

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL COAST REGION

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DRAFT WASTE DISCHARGE REQUIREMENTS ORDER NO. R3-2004-0028

NPDES NO. CA0050610

For

DUKE ENERGY, MORRO BAY

MORRO BAY POWER PLANT, UNITS 1 and 2

San Luis Obispo County

The California Regional Water Quality Control Board, Central Coast Region (hereafter Board), finds that:

SITE OWNER AND LOCATION

1. Duke Energy, Morro Bay, LLC, located at 1290 Embarcadero Road, Morro Bay, CA, 93442, (hereafter Discharger) owns and operates a fossil fuel Power Plant located in Morro Bay as shown on Attachment 1. Discharger will modernize this facility over the next several years by replacing the existing power generation units with modern natural gas fired, combined cycle units.

FACILITY DESCRIPTION

Discharge Category

2. The United States Environmental Protection Agency and Regional Board classify this discharge as a major discharge.

Design Capacity

3. The modernized Power Plant will consist of two new power generation units capable of producing 600 megawatts (MW) each. Upon completion of the project, the modernized Power Plant will be capable of producing a total of 1,200 MW, and the existing Power Plant units will be removed along with most of the existing facility, except that the existing intake and outfall structures will be retained and the intake will be upgraded. The design (or maximum) cooling water flow through the modernized Power Plant is 475 million gallons per day (MGD). The Discharger proposed a maximum annual daily-average cooling water flow limit of 370 MGD. The design (475 MGD) and maximum annual daily-average (370 MGD) flows are established limits in this Order under Effluent Limitations, B.6. The proposed modernization project is defined in the Discharger's Application for Certification, as filed with the California Energy Commission (October 2000) and subsequent amendments of the application.

Adjacent Properties and Land Use

4. Discharger owns 107 acres of flat terrain, approximately twenty feet above sea level, including Leila Keiser Park, Morro Dunes RV Park, and a fisherman's gear and boat storage facility. Discharger leases Leila Keiser Park to the City of Morro Bay, and leases the Morro Dunes RV Park to a private individual. The area around the

Morro Bay Power Plant consists of commercial and industrial properties, the Morro Bay Harbor, the Embarcadero just to the south, residential neighborhoods, and beaches. Pacific Gas & Electric operates a power switchyard adjacent to the Power Plant. According to the Energy Commission's Presiding Members Proposed Decision, November 2003, approximately twenty acres are available for the proposed Power Plant Project.

Geology

5. The upper eight feet of the site is generally fill material (dredged fine sand) and dune sand. Dune deposits and estuarine deposits are found beneath the fill material. Intermittent and various types of clay, silt and fine sand lenses are extend to a depth of approximately 70 feet below ground surface, where sandstone and shale bedrock is found.

Ground Water

6. Depth to groundwater generally varies from 3 to 15 feet below ground surface. Groundwater at the site is unconfined. The water-bearing unit at the site consists primarily of an alluvial aquifer with interbeds of silt and clay. The aquifer varies in thickness from approximately 72 feet at the eastern edge of the property to 63 feet at the western edge. Bedrock forms the base of the aquifer. Groundwater is recharged by precipitation and by offsite groundwater flow from the northeast (Chorro Creek). Groundwater generally flows to the southwest, and is locally influenced by groundwater pumping and tidal fluctuations.

7. There are two water supply wells located on the Power Plant site. Discharger's North Well is located about 800 feet northeast of the existing Power Plant, and has a yield of 70,000 to 140,000 gallons per day. Discharger's South Well is located about 450 feet north of the existing Power Plant, and yields less than 70,000 gallons per day. Since 1995 pumping from both wells has averaged 10,000 gallons per day. The City of Morro Bay periodically uses water supply wells located at Kaiser Park, about 1150 feet north of the Power Plant, on land leased from Discharger. The City wells sustained a yield of 436,000 to 536,000 gallons per day in the 1980s and early 1990s. The City now relies on State water and uses the Kaiser Well Field as backup supply. The California Energy Commission required Discharger to investigate the hydraulic relationship between its wells and the City of Morro Bay's supply wells. Discharger's report, titled *Numerical Ground Water Flow Modeling, Morro Bay Power Plant Modernization Project*, February 2002, concludes that pumping Discharger's wells, under the most conservative assumptions, will cause minor draw down of the City's wells in Kaiser Park but will not diminish their yield. The report also concludes that pumping Discharger's wells will have an insignificant effect on Morro Creek, which is located between Discharger's wells and the City of Morro Bay's wells.

8. A former Shell Service Station located on the corner of Highways 1 and 41 in Morro Bay (1840 Main Street, Morro Bay) has been a Regional Board groundwater investigation and cleanup case since October 2000. Shell is remediating a soil and ground water contaminant plume, including methyl tertiary butyl ether (MTBE), per the Regional Board's Cleanup and Abatement Order No. 01-028. The cleanup site is located about 600 feet east of the City supply wells at Kaiser Park, and about a 2,500 feet northeast of Discharger's supply wells. It is unlikely that pumping of Discharger's wells will influence the contaminant plume because the contaminant plume is diminishing in size due to cleanup efforts, the plume is beyond the hydraulic influence of Discharger's wells, and Morro Creek acts as a hydrologic barrier between the wells and the plume.

Surface Water

9. Morro Bay is a shallow, seasonally hyper-saline, bar built estuary, a type of system often referred to as a lagoon or barrier lagoon. It was created behind a barrier sand spit that was formed by littoral transport northward from the area of Point Buchon. The Morro Bay Estuary is about 2,300 acres (3.3 square miles) of

wetted surface area in size. The modern entrance to Morro Bay is one of two original entrances. A second entrance north of Morro Rock was filled in to form the sand spit now located in that area. Morro Bay is designated as a National and State Estuary, and is also on the Clean Water Act Section 303(d) list of impaired water bodies based on sedimentation, metals, and pathogens.

10. Estero Bay is a shallow sandy bottom bay that lies between Estero Point to the north and Point Buchon to the south. Estero Bay is a little over 15 miles in length and arcs inland a distance of about 5.5 miles. The gently sloping bottom of Estero Bay has a maximum depth of about 300 feet, and the 120-foot depth contour lies one to three miles offshore. Estero Bay's broad sandy beach decreases in width and forms rocky intertidal habitat at the northern and southern edges of the Bay. Cooling water from the Power Plant is discharged to Estero Bay at the shoreline just north of Morro Rock.

11. Morro Creek traverses the northwestern portion of the site. Willow Camp Creek flows westward into Morro Creek near the north end of the site. Morro Creek empties to Estero Bay just north of the Power Plant. Stormwater discharges from the site to Willow Camp Creek.

