Dynegy Inc.
West Region Operations
4140 Dublin Blvd., Suite 100
Dublin, California 94568
Phone 925-829-1804
Fax 925-829-9406

DYNEGY

November 19, 2010

Via E-Mail
Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814
commentletters@waterboards.ca.gov

Re: Comment Letter - OTC Policy Amendment
Comments on Proposed Amendment to the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling

Dear Ms. Townsend:

Dynegy Inc. (Dynegy) submits these comments on the State Water Resources Control Board's proposed amendments to the "Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling" (OTC Policy), notice of which was provided on September 30, 2010.

Dynegy, the owner and operator of the Moss Landing Power Plant,[1] strongly supports the proposed amendments to Section 2.A.(2)(d) that would allow recently installed combined-cycle units, without demonstrating that compliance with Track 1 is not feasible, to continue to use once-through cooling (OTC) until the unit reaches the end of its useful life provided certain requirements are met (i.e., permit condition specifies the end of the unit's useful life; evaluation and, where feasible, installation of fine mesh screens (or equivalent); and, if such technology is not feasible, annual payment of mitigation funds). The proposed amendments regarding combined-cycle units are both appropriate as a matter of policy and consistent with law.

Dynegy also supports the proposed amendments to Section 3.A.(1) that would allow any fossil fuel-fired power plant, upon approval of a compliance plan that extends beyond December 31, 2020, to continue to use OTC until each unit is repowered by a date specified in the plant's compliance plan. These proposed amendments provide a much needed compliance flexibility option for owners and operators of facilities for which repowering is a commercially

[1] Dynegy owns and operates the Moss Landing Power Plant through its subsidiary, Dynegy Moss Landing, LLC. The Moss Landing Power Plant was modernized in 2002 to include two high-efficiency combined-cycle units (Units 1 & 2) in place of five, less efficient steam boilers that were constructed in 1950 (old Units 1-5).

viable alternative.

A. The Proposed Amendments to Section 2.A.(2)(d) Appropriately Recognize the Unique Status of Combined-Cycle Units

Dynegy strongly supports the proposed amendments to Section 2.A.(2)(d), which address recently installed, efficient combined-cycle units, such as Moss Landing Units 1 & 2.

As proposed, the amendments to Section 2.A.(2)(d) would allow the owner or operator of a combined-cycle unit installed prior to the effective date of the OTC Policy, without demonstrating that compliance with Track 1 is not feasible, to continue to use OTC at the unit until the unit reaches the end of its useful life provided the owner/operator: (1) commits to eliminating the use of OTC upon repowering the unit and the end of the useful life of the combined-cycle unit is specified in the owner/operator's implementation plan and any NPDES permit issued for the unit pursuant to the OTC Policy; (2) conducts pilot scale feasibility studies of fine mesh screen or equivalent measures to maximize the reduction of impingement and entrainment and implements such measures unless shown to be not feasible; and (3) for units without fine mesh screens or equivalent measures (i.e., where such technology is not feasible, a determination made without considering cost), annually pays interim mitigation funds in the amount of $3 per million gallons actual OTC water withdrawn until the end of the unit's life.

The proposed amendments appropriately recognize the unique status of combined-cycle units. For example, Moss Landing's combined-cycle units (Units 1 & 2), in combination with existing Units 6 & 7, make Moss Landing the largest fossil fuel-fired power plant in California in terms of electrical generating capacity, yet both generating blocks (Units 1 & 2 and Units 6 & 7) have among the lowest average cooling water flow-to-energy generation ratios (average MG/Mwh) of the California OTC power plants. See Final Substitute Environmental Document, Figure 11, at p. 41 (May 4, 2010) (Final SED). In fact, the three combined-cycle facilities that would be able to avail themselves of the proposed amendments to Section 2.A.(2)(d), including Moss Landing Units 1 & 2, have three of the four lowest cooling water flow-to-MWh ratios of all California OTC power plants.[2] Id. These same combined-cycle units also have three of the four lowest design cooling water intake demands of all the California OTC power plants, with Moss Landing 1 & 2 the lowest of all OTC power plants in California. Final SED, Figure 17, at p. 91. Finally, these combined-cycle units have lower air pollutant emissions factors -- both for criteria pollutants and carbon dioxide -- than the other older, conventional steam boiler OTC power plants in California. Final SED, Table 20, at p. 92. Thus, the combined-cycle facilities are more efficient in terms of water and fuel use compared to older, conventional steam boiler OTC facilities and, in that regard, have lower environmental impacts than the other OTC facilities.

