

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

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**TENTATIVE ORDER NO. R9-2009-0038
AMENDING
ORDER NO. R9-2006-0065 (NPDES NO. CA0109223)
WASTE DISCHARGE REQUIREMENTS FOR
THE POSEIDON RESOURCES CORPORATION
CARLSBAD DESALINATION PROJECT
DISCHARGE TO THE PACIFIC OCEAN VIA
THE ENCINA POWER STATION DISCHARGE CHANNEL**

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. On August ~~14~~, 16, 2006, the Regional Board adopted Order No. R9-2006-0065 (NPDES No. CA0109223) (Order No. R9-2006-0065) establishing waste discharge requirements for Poseidon Resources Corporation (~~Poseidon~~Discharger) to discharge up to 57 million gallons per day (MGD) of a combined waste stream comprised of concentrated saline waste seawater and filter backwash wastewater from the Carlsbad Desalination Project (CDP) into the Pacific Ocean via the Encina Power Station (EPS) cooling water discharge channel. Intake source water from Agua Hedionda Lagoon (AHL) is to be drawn in through the existing EPS intake structure. The total flow rate of source water needed to operate the CDP at full production was determined to be 304 ~~million-gallons-per-day~~MGD, in order to produce 50 MGD (MGD) of potable water. Of this source water, 107 MGD will be used for the production of 50 MGD of potable water (and 57 ~~MGD~~ of wastewater). The remaining 197 MGD of source water not used for production is needed as dilution water to comply with the salinity requirements of the NPDES Permit. This results in a total discharge flow rate of 254 MGD (57 MGD of wastewater and 197 MGD of dilution water).
2. Section 13142.5(b) of the California Water Code requires new or expanded coastal industrial facilities using seawater for cooling, heating, or industrial processing, to use the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life.
3. Section VI.C.2.e. of Order No. R9-2006-0065 requires ~~Poseidon~~Discharger to submit for Regional Board approval, within 180 days of adoption, a Flow, Entrainment and Impingement Minimization Plan (Minimization Plan) that “shall assess the feasibility of site-specific plans, procedures, and practices to be implemented and/or mitigation measures to minimize the impacts to marine organisms when the CDP intake requirements exceed the volume of water being discharged by the EPS.” The Order requires an approved Minimization Plan to ensure that the CDP complies with ~~s~~Section 13142.5(b) of the Water Code when the CDP is co-located with EPS, but CDP’s intake requirements exceed the volume of water being discharged by EPS under power generation operations (“co-location

operation for CDP benefit"). Co-location operation for CDP benefit can occur under conditions 1 (1) when EPS is temporarily shut down or (2) when EPS is operating but its discharge volume is not sufficient to meet CDP's intake requirements.

4. If EPS permanently ceases operations and the Discharger proposes to independently operate the existing EPS seawater intake and outfall for the benefit of the CDP ("stand-alone operation"), it will be necessary to evaluate whether, under those conditions, the CDP complies with the requirements of Water Code ~~s~~Section 13142.5(b). Additional review will be necessary in part because under stand-alone operations, the Discharger ~~will~~may have more flexibility in how it ~~operates~~accesses the EPS intake structure and outfall, and additional and/or better design and technology features may ~~be feasible~~become feasible. The Discharger will be required to submit a new Report of Waste Discharge to the Regional Board for authorization to operate in stand-alone mode, and shall seek review under Section 13142.5(b) for such stand-alone operation with permanent shutdown of the EPS facility, within 90 days after EPS provides written notice to the California Independent System Operator of its intent to shut down permanently all of its generating units.
5. It is possible that under prolonged, but not permanent, EPS shutdown, additional design or technology features to further reduce intake and mortality of marine life could become available and feasible. The Discharger will be required to submit a technical report to the Executive Officer evaluating the feasibility of any additional design or technology features within 45 days of being notified by EPS that all generating units will be non-operational for power production without seawater intake for these units and unavailable to be called upon by the California Independent System Operator to produce power for a period of 180 consecutive days or more. If the Discharger identifies additional measures that could be implemented under such conditions, the Discharger will be required to implement them as soon as reasonably practicable for the duration of the prolonged period of temporary shutdown.
6. ~~5~~-On February 13, 2007, the Discharger submitted a draft Minimization Plan dated February 12, 2007, intended to comply with Order R9-2006-0065. On June 29, 2007, in response to Regional Board staff's and interested persons' comments, the Discharger submitted a revised Minimization Plan, dated June 1, 2007. ~~The~~ Regional Board staff reviewed the revised Minimization Plan, and in a letter dated February 19, 2008, ~~informed the Discharger that the revised Minimization Plan was incomplete and included~~provided a detailed listing of items that needed to be addressed before the Regional Board could approve the revised Minimization Plan.
7. ~~6~~-On March 7, 2008, the Discharger submitted an updated version of the revised Minimization Plan, dated March 6, 2008.

8. ~~7.~~ On April 9, 2008, in a public meeting, the Regional Board adopted Resolution No. R9-2008-0039. ~~The Regional Board determined that~~ 0039, conditionally approving the revised Minimization Plan ~~did not satisfy all of the requirements in Section VI.C.2.e. of Order No. R9-2006-0065, but conditionally approved the Plan,~~ subject to the conditions (1) that within six months, the Discharger submit an amended Minimization Plan that includes a specific proposal for mitigation of the impacts, by impingement and entrainment upon marine organisms resulting from the intake of seawater from Agua Hedionda Lagoon and (2) that the amended Plan address the items outlined in the February 19, 2008 letter to ~~Poseidon~~ Discharger and the following additional concerns:
- ~~(1)~~ a) Identification of impacts from impingement and entrainment;
 - ~~(2)~~ b) Adequate monitoring data to determine the impacts from impingement and entrainment;
 - ~~(3)~~ c) Coordination among participating agencies for the amendment of the Plan as required by Section 13225 of the California Water Code;
 - ~~(4)~~ d) Adequacy of mitigation; and
 - ~~(5)~~ e) Commitment to fully implement the amendment to the Plan.
9. On May 1, 2008, an interagency meeting was held to determine mitigation options for the CDP. In addition to Coastal Commission and Regional Board staff, attendees included staff representatives from:
- (a) California Department of Fish and Game
 - (b) California State Lands Commission
 - (c) California Department of Transportation
 - (d) City of Carlsbad
 - (e) City of Vista
 - (f) U.S. Fish and Wildlife Service
- ~~8.~~ ~~On November 18, 2008, the Regional Board received an amendment to the March 6, 2008, Minimization Plan. The amendment was titled~~
During the subsequent weeks, the Discharger cooperated with the participating agencies to develop the Marine Life Mitigation Plan ~~and was dated November 14, 2008 (MLMP). The MLMP was intended to satisfy the conditions in Resolution No. R9-2008-0039. In a letter dated December 2, 2008, the Executive Officer informed the Discharger that the amended Plan did not satisfy the requirements established in Resolution No. R9-2008-0039 since it did not propose a specific mitigation site or specific proposal for mitigation at an identified site. The amendment to the Plan also did not fully address the issues raised in the Regional Board's February 19, 2008 letter, and was submitted past the due date of October 6, 2008. On December 9, 2008, the Discharger submitted a response to the December 2, 2008 letter disagreeing and asserting that the amendment to the Plan and previous submittals satisfied the Regional Board's conditions set forth in Resolution No. R9-2008-0039.~~
(MLMP) and, on July 3, 2008, the Discharger submitted the first draft of the MLMP

