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W 5b

ADDENDUM TO COMMISSION PACKET
FOR
ENERGY, OCEAN RESOURCES and
FEDERAL CONSISTENCY

For Wednesday, August 6, 2008

- Item No. W 5b** **E-06-013**
(Condition Compliance)
Poseidon Resources (Channelside) LLC
- Staff Modifications
 - Applicant's Submittal

CALIFORNIA COASTAL COMMISSION

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W5b

August 5, 2008

TO: Coastal Commissioners and Interested Parties

FROM: Alison J. Dettmer, Deputy Director
Tom Luster, Staff Environmental Scientist

SUBJECT: Addendum to E-06-013 Condition Compliance Report for proposed *Marine Life Mitigation Plan* – Poseidon Resources (Channelside) LLC – Carlsbad Desalination Facility

This addendum includes a brief Staff Note and several recommended modifications to the Revised Findings. Commissioner *ex parte* forms and correspondence received related to this item are included in a separate packet containing all *ex parte* forms and correspondence for Items W4a, W5a, and W5b, all of which apply to this proposed project.

STAFF NOTE – Review of Poseidon’s Responses to Issues Identified in the July 24, 2008 Staff Report (attached):

On July 30, 2008, staff received Poseidon’s Responses to Issues Identified in the July 24, 2008 Staff Report, which included a number of proposed modifications to Poseidon’s MLMP. Staff evaluated the document to determine whether Poseidon’s proposed changes would be appropriate to include in staff’s recommended modifications. Based on that evaluation, staff recommends the Commission approve several of Poseidon’s proposed changes, which are included below within Staff’s Recommended Modifications.

STAFF RECOMMENDED MODIFICATIONS TO THE STAFF REPORT:

Staff recommends the following two general modifications be made throughout the report:

- 1) Change all references to the Marine Review Committee, or MRC, to the Scientific Advisory Panel, or SAP.
- 2) In Exhibit 2, delete staff’s notes, which are shown in [***bracketed bold italics***]. These were illustrative for purposes of the Exhibit and are not intended to be included as part of the conditions of approval.

The remaining recommended changes are shown in ~~single strikethrough~~, and **bold underline**:

Page 12, third paragraph:

“Poseidon contends that ~~Dr. Raimondi’s~~ **staff’s** recommendation to apply an 80-95% level of certainty for mitigation is “extraordinary and unprecedented” and would result in excess mitigation for the project’s expected impacts. In response, Dr. Raimondi and the MRC state that **consideration of uncertainty is standard practice in data analysis and that such consideration provides a context for understanding the likelihood that any mitigation package would lead to full compensation for impacts. Dr. Raimondi used two general models for estimating the APFs. Based on the error rates Poseidon calculated, the 80% confidence level APF for estuarine species would be 87 acres – i.e., in order to have 80% likelihood of complete compensation, Poseidon would need to restore 87 acres of estuarine habitat. Using a separate model, which Dr. Raimondi considered more appropriate with respect to calculating the APF¹, the 80% confidence level was estimated to be 49 acres. Incorporating impacts to open coast species was estimated to increase the overall APF (at the 80% level) to 61 acres.** ~~the confidence levels used are based on the error rates Poseidon calculated as part of its study, and generating these calculations is a standard practice for this type of entrainment study. Dr. Raimondi’s recommendation of using the 80-95% confidence level~~ **incorporating uncertainty into the consideration of compensatory APF** is “unprecedented” only in that past studies have used **defaulted to the use of** the 50% confidence level **to describe the impact** and then applied a mitigation ratio, such as 2:1 or 3:1, to reflect the lower confidence level and to include in consideration of **that the mitigation that may be “out of kind” or provided at some distance from the affected area or to account for concerns that the mitigation will not be successful.** Dr. Raimondi’s proposal, as supported by the MRC and Commission staff, **and in combination with the proposed conditions in Exhibit 2,** would actually result in less mitigation acreage than that standard mitigation approach, but it would have higher certainty of success.”