In addition, the proposed amendments properly recognize the large capital investments recently made in the combined-cycle facilities. As recognized by Board staff, these recently installed facilities "are typically amortized over long periods (20 years or more) and have likely

[2] Moss Landing 6 & 7 is the fourth power plant in this group of plants with the lowest cooling water flow-to-MWh ratios. Final SED, Figure 11, at p. 41.

not been recouped yet." Final SED, at 91. Indeed, the financing of Moss Landing Units 1 & 2 assumed a 30-year amoritization period. In contrast, the older technology steam boiler units "have long since recouped their initial investments and no longer carry this additional financial burden." Id. Thus, while the OTC Policy does not allow site-specific cost-benefit analyses as permitted under federal Clean Water Act section 316(b), the proposed amendments appropriately recognize cost considerations that are unique to recently installed combined-cycle units. The proposed amendments also support integration of renewable energy sources into California's energy supply system by ensuring the continued availability of existing plants that provide load following services essential to meeting renewable energy standards.

The proposed amendments also properly recognize that the decision to develop Moss Landing Units 1 & 2 was made in reliance on a site-specific Regional Water Board NPDES permit determination, as well as a California Energy Commission (CEC) siting determination, for cooling water intake structures under existing law. At Moss Landing Units 1 & 2, after extensive site-specific evidentiary hearings and based upon the recommendations of a Technical Working Group comprised of many of the same neutral experts the Board relied upon in developing the OTC Policy, both the Central Coast Regional Water Quality Board (Central Coast Regional Board) and the CEC concluded that closed-cycle cooling was infeasible and that the continued use of OTC did not cause significant adverse environmental impact.[3] In reliance upon the decisions made by the Central Coast Regional Board and the CEC, the Moss Landing owners spent many millions of dollars altering the OTC system for Units 1 & 2 (including the installation of inclined 5/16 inch fine mesh traveling screens) and providing habitat enhancements.

Simply put, the proposed amendments to Section 2.A.(2)(d) fully respect the Central Coast Regional Board's recent best technology available (BTA) determination for Moss Landing, as well the CEC's findings regarding Moss Landing. More specifically, in the NPDES permitting of Moss Landing Units 1 & 2, the Central Coast Regional Board required new entrainment studies to determine the impacts that could be expected from the operation of the new combined-cycle units. Those entrainment studies were performed under the direction of a technical working group that included Regional Board staff and their independent technical experts, including scientists from Moss Landing Marine Labs and UC Santa Cruz. Based on those studies, the Central Coast Regional Board staff and their independent scientists determined the OTC impacts were not so significant as to require installation of one of the other numerous alternative cooling or flow-reduction technologies that had been evaluated.[4]

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[3] California Regional Water Quality Control Board Central Coast Region, *Staff Report*, Duke Energy Moss Landing Power Plant, Units 1 and 2, Review of Finding No. 48, NPDES Permit Order No. 00-041 (Apr. 10, 2003); California Energy Commission, Commission Decision, Application for Certification Moss Landing Power Project, Docket No 99-AFC-4, Finding 12, at 188 (Nov. 2000).

[4] The 2003 *Staff Report*, supra note 3, explained that while 13 percent of the fish larvae in the Elkhorn Slough/Moss Landing Harbor are at risk of entrainment from operation of the new units, the impacts from OTC cannot be reliably translated into impacts to adult fish populations and, further, that eliminating OTC at Moss Landing is unlikely to result in discernable changes to the populations of fishes in Elkhorn Slough and Moss Landing Harbor. Specifically, the *Staff Report* quotes an independent study showing that the population of several species of fish in Elkhorn Slough has been stable or increasing over the past several decades while Moss Landing has been in operation: "Since the 1970s, the abundance of both juvenile and adult fishes in Elkhorn Slough has decreased somewhat.