to Coastal Commission staff. On July 7, 2008, Coastal Commission staff forwarded the draft MLMP to staff at the various participating agencies, including the Executive Officer of the Regional Board. On August 2, 2008, in response to Coastal Commission staff comment, the Discharger submitted a revised MLMP. On August 6, 2008, the Coastal Commission held a hearing to consider the MLMP. Regional Board staff attended this hearing. The Coastal Commission approved the MLMP and directed its staff to work with the Discharger to finalize the language of the plan. On or about September 17, 2008, the CDP's Project Manager, Peter MacLaggan, met with the Executive Officer and notified him that final language of the MLMP was unlikely to be available before October 8, 2008 because of the time required in the interagency process. On or about November 7, 2008, the Coastal Commission staff and the Discharger reached agreement on the final language of the MLMP.

10. On November 14, 2008, the Discharger submitted to the Regional Board the MLMP as the proposed amendment to the March 6, 2008 Minimization Plan to satisfy the conditions in Resolution No. R9-2008-0039.

11. 9-On February 11, 2009, in a public meeting, the Regional Board was scheduled to consider whether the MLMP satisfied the conditions established in Resolution No. R9-2008-0039 or whether any failure to satisfy the conditions rendered the Resolution inoperative by its own terms. At the commencement of the meeting, the Executive Officer identified a list of outstanding issues concerning the March 6, 2008 Minimization Plan, as supplemented by the MLMP. The outstanding issues were identified as follows: "(1) Placing Regional Water Board and its Executive Officer on equal footing, including funding, with Coastal Commission and its Executive Director, in the MLMP, while minimizing redundancies (e.g., only one Scientific Advisory Panel).—Details, with details of a dispute resolution process to be worked out; (2) Reducing the number of sites to five, in consultation with the Coastal Commission, with the existing proviso that other sites within the Regional Board boundaries could be added.; (3) Poseidon to provide the flow-proportioned calculations for Poseidon's impacts due to impingement, to help support the Board's determination that these impacts are *de minimis*.; and (4) Poseidon to provide a consolidated set of all requirements imposed to date by the various agencies."

12. 40-The Regional Board heard public comment at the February 11, 2009 hearing, but with the concurrence of the Discharger, continued the matter to its April 8, 2009 meeting. The Regional Board directed staff to work with the Discharger to expeditiously address the list of the outstanding issues identified by the Executive Officer and further directed staff to prepare for Regional Board consideration a resolution or order approving the Flow, Entrainment, and Impingement Minimization Plan required by Order No. R9-2006-0065.

13. 44-Following the February 11, 2009 meeting, Regional Board staff and the Discharger met on numerous occasions to addressdiscuss the outstanding issues on numerous occasions. On March 9, 2009,2009 the Discharger submitted a further revised

Minimization Plan, including the MLMP, for the Regional Board's consideration. ~~This version of the Minimization Plan is~~ On March 27, 2009, the Discharger submitted revisions to the March 9, 2009 Minimization Plan. The March 9, 2009 Minimization Plan, as revised on March 27, is hereinafter referred to ~~herein~~ as the March 9, 27, 2009 Minimization Plan.

14. ~~12-~~The Regional Board reviewed the March 9, 27, 2009 Minimization Plan to determine whether its implementation will result in the "use [of] the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life" under co-location operation for CDP benefit.

SITE

15. ~~13-~~Chapter 2 of the March 9, 27, 2009 Minimization Plan addresses identification of the best available site feasible for the CDP to minimize the intake and mortality of marine life ~~under conditions of co-location operation for CDP benefit.~~
16. The CDP will be co-located with EPS and use EPS's existing intake and discharge facilities, which draw cooling water from AHL and discharge into the Pacific Ocean.
17. The CDP has four fundamental project objectives: (1) to provide a local and reliable source of potable water not subject to variations of drought or political or legal constraints; (2) to reduce local dependence on imported water; (3) to provide water at or below the cost of imported water supplies; and (4) to meet the CDP's planned contribution of desalinated water as a component of satisfying regional water supply planning goals.
18. Co-locating the CDP with EPS allows the CDP to use the existing EPS intake and discharge facilities. Using EPS's existing intake and discharge facilities allows the CDP to minimize the intake and mortality of marine life by reducing the amount of source water required to be withdrawn directly from AHL for desalination purposes by the amount of water discharged by EPS.
19. By co-locating with the EPS, the CDP will use the wastewater stream discharged by the EPS as its first source of water. The discharge of the EPS wastewater to the Pacific Ocean is subject to R9-2006-0043, a NPDES permit issued to Cabrillo Power I LLC by the Regional Board. The Discharger's proposed beneficial reuse of EPS's discharge water is a form of conservation of water resources through water recycling expressly encouraged by the State of California (see, e.g., Water Code Section 461), and has the added benefit of reducing the amount of EPS wastewater discharged under R9-2006-0043.

20. Using the existing EPS intake and discharge facilities also eliminates the need for new construction of a major intake system and discharge facilities, with necessarily associated environmental and economic costs.
21. ~~14.~~ The ~~Discharger~~ Board, through its review and approval of the March 27, 2009 Minimization Plan, has evaluated three alternative sites in the City of Carlsbad that would accommodate ~~a large~~ the proposed desalination project. These sites include (1) other locations on the EPS property, (2) the Encina Water Pollution Control Facility, and (3) the Maerkle Reservoir.
22. ~~15.~~ ~~The Discharger concluded that all~~ These three alternatives ~~were~~ have been found by the Regional Board to be infeasible for the following reasons:
- (1) ~~———(1)~~ Other locations within the Encina Power Station property: Alternative sites within the EPS property ~~were~~ are infeasible because the power plant owner has reserved the remaining portion of the site to accommodate future power plant modifications, upgrades, or construction of new power plant facilities.
 - (2) ~~(2)~~ Encina Water Pollution Control Facility: This site could only accommodate a desalination plant with a 10 MGD production capacity, due to ~~the~~ outfall constraints. Use of this site would also require the construction of an intake pipeline to convey source water from the power plant cooling canal; ~~and,~~
 - (3) ~~(3)~~ Maerkle Reservoir: The public rights-of-way between the reservoir and the Pacific Ocean do not have sufficient space to accommodate an intake pipeline and concentrate line. Use of this site would also require the pumping of over 100 MGD of seawater to an elevation of 531 feet (compared to 70 feet at the proposed site) for processing. This area has also been zoned as “Open Space.”
23. ~~16.~~ The Project EIR, certified by the City of Carlsbad on June 13, 2006, evaluated only alternative 2 above, and concluded that the Encina Water Pollution Control Facility site would not be as effective as the proposed location site in satisfying the objectives of the project. The EIR did not evaluate other locations within the EPS since other locations within the EPS were determined to be substantially the same as the proposed site.
- ~~17. The Discharger concludes that the proposed location for the CDP at the EPS (as previously approved by the Regional Board in NPDES Permit No. R9-2006-0065) is the best available site for the Project because there are no feasible and less environmentally damaging alternative locations.~~
24. ~~18.~~ The EPS site is the only site in reasonable proximity to the existing seawater intake and outfall, and to key delivery points of the water distribution system of the City of Carlsbad, the largest user of proposed desalinated water anticipated by the Discharger. The use of