Modifications to Exhibit 2 – Staff’s Recommended Conditions:

Section 1.2 – Preliminary Restoration Plan (modified from Poseidon’s 7/30/08 Report):

“In consultation with Commission staff, the permittee shall develop a preliminary wetland restoration plan for the wetland site(s) identified through the site selection process. **Within 10 months of issuance of the desalination facility’s coastal development permit, the permittee shall submit the proposed site(s) and Preliminary Restoration Plan to Commission staff for review and approval.** The preliminary wetland restoration plan shall meet the minimum standards and incorporate as many as possible of the objectives in subsections 1.3 and 1.4, respectively.”

¹ **Poseidon’s study included sampling error rates for source water sampling, which Dr. Raimondi believes are unreasonably high. Dr. Raimondi calculated an error rate based on the proportional mortality of each species being an independent replicate, which better matches the logic behind the use of APF.**

Section 1.3.i – Minimum Standards, page 3 of 13 (from Poseidon’s 7/30/08 Report):

“Does not result in an adverse impact on endangered animal species, or an adverse unmitigated impact on endangered plant species.”

Section 3.4.a – Post-Restoration Monitoring and Remediation (modified from Poseidon’s 7/30/08 report). Add subsection 3):

“Tidal prism. If the mitigation site(s) require dredging, the tidal prism shall be maintained and tidal flushing shall not be interrupted.”

Section 3.0 Annual Review, page 12, second paragraph, first line:

“The public review will include discussions on whether the ~~artificial reef and wetland~~ mitigation projects have met the performance standards...”

Add new Section 4.0, page 13:

“4.0 ADDITIONAL PROCEDURES

4.1 Dispute Resolution

In the event that the permittee and the Executive Director cannot reach agreement regarding the terms contained in or the implementation of any part of this Plan, the matter may be set for hearing and disposition by the Commission.

4.2 Extensions

Any of the time limits established under this Plan may be extended by the Executive Director at the request of the permittee and upon a showing of good cause.”

Poseidon's Responses to Issues Identified in July 24, 2008 Staff Report

In response to Commission Staff's specific concerns regarding Poseidon's proposed Marine Life Mitigation Plan, as identified on page 15 of the July 24, 2008 Staff Report, Poseidon has modified its Plan to address Staff's concerns. Below we have listed each of Staff's identified concerns, followed by Poseidon's response. In addition to the responses herein, attached hereto is a redline of Poseidon's Marine Life Mitigation Plan ("Poseidon's MLMP") showing the changes made in response to Staff's concerns.

I. Responses to Bullet Points on Page 15: In this section we have responded to each of the bullet points listed on page 15 of the Staff Report.

Issue 1: *Staff recommended that Poseidon submit a complete coastal development permit application for its Final Restoration Plan within 24 months of Commission approval of its Preliminary Plan (i.e., the Plan being reviewed herein). Poseidon modified that recommendation in Section 4 of its Plan to allow submittal of that application either 24 months after issuance of the project coastal development permit or commencement of commercial operations of the desalination facility, whichever is later. This could substantially delay the implementation of mitigation and could result in several years of impacts occurring without mitigation.*

- **Poseidon Response to Issue 1:** On Page 6 of 16 of Poseidon's MLMP, Poseidon has revised its Plan so that the Coastal Development Permit for the Final Restoration Plan will be submitted within 24 months of Commission approval of its Preliminary Plan.

Issue 2: *A proposed change to Poseidon's Plan at Section 3.1(d) and at Section 3.2(c) would reduce the required buffer zone at its mitigation sites from no less than 100 feet wide to an average that could be much less than 100 feet.*

- **Poseidon Response to Issue 2:** Poseidon has removed the word "substantially" from Section 3.1(d) so that it is evident that buffer zones will be at least 100 feet wide. (See Poseidon's MLMP, Page 4 of 16.)

Issue 3: *A proposed change to Section 3.1(i) would allow the Plan to affect endangered species in a way not allowed under the Edison requirements.*

- **Poseidon Response to Issue 3:** Poseidon has revised Section 3.1(i) to indicate that Poseidon's Plan will not result in an adverse impact on endangered animal species, and that it will require mitigation for Plan impacts on endangered plant species. (See Poseidon's MLMP, Page 5 of 16.) The formulation of this provision in the Edison plan does not take into account that substantially all wetlands restoration projects will have impacts on sensitive plant species, which would likely be mitigated through relocation to upland areas. The Edison plan's formulation would not allow mitigation in any area where there is a sensitive plant. Accordingly, Poseidon modified this language to ensure there are no adverse impacts to endangered animals, but to allow for mitigation and relocation of sensitive plants.