Facility Cooling Water Intake System

12. The existing Power Plant has two cooling water intake stations, both located in Morro Bay Harbor (Attachment 2). The intake structures are submerged, and use travelling screens to prevent seaweed, fish, invertebrates and debris from entering the cooling water system. The modernized plant will use these same intake structures and traveling screens. However, the modernized Power Plant will have a lower design cooling water flow capacity compared to the existing power Plant (design flow is decreased from 668 MGD for the existing Power Plant to 475 MGD for the modernized Power Plant).

Discharge Locations

13. The modernized Power Plant will have three discharge outfalls, designated as 001, 002, and 003. Only the discharge to Estero Bay (discharge 001) is regulated in this Order. Discharges 002 and 003 are storm water discharges and will be regulated under NPDES General Permit No. CAS000001 (finding No. 15 below). Internal discharges to 001 are listed in Table 1. Since the modernized facility has not been built, a detailed "as built" description of all internal waste streams is not available (nevertheless, this Order requires compliance with all applicable requirements from the Ocean Plan, Thermal Plan, and federal regulations, as described in the Monitoring and Reporting Program). Thus, this Order requires the Discharger to monitor all constituents of concern that internal waste streams will contain, despite the lack of "as built" documentation. This Order requires submittal of a detailed description of all internal waste streams twelve months prior to commencement of Power Plant operations (Provision D.2.).

14. Outfall 001 (35⁰ 22' 15'') discharges to Estero Bay and includes the main cooling water, brine from make-up waters, boiler chemical cleaning waste, boiler discharges, miscellaneous non-routine discharges, boiler blowdown, and miscellaneous floor drains. Outfall 001 is the same outfall used by the existing Power Plant.

Table 1. Modernized Morro Bay Power Plant Discharge Outfalls as described in Discharger's NPDES Permit Application, Duke Energy 2001.

Outfall No.	Discharge No.	Discharge Description	Avg. Flow (MGD)
001 (Estero Bay)	001	Maximum annual daily average, once-through cooling water	370
		Intake screen wash return	1.2
		Make-up water system brine	0.24
		Boiler chemical metal cleaning waste	TBD
		Boiler wash/rinse and boiler layup solution	TBD
		Miscellaneous non-routine discharges	Negligible
		Units 5 and 6 boiler blowdown	0.24
		Miscellaneous floor drains	0.075

Storm Water Discharges

15. Storm water discharges and other non-stormwater discharges via yard drains will be regulated under NPDES General Permit No. CAS000001, Water Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities, Excluding Construction Activities, issued by the State Water Resources Control Board (General Industrial Storm Water Permit) and any renewed General Storm Water Permits issued by the State Water Resources Control Board. Discharger applied for coverage under the general permit by filing a Notice of Intent with the State Water Resources Control Board, and received confirmation of coverage. The WDID number for the modernized Power Plant is 3 40I018779.

Other Wastewater Discharges

16. The City of Morro Bay discharges brine from its desalination plant to the existing Power Plant outfall pursuant to NPDES permit Order No. 94-03. The City's desalination facility operates when necessary to augment state water supplies. The City will continue to utilize the Power Plant outfall for brine discharge after modernization is complete.

REGIONAL BASIN PLAN

17. The Water Quality Control Plan, Central Coastal Basin (Basin Plan) was adopted by the Board on November 19, 1989, and approved by the State Board on August 16, 1990, and has been amended several times since then. The Regional Board approved amendments to the Basin Plan on February 11, 1994, and on September 8, 1994. The Basin Plan incorporates statewide plans and policies by reference and contains an implementation plan. The Basin Plan designates beneficial uses of water bodies in the Central Coast Region and specifies numeric and narrative water quality objectives to protect designated and existing beneficial uses. The Basin Plan is applicable to discharges to both Morro Bay and Estero Bay.

CALIFORNIA OCEAN PLAN

18. The Water Quality Control Plan, Ocean Waters of California - California Ocean Plan (Ocean Plan) was adopted by the Board in 1972 and was last amended in 2001. The Ocean Plan (2001) designates beneficial uses and contains water quality objectives and other requirements governing discharges to the Pacific Ocean including Estero Bay. The Ocean Plan applies to discharges to Estero Bay. Water quality objectives for heat

are not included in the Ocean Plan but are established in the Thermal Plan, discussed below.

19. The Ocean Plan is applicable to Discharge Outfall No. 001 to Estero Bay. The Ocean Plan contains a procedure for establishing effluent limitations based on ocean water quality objectives. Effluent limitations are applied outside a zone of initial dilution and are calculated based on, among other things, ocean water concentration and minimum probable initial dilution. An initial dilution ratio of 10:1 (seawater:effluent) is used in calculating effluent limits for outfall No. 001. This initial dilution ratio is an order of magnitude less than most ocean discharges (that is, the effluent limitations are more stringent by an order of magnitude compared to most ocean discharges).

BENEFICIAL USES

20. The Basin Plan designates the following beneficial uses for Morro Bay:

- a. Water contact recreation;
- b. Non-contact water recreation;
- c. Industrial service supply;
- d. Navigation;
- e. Marine habitat;
- f. Commercial and sport fishing;
- g. Rare, threatened or endangered species;
- h. Shellfish harvesting;
- i. Wildlife habitat.
- j. Spawning, reproduction and/or early development;
- k. Preservation of biological habitat of special significance;
- l. Estuarine habitat;
- m. Aquaculture;
- n. Cold Freshwater habitat; and
- o. Migration of aquatic organisms.

21. The Ocean Plan and Basin Plan designate the following beneficial uses for Estero Bay:

- a. Water contact recreation;
- b. Non-contact water recreation, including aesthetic enjoyment;
- c. Industrial water supply;
- d. Navigation;
- e. Marine habitat;
- f. Commercial and sport fishing;
- g. Rare, threatened or endangered species;
- h. Shellfish harvesting;
- i. Wildlife habitat;
- j. Spawning, reproduction and/or early development;
- k. Mariculture; and
- l. Fish migration.

22. The shellfish harvesting beneficial use (Findings 21h and 22h) exists wherever mussels, clams, or oysters may be harvested for human consumption. To the knowledge of the Regional Board, mussels, clams, and oysters are all present within Morro Bay and Estero Bay. The State Health Department regulates commercial shellfish harvesting in Morro Bay.

23. Per the California Department of Fish and Game, several species listed as "Threatened" or "Endangered" pursuant to the Federal Endangered Species Act may be found in the vicinity of the Power Plant. In Morro Bay, these may include tidewater gobies, steelhead, red-legged frog, California brown pelican, Guadalupe fur seal, southern sea otter, and the peregrine falcon. In Estero Bay, threatened or endangered species may include

loggerhead, green, and leatherback turtles, white abalone, steelhead, tidewater gobies, peregrine falcon, Guadalupe fur seal, southern sea otter, and California brown pelican.