existing intake and discharge facilities at the EPS site avoids construction of a major new intake system and discharge facilities.

~~19. Under the scenario proposed in the Discharger's Report of Waste Discharge for Order No. R9-2006-0065 as described in Section II.B. of that Order, there are no better alternative and feasible sites available for the CDP.~~

25. Further and more detailed findings of the Regional Board on site are in Attachment A to this Order, Supplemental Findings of Regional Board for Order No. R9-2009-0038.

26. The Regional Board finds that there are no better available, feasible and less environmentally damaging alternative sites to the proposed site for the CDP at the EPS (as previously approved by the Regional Board in NPDES Permit No. R9-2006-0065). Pursuant to Water Code Section 13142.5(b), the Board finds that the proposed site is the best available site feasible that can be used to minimize the intake and mortality of all forms of marine life.

DESIGN

27. ~~20.~~ Chapter 3 of the March 9,27, 2009 Minimization Plan addresses identification of the best available design feasible to minimize the intake and mortality of marine life under co-location operation for CDP benefit.

28. ~~21.~~ A key feature of the proposed design is the direct connection of the desalination plant intake and discharge facilities to the discharge canal of the power generation plant. This approach allows the CDP to use the power plant cooling water as both source water for the seawater desalination plant and as a blending water to reduce the salinity of the desalination plant concentrate prior to the discharge to the ocean. Under the conditions of co-location with the EPS, however, ~~Poseidon~~ Discharger has little control over the intake structure.

29. ~~22.~~ When EPS is producing power and is discharging 304 MGD or more of seawater for once-through cooling, the ~~March 9, 2009 Minimization Plan concludes that the~~ proposed desalination plant operation would cause a *de minimis* increase in entrainment and impingement of marine organisms. Under conditions of co-location operation for CDP benefit, the Discharger must comply with Water Code ~~s~~ Section 13142.5(b) and use best available design feasible to minimize incremental increases in intake and mortality of marine life for operation under these conditions. Based on flow data submitted by the Discharger, the EPS would have provided approximately 89% of the CDP's required flow in ~~2008~~ 2008, indicating that the CDP would have been responsible for minimizing intake and mortality of the additional approximately 11% increment in impacts from EPS operations conducted for the benefit of the CDP. The March 9,27, 2009 Minimization Plan concludes that under this condition, direct use of the EPS discharge and variable frequency

drives on the desalination plant intake pumps will result in a substantial reduction in intake and mortality of marine life.

30. ~~23.~~ The March ~~9,~~27, 2009 Minimization Plan also concludes that additional design features will be employed to minimize intake and mortality of marine life when EPS is temporarily shut down. The CDP must comply with the best available design feasible requirement in Water Code ~~s~~Section 13142.5(b) when EPS is operating for the benefit of CDP (whether EPS is temporarily shut down or not otherwise discharging sufficient volume of water to meet CDP's operational needs). Features that will be incorporated in the desalination plant design to reduce impingement, entrainment, and flow collection when EPS is temporarily shut down include operation of a modified (EPS) pump configuration to reduce both inlet (bar racks) and fine screen velocity, and ambient temperature processing. While the percentage of time EPS is temporarily shut down has not been predicted and the Discharger has not quantified the expected reduction in impingement and entrainment during operation under these conditions, it is reasonable to conclude that reductions in impingement and entrainment will occur when CDP implements these features.
31. ~~24.~~ Available information shows that under the conditions of co-location operation for CDP's benefit, the Discharger has little control over the intake structure and the corresponding intake pumps. Under the conditions of co-location operation, the existing intake meets the best available design criteria. feasible. The Regional Board finds that the proposed design for CDP operations is the best available design feasible under co-location operation for the benefit of CDP.
32. Further and more detailed findings on design are in Attachment A, Detailed Findings of Regional Board for Order No. R9-2009-0038.
33. ~~25.~~ The Discharger indicates that the design features it will use under limited co-location operations would also serve as best available design feasible under stand-alone conditions. As indicated above, the Regional Board is not considering the adequacy of design alternatives for stand-alone operating conditions at this time. Once EPS permanently shuts down and the CDP is operated ~~as-on~~a stand-alone basis, the Discharger will have more flexibility in design implementation. It will be appropriate to undertake additional evaluation under ~~CWC-section~~Section 13142.5(b) at that time to determine whether any additional and/or superior design features are feasible for CDP stand-alone operations.
34. Pursuant to Water Code Section 13142.5(b), the Board finds that the proposed design is the best available design feasible under co-location operation for the benefit of CDP that can be used to minimize the intake and mortality of all forms of marine life