Issue 4: *Poseidon proposes to change Section 3.3(c) to allow mitigation to occur in up to four sites, rather than up to two sites, as required of Edison, which could fragment the mitigation and reduce its overall value.*

- **Poseidon Response to Issue 4:** Poseidon has revised Section 3.3(c) to allow mitigation to occur only at up to two sites without Executive Director approval. (See Poseidon’s MLMP, Page 6 of 16.)

Issue 5: *Poseidon also proposed deleting a requirement at Section 5.4 that would require a designed tidal prism to be maintained to ensure the wetland mitigation site has adequate tidal action.*

- **Poseidon Response to Issue 5:** Poseidon has revised its Plan to include a requirement at Section 5.4(a)(3) that would require a designed tidal prism be maintained if the Plan requires dredging. (See Poseidon’s MLMP, Page 9 of 16.)

Issue 6: *Poseidon Proposes that any fees it pays for coastal development permits or amendments be credited against the budget needed to implement the mitigation plan.*

- **Poseidon Response to Issue 6:** Poseidon has revised Condition B, Section 2.0 to remove its proposal regarding the crediting of fees paid for coastal development permits or amendments. (See Poseidon’s MLMP, Pages 13-14 of 16.)

II. Responses to Staff’s Recommendation to Include Conditions in Exhibit 2: In this section we have responded to Staff’s comment on page 15 of the Staff Report that Poseidon’s Plan should be modified to include the conditions in Exhibit 2 by identifying each of the differences between Poseidon’s Plan and Exhibit 2, followed by Poseidon’s response.

- Poseidon’s Plan removes the requirement in Section 2.0 that would require Poseidon to submit the proposed site and preliminary plan to the Commission within 9 months of the effective date of the approval, and removes Exhibit 2’s “Preliminary Plan” requirements set forth in Exhibit 2 at §1.2.
 - **Poseidon Response:** Poseidon has revised its Plan to include the “Preliminary Plan” requirements (Poseidon’s MLMP § 2.1) and has modified its Plan so that a proposed site and preliminary plan will be submitted to the Commission within 10 months of the effective date of the approval. (See Poseidon’s MLMP § 2.0.)
- Poseidon’s Plan adds three potential restoration sites (Agua Hedionda, San Elijo, and Buena Vista) for a total of 11 sites in Section 2.0.
 - **Poseidon Response:** This remains part of Poseidon’s proposal because these sites are in close proximity to the Project site, and have been recommended as potential mitigation sites by local and state agencies.

- Poseidon’s Plan allows Poseidon to consider other sites that may be recommended by the Department of Fish and Game (“DFG”) as high-priority wetlands restoration projects, while Staff’s MLMP only allows additional sites to be considered with approval from the Executive Director. (Section 2.0.)
 - **Poseidon Response:** This remains part of Poseidon’s proposal to allow consideration of sites that could be proposed by DFG.
- Poseidon’s MLMP has objectives of providing “substantial” upland buffer and upland transition areas, as compared to Staff’s objective of providing “maximum” upland buffer and upland transition areas. (See Poseidon’s MLMP §§ 3.2(a),(d).)
 - **Poseidon Response:** Poseidon has revised Sections 3.2(a) and (d) of its Plan to incorporate Staff’s proposed “maximum” language. (See Poseidon’s MLMP, Page 5 of 16.)
- Poseidon’s Plan deletes Staff’s Objective in Section 3.2(c) of providing a buffer zone of an average of at least 300 feet wide, and includes a 100 feet-wide Objective.
 - **Poseidon Response:** Poseidon has revised Section 3.2(c) so that the Objective provides for a buffer zone that is an average of 300 feet wide, depending on the feasibility at the selected site(s), and not less than 100 feet wide. (See Poseidon’s MLMP, Page 5 of 16.) This modification addresses Staff’s concerns and will allow Poseidon to have necessary flexibility in selecting the mitigation site(s).
- Poseidon proposes commencing restoration construction within 12 months of approval of the restoration plan (Poseidon’s MLMP § 4.2), while Staff proposes construction within 6 months of approval of the restoration plan (Exhibit 2 at § 2.2).
 - **Poseidon Response:** This remains part of Poseidon’s proposal because it is a more reasonable estimate of time that will be required to undertake the restoration efforts.
- Poseidon’s Plan adds a provision to assure that the mitigation is in place for 30 years, and therefore adds a definition of the facility’s “full operating life” of 30 years from the date as-built plans are submitted. (See Poseidon’s MLMP § 5.0)
 - **Poseidon Response:** This remains part of Poseidon’s proposal because it provides clarity for Poseidon’s responsibilities and obligations under the Plan.
- Poseidon modifies the requirement that the Executive Director will retain approximately two scientists and one administrative support staff to oversee the plan’s mitigation and monitoring functions, and provides that the Executive Director shall retain staff as set forth in the “work program.” (See Poseidon’s MLMP Condition B § 1.0)
 - **Poseidon Response:** This remains part of Poseidon’s proposal because Poseidon does not believe this amount of staffing is necessary given the significantly smaller scope of Poseidon’s restoration obligations compared to SONGS. Poseidon’s proposal provides that the work program will identify the necessary staffing.