Moreover, at Moss Landing, the NPDES permit and CEC approval imposed mitigation and restoration programs that, separate from BTA implementation, were designed to address the residual OTC impacts of Units 1 & 2 throughout their operating life.[5] Specifically, the owner of the Moss Landing Power Plant was directed to pay $7 million to a dedicated fund to be used by the Elkhorn Slough Foundation for the acquisition and permanent preservation of lands that directly impinge on or contribute damaging impacts to Elkhorn Slough, habitat restoration activities, and long-term stewardship of the mitigation projects in perpetuity. Those programs have been successfully implemented: the Elkhorn Slough Foundation has acquired over 2,140 acres and leveraged the initial $7 million to acquire real estate valued at over at $30 million, as well as engaged in phased restoration activities at six properties in the Elkhorn Highlands and a series of wetland properties.[6] Because the residual OTC impacts of Moss Landing Units 1 & 2 after implementation of BTA have already been offset for the Units' operating life, it is entirely appropriate for the Board to conclude that Moss Landing Units 1 & 2 be allowed to comply with the OTC Policy through the proposed amendments to Section 2.A.(2)(d).

In short, as a matter of policy, the proposed amendments to Section 2.A.(2)(d) are appropriate, proper and justified given the unique status of combined-cycle units, such as Moss Landing Units 1 & 2.

B. The Proposed Amendments to Section 2.A.(2)(d) are Lawful under Clean Water Act Section 316(b)

For the reasons set forth below, we believe the proposed amendments, including the provision concerning payment of mitigation funds, are consistent with the requirements of Clean Water Act (CWA) section 316(b), as applied to existing facilities, and are therefore lawful.

The State Water Resources Control Board (Board) adopted the OTC Policy for the express purpose of implementing CWA section 316(b). Resolution No. 2010-0020, Findings 1.A.-F. Section 316(b) requires that "the location, design, construction, and capacity of cooling

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However, in general, the species composition and overall densities of the dominant fish larvae appear to have remained fairly similar, with some species of fish larvae being considerably more abundant in 1999-2000 than in previous decades. The main categories of fish larvae exhibiting higher densities were gobies, the Pacific herring, Pacific sand lance, staghorn sculpin, white croaker, true smelts, and blennies." *Staff Report* at 13. The entrainment study for Moss Landing further determined that five of the six fish species most at risk for entrainment -- and representing 94 percent of all the fish species entrained by the power plant -- have actually increased in abundance over the past several decades during which Moss Landing has operated using OTC. Although the study did find that the populations of two species of fish (*i.e.*, longjaw mudsucker and northern anchovy) appear to have declined over the past three decades, the study concluded that those changes appear to be habitat-related, and *not* due to Moss Landing's OTC system. Id. at 13 (identifying erosion and the subsequent shifting of sediment as "the main reason for these changes"). Moreover, after acknowledging the difficulty of linking population effects to impacts from Moss Landing, the *Staff Report* concludes that: "Even if one assumes that [Moss Landing] has contributed to the potential decline in longjaw mudsucker and northern anchovy larval species, the assumed benefit would then be an increase in these larval species if closed cooling were implemented. However, it is difficult to conceive a scenario in which potential increases in these two larval species could possibly justify the costs of closed cooling alternatives." Id. at 14.

[5] Commission Decision, supra note 3, at 170-172, 194-200; NPDES Permit No. CA0006254, Findings 50 and 51.

[6] Elkhorn Slough Foundation, *The Elkhorn Slough Environmental Enhancement and Mitigation Plan, Interim Report, Annual Update*, 3, 4, 7 (July 2009).

water intake structures reflect the best technology available [BTA] for minimizing adverse environmental impact." 33 U.S.C. § 1326(b). "Adverse environmental impact" refers to the impingement and entrainment of aquatic organisms resulting from operation of a cooling water intake structure. While the Board may have authority to formulate a state policy on use of OTC that goes beyond the requirements of federal law, it is not obligated to do so. The only limitation on the Board's authority when acting to implement section 316(b) is that the OTC Policy may not be less stringent than or conflict with section 316(b), as that provision is interpreted under federal law.