TECHNOLOGY

35. ~~26-~~Chapter 4 of the March ~~9~~,27, 2009 Minimization Plan addresses identification of the best available technology feasible to minimize the intake and mortality of marine life under co-location operation for the CDP's benefit.
36. ~~27-~~Because CDP will be co-located with the EPS, technological modifications to the existing intake channel to minimize the intake and mortality of marine life must be compatible with both EPS's and CDP's operations. In addition, the Amendment of Lease PRC 8727.1 [State Lands Commission lease with Cabrillo Power LLC I (EPS operator)] to authorize CDP's use of the intake and outfall recognized that entrainment and impingement minimization measures cannot interfere with, or interrupt ongoing power plant operations.
37. ~~28-~~The ~~Discharger~~Board, through its review and approval of the March 27, 2009 Minimization Plan, has analyzed and investigated a number of alternative seawater intake, screening, and treatment technologies prior to selecting the desalination plant intake, intake screening, and seawater treatment technologies planned for the CDP. ~~The discharger concluded that when~~When economic, environmental and technological factors are taken into account, the power plant intake, screening, and treatment alternatives are not capable of being accomplished in a successful manner within a reasonable period of time.
38. ~~29-~~The ~~Discharger~~Board, through its review and approval of the March 27, 2009 Minimization Plan, has analyzed the following intake alternatives: (1) Subsurface intake (vertical and horizontal beach wells, slant wells, and infiltration galleries); (2) new open ocean intake; (3) Modifications to the existing power plant intake system; and (4) Installation of variable frequency drives (VFDs) on seawater intake pumps.
39. ~~30-~~The ~~Discharger~~Board, through its review and approval of the March 27, 2009 Minimization Plan, has compared screening technologies to identify the best available technology feasible including: (1) Fish net, acoustic and air bubble barriers upstream of the existing intake inlet mouth; (2) New screening technologies to replace the existing inlet screens (bar racks); and (3) fine vertical traveling screens.
40. ~~31-~~~~The Discharger concluded that implementation~~Implementation of the alternatives associated with the modification of the existing power plant intake and intake screening facilities ~~were~~are infeasible because they would interfere with, or interrupt, power plant scheduled operations. ~~The Discharger also concluded that taking~~Taking into account economic, environmental and technological factors, the power plant intake and intake screening alternatives are not capable of being accomplished in a successful manner within a reasonable period of time.
41. ~~32-~~The Discharger identified intake technologies it will employ to reduce intake and mortality of marine organisms during temporary or permanent shutdown of the EPS. The

CDP intake pump station design will incorporate variable frequency drives to reduce the total intake flow for the desalination facility to no more than that needed at any given time, thereby minimizing the entrainment of marine organisms.

42. ~~33-~~ Under the conditions of co-location operations for CDP's benefit when EPS maintains control of the intake and discharge facilities, the Discharger has little control over the intake structure and little flexibility in implementing different technologies. Under these circumstances, the Discharger has identified the best available technologies feasible to minimize the intake and mortality of marine life at this time. Because different and/or better technologies may ~~be~~ become feasible under stand-alone operations, the Regional Board will require evaluation of CDP's compliance with Water Code ~~s~~ Section 13142.5(b) under those conditions.
43. Further and more detailed findings on technology are in Attachment A, Detailed Findings of Regional Board for Order No. R9-2009-0038.
44. Pursuant to Water Code Section 13142.5(b), the Regional Board finds that the proposed technology is the best available technology feasible under co-location operation for the benefit of CDP that can be used to minimize the intake and mortality of all forms of marine life.

MITIGATION

45. ~~34-~~ Chapter 6 of the March ~~9,~~ 27, 2009 Minimization Plan describes mitigation measures associated with the CDP, incorporates the ~~November 14, 2008~~ Marine Life Mitigation Plan previously submitted ~~by the Discharger~~, and addresses identification of best mitigation feasible to minimize intake and mortality of marine life ~~under conditions of co-location operation for CDP benefit~~. By attachment, ~~Poseidon~~ Discharger includes baseline studies of the existing marine system in the area that could be affected by the facility.
46. ~~35-~~ The MLMP sets forth a plan for mitigation and monitoring for impacts due to entrainment from the CDP as means of complying with Water Code ~~s~~ Section 13142.5(b). It was developed by the Discharger in consultation with multiple resource agencies including the Regional Board, and was approved by the California Coastal Commission (Commission) on ~~November 21,~~ August 6, 2008. The MLMP was written for stand-alone operation, and proposes phased implementation of up to 55.4 acres of wetland mitigation within the Southern California Bight. Phase I requires the creation of 37 acres, and Phase II requires an additional 18.4 acres, which the Discharger may propose to eliminate or reduce if it proposes alternative mitigation, such as new entrainment reduction technology or mitigation credits for dredging.
47. ~~36-~~ The MLMP proposes mitigation ~~to~~ that no more than two mitigation site(s) be selected from among 11 potential sites in southern California. These sites are : Tijuana Estuary, San Dieguito River Valley, Agua Hedionda Lagoon, San Elijo Lagoon, Buena Vista Lagoon,

Huntington Beach Wetland, Anaheim Bay, Santa Ana River, Los Cerritos Wetland, Ballona Wetland, and Ormond Beach. Additional sites may be incorporated if appropriate. The Minimization Plan clarifies that preference will be given to mitigation in the San Diego Region, to the extent feasible.

48. ~~37-~~ Within 9 months of receiving ~~the~~its Coastal Development Permit from the Commission, the Discharger must submit to the Commission, and the Regional Board, a list of the selected mitigation site or sites, and corresponding preliminary restoration plans, for review and agency approval. Six months following the Regional Board's and Commission's approval of the selected ~~site~~site(s) and proposed restoration plan(s), pending necessary permits, the Discharger must begin wetland construction. The Discharger must submit similar plans for Phase II implementation, if Phase II implementation is required, within 5 years of receiving the Coastal Development Permit for Phase I implementation.
49. ~~38-~~ The MLMP ~~also~~ contains mitigation monitoring requirements, and criteria for performance standards ~~similar to~~modeled after those required of Southern California Edison's mitigation for San Onofre Nuclear Generating Station (SONGS) at San Dieguito lagoon. The MLMP also provides for the oversight of such monitoring by a scientific advisory panel, and commits to public availability of monitoring results.
50. ~~39-~~ The California Coastal Commission, through its expert, concluded that 55.4 acres ~~are required for stand-alone entrainment mitigation~~of wetlands will assure the benefits needed to compensate for potential entrainment losses under stand-alone conditions (with an 80% confidence interval). The Commission ~~did not consider impingement impacts because the data before it assumed de minimis impingement impacts. The March 9, on page 39 of 106 of its findings found that the CDP, "when operating stand-alone, is expected to impinge approximately 2.12 pounds of fish per day, which Poseidon provides is less than the average daily consumption of an adult pelican (more than 2.5 pounds per day), which for this project the Commission considers de minimis and insignificant." ~~The March 27, 2009 Minimization Plan, Table 5-2, presents a range of projected impingement losses from CDP's projected operation at levels higher than were presented to the Coastal Commission and states that, in addition to mitigating for entrainment losses, the MLMP also mitigates for the CDP's newly identified projected impingement.~~for the CDP when drawing 304 MGD from AHL, from 1.57 kilograms per day to 4.70 kilograms per day, which are higher than the level of 2.12 pounds per day (0.96 kilograms per day) considered by the Coastal Commission but still less than the average four pounds per day of fish an adult pelican consumes.~~
51. The Regional Board considered multiple approaches to estimating impingement associated with the CDP's projected operations as presented in the March 27, 2009 Minimization Plan. The estimates derived from the multiple approaches range from 1.56 kg/day to 7.2 kg/day of fish impinged. The Discharger presented evidence in April of 2008, January of 2009, and April of 2009 that the level of