- Poseidon’s Plan removes the cap on total costs for the advisory panel of \$100,000 per year contained in Exhibit 2, and requires the Executive Director to submit a proposed budget for the advisory panel to the Commission for approval on a biennial basis, and provides that any disagreement over the budget to be submitted to the Commission for resolution. (Poseidon’s MLMP Condition B § 2.0.)
 - **Poseidon Response:** Poseidon has revised Condition B Section 2.0 to include Staff’s language regarding the \$100,000 cap, but has retained its procedures for the budget due to the fact that the scope of Poseidon’s restoration obligations will be significantly smaller than Edison’s, and the budget for the advisory panel should bear a reasonable relationship to the scope of restoration. (See Poseidon’s MLMP, Page 14 of 16.)
- Poseidon’s Plan modifies the Executive Director’s ability to amend the work program. (Poseidon’s MLMP Condition B § 2.0.)
 - **Poseidon Response:** Poseidon has modified Condition B, § 2.0 so that it is now consistent with the language in Exhibit 2. (See Poseidon’s MLMP, Page 15 of 16.)
- Poseidon’s Plan requires submission of a written review of the restoration project’s previous year by April 30 instead of an annual public workshop. Poseidon provides for a public workshop every fifth year, regardless of whether the project’s performance standards have been met. (Poseidon’s MLMP Condition B § 3.0.) Exhibit 2 provides for an annual public workshop, and would lower the frequency of this obligation to a five year review once performance standards are achieved.
 - **Poseidon Response:** This remains part of Poseidon’s proposal because of the substantially limited size of the Poseidon’s restoration project as compared to Edison’s SONGS restoration project, and the significant cost already imposed on Poseidon’s mitigation program.
- Poseidon’s Plan gives the Commission, rather than the Executive Director, the authority to determine the success or failure to meet the performance standards, or necessary remediation and related monitoring.
 - **Poseidon Response:** Poseidon has modified Condition B, § 3.0 so that it is consistent with the language in Exhibit 2. (See Poseidon’s MLMP, Page 10 of 16.)
- Poseidon’s Plan adds a general dispute resolution provision that would allow any disputes to be heard by the Commission. (Poseidon’s MLMP Condition B § 4.1.)
 - **Poseidon Response:** This remains part of Poseidon’s proposal because it retains and states the permittee’s implicit rights.
- Poseidon’s MLMP allows for time extensions by the Executive Director at Poseidon’s request upon a showing of good cause. Poseidon’s MLMP Condition B § 4.2.)
 - **Poseidon’s Response:** This remains part of Poseidon’s proposal.



POSEIDON RESOURCES

August 2, 2008

**Agenda Item
W 5b**

VIA OVERNIGHT DELIVERY

Chairman Kruer and Honorable Commissioners
California Coastal Commission
North Central Coast District
45 Fremont, Suite 2000
San Francisco, CA 94105-2219

RECEIVED

AUG 01 2008

CALIFORNIA
COASTAL COMMISSION

Re: Carlsbad Desalination Project CDP Application No. E-06-013
Special Condition 8: Marine Life Mitigation Plan

Dear Chairman Kruer and Honorable Commissioners:

Poseidon Resources (Channelside) LLC ("Poseidon") requests that the Commission approve Poseidon's proposed Marine Life Mitigation Plan ("MLMP") attached hereto as Exhibit A, which Poseidon has prepared pursuant to Special Condition 8 of the above-referenced Coastal Development Permit (the "Permit") for the Carlsbad Seawater Desalination Facility (the "Project"). The Commission approved the Permit at its November 15, 2007 hearing, including Special Condition 8, which requires the Applicant to submit a Marine Life Mitigation Plan for Commission review and approval before the Permit will issue.