No threatened or endangered species were identified in the entrainment or impingement studies. There was an erroneous identification of some larvae as tidewater gobies but the mistake was discovered by DNA testing. The tidewater goby is a small estuarine fish. After tentatively identifying the tidewater goby in entrainment samples, Discharger contracted with an outside laboratory to do DNA testing as a way to check the visual taxonomic identification. The DNA tests were negative, meaning that the samples did not match tidewater goby DNA on record. Regional Board staff hired an independent expert in DNA analyses, Dr. Giacomo Bernardi, UC Santa Cruz, to review the DNA work submitted by Discharger. Dr. Bernardi concluded the study results conclusively showed that the larvae were not tidewater goby (Memo from Dr. Bernardi to the Regional Board, February 2001). Regional Board staff relayed this information to the U.S. Fish and Wildlife Service.

THE CLEAN WATER ENFORCEMENT AND POLLUTION PREVENTION ACT OF 1999

24. The Clean Water Enforcement and Pollution Prevention Act of 1999 (amendments to Water Code section 13385) became effective January 1, 2000. The Act requires the Board to impose mandatory penalties for certain violations. Failure to comply with NPDES Permit effluent limitations and certain other requirements and conditions may result in significant enforcement action by the Regional Board.

ANTI-BACKSLIDING

25. There is no backsliding because the effluent limitations in this Order are not less stringent than the previous Order. Additional effluent limitations have been added pursuant to the current version of the California Ocean Plan.

ANTI-DEGRADATION

26. There will be no degradation, within the meaning of State Water Resource Control Board Resolution 68-16 or 40 CFR section 131.12, caused by the discharge authorized by this Order because no additional volume or concentration of waste discharge is authorized.

COMPLIANCE WITH THE CALIFORNIA THERMAL PLAN

27. The State 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 September 18, 1975. The Thermal Plan provides numeric and narrative water quality objectives for "existing" and "new" discharges of heat. The State Water Resources Control Board's Office of the Chief Counsel provided guidance to the Regional Boards regarding "new" versus "existing" thermal discharges on April 4, 2001. The guidance states that a discharge should be considered "new" if there is a material change in the discharge, otherwise the discharge is considered "existing" within the meaning of the Thermal Plan. A material change is an increase in volume, pollution, or a change in location of the discharge. Based on this guidance, the thermal discharge from the modernized Power Plant is "existing" within meaning of the Thermal Plan. The permitted volume of cooling water for the modernized power plant and the permitted effluent temperature limits are reduced compared to the permit for the existing power plant.

28. The Thermal Plan requires that existing thermal discharges shall comply with the following narrative water quality objective: Existing discharges of heat to coastal waters (including Estero Bay) must "comply with limitations necessary to assure protection of beneficial uses and Areas of Special Biological Significance." There are no designated Areas of Special Biological Significance near the Morro Bay Power Plant. The nearest designated Area of Special Biological Significance is the ocean area surrounding the mouth of Salmon

Creek, approximately 45 miles north of Morro Bay. Therefore, the operative portion of the objective is compliance with limitations necessary to protect beneficial uses. The beneficial uses of Estero Bay (same as beneficial uses for the Pacific Ocean) are listed in Finding No. 22, above.

29. On May 11, 2001, the Discharger submitted a report titled *Morro Bay Power Plant Modernization Project, Thermal Discharge Assessment Report*. The Thermal Discharge Assessment Report was prepared under the direction of a technical working group that included Regional Board staff, Regional Board independent scientific experts, California Energy Commission staff and their independent experts, and California Department of Fish and Game staff. The report describes the upgraded facility, estimates future operating parameters, estimates the dispersion of the thermal plume under future operating conditions, and describes the biological changes caused by the thermal discharge in the habitats near the outfall. The Thermal Discharge Assessment Report illustrates that the thermal discharge has caused changes in species composition and abundance along approximately six hundred feet of the rocky intertidal zone of north Morro Rock. Species normally found in this rocky intertidal area have been largely replaced by heat tolerant species. In general, the changes decrease with increasing distance from the discharge point. The report also demonstrates that the thermal plume does not affect benthic and sandy beach habitats beyond the immediate vicinity of the outfall. A more detailed description of the thermal effects studies is included here as Attachment 2.

30. The State Water Resources Control Board's Order No. 83-1, a precedent setting decision, determined that the Thermal Plan narrative objective requiring protection of beneficial uses meant "reasonable" protection and so accommodated some degradation of beneficial uses. Order 83-1 involved PG&E's Diablo Canyon Power Plant thermal discharge. The State Water Resources Control Board held that predicted adverse impacts to beneficial uses along approximately one third of Diablo Cove (about 1,800 feet of shoreline) constituted reasonable protection of beneficial uses. The thermal discharge from the existing Morro Bay Power Plant affects about 600 feet of shoreline along north Morro Rock. The modernized Power Plant will have a lower permitted discharge volume and a lower effluent temperature limit than the existing Power Plant. However, the actual effluent temperature for the modernized Power Plant will be similar to the existing Power Plant. The lower permitted flow volume may act to decrease thermal effects, however, the Regional Board's assumption is that thermal effects will continue to be essentially the same (about 600 feet of rocky shoreline affected). Accordingly, the magnitude and extent of thermal effects on Morro Rock will not increase, and are not unreasonable based on the State Water Resources Control Board interpretation of the Thermal Plan.

31. Because the thermal discharge complies with the Thermal Plan narrative objective and the thermal effects will not increase with the modernized Power Plant, there is no legal requirement to consider further mitigation of the thermal impacts. However, even if alternatives were considered, there are no reasonable alternatives to reduce the thermal impacts. Potential alternatives include moving the discharge offshore or increasing the cooling water flow to reduce the effluent temperature. Moving the discharge offshore would A) cause temporary impacts due the construction activities, B) cause different impacts in the offshore environment (such as impacts resulting from increased turbidity), and C) would be cost prohibitive. Tetra Tech, an independent consultant to the Regional Board, estimated the cost of moving the discharge 600 feet offshore at \$8 million, and estimated the cost of moving the discharge 3,500 feet offshore at \$23 million. Moving the discharge partially offshore (600 feet) would not eliminate the impacts to Morro Rock, but would likely transfer the impacts to the western side of the Rock. Increasing cooling water flow volume and decreasing effluent temperature (to produce the same amount of power) may decrease the thermal impacts, but would also increase entrainment and impingement impacts.

COMPLIANCE WITH CLEAN WATER ACT SECTION 316(B)

32. The power plant's cooling water intake system must comply with Clean Water Act section 316(b)(33 U.S.C. § 1326), which provides:

"Any standard established pursuant to section 1311 [CWA §301] ... or section 1316 [CWA §306] ... and applicable to a point source shall require that the location, design, construction, and capacity of cooling water

intake structures reflect the best technology available for minimizing adverse environmental impact.”

The USEPA published Clean Water Act Section 316(b) regulations for existing power plants on July 9, 2004.