impingement is 1.56 kg/day, and the Discharger contends that the level of 4.7 kg/day overstates the CDP's projected impingement impacts. The Regional Board staff does not agree with the Discharger's position. The Discharger and the Board staff also disagree as to whether and to what extent certain dates, described by the Discharger's experts as "outliers", should be included in calculating the estimate of future impingement from the CDP. The Board finds it unnecessary to resolve these disputes and determine whether the Discharger's position or the staff's position concerning the estimation of impingement or the inclusion or exclusion of outliers is correct. Instead, based on the Discharger's voluntary agreement to meet a biological productivity standard of 1715 kg per year or 4.7 kg per day, the Board has determined that Proportional Approach 3-B, resulting in an estimate of 4.7 kg/day of impingement, the maximum reasonable estimate described in the Minimization Plan, should be used by the Regional Board as the appropriate standard to use as the basis for setting the compensation for impingement to be provided by the mitigation site(s). Any impingement attributable to the CDP will be less than or equal to this level of 4.7 kg per day. The estimate of 4.7 includes the "outlier days" and in fact does not discount them due to reduced flow from the CDP. Based on this use of this standard as a regulatory measure, it is unnecessary to resolve the dispute between the staff and the Discharger as to the appropriate impingement estimate.

52. The biological performance standard of 1,715.5 kg/year agreed to by the Discharger is set forth in the Minimization Plan. This standard, as it may be adjusted under the terms of this Order, will be considered a biological performance measure under Section 5.4 of the MLMP.

53. To demonstrate that the mitigation wetlands required by the MLMP achieve the productivity standard of 1,715.5 kg/year of available fish biomass as described in Section 6.2.1 of the Minimization Plan, the Discharger will conduct productivity monitoring pursuant to a Productivity Monitoring Plan (PMP). The Discharger will be considered to be successful in meeting this performance standard when it has been met for a three-year period, in the same manner as the other performance standards described in Section 3.0 of the MLMP. The Executive Officer shall report to the Board upon determining that this performance standard has been met for three years and the CDP has been deemed successful in meeting this standard. If the Board determines that this performance standard has been met, the monitoring program will be scaled down as recommended by the Executive Officer and approved by the Board. A public review shall thereafter occur every five years, or sooner if called for by the Executive Officer. The work program shall reflect the lower level of monitoring required. If subsequent monitoring shows that the standard is no longer being met, monitoring may be increased to previous levels, if determined necessary by the Executive Officer.

54. The Discharger shall submit a proposed detailed PMP to the Executive Officer concurrently with the proposed Restoration Plan in Section 2.0 of the MLMP for review by the Executive Officer. In conducting the review and approval of the PMP, the Executive Officer may consult with the Scientific Advisory Panel (SAP) established in the MLMP, or other experts retained by the Executive Officer. The Discharger shall reimburse the Board for the costs of such review, in an amount not to exceed \$10,000, (such amount adjusted for changes in the consumer price index after 2009.) Any decision of the Executive Officer on the PMP may be appealed to the Regional Board.
55. At this time, there is no impingement data associated with the CDP because the CDP has not yet commenced operations. Once operations commence, it will be valuable to consider impingement over the course of a one-year period per permit cycle to evaluate impingement associated with the CDP's operations. The Regional Board will require the Discharger to sample and report on impingement during a one-year period per permit cycle according to an impingement sampling program (ISP) using the method set forth in sections 9.3 and 10.2 of Attachment 4 to the March 27, 2009 Minimization Plan, with the exception of heat treatment events.
- ~~40. The Discharger concludes that, assuming that impingement impacts are proportional to intake flow volumes, the projected CDP impingement impacts to fishes under stand-alone operation would be approximately 1,715.5 kg/year. The discharger concludes that the 37 acres to be constructed in Phase I are expected to yield approximately 1,400 kg/year of fish biomass. If the additional 18.4 acres of Phase II are implemented, they would provide an additional 696 kg/year, for a total of 2,096 kg/year. The Discharger concludes that restoration of 45.3 acres would fully offset CDP's projected impingement at 304 MGD of flow.~~
- ~~41. Beyond the use of the proposed impingement minimization technology (i.e. use of modified pump configuration when EPS is temporarily shut down and the reduction in flows when EPS is operating at less than 304 MGD intake), the discharger is not proposing additional mitigation for the newly-identified impacts from impingement at this time.~~
56. Based upon the results of the ISP, the Regional Board may determine that it is appropriate to adjust the biological productivity performance standard of 1,715.5 kg/year upward or downward for the next permit cycle.
57. Although the CDP will rely on EPS discharge water for its source water to the extent such water is available, the mitigation provided for under the Minimization Plan, incorporating the MLMP, and this Order fully offsets projected entrainment and impingement losses assuming up to an annual average flow rate of 304 MGD of source water withdrawn directly from AHL and none from EPS discharges.

58. Further and more detailed findings on mitigation are in Attachment A, Supplemental Findings of Regional Board for Order No. R9-2009-0038.
59. Pursuant to Water Code Section 13142.5(b), the Board finds that the proposed mitigation is the best available mitigation feasible that can be used to minimize the intake and mortality of all forms of marine life.

GENERAL

- ~~42.~~ This Order amends Order No. R9-2006-0065 to require the Discharger to implement and comply with the March 9, 2009 Minimization Plan under co-location operations to benefit the CDP.
60. ~~43.~~ Implementation of the March ~~9~~, 27, 2009 Minimization Plan will ensure that the CDP is in compliance with Water Code ~~s~~Section 13142.5(b) under co-location operations to benefit the CDP.
61. ~~44.~~ Implementation of the March ~~9~~, 27, 2009 Minimization Plan is not required by the federal Clean Water Act and does not represent an effluent standard or limitation within the meaning of ~~s~~Section 1365 of the federal Clean Water Act [Title 33, Federal Water Pollution Control Act, ~~s~~Section 505]. Failure to implement and comply with the Minimization Plan is not a violation subject to mandatory minimum penalties under ~~s~~Section 13385, subdivision (h) or subdivision (i) of the Water Code, because it is not an “effluent limitation” as defined by Water Code ~~s~~Section 13385.1, subdivision (c).
62. ~~45.~~ EPS’s operations are regulated in part by Regional Board Order No. R9-2006-0043 (NDPES No. CA0001350), issued to Cabrillo Power I, LLC, on August 16, 2006. The Discharger’s and EPS’ use of the intake structure in accordance with Order No. R9-2006-0065, and the March ~~9~~, 27, 2009 Minimization Plan during co-location operations to benefit the CDP, does not constitute “cooling water flow” as that term is used in Section V.B. of Order No. R9-2006-0043. Therefore, EPS need not comply with Section V.B, but shall continue to comply with Sections V.A and V.C. of Order No. R9-2006-0043, when operating the intake structure during co-location operations to benefit the CDP.
63. ~~46.~~ According to Section 13263(e) of the California Water Code, the Regional Board may, upon application by any affected person, or on its own motion, review and revise waste discharge requirements. Section 122.62(a) of title 40 of the Code of Federal Regulations authorizes the reopening and modification of an NPDES permit based upon new information.
- ~~47.~~ Order No. 2006-0065 is not being reopened for any other purpose than the revisions contained herein. Except as contradicted or superseded by the findings and directives set

~~forth in this Order, all of the previous findings and directives of Order No. R9-2006-0065 remain in full force and effect.~~

~~48. This action supersedes Resolution No. R9-2008-0039, which considered an earlier version of the March 9, 2009 Minimization Plan, in its entirety. Resolution No. R9-2008-0039 has no ongoing force or effect.~~

64. This Order incorporates the March 27, 2009 Minimization Plan as amended by this Order, the supplemental findings, which are Attachment A to this Order, and the responses to public comments, which are Attachment B to this Order. The provision of the Minimization Plan and the Attachments to this Order are incorporated into this Order by reference, as if fully set forth herein, and shall be considered part of the Board's adopted findings for this Order.