Following months of extensive collaboration with experts, Commission Staff, and state and local agencies,¹ Poseidon submitted its MLMP to the Commission on July 3, 2008. The MLMP contains the following elements that ensure Poseidon will implement and fund a wetland restoration project or projects that not only fully mitigate any Project impacts to marine life, but also provide additional mitigation that creates, enhances, and restores aquatic and wetland habitat consistent with Coastal Act Sections 30230 and 30231 and Special Condition 8:

- Contains **performance standards and objectives** that are consistent with those applied in Edison's San Onofre Nuclear Generating Station ("SONGS") project;

¹ Poseidon has consulted with the Department of Fish and Game, the Department of Transportation, the State Lands Commission, the San Diego Regional Water Quality Control Board, the City of Carlsbad, Coastal Commission Staff, and the U.S. Fish and Wildlife Service, among others.

These materials have been provided to Coastal Commission Staff

Poseidon Resources Corporation

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Project Office: 4600 Carlsbad Boulevard, Carlsbad, CA 92008

- Provides for up to **42.5 acres of wetland restoration**, which is consistent with California Energy Commission (“CEC”) methodology and Commission precedent;
- Implements a **phased mitigation program** to ensure that Poseidon is incentivized to incorporate emerging technologies that are not currently available into Project operations **to further reduce marine impacts**;
- Requires Poseidon to submit a new Coastal Development Permit application for Phase I of the restoration project **within 24 months** of MLMP approval;
- Ensures long-term **performance, monitoring, and protection** of the mitigation measures; and
- Allows for the Commission **to determine in the future** whether Lagoon dredging should entitle Poseidon to restoration credit applicable to all or part of its Phase II mitigation obligations.

On July 24, 2008, Commission Staff released its Staff Report recommending approval of the MLMP if it is modified and amended to include Staff’s recommendations. In response to the Staff Report, Poseidon revised the MLMP to address substantially all of Staff’s concerns (excluding the three issues discussed in the remainder of this letter), and to ensure that the MLMP substantially complies with Staff’s recommendations.² For the Commission’s convenience, we have attached as Exhibit B a document that sets forth the issues raised in the Staff Report and how Poseidon responded to those issues, including citations to the changes made to the MLMP. Poseidon’s proposed MLMP is attached hereto as Exhibit A in redline format showing all of the changes made in response to the Staff Report that are discussed in Exhibit B. These documents demonstrate that Poseidon has made significant compromises to its positions regarding the MLMP to address and resolve Staff’s concerns.

A. Key Differences With Staff Report

Poseidon believes there remain only three key differences between Poseidon’s MLMP and Staff’s position in the Staff Report that require the Commission’s further consideration, including:

- (1) the amount of mitigation acreage;
- (2) whether mitigation may be phased; and

² Poseidon forwarded these revisions to Staff on July 31, 2008 and hoped to have Staff confirm, prior to finalizing this letter, that these revisions addressed their concerns, but Staff cancelled the planned conference call to discuss these changes.

- (3) whether the Commission should have the discretion to decide at a later date if Poseidon may receive restoration credit for dredging the Agua Hedionda Lagoon (the "Lagoon").

Poseidon contends that the MLMP's proposed 42.5 acres of mitigation is soundly based on CEC methodology; that the phased approach to mitigation ensures the Project's marine life impacts will be fully mitigated during all Project operating scenarios; and that the Commission should be allowed to determine whether Poseidon may receive restoration credit for evidence demonstrating the environmental benefits attributable to Lagoon dredging at the time Poseidon actually requests such credit (if ever) for its Phase II obligations. Accordingly, for those reasons and the reasons summarized below and set forth in detail in Exhibit C ("Marine Life Mitigation Rationale"), Poseidon requests that the Commission not adopt Staff's recommended modifications and instead adopt Poseidon's MLMP as revised and attached hereto as Exhibit A.