As noted in the Draft Staff Report (dated September 29, 2010) for the proposed amendments, there are no current federal regulations establishing nationwide BTA standards for existing power plants. The Phase II regulations originally adopted by the U.S. Environmental Protection Agency (EPA) in July 2004 were subsequently suspended by EPA in response to litigation filed in federal court challenging the regulations. 72 Fed. Reg. 37107 (July 9, 2007); Riverkeeper, Inc. v. EPA, 475 F.3d 83 (2d Cir. 2007) (Riverkeeper II). Pending the adoption of new regulations, EPA directed that permitting agencies should continue to make BTA determinations on a case-by-case basis using Best Professional Judgment, consistent with guidance that had been in use prior to adoption of the Phase II regulations. This guidance includes the "wholly disproportionate test" which allows a permitting agency to consider whether the costs of retrofitting an existing facility with new cooling technology would be "wholly disproportionate" to the environmental benefits to be gained thereby. In such cases, the new technology is considered "not available," and the existing cooling water intake structure, without modification, can lawfully be determined BTA under section 316(b). Use of such cost-benefit analyses under CWA section 316(b) has been expressly upheld by the United States Supreme Court, both in connection with EPA's promulgation of nationwide BTA standards and in connection with BTA determinations applicable to individual facilities (sometimes referred to as "site-specific variances"). Entergy Corp. v. Riverkeeper, Inc., 129 S. Ct. 1498 (2009) (Entergy).

In a recent memo to the Board regarding the Supreme Court's decision in Entergy, the Chief Counsel for the Board acknowledged that "[t]he Supreme Court decision in many ways returns the landscape for section 316(b) decision-making to the status quo." Memo from Michael A. M. Lauffer, Chief Counsel, to Dorothy Rice, Executive Director, Subject: U.S. Supreme Court's Decision Interpreting Clean Water Section 316(b) Requirement for Best Technology Available for Cooling Water Intake Structures (*Entergy Corp. v. Riverkeeper, Inc. et. al.* (2009) 556 U.S. __ [129 S.Ct. 1498]), at 4 (May 6, 2009) (Memo). The Memo specifically notes that "the Water Boards may consider costs among other factors in exercising best professional judgment for permit-specific interpretations of section 316(b)" (id., at p. 7), and that permissible cost-benefit analyses under section 316(b) may be less restrictive than the traditional "wholly disproportionate" standard utilized in the past. Id., at p. 5.

In the absence of federal regulations prescribing specific BTA requirements for existing facilities, states with delegated authority to administer the NPDES program (such as California) may continue to base BTA determinations for individual existing facilities, or categories of facilities, on Best Professional Judgment, taking costs into consideration. The proposed amendments in Section 2.A.(2)(d) constitute a reasonable determination by the Board that

combined-cycle units that utilize OTC, upgraded with fine mesh screens or comparable technology to minimize impingement and entrainment where feasible, satisfies federal BTA requirements. Significantly, the cooling water intake for Moss Landing Units 1 & 2 was fitted with new, angled 5/16 inch mesh screens when the combined-cycle units were constructed. Where use of fine mesh screens or other technology is not feasible, such technology is "not available" and is thus not required to satisfy section 316(b). Given the significant reductions in water usage that are achieved by combined-cycle units, relative to older, conventional steam boiler units – and the inherent reductions in levels of impingement and entrainment associated with reduced water usage – the cost to retrofit combined-cycle units with new cooling systems before the end of their useful lives is not cost justified relative to the incremental environmental benefits that would be gained thereby.