The Regional Board's 316(b) analysis and findings are included as Attachment 3 to this Order, and are incorporated herein by reference. The Regional Board's 316(b) analysis evaluates intake structure technologies (screens, filters), closed cooling systems (cooling towers, dry cooling, etc.), and habitat enhancement. The findings conclude that closed cooling systems are not feasible and intake structure technologies such as screens and filters are experimental and/or not feasible at this location. Attachment 3 also addresses the California Energy Commission's Decision, which concludes that various dry cooling alternatives are not feasible at this site due to visual, noise, land use, legal, and cost issues.

Considering all the evidence in the record, including the Regional Board's 316(b) analysis and findings in Attachment 3, the California Energy Commission's Decision, and the Discharger's proposal to provide \$12.5 million to fund a Habitat Enhancement Program, the modernized Power Plant's existing cooling water intake structure constitutes the “best technology available” for the purpose of Section 316(b) of the Clean Water Act. Therefore, no changes to the proposed cooling water intake structure location, construction, or design are required by this Order. However, this Order requires minimization of cooling flows as described in Provision 8, and requires periodic dredging in front of the intake structure as described in Provision 9. This Order also requires Discharger to provide \$12.5 million in funding for the Habitat Enhancement Program, and \$165,000 per year for monitoring, as described in Finding 34, below.

Habitat Enhancement Program

33. The purpose of the Habitat Enhancement Program is to protect, restore, and enhance critical estuarine habitat in the Morro Bay Estuary. For the purposes of this Order, critical estuarine habitat is defined by the elevation below +4.68 MLLW (Mean Low Lower Water Level), or habitat that is submerged the majority of the time. This habitat is critical to maintain the populations of estuarine fish and invertebrates being entrained. The main goals of the Habitat Enhancement Program are to:

- Prevent the loss of critical estuarine habitat in Morro Bay for the long-term protection of fish and invertebrate populations and communities.
- Enhance existing critical estuarine habitat to promote larval productivity of fish and invertebrates.
- Restore or recover critical estuarine habitat.

These goals will be achieved by developing and implementing specific projects based on references such as (but not limited to) PWA's report to the Regional Board titled *Morro Bay Sedimentation: Historical Changes and Sediment Management Opportunities to Extend the Life of the Bay*, August 2002, the Regional Board's Sedimentation Total Maximum Daily Load Order for the Morro Bay Watershed, and the Morro Bay National Estuary Program's Comprehensive Conservation Plan. Monitoring will be implemented as part of the Program as described below.

The Habitat Enhancement Program structure will consist of four elements: The Regional Board, the Executive Officer, an Implementation Team, and independent scientists.

Regional Board: This is the decision making body that sets policy and direction as reflected in this NPDES permit Order. The Regional Board does not delegate its authority regarding this Order to any other party.

Executive Officer: The Regional Board Executive Officer will review, prioritize, and approve proposed projects and submit annual progress reports to the Regional Board. The Executive Officer will apply an

adaptive management approach to achieve the goal of preserving and enhancing critical estuarine habitat in Morro Bay. Adaptive management is the cyclical process of implementing projects to achieve goals, measuring success through observation and/or monitoring, and using the results to refine a program.

The Executive Officer may designate a percentage of the overall Habitat Enhancement Program funds as an endowment to directly provide long-term support for projects implemented by the Program. The Executive Officer may also hire independent scientists when necessary, as discussed below.

Implementation Team: Regional Board staff and the Morro Bay National Estuary Program will lead the Implementation Team as directed by the Executive Officer. The existing Morro Bay National Estuary Program structure and process may be used to minimize additional committees and processes. The Implementation Team will:

- Identify and prioritize projects per the goals of Habitat Enhancement Program as stated in this Order
- Implement projects approved by the Executive Officer
- Maximize efficiency by coordinating projects with other watershed efforts
- Hire independent scientists as needed
- Recommend and implement approved monitoring efforts (with input from the independent scientists)
- Provide status reports to the Executive Officer and recommend adaptive management changes to maximize environmental benefits

Independent Scientists: Independent scientists will be retained by the Executive Officer and the Implementation Team as necessary to assure that the Habitat Enhancement Program is managed, implemented, and revised with input from objective experts in the relevant fields of study.

Monitoring: The purpose of monitoring is to comply with Section 316(b), determine if the goals of the Habitat Enhancement Program are being met, and to assess ambient conditions of the Morro Bay Estuary. The Morro Bay National Estuary Program, with input from the independent scientists, may implement both long-term baseline monitoring and project-specific monitoring as necessary. An example monitoring program is defined in the *Monitoring and Management Plan for the SONGS Wetland Mitigation Program, August 1998*, for the California Coastal Commission. Depending on the specific questions to be answered and direction from the independent scientists, physical parameters may include bathymetry, sediment loading, and tidal prism (the Regional Board's sediment Total Maximum Daily Load Order for the Morro Bay watershed includes a requirement for sediment deposition and tidal prism monitoring). Biological and water quality parameters will also be considered. Specific monitoring may also be done to measure the effectiveness of individual projects, such as the efficiency (sediment deposition) of flood plain restoration. The Habitat Enhancement Program shall use an adaptive management approach that reviews and revises monitoring programs as needed. Monitoring programs shall be implemented as efficiently and cost effectively as possible, in coordination with other relevant efforts.

Program Funding: Discharger shall provide one-time funding of \$12.5 million to implement the Habitat Enhancement Program, and \$165,000 per year for monitoring efforts for the life of this Order (amounts as proposed by Discharger's Habitat Enhancement Program report, dated August 30, 2002; see Appendix B of Discharger's Habitat Enhancement Program report for monitoring funds discussion). Discharger shall submit the funds as follows: Fifty percent (\$6.25 million) shall be submitted within 30 days after the foundations for the modernized Power Plant are poured. The remaining fifty percent (\$6.25 million) shall be submitted within 30 days of commencement of commercial operation of the modernized Power Plant. The funds will be deposited to the non-profit, non-partisan financial organization identified by the Executive Officer.

Discharger shall submit \$165,000 per year to fund monitoring efforts of the Habitat Enhancement Plan for the

life of this Order (five years). The first annual payment shall be submitted within 30 days of adoption of this Order and annually thereafter. The funds will be deposited to the non-profit, non-partisan financial organization identified by the Executive Officer. The Executive Officer will review the annual monitoring funding level and recommend revisions as necessary during future NPDES permit renewals.

Program Efficiency: The Habitat Enhancement Program shall be managed as efficiently and expeditiously as possible. Time is of the essence because critical habitat in Morro Bay is being lost at an accelerated rate. The Implementation Team shall research and select high priority projects that provide the greatest protection and enhancement of critical habitat for the least cost. For example, there are many sediment reduction projects that can be implemented in the Morro Bay watershed; some projects provide a great deal of sediment reduction with relatively low costs, while others provide little sediment reduction at a high cost (Philip Williams and Associates, 2002). The Implementation Team will consider cost versus benefit for each project and will coordinate with other efforts to maximize efficiency and effectiveness. The Implementation Team will also maximize the use of the Program funds through leveraging. The Program funds can be leveraged as “matching funds” to obtain additional resources for watershed and estuarine enhancement, restoration and preservation.