B. Poseidon's Restoration Acreage is Consistent with Commission Practice

Independent review has confirmed that Poseidon's proposed 42.5 acres is sufficient restoration to fully mitigate the Project's marine life impacts, consistent with Coastal Act Sections 30230 and 30231. Poseidon's entrainment study, which provides the basis for Poseidon's proposed 42.5 acres of wetland restoration, was reviewed by the Coastal Commission's independent expert, Dr. Pete Raimondi of UC Santa Cruz. Dr. Raimondi confirmed, among other things, that: (1) Poseidon's study design is consistent with recent entrainment studies conducted in California;³ and (2) using CEC methodology, the habitat restoration required to mitigate the Project's "stand-alone" operations would be 42.5 acres. This methodology is also consistent with the peer-reviewed and approved methodology the CEC applied to the Morro Bay Power Plant and the Moss Landing Power Plant.

Notably, Commission Staff originally recommended that Poseidon use CEC methodology to determine Project mitigation acreage, but Staff is now recommending a substantial *increase* in the mitigation acreage by *applying a new standard that has never been peer-reviewed and which adjusts variables in the modeling estimates*. Specifically, Dr. Raimondi suggested that in order to provide a *greater* level of assurance that impacts to lagoon and ocean species will be mitigated, Poseidon could restore a total of 55.4 to 68.2 acres, which would provide an unprecedented level of mitigation for the Project's "stand-alone" impacts that the Commission has never applied before. This "enhanced mitigation" proposal is not consistent with CEC methodology and established, peer-reviewed methodology and precedent. Notably, Dr. Raimondi has not advocated that the Commission should apply the "enhanced mitigation" methodology, and has appropriately left to the Commission the decision of which methodology should be used.

³ As Set forth in the Staff Report, "Dr. Raimondi was able to determine that the study's sampling and data collection methods were consistent with those used in other recent entrainment studies conducted in California pursuant to the protocols and guidelines used by the U.S. EPA, Regional Water Quality Control Boards, California Energy Commission, and Coastal Commission." (*Staff Report re: Condition Compliance for CDP No. E-06-013; Special Condition 8: Submittal of Marine Life Mitigation Plan*, July 24, 2008, at p. 8.)

C. Phased Mitigation is Appropriate for this Project

Poseidon's phased approach to mitigation would fully compensate for the Project's impacts to marine life under either of the power plant's operating scenarios. The initial phase would provide 37 acres of wetland restoration, which would fully compensate for Project-related impacts during the period when both the Encina Power Station ("EPS") and the Project are operating ("Phase I"). The second phase would provide up to 5.5 acres of additional restoration to address any additional unmitigated impacts occurring if the Project ever operates "stand-alone"; that is, when the EPS is decommissioned or when the EPS is providing less than 15% of the water needed for the Project based on the EPS's average water use over any three-year period ("Phase II").

- **Phase I Substantially Over-mitigates Project Impacts.** The 37 acres provided under Phase I would fully mitigate the Project's impacts as long as at least 13% of the Project's seawater requirements are provided by the EPS. In the last 18 months, the EPS would have provided over 65% of the water needed for the Project. Based on that number, the 37 acres provided by Poseidon under Phase I would have been about 2.5 times the mitigation actually required. Through the phased approach to mitigation, Poseidon will substantially over-mitigate its impacts while the EPS continues to operate.
- **Phase II Mitigation Provides New Opportunities to Reduce Impacts.** Under Phase II, the MLMP ensures that Poseidon will fully mitigate its "stand-alone" impacts by requiring Poseidon to: (1) analyze the environmental effects of ongoing Project operations; (2) use that analysis to investigate and evaluate reasonably feasible technologies that are unavailable today, which may reduce any marine life impacts; (3) provide its analysis of environmental effects and its evaluation of any reasonably feasible technologies to reduce impacts to the Commission; and (4) undertake Lagoon dredging obligations, if feasible. The Commission will then be able to determine if actual Project operations have less of an impact to marine life than originally estimated, if Poseidon can further reduce the Project's impacts through reasonably feasible technologies, or if Poseidon should receive restoration credit for demonstrated environmental benefits attributable to dredging (as discussed further in Section D below). Based on these determinations, the Commission may proportionally reduce Poseidon's habitat restoration obligation for Phase II mitigation. Accordingly, phased mitigation will incentivize Poseidon to investigate new technologies that are not available today to reduce impacts so that it can potentially reduce its restoration obligation, and it will enable the Commission to make mitigation decisions based on the Project's actual operational impacts rather than estimates. If the mitigation obligation is not reduced, the MLMP requires Poseidon to restore an additional 5.5 acres of wetland habitat subject to the same performance standards and objectives required under Phase I.