The mitigation payments that would be required in cases where a combined-cycle unit cannot feasibly be retrofitted with fine mesh screens or other equivalent technology (see proposed Section 2.A.(2)(d)(ii)(3)) go beyond the requirements of federal law and are not precluded by Riverkeeper, Inc. v. EPA, 358 F.3d 174 (2d Cir. 2004) (Riverkeeper I). In Riverkeeper I, the court held that restoration or mitigation measures cannot be used as a means of complying with CWA section 316(b). Under the proposed amendments to the OTC Policy, mitigation payments are not allowed as a means of achieving compliance with BTA or in lieu of BTA. In those cases where fine mesh screens or equivalent technology cannot feasibly be installed, BTA is satisfied by the combined use of combined-cycle technology and the existing cooling technology, whatever it may be. As noted above, under federal law, technology that has been determined not to be feasible for a particular facility is "not available" and is thus not required for purposes of section 316(b). There is nothing in section 316(b) or in the Clean Water Act generally that bars a state from imposing mitigation payments in circumstances where the "best technology available" for a given existing facility cannot achieve the level of reduction in impingement and entrainment that might feasibly be achieved at a different facility utilizing different technology. The Board's authority to require mitigation payments in such circumstances is not based on the CWA, but rather on provisions of state law that provide the Board with broad powers to protect and enhance beneficial uses of waters of the state.

Finally, it should be noted that the OTC Policy will ultimately have to be reviewed in light of any new federal regulations that establish BTA for existing facilities. If the proposed amendments, or any other aspects of the OTC Policy, are determined to conflict with the new federal regulations, they will have to be revised to conform with the federal regulations. Members of the Board have publicly stated that such conforming changes may make the OTC Policy more or less stringent, depending on the nature of the forthcoming federal BTA requirements for existing facilities. To the extent that the federal regulations include mandatory BTA requirements for combined-cycle units, those requirements will need to be satisfied.

C. The Proposed Amendments to Section 3.A.(1) Provide Needed Flexibility for Units for which Repowering is a Viable Alternative

Dynegy supports the proposed amendments to Section 3.A.(1) that would allow any fossil fuel-fired power plant, upon approval of a compliance plan that extends beyond December 31, 2020, to continue to use OTC until the unit is repowered by a date specified in

the plant's compliance plan. The proposed amendments would provide needed flexibility to the OTC Policy for units where repowering is a realistic compliance option. Without the proposed amendments, units that may otherwise be repowered may be forced to shutdown prematurely in order to meet the applicable compliance deadline specified in the OTC Policy, thereby wasting investment in existing infrastructure, interfering with integration of renewable energy sources into California's energy supply system, eliminating jobs, and threatening grid reliability. The proposed amendments alleviate those undesirable outcomes by providing the possibility of additional compliance planning flexibility to OTC plants for which repowering is a realistic commercially viable alternative.[7]

D. The Board Should Not Delay Adoption of the Proposed Amendments

The Board should adopt the proposed amendments at this time.[8] Deferring consideration of the proposed amendments until after the Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) has submitted its first report to the Board, which is not due until October 1, 2011, serves no useful purpose. Instead, delaying adoption of the proposed amendments would only create further compliance planning uncertainty for owners and operators of combined-cycle facilities (and repowering facilities with compliance plans extending beyond December 31, 2020), as well as the SACCWIS, and needlessly require owners and operators of combined-cycle facilities (and affected repowering facilities) to prepare implementation plans by April 1, 2011. Delaying adoption of the proposed amendments would also likely delay the immediate payment of the specified mitigation funds by combined-cycle units (and affected repowering units) that choose to comply using the proposed compliance option and for which fine mesh screen technology is demonstrated to be infeasible.

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In closing, the proposed amendments to the OTC Policy appropriately and lawfully recognize the unique status of combined-cycle units, such as Moss Landing Units 1 & 2, and would provide needed flexibility in terms of an additional compliance option for other fossil fuel-fired power OTC plants that commit to repowering. Dynegy, therefore, urges the Board to adopt the proposed amendments at the scheduled December 14, 2010 hearing.

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[7] Dynegy notes that the last sentence of proposed Section 3.A.(1)(a) incorrectly references "this subparagraph (b)". We believe the correct cross reference should be "this subparagraph".

[8] Draft Staff Report, Proposed Amendment to the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling, § 7, "Alternative 2: Delay Action", at p. 6 (Sept. 29, 2010).

We appreciate the Board's consideration of our comments. If you have any questions concerning Dynegy's comments, please contact Barb Irwin, Director Environmental West Region Operations, at 925-803-5121.

Sincerely,

Daniel P. Thompson
Vice President
Dynegy West Region Operations

cc: Office of the Governor
California Energy Commission
California Public Utilities Commission
California Independent System Operator