Reasonable Potential Analysis

34. Discharger submitted a Reasonable Potential Analysis, based on the existing Power Plant, as part of the Report of Waste Discharges on April 6, 2001. A Reasonable Potential Analysis may include analysis of effluent monitoring data and qualitative evaluation. Since the modernized Power Plant has not yet been built, there is no operational effluent monitoring data to review for that facility, however, effluent quality is expected to be similar to historical cooling water flows. All applicable Ocean Plan, Thermal Plan, and federal regulations regarding effluent limitations are included in this Order (nothing is excluded based on the Reasonable Potential Analysis).

California Environmental Quality Act

35. NPDES permits are typically exempt from the requirements of Division 13, Chapter 3 of the California Environmental Quality Act (Public Resources Code sections 21100 et seq.) pursuant to Water Code section 13389. This exemption does not apply if the waste discharge requirements are for a new source as defined in the Clean Water Act (33 U.S.C. § 1250 et seq.). The modernized Morro Bay Power Plant is a new source as defined by Clean Water Act section 306 (33 U.S.C. § 1316) and applicable federal regulations. The California Energy Commission is the lead agency under CEQA for this project (see California Public Resources Code section 25519(c)) and has prepared a document that is a functional equivalent of a Draft Environmental Impact Report (the Commission Decision dated August 2, 2004 incorporating the Third Revised Presiding Member’s Proposed Decision). The Regional Board, as a responsible agency, has reviewed and considered the PMPD. The California Energy Commission’s Commission Decision is the functional equivalent of an Environmental Impact Report and certification. The Regional Board, as a responsible agency, must rely on the California Energy Commission’s functional equivalent CEQA document. If that document identifies any significant environmental impacts within the Regional Board’s jurisdiction, the Regional Board must make findings regarding those impacts.

35. The PMPD includes the following findings:

- The appropriate CEQA baseline is the average cooling water use by the existing plant over the five-year period 1996-2000, which is 387.2 mgd. (See, e.g., PMPD, pp. 286-287, 315.)
- Once-through cooling has the potential to impact aquatic biological resources through thermal impacts, impingement and entrainment. The record shows that the modernized plant will not have a significant thermal impact on these resources either in the absolute sense pursuant to the Clean Water Act or relative to the existing plant, pursuant to CEQA. (See, e.g., PMPD, pp. 314, 400.)

- Current cooling water intake velocities of the existing plant are 0.5 ft/sec. As a result of modernization, these velocities will be reduced to 0.3 ft./sec, a 40% reduction. The evidence supports the conclusion that impingement impacts of the Project are not significant either in the absolute sense or relative to the existing plant. (See, e.g., PMPD, p. 314.)
- There is no need to consider alternatives to once-through ocean cooling pursuant to CEQA because such cooling will not have a significant, adverse environmental impact pursuant to CEQA. (See, e.g., PMPD, p. 299, 318.)
- Modernization of the Morro Bay Power Plant with reduced use of once-through cooling and the Conditions of Certification proposed in the PMPD will not cause any significant, direct, indirect or cumulative adverse impacts [to aquatic biologic resources] within the meaning of CEQA. (See, e.g., PMPD, p. 318)
- The project's compliance with existing and new permits will result in no significant water quality degradation, and will result in no significant adverse impact due to wastewater discharge or stormwater management and discharge. (PMPD, p. 399.)

CEQA does not require the Regional Board to make findings regarding once-through cooling impacts, since the PMPD concluded the impacts were not significant. However, in order to issue the NPDES permit, the Regional Board must determine that this Order complies with CWA section 316(b).

36. The PMPD identified the following potential impact to groundwater quality: ... Project effects on the local groundwater gradient to the extent that it may cause the methyl tertiary-butyl ether (MTBE) plume located northeast of the Project to migrate toward the supply wells. Sustained pumping by the MBPP wells could potentially alter the migration path of MTBE contaminated groundwater, encourage migration toward the City or MBPP wells, and impact efforts to control and remediate the MTBE plume. [CEC] Staff has identified mitigation measures that are feasible and that will sufficiently mitigate these impacts to a less than significant level. ... Conditions of Certification SOIL & WATER 6 through 10 address potential groundwater impacts and will ensure that the Project has no significant impacts on groundwater resources. (PMPD pp. 393-394, 402-404.)

Although underground tank cleanup activities are generally within the jurisdiction of the Regional Board, these potential impacts relate to pumping by the MBPP wells. As a responsible agency under CEQA, the Regional Board is responsible for mitigating or avoiding only those parts of the project it decides to approve. (14 Cal. Code of Regs. §15096, subd. (g)(1).) Since this Order does not regulate pumping by the MBPP wells, the Regional Board is not required to make findings regarding this potential impact.

37. With regard all other significant or potentially significant impacts identified in the PMPD, and the mitigation measures proposed with respect to them, such measures are within the responsibility and jurisdiction of another public agency, and not within the jurisdiction of the Regional Board. This finding is based upon the fact that such impacts and mitigation measures do not relate to water quality, and the Regional Board only has jurisdiction over matters related to water-quality control, to regulate discharges of waste that could affect waters of the state, and to address pollution or nuisance attendant with such discharges. (See Water Code § 13200 et seq.) The remaining impacts identified in the PMPD do not affect the quality of waters of the state.

Porter Cologne Water Quality Control Act

35. Porter Cologne Water Quality Control Act, Section 13142.5, states: For each *new or expanded* coastal power plant ... using seawater for cooling ..., the best available site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life. No case law or State Board

precedential decision or guidance has ever interpreted the term “new ... coastal power plant” where a rebuilt facility will utilize an existing cooling system. Similarly, no precedent or guidance defines whether a rebuilt power plant with an increased generating capacity but decreased cooling water intake is “expanded.” The Regional Board declines to find whether the modernized Power Plant is “new or expanded.” Assuming it is “new or expanded,” the Regional Board finds that the modernized Power Plant, together with the Habitat Enhancement Program, uses the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life. The reasons for this finding are discussed in Attachment 3..

Discharging is a Privilege

36. A permit and the privilege to discharge waste into waters of the State is conditional upon the discharge complying with provisions of Division 7 of the California Water Code and of the Clean Water Act (as amended or as supplemented by implementing guidelines and regulations) and with any more stringent effluent limitations necessary to implement water quality control plans, to protect beneficial uses, and to prevent nuisance. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act. Compliance with this Order should assure conditions are met and mitigate any potential changes in water quality due to the project.