D. Lagoon Dredging Credit Should Be Evaluated in the Future

Pursuant to Poseidon's MLMP, the Commission may decide at a later date whether Poseidon should receive any restoration credit for assuming Lagoon dredging obligations. Poseidon has not requested that dredging credit be applied to its mitigation obligations now; on the contrary, Poseidon is asking the Commission only to leave open the possibility of allowing such credit in the future if Poseidon assumes dredging obligations. The Staff Report, however, recommends that the Commission should decide *now* that Poseidon's potential dredging is not subject to restoration credit because dredging is inconsistent with Special Condition 8's requirement that mitigation be in the form of creation, enhancement or restoration of wetland habitat.

The Staff Report, however, fails to acknowledge that Lagoon dredging is necessary to preserve the Lagoon's beneficial uses, and that sand dredged from the Lagoon would be used to maintain, restore and enhance habitat for grunion spawning and enhance opportunities for public access and recreation along the shoreline. Moreover, the Commission has applied dredging credit in the past for the SONGS project. Further, approval of the MLMP would not constitute approval of a particular dredging proposal or grant of dredging credit. Rather, any dredging proposal would require a separate Coastal Development Permit pursuant to Special Condition 12, so it would be premature for the Commission to analyze dredging that Poseidon cannot perform. Accordingly, it is perfectly appropriate for the Commission to determine whether Poseidon should receive restoration credit for dredging at the time it applies for such credit in the future (if ever).

We appreciate the Commission's consideration of these important issues and respectfully request that the Commission approve Poseidon's proposed Marine Life Mitigation Plan attached hereto as Exhibit A at its August 6, 2008 meeting.

Sincerely,



Peter MacLaggan
Poseidon Resources

Attachments

cc: Tom Luster;
Rick Zbur, Esq.

POSEIDON RESOURCES

Agenda Item
W 5b

EXHIBITS TO POSEIDON'S

AUGUST 2, 2008

RESPONSE TO STAFF REPORT

REGARDING THE

MARINE LIFE MITIGATION PLAN

Exhibit A Marine Life Mitigation Plan

Exhibit B Responses to Issues Identified in July 24, 2008
Staff Report

Exhibit C Marine Life Mitigation Plan Rationale

These materials have been provided to California Coastal Commission Staff

EXHIBIT A

EXHIBIT A

MARINE LIFE MITIGATION PLAN

CONDITION A: WETLAND RESTORATION MITIGATION

The permittee shall develop, implement and fund a wetland restoration project that compensates for marine life impacts from Poseidon's Carlsbad desalination facility.

1.0 PHASED IMPLEMENTATION

Poseidon's Carlsbad desalination facility will function under two operating scenarios: (1) using the Encina Power Station's seawater intake while the Power Station continues to operate ("Phase I"); and (2) as a stand-alone facility ("Phase II"). The permittee's restoration project shall be phased to address marine life impacts from each of the applicable operating scenarios.

To mitigate marine life impacts for Phase I operations, the permittee shall develop, implement and fund a 37-acre wetland restoration project consistent with the terms and conditions set forth in this Plan. The permittee's additional obligations to mitigate marine life impacts for Phase II operations, which may include up to 5.5 acres of additional wetland restoration, are set forth in section 6.0. Combined, mitigation for Phase I and Phase II would require up to 42.5 acres of wetland restoration.