65. ~~49.~~ This action is exempt from the requirement of preparation of environmental documents under the California Environmental Quality Act [Public Resources Code, Division 13, Chapter 3, Section 21000 et seq.] in accordance with Section 13389 of the California Water Code.

66. ~~50.~~ The Regional Board has notified all known interested parties of its intent to adopt Order No. R9-2009-0038.

67. ~~51. The Regional Board in~~ In a public hearing on April 8, ~~2009~~ 2009, the Regional Board heard and considered all comments pertaining to the adoption of Order No. R9-2009-0038.

THEREFORE, IT IS HEREBY ORDERED:

1. The March ~~9,~~ 27, 2009 Minimization Plan, as amended hereunder, submitted pursuant to Provision VI.C.2.e. of Order No. R9-2006-0065, is hereby approved.
2. This Order amends Order No. R9-2006-0065 to require the Discharger to implement and comply with the March 27, 2009 Minimization Plan under co-location operations to benefit the CDP.
3. Order No. 2006-0065 is not being reopened for any other purpose than the revisions contained herein. Except as contradicted or superseded by the findings and directives set forth in this Order, all of the previous findings and directives of Order No. R9-2006-0065 remain in full force and effect.
4. This action supersedes in its entirety Resolution No. R9-2008-0039, which considered an earlier version of the March 27, 2009 Minimization Plan. Resolution No. R9-2008-0039 has no ongoing force or effect.

5. The March 27, 2009 Minimization Plan submitted pursuant to Provision VI.C.2.e. of Order No. R9-2006-0065 is hereby approved: subject to the amendments described in this Order:

6. The Minimization Plan is amended to add a monitoring component that requires impingement monitoring at the intake once the desalination project is in operation.
 - a. Intake Monitoring Schedule. Discharger shall commence monitoring for impingement in 2012, following permit reissuance. Monitoring shall be conducted for 52 continuous 24-hour periods during the first 12 months after project operation.

 - b. Selection of Sampling Dates. Preference will be given to days in which the EPS flow is expected to be at or about 304 MGD.

 - c. Impingement Sampling. Discharger shall monitor for impingement in accordance with the methodology and the impingement mortality sampling plan, described in Sections 9.3 and 10.2 of Attachment 4 to the Minimization Plan, excluding the requirement for impingement sampling during heat treatment.

 - d. Reporting. A report containing detailed analysis of the fish impingement monitoring data shall be submitted within 6 months after the field program is complete. The Discharger shall report impingement data as follows:
 - i. Impingement shall be adjusted to reflect the flow proportional approach as described in and consistent with Approach 3-B of the Minimization Plan, Attachment 5.

 - ii. Notwithstanding subparagraph 6.d.i., impingement data shall not be proportionally adjusted, in accordance with Approach 3-B, when impingement sampling indicates that impingement on a particular sampling day is the result of a non-flow related event.

7. The Minimization Plan is amended to add a productivity monitoring component that requires monitoring of available fish biomass at the mitigation site(s):
 - a. Available Fish Biomass. Within 4 years upon completed construction of the mitigation wetlands and prior to the end of the 2011-2016 permit cycle, Discharger shall demonstrate that the wetlands produce at least 1715 kilograms (kg) of available fish biomass per year. At the end of the 2011-2016 permit cycle, Discharger shall provide a comparison of the

impingement monitoring data and available fish biomass data obtained during the 2011-2016 permit cycle. This comparison will be used to support the determination whether to increase or decrease the 1,715 kg/year performance standard to reflect actual impingement resulting from CDP operations.

b. Accounting.

i. Available fish biomass shall be based on the following three categories of fish species:

1. Most Commonly Entrained Lagoon Species ("Lagoon Biomass")

- a. Goby
- b. Blenny
- c. Garibaldi

2. Most Commonly Entrained Ocean Species ("Ocean Biomass")

- a. White croaker
- b. Spotfin croaker
- c. Queenfish
- d. Northern anchovy
- e. California halibut

3. All Other Species ("Other Biomass")

ii. The biomass from Lagoon, Ocean and Other Species shall be deemed available in the following proportions:

0% of Lagoon Biomass is available

88% of Ocean Biomass is available

100% of Other Biomass is available

iii. Available fish biomass shall be calculated as follows: Available Fish Biomass = (88% x Ocean Biomass) + (100% x Other Biomass)

iv. For mitigation sites that involve restoration of existing wetlands, a baseline of the estimated biological productivity of fish biomass of the wetlands prior to restoration shall be used to measure increases in fish biomass required by this productivity standard.

- v. The term “available fish biomass” shall be defined and calculated consistent with the methodology set forth in Attachment 7 to the Minimization Plan and the April 2, 2009 submittal to the Regional Board by Dr. David Mayer and Mr. Chris Nordby entitled “Wetlands Mitigation Credit for Potential Impingement, As Well As For Potential Entrainment.

- vi. The sampling for the productivity monitoring shall be done principally or wholly within the boundaries of the mitigation site(s).

- c. Monitoring Plan. The Discharger shall submit a proposed Productivity Monitoring Plan (“PMP”) to measure the fish biomass as described in this Order concurrently with the proposed Restoration Plan in section 2.0 of the MLMP for review and approval by the Executive Officer. In conducting the review and approval of the PMP, the Executive Officer may consult with the Scientific Advisory Panel (SAP) established in the MLMP, or other experts retained by the Executive Officer. The Discharger shall reimburse the Board for the costs of such review, in an amount not to exceed \$10,000, (such amount adjusted for changes in the consumer price index after 2009.) Any decision of the Executive Officer on the PMP may be appealed to the Board. The PMP is subject to framework established in Conditions B and C of the MLMP and to the Regional Board’s corresponding authorities under Condition B for purposes of administration.

Monitoring. Discharger shall conduct monitoring of available fish biomass using the protocol and methodologies specified in the approved monitoring plan.