Permit Application

37. The Discharger submitted a Report of Waste Discharge application for the modernized Power Plant on January 28, 2000. Additional information was submitted on April 6, 2001, and on July 13, 2004.

The Regional Board issued the existing permit for the existing facility, Order No. 95-22, on February 10, 1995. The Regional Board will consider renewal of Order 95-22 for the existing Power Plant independently of this Order during 2004.

38. Regional Board staff prepared a draft permit and fact sheet/testimony and notified the public on October 1, 2004 that a hearing on the draft permit would be convened on December 2, 2004.

39. After considering all the evidence, legal arguments, and public comment presented according to the hearing notice, documents in the administrative record and applicable laws and regulations, the Board adopts this Order.

40. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board (State Board) to review the action in accordance with Section 13320 of the California Water Code and Title 23, California Code of regulations, Section 2050. The petition must be received by the State Board with 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request.

IT IS HEREBY ORDERED, pursuant to authority in Sections 13263, 13377, 13267, 13383, 13268 and 13385 of the California Water Code, the Discharger, their agents, successors, and assigns, may discharge waste from the modernized Power Plant described above, providing compliance is maintained with the following:

All technical and monitoring reports submitted pursuant to this Order are required pursuant to Section 13267 and 13383 of the California Water Code. The reports are necessary to determine compliance with this Order and to assess the Power Plant’s impacts on groundwater and surface water quality. Failure to submit reports in accordance with schedules established by this Order, attachments to this Order, or failure to submit a report of sufficient technical quality to be acceptable to the Executive Officer, may subject the discharger to enforcement action pursuant to Section 13268 and 13385 of the California Water Code or any other enforcement action authorized by law.

General permit conditions, definitions and the method of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for National Pollutant Discharge Elimination System Permits," dated January 1985. Applicable paragraphs are referenced in paragraph D.4. of this Order.

Requirements specified in this Order are based on staff's professional judgement and the following documents:

BP =	Basin Plan
OP =	Ocean Plan
TP =	Thermal Plan
SP =	Standard Provisions & Reporting Requirements
FR =	Federal Regulations 40 CFR 423.12
PF =	Professional Judgment

Throughout this Order and Monitoring and Reporting Program, superscripts are included to indicate the source of specified requirements. Requirements not referenced are based on professional judgement or are carried over from the previous Order.

A. DISCHARGE PROHIBITIONS

1. Discharge at any location other than that described in this Order is prohibited, except as covered under NPDES General Permit No. CAS000001, Water Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities, Excluding Construction Activities, issued by the State Water Resources Control Board (General Industrial Storm Water Permit) and any renewed General Storm Water Permits issued by the State Water Resources Control Board.
2. Discharge of polychlorinated biphenyl compounds (PCBs) is prohibited.^{OP}
3. Discharge of domestic wastewater or solid waste to surface waters is prohibited.^{OP}
4. The discharge shall not cause unreasonable adverse affects on beneficial uses of water or threatened or endangered species.^{BP} The Regional Board determines what is unreasonable on a case by case basis.

B. EFFLUENT LIMITATIONS

1. Cooling water flow shall not exceed 475 MGD at any time, and shall not exceed 370 MGD on an annual daily-average basis (the average of the daily average flows for a year).
2. In addition to the effluent limits described below, mass emission limits also apply. The mass emission limit is simply the effluent limit multiplied by the flow volume, as described in the Ocean Plan.^{OP}
3. Temperature measurements of the effluent shall be taken as often as reasonably possible, but not less than every five minutes. Influent temperatures shall be measured at depth in front of the intake structure or at any point within the cooling water system before heat is added to the cooling water. Effluent temperatures shall be measured within the discharge system, downstream of the condensers but prior to the point of discharge.^{PF}
4. Except during periods of heat treatment, the temperature of the discharge shall not exceed the natural temperature of the influent water by more than 20⁰ F. Influent and effluent temperatures shall be measured concurrently, and not less than every five minutes.
5. During heat treatment to remove mussels and other biofouling organisms from cooling water system conduits, the instantaneous maximum temperature of the discharge shall not exceed the natural temperature of the influent water by more than 30°F. Instantaneous maximum temperature of the discharge is defined as any

single hourly average temperature of the discharge as measured in the surge chamber(s) of the two discharge conduits. During heat treatments, the temperature of the discharge is defined as any single hourly average temperature of the discharge as measured in the surge chamber(s) of the discharge conduit(s).

6. Discharge Outfall No. 001 shall not contain constituents in excess of the following limits:^{OP}

EFFLUENT LIMITATIONS

Constituent	Units	Monthly (30-day average)	Weekly (7-day average)	Maximum At anytime
Grease & Oil	mg/l	25	40	75
Suspended Solids	mg/l		60	
Settleable Solids	ml/l	1.0	1.5	3.0
Turbidity	NTU	75	100	225
pH	Units		6.0 – 9.0 at all times	

OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE

Constituent	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
<i>Arsenic</i>	Mg/l	0.06	0.32	0.85
Cadmium	mg/l	0.01	0.04	0.11
Chromium(Hex) ^a	mg/l	0.02	0.09	0.22
<i>Copper</i>	mg/l	0.01	0.11	0.31
Lead	mg/l	0.02	0.09	0.22
<i>Mercury</i>	ug/l	0.44	1.76	4.40
Nickel	mg/l	0.06	0.22	0.55
Selenium	mg/l	0.17	0.66	1.65
<i>Silver</i>	mg/l	0.01	0.03	0.08
<i>Zinc</i>	mg/l	0.14	0.80	2.12
Cyanide ^b	mg/l	0.01	0.04	0.11
Total Chlorine Residual (For intermittent chlorine sources, see Ocean Plan)	mg/l	0.02	0.09	0.66
Ammonia (as N)	mg/l	6.60	26.40	66.00
Chronic Toxicity	TU ^c	N/A	11.00	N/A
Phenolic Compounds (non-chlorinated)	mg/l	0.33	1.32	3.30
Chlorinated Phenolics	mg/l	0.01	0.04	0.11
Endosulfan	ug/l	0.10	0.20	0.30
Endrin	ug/l	0.02	0.04	0.07
HCH ^c	ug/l	0.04	0.09	0.13
Radioactivity	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.			

Effluent Limit Footnotes:

- a. The chromium limit may be met as total chromium if the Discharger chooses.
- b. If a discharger can demonstrate to the satisfaction of the Regional Board (subject to U.S. EPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by the combined measurement of free cyanide, simple alkali metal cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR Part 136, as revised May 14, 1999.
- c. The total chlorine residual limitation is from 40 CFR 423.12. For periods when total chlorine residual (TCR) or total residual oxidant (TRO) monitoring systems are temporarily inoperative, an alternate means of measurement or calculation, such as an engineering evaluation, may be used. Total residual chlorine may not be discharged from any single generating unit for more than two hours per day.
- d. HCH shall mean the sum of the alpha, beta, gamma (lindane), and delta isomers of hexachlorocyclohexane.