- d. The Discharger will be considered to be successful in meeting this performance standard when it has been met for a three-year period, in the same manner as the other performance standards described in Section 5.4 of the Minimization Plan. The Executive Officer shall report to the Board upon determining that this performance standard has been met for three years and the CDP has been deemed successful in meeting this standard. If the Regional Board determines that this performance standard has been met and the project has been successful, the monitoring program will be scaled down as recommended by the Executive Officer and approved by the Board. A public review shall thereafter occur every five years, or sooner if called for by the Executive Officer. The work program shall reflect the lower level of monitoring required. If subsequent monitoring shows that the

standard is no longer being met, monitoring may be increased to previous levels, if determined necessary by the Executive Officer.

8. Within 90 days after the EPS provides written notice to the California Independent System Operator of its intent to shutdown permanently all of its generating units, the Discharger shall submit a Report of Waste Discharge to the Regional Board for authorization to operate in stand-alone mode with permanent shutdown of the EPS facility, and shall seek review under California Water Code Section 13142.5(b) for such stand-alone operation.
 - a. The conditions of Order No. R9-2006-0065, as amended by this order, or as replaced by subsequent orders, shall remain in force until the Regional Board takes final action on the Discharger's Report of Waste Discharge to operate in stand-alone mode.

~~2.~~ **Section VI.C.2.e.** in Order No. R9-2006-0065 is amended as follows:

On March ~~9,27~~, 2009, ~~t~~The Discharger ~~shall submit~~ submitted a Flow, Entrainment and Impingement Minimization Plan (March ~~9,27~~, 2009 Minimization Plan) ~~within 180 days of adoption of the Order~~ which was approved with amendments by the Regional Board on ~~April 8, May 13~~, 2009. The approved Plan ~~shall assess~~ identifies the best available site, design, technology, and mitigation feasible to be used by the Discharger to minimize the intake and mortality of all forms of marine life during CDP operations ~~the feasibility of site specific plans, procedures, and practices to be implemented and/or mitigation measures to minimize the impacts to marine organisms when~~ the when CDP is co-located with EPS, but ~~the~~ CDP intake requirements exceed the volume of water being discharged by the EPS and EPS operates its seawater intake and outfall for the benefit of ~~the~~ CDP. The Discharger shall implement and comply with the terms of the Minimization Plan as approved by the Regional ~~Board~~. ~~The plan shall be subject to the approval of the Regional Water Board and shall be modified as directed by the Regional Water~~ Board. In the event that the EPS permanently ceases operations, and the Discharger proposes to operate the seawater intake and outfall independently for the benefit of ~~the~~ CDP as a stand-alone facility, additional review to determine whether ~~the~~ CDP complies with Section 13142.5 (b) of the Water Code will be required. In addition, the Discharger shall submit a technical report to the Executive Officer evaluating the feasibility of any additional design or technology features within 45 days of being notified by EPS that all generating units will be non-operational for power production without seawater intake for these units and unavailable to be called upon by the California Independent System Operator to produce power for a period of 180 consecutive days or more. If the Discharger identifies additional measures that could be implemented under such conditions, the Discharger will be required to implement them as soon as reasonably practicable for the duration of the prolonged period of temporary shutdown. Discharger shall not conduct "heat treatment" of the seawater

intake system in the operations of the CDP, and any “heat treatment” shall be conducted by EPS solely for the benefit of its operations.

Table 12 in the Fact Sheet will be modified as follows:

| Potential Issue | EIR Finding | EIR-Required Mitigation | Regional Board Analysis |
|---------------------------|---|---|--|
| Entrainment & Impingement | No Significant Impact. When operating in conjunction with EPS, the operation of CDP will not change EPS flows and flow velocities, nor cause additional impingement losses. Additional entrainment loss is ~ 0.01% to 0.28%. When operating independent of EPS, flow volume and velocity would be substantially reduced, meeting federal performance standards for impingement. Entrainment loss would range from 2% to 34% of that of EPS. | In the event the EPS were to permanently cease operations, and the Developer were to independently operate the existing EPS seawater intake and outfall for the benefit of the project, such independent operation will require CEQA compliance and permits to operate as required by then-applicable rules and regulations for the City and other relevant agencies. | The CDP is not subject to 316(b) regulations. To ensure compliance with California Water Code Section 13142.5(b) requirements when the CDP is co-located with the EPS but the CDP intake requirements exceed the volume of water being discharged by the EPS and EPS operates for the benefit of the CDP, Provision VI.C.2.e of Order No. R9-2006-0065 requires the discharger to develop a plan to minimize entrainment and impingement, obtain Regional Board approval for the plan, and implement the plan. the discharger must implement and comply with the March <u>9, 27</u> , 2009 Flow, Entrainment and Impingement Minimization Plan <u>as</u> approved by the Regional Board on <u>April 8, May 13</u> , |

| | | | |
|--|--|--|---|
| | | | <p>2009. If EPS ceases operations and the Discharger proposes to operate the seawater intake structure and outfall independently for the benefit of the CDP as a stand-alone facility, the Regional Board will require reevaluation of <u>reevaluate whether the CDP meets</u> the requirements of Water Code section <u>Section</u> 13142.5(b).</p> |
|--|--|--|---|

Section VII.B.2.e₂ in the Fact Sheet will be modified as follows:

e. Flow, Entrainment and Impingement Minimization Plan

The Discharger's Report of Waste Discharge assessed EPS cooling water flows over a 20.5-year period and concluded that historical EPS flows were sufficient to supply CDP intake flows and provide sufficient dilution water to insure that receiving water salinity is not adversely impacted. The Discharger also concluded that during temporary periods when power generation is suspended for maintenance, unheated EPS thru-flows would be adequate to supply CDP and provide sufficient dilution water to protect receiving water salinity. The Regional Water Board recognizes that future EPS flows may not follow historical trends. For this reason, the Regional Board requires the Discharger to implement and comply with the approved ~~it is warranted to require the Discharger to prepare a~~ Flow, Entrainment and Impingement Minimization Plan to ensure that the requirements of ~~s~~section 13142.5(b) of the Water Code are complied with when CDP's intake requirements exceed the volume of water being discharged by the EPS and EPS operates partially for the benefit of ~~the CDP~~. ~~The Flow Minimization, Entrainment and Impingement Minimization Plan shall be submitted within 180 days of adoption of the Order.~~

~~The plan shall assess the feasibility of site-specific plans, procedures, and practices to be implemented and/or mitigation measures to minimize the impacts to marine organisms when the CDP intake requirements exceed the volume of water being discharge by the~~

~~EPS. The plan shall be subject to the approval of the Regional Water Board and shall be modified as directed by the Regional Water Board. CDP.~~

Section VII.B.4.b₂ in the Fact Sheet will be modified as follows:

- b. California Water Code Section 13142.5(b) Applicability. Water Code Section 13142.5(b) requires industrial facilities using seawater for processing to use the best available site, design, technology, and mitigation feasible to minimize the intake and mortality of all forms of ~~impacts to~~ marine life. The CDP is planned to operate in conjunction with the EPS by using the EPS cooling water discharge as its source water. When operating in conjunction with the power plant, the desalination plant feedwater intake would not increase the volume or the velocity of the power station cooling water intake nor would it increase the number of organisms impinged and entrained by the Encina Power Station cooling water intake structure. Recent studies have shown that nearly 98 percent of the larvae entrained by the EPS are dead at the point of the desalination plant intake. As a result, a *de minimis* of organisms remain viable which potentially would be lost due to the incremental entrainment effect of the CDP operation. Due to the fact that the most frequently entrained species are very abundant in the area of the EPS intake, Agua Hedionda Lagoon and the Southern California Bight, species of direct recreational and commercial value would constitute less than 1 percent of all the organisms entrained by the EPS. As a result, the incremental entrainment effects of the CDP operation in conjunction with the EPS would not trigger the need for additional technology or mitigation to minimize impacts to marine life.

In instances when the CDP's intake requirements exceed the volume of water being discharged by EPS, the CDP will implement the approved Flow, Entrainment and Impingement Minimization Plan to comply with the requirements of Water Code ~~s~~Section 13142.5(b) to use the best available site, design, technology and mitigation feasible to minimize the intake and mortality of marine life.

~~However, in~~ In the event that the EPS were to cease operations, and the discharger were to independently operate the seawater intake and outfall for the benefit of the CDP, such independent or stand-alone operation will require additional Regional Board review to ensure that CDP operations comply with the requirements of ~~pursuant to~~ Water Code Section 13142.5(b) by employing any additional and/or better design or technology features that were not feasible when EPS was in operation. ~~The Regional Water Board review and approval of the Flow Minimization, Entrainment and Impingement Minimization Plan will address any additional review required pursuant to Water Code Section 13142.5(b).~~

Section VI.C. of Attachment F Fact Sheet will be modified as follows:

c. Fish Impingement Monitoring

As issued on August 16, 2006, the NPDES permit did not require Discharger to monitor for fish impingement. In conjunction with the approval of the Minimization Plan, the Regional Board determined that monitoring for fish impingement is necessary. The permit is being amended to reflect such requirement.

The desalination plant will not begin operations until the fourth quarter of 2011, at the very earliest. The permit expires on October 1, 2011. Therefore, the impingement monitoring requirement will not take effect until the next permit cycle.

The current amendment establishes the impingement monitoring requirements. For the next permit cycle, Discharger is required to monitor for 52 continuous 24-hour periods during the first 12 months after the CDP commences operations, giving preference to those days on which the EPS flow is expected to be at or about 304 MGD. Monitoring must be conducted in accordance with the impingement sampling methods described in Sections 9.3 and 10.2 of Attachment 4 to the Minimization Plan, respectively. No impingement monitoring will be conducted during heat treatments.

Discharger is required to prepare a report containing detailed analysis of the fish impingement monitoring data, which must be submitted to the Regional Board within 6 months after completion of the field program. In the report, the impingement must be adjusted to reflect the CDP's proportional flow, as described in Approach 3-B of the Minimization Plan, Attachment 5, unless the impingement results from a non-flow related event.

D. Productivity Monitoring

Productivity Monitoring Requirements have been added to the permit in Attachment E—the Monitoring and Reporting Program. The purpose of this standard is to ensure that the Discharger satisfies Section 1.1 of the Minimization Plan, which states in pertinent part: “[T]he purpose of the Plan is to minimize the impingement and entrainment of marine life associated with the intake of seawater for desalination because mortality can result from such impingement and entrainment.”

Within 4 years upon completed construction of the mitigation wetlands prior to the end of the 2011-2016 permit cycle, 1,715.5 kg per year will be the required performance standard. At the end of the 2011-2016 permit cycle, Discharger will evaluate the impingement monitoring data to determine whether 1,715.5 kg per year actually reflects CDP-related impingement or if this value requires an increase or decrease in order to properly account for CDP's operations.

In order to calculate the amount of fish biomass that is “available” as impingement mitigation credit in the mitigation wetlands, it is necessary to distinguish between three fish categories: (1) the three most commonly entrained lagoon species—i.e., gobies, blennies, garibaldi (“Lagoon”); (2) the five most commonly entrained ocean species—i.e., white croaker, northern anchovy, California halibut, queenfish, spotfin croaker (“Ocean”); and (3) all other species (“Other”).

- a. Lagoon. Of the up to 55.4 acres of mitigation wetlands that the Discharger has agreed to create or restore to offset potential stand-alone entrainment, 49 acres are designed to mitigate for the entrainment of the most commonly entrained lagoon species (i.e., gobies, blennies and garibaldi). Therefore, to the extent that the mitigation wetlands produce gobies, blennies, and/or garibaldi, 12% of their biomass should be available as impingement mitigation credit ($6.4/55.4 = 12\%$). As a means of streamlining the monitoring and accounting, the Discharger has elected to forego any claim to this credit.
- b. Ocean. Of the up to 55.4 acres of mitigation wetlands that the Discharger has agreed to create or restore to offset potential stand-alone entrainment, 6.4 acres are designed to mitigate for the entrainment of the most commonly entrained ocean species (i.e., white croaker, northern anchovy, California halibut, queenfish, spotfin croaker). Therefore, to the extent that the mitigation wetlands produce these ocean species, 88% of their biomass is available as impingement mitigation credit ($49/55.4 = 88\%$).
- c. Other. Of the up to 55.4 acres of mitigation wetlands that the Discharger has agreed to create or restore to offset potential stand-alone entrainment, no acres are designed to mitigate for the entrainment of “other species.” Therefore, to the extent that the mitigation wetlands produce other species, 100% of their biomass is available as impingement mitigation credit ($55.4/55.4 = 100\%$).

When calculating the available fish biomass, the following expression shall be used:

$$\underline{\text{Available Fish Biomass} = (88\% \times \text{Ocean Biomass}) + (100\% \times \text{Other Biomass})}$$

Discharger will submit a detailed monitoring plan to the Executive Officer for review and approval concurrent with the submittal of the proposed wetlands Restoration Plan under the MLMP. The methodologies and procedures described therein will be based on the sampling of representative species, potentially including invertebrates, in addition to fish species.

Productivity sampling must be conducted so as to avoid materially disturbing the functioning and viability of the wetlands.

Discharger must conduct monitoring of available fish biomass using the protocol and methodologies specified in the approved monitoring plan.

I, John H. Robertus, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of ~~a~~an Order adopted by the California Regional Water Quality Control Board, on ~~April 8~~, May 13, 2009.

TENTATIVE

JOHN H. ROBERTUS
Executive Officer