PROTECTION OF HUMAN HEALTH—NON CARCINOGENS

Acrolein	mg/l	2.420
Antimony	mg/l	13.200
bis(2-chloroethoxy) methane	mg/l	0.048
bis(2-chloroisopropyl) ether	mg/l	13.200
Chlorobenzene	mg/l	6.270
chromium (III)	g/l	2.090
di-n-butyl phthalate	mg/l	38.500
dichlorobenzenes*	mg/l	56.100
diethyl phthalate	mg/l	363.000
dimethyl phthalate	g/l	9.020
4,6-dinitro-2-methylphenol	mg/l	2.420
2,4-dinitrophenol	mg/l	0.044
Ethylbenzene	mg/l	45.100
Fluoranthene	mg/l	0.165
Hexachlorocyclopentadiene	mg/l	0.638
Nitrobenzene	mg/l	0.054
thallium	mg/l	0.022
Toluene	g/l	0.935
tributyltin	ug/l	0.015
1,1,1-trichloroethane	g/l	5.940

PROTECTION OF HUMAN HEALTH - CARCINOGENS

acrylonitrile	ug/l	1.100
Aldrin	ng/l	0.242
Benzene	ug/l	64.900
benzidine	ug/l	0.001
Beryllium	ug/l	0.363
bis(2-chloroethyl) ether	ug/l	0.495
bis(2-ethylhexyl) phthalate	ug/l	38.500
carbon tetrachloride	ug/l	9.900
chlordan*	ng/l	0.253
chlorodibromomethane	ug/l	94.600

chloroform	ug/l	1430.000
DDT*	ng/l	1.870
1,4-dichlorobenzene	ug/l	198.000
3,3'-dichlorobenzidine	ug/l	0.089
1,2-dichloroethane	mg/l	0.308
1,1-dichloroethylene	mg/l	0.010
dichlorobromomethane	mg/l	0.068
dichloromethane	mg/l	4.950
1,3-dichloropropene	mg/l	0.098
Dieldrin	ng/l	0.440
2,4-dinitrotoluene	ug/l	28.600
1,2-diphenylhydrazine	ug/l	1.760
halomethanes*	mg/l	1.430
heptachlor*	ug/l	0.001
heptachlor epoxide	ug/l	0.000
hexachlorobenzene	ng/l	2.310
hexachlorobutadiene	ug/l	154.000
hexachloroethane	ug/l	27.500
isophorone	g/l	0.008
N-nitrosodimethylamine	ug/l	80.300
N-nitrosodi-N-propylamine	ug/l	4.180
N-nitrosodiphenylamine	ug/l	27.500
PAHs*	ug/l	0.097
PCBs*	ng/l	0.209
TCDD equivalents*	pg/l	0.043
1,1,2,2-tetrachloroethane	mg/l	0.025
tetrachloroethylene	mg/l	0.022
toxaphene	ng/l	2.310
trichloroethylene	ug/l	297.000
1,1,2-trichloroethane	mg/l	0.103
2,4,6-trichlorophenol	mg/l	0.003
Vinyl chloride	ug/l	396.000

7. The Discharge shall be essentially free of materials and substances that:^{OP, BP}

- a. float or become floatable upon discharge.
- b. may form sediments which degrade the benthic community.
- c. accumulate to toxic levels in marine waters, sediments or biota.
- d. significantly decrease the natural light to benthic communities and other marine life.
- e. result in aesthetically undesirable discoloration of the ocean surface.

8. Foam and scum shall be controlled to the extent necessary to preclude nuisance and adverse effects on beneficial uses.^{OP}

9. Individual waste streams within the Power Plant shall not contain constituents in excess of the following

limits^{FR}:

Constituent	30-Day Average	Maximum at any time
Total Suspended Solids	30.0 mg/l	100.0 mg/l
Oil and Grease	15.0 mg/l	20.0 mg/l
		Daily Maximum
Copper	1.0 mg/l	1.0 mg/l
Iron	1.0 mg/l	1.0 mg/l

C. RECEIVING WATER LIMITATIONS

Physical Characteristics:

1. Floating particulates and grease and oil shall not be visible.^{OP}
2. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.^{OP}
3. Natural light shall not be significantly reduced at any point outside the initial dilution zone as a result of the discharge of waste.^{OP}
4. 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.^{OP}

Chemical Characteristics:

5. The dissolved oxygen concentration shall not at any time fall below 5.0 mg/l or be depressed more than ten percent from that which occurs naturally as a result of the discharge of oxygen demanding waste material.^{BP,OP}
6. The pH shall not be depressed below 7.0, raised above 8.5, or changed more than 0.2 units from that which occurs naturally.^{BP,OP}
7. The dissolved sulfide concentrations of wastes in and near sediments shall not be significantly increased above that present under natural conditions.^{OP}
8. The concentrations of substances with Effluent Limitations in this Order shall not increase in marine sediments to levels that would degrade indigenous biota.^{OP}
9. The concentrations of organic materials shall not be increased in marine sediments to a level which would degrade marine life.^{OP}
10. Nutrient materials shall not cause objectionable aquatic growth or degradation of indigenous biota.^{OP}
11. Waste discharges to the ocean must be essentially free of substances that will accumulate to toxic levels in marine waters, sediments, or biota.^{OP}

Biological Characteristics:

12. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.^{OP}
13. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.^{OP}
14. 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.^{OP}

Temperature: (provisions regulating the thermal aspect of wastes discharged to the ocean are set forth in the Thermal Plan (Ocean Plan, page 1)):

15. The temperature of the discharge shall assure protection of beneficial uses.^{BP, TP}

D. PROVISIONS

1. This Order (Order RB3-2004-0028) will become effective fifty days after final adoption by the Regional Board.
2. Discharger shall comply with Monitoring and Reporting Program No. RB3-2004-0028, including any modifications to the Monitoring and Reporting Program by the Executive Officer. The Executive Officer may not diminish the requirements, but may require more frequent monitoring or reporting. After receiving the detailed description of internal waste streams described in Finding 13, the Executive Officer may add additional constituents to the Monitoring and Reporting Program. Monitoring and Reporting Program No. RB3-2004-0028 is Attachment 4 of this Order and is incorporated here in by reference.
3. For all sampling to determine compliance with this Order, Discharger shall use analytical methods capable of detecting chemicals at the minimum detection level as defined in the Ocean Plan. If an effluent limit is below the minimum detection level ("minimum level"), the minimum level shall be reported with monitoring results. Minimum levels of detection for given analytical methods are provided in Appendix II to the Ocean Plan. Minimum levels represent the lowest concentration of a pollutant that can be quantitatively measured in a sample given the current state of performance in analytical chemistry methods on California.
4. The discharger shall comply with Items A.2.-A.5, A.8.- A.12, A.14.-A.23., B.L-B.7., C.1.-C.8., C.10., C.12-C.15, C-18., E.1. and 2., and F.1.-F.6., of the "Standard Provisions and Reporting Requirements for National Pollutant Discharge Elimination System Permits," dated January, 1985. Paragraph (a) of Item E.1. shall apply only if the bypass is for essential maintenance to assure efficient operation. Bypasses authorized under paragraph of Item E.1. are not subject to paragraphs (b) and (c) of Item E.1. The Regional Board address specified in Item C.10 has changed. It is now 895 Aerovista Place, Suite 101, San Luis Obispo, CA 93401.
5. Discharge of any wastes of a significantly different character than described in this Order shall be reported to the Executive Officer pursuant to paragraph C.6. in the Standard Provisions.
6. For each new chemical added to the discharge that could potentially cause toxicity, Discharger shall conduct toxicity testing to determine the effluent concentration for that chemical or chemical product necessary to assure compliance with toxicity effluent limits in this Order. Approved toxicity testing methodologies are described in the Ocean Plan. The results of these toxicity tests shall be submitted to the Executive Officer prior to discharge of added chemicals or chemical products.

7. The Discharger shall make every reasonable effort to schedule quarterly toxicity monitoring to coincide with the highest potential for toxicity in the effluent (considering plant operations and addition of toxic chemicals). Monitoring reports shall include a discussion of the efforts made to comply with this requirement.

8. The Discharger shall minimize cooling water flows to the greatest extent possible by managing cooling water flows and effluent temperature relative to power output. Higher effluent temperatures result in lower cooling water flows at a given power output. Whenever possible, the discharger shall maintain effluent temperatures near the permit Order limit, without exceeding the temperature limit, and shut down cooling water pumps to minimize cooling water flow. That is, only the amount of cooling water necessary to maintain a given power output at or near the effluent temperature limit shall be used. The discharger shall include average-hourly power generation, average-hourly flow volume, and average-hourly effluent temperature data in quarterly monitoring reports to verify that cooling water flow volumes were kept at minimum levels. The data shall be presented graphically to illustrate the relationship between these three variables over time.

9. Discharger shall periodically dredge sediment in front of the intake structure to minimize approach velocities. Annual monitoring reports shall include a status report on the buildup of sediment near the intake structure and dredging activities.

10. Biofouling control measures shall be implemented routinely to minimize biofouling in the cooling water system. These control measures shall be summarized in quarterly reports. Studies may be performed by the Discharger to investigate more effective biofouling control alternatives provided that a study plan is submitted to and approved by the Executive Officer prior to commencing the study. The study plan shall define all biofouling control constituents that may be discharged.

11. Discharger shall provide funding of \$12.5 million to implement the Habitat Enhancement Program, and \$165,000 per year for monitoring efforts for the life of this Order (amounts as proposed by Discharger's Habitat Enhancement Program report, dated August 30, 2002; see Appendix B of Discharger's Habitat Enhancement Program report for monitoring funds discussion). Discharger shall submit the funds as follows: Fifty percent (\$6.25 million) shall be submitted within 30 days after the foundations for the modernized Power Plant are poured. The remaining fifty percent (\$6.25 million) shall be submitted within 30 days of commencement of commercial operation of the modernized Power Plant. The funds will be deposited to the non-profit, non-partisan financial organization identified by the Executive Officer.

Discharger shall submit \$165,000 per year to fund monitoring efforts by the MBNEP for the life of this Order (five years). The first annual payment shall be submitted within 30 days of adoption of this Order, and annually thereafter. The funds will be deposited to the non-profit, non-partisan financial organization identified by the Executive Officer. The Regional Board will review the annual monitoring funding level and recommend revisions as necessary during future NPDES permit renewals.

The Regional Board will review the annual monitoring funding level and require revisions as necessary during future NPDES permit renewals. After implementation of the Habitat Enhancement Plan's specific restoration projects commences, the Discharger shall ensure that monitoring includes the restoration parameters, monitoring frequency, and success criteria recommended by the Implementation Team consistent with the Habitat Enforcement Plan described in this Order. If any such project has not been in place for a sufficient length of time prior to renewal of this Order to measure the impacts of the project, success criteria (and compliance with site-specific requirements) shall be measured by compliance with the funding requirements of this Provision, or, if either of the \$6.25 million payments have been made, satisfactory progress of the non-profit, non-partisan financial institution toward implementation of the project (e.g., removal of Hoary Cress, excavation of sediment, etc.). The Discharger shall ensure that status reports on project implementation are provided no less frequently than bi-annually.

The purpose of the Habitat Enhancement Program is to protect, restore, and enhance critical estuarine habitat in the Morro Bay Estuary. For the purposes of this Order, critical estuarine habitat is defined by the elevation below +4.68 MLLW (Mean Low Lower Water Level), or habitat that is submerged the majority of the time. This habitat is critical to maintain the populations of estuarine fish and invertebrates being entrained. The main goals of the Habitat Enhancement Program are to:

- Prevent the loss of critical estuarine habitat in Morro Bay for the long-term protection of fish and invertebrate populations and communities.
- Enhance existing critical estuarine habitat to promote larval productivity of fish and invertebrates.
- Restore or recover critical estuarine habitat.

These goals will be achieved by developing and implementing specific projects based on references such as (but not limited to) PWA's report to the Regional Board titled *Morro Bay Sedimentation: Historical Changes and Sediment Management Opportunities to Extend the Life of the Bay*, August 2002, the Regional Board's Sedimentation Total Maximum Daily Load Order for the Morro Bay Watershed, and the Morro Bay National Estuary Program's Comprehensive Conservation Plan. Monitoring will be implemented as part of the Program as described below.

12. Provisions 8 through 11 constitute the site-specific requirements for compliance with Clean Water Act Section 316(b), pursuant to 40 CFR 125.94(a)(5). The Discharger shall reduce entrainment or increase fish production commensurate with the efficacy at the facility of these measures. These requirements may be revised upon renewal of this Permit as required by the adaptive management plan requirements of the Section 316(b) regulations. Monitoring requirements for cooling water intake minimization, sediment dredging, biofouling control measures and restoration measures are set forth in Provisions 8 through 11, respectively. Monitoring reports required by Provisions 8 through 10 shall estimate the reduction, if any, of cooling water intake flows and/or entrainment that resulted from these activities.

13. This Order expires on April 2, 2009, and the Discharger must file a Report of Waste Discharge in accordance with Title 23, Division 3, Chapter 9, of the California Code of Regulations, not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements. The Report of Waste Discharge shall include an analysis of any new or improved entrainment and impingement technologies or cooling water system changes to further reduce the biological impacts from the power plant's cooling water systems.

I, Roger W. Briggs, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Coast Region, on April 2, 2004.

Roger W. Briggs, Executive Officer