1.1 Technology Review During Phase I Operations

On or before April 30 of each year following the commencement of the Carlsbad desalination facility's commercial operations, the permittee shall provide the Executive Director with data demonstrating the Encina Power Station's cooling water intake for the prior calendar year. On or before April 30 following the first three years of the Carlsbad desalination facility's commercial operations, the permittee shall also provide the Executive Director with the calculation demonstrating the Power Station's average water use during the prior three-year period. The permittee shall thereafter provide the Executive Director with that calculation annually, on or before April 30, until either of the occurrence of either of the "Phase II Pre-Conditions," as defined in subsection 1.2 below.

Consistent with the permittee's approvals from the State Lands Commission, the permittee shall perform the following ten years after the commencement of commercial operations, unless either of the "Phase II Pre-Conditions" occur before that time (as defined in subsection 1.2 below):

- a. Conduct a new analysis of the environmental effects of ongoing desalination facility operations ten years after the commencement of commercial operations. The analysis

shall provide information about the project's actual impacts from operations, taking into account all project features and mitigation measures;

- b. Using that analysis, the permittee shall investigate and evaluate new and developing technologies that are reasonably feasible and unavailable today, which may further reduce any marine life impacts; and
- c. Within 24 months of the date that the permittee commenced its analysis of the environmental effects of ongoing desalination facility operations, the permittee shall provide that analysis and its evaluation of potential and reasonably feasible technologies to the Commission for review. The determination of feasibility shall consider costs, potential impacts, and acceptability to the Encina Power Station, among other things.

Upon receiving the analysis of environmental effects of ongoing desalination facility operations and the evaluation of new and available technologies from the permittee, the Commission may request a hearing to determine whether those technologies are reasonably feasible and whether the permittee can implement any of the technologies to reduce marine life impacts. If the Commission determines that any such technologies are reasonably feasible and may further reduce marine impacts, this Marine Life Mitigation Plan may, after a public hearing before the Commission, be amended to require implementation of reasonably feasible technologies.

1.2 Implementation of Phase II Mitigation

The permittee's Phase I mitigation obligations will not be affected by whether or not the permittee is ultimately required to undertake mitigation for Phase II. If either the Encina Power Station stops using its existing seawater intake for cooling water, or the Encina Power Station's use of its seawater intake provides less than 15% of Poseidon's needed water based on the Power Station's average water use over any three-year period ("Phase II Pre-Conditions"), then the permittee shall also undertake the Phase II mitigation obligations set forth in section 6.0.

2.0 PHASE I SITE SELECTION

In consultation with Commission staff, the permittee shall select a wetland restoration site for Phase I mitigation in accordance with the following process and terms.

Within 10 months of the effective date of this permit, the permittee shall submit the proposed site and preliminary Phase I restoration plan to the Commission for its review and approval or disapproval.

The location of the wetland restoration project shall be within the Southern California Bight. The permittee shall select from sites including, but not limited to, the following eleven sites:

Tijuana Estuary in San Diego County; San Dieguito River Valley in San Diego County; Agua Hedionda Lagoon in San Diego County; San Elijo Lagoon in San Diego County; Buena Vista Lagoon in San Diego County; Huntington Beach Wetland in Orange County, Anaheim Bay in Orange County, Santa Ana River in Orange County, Los Cerritos Wetland in Los Angeles County, Ballona Wetland in Los Angeles County, and Ormond Beach in Ventura County. The permittee may also consider any sites that may be recommended by the California Department of Fish & Game as high priority wetlands restoration projects.

The basis for the selected site shall be an evaluation of the site against the minimum standards and objectives set forth in subsections 3.1 and 3.2 below. The permittee shall take into account and give consideration to the advice and recommendations of the scientific advisory panel established and convened by the Executive Director pursuant to Condition B.1.0. The permittee shall select the site that meets the minimum standards and best meets the objectives.

2.1 Preliminary Phase I Restoration Plan

In consultation with Commission staff, the permittee shall develop a preliminary wetland restoration plan for Phase I mitigation of the wetland site identified through the site selection process. The preliminary Phase I restoration plan shall meet the minimum standards and incorporate as many as possible of the objectives in subsections 3.1 and 3.2, respectively.

The preliminary Phase I restoration plan shall include the following elements:

- a. Review of existing physical, biological, and hydrological conditions; ownership, land use and regulation.**
- b. Site-specific and regional restoration goals and compatibility with the goal of mitigating Poseidon's marine life impacts.**
- c. Identification of site opportunities and constraints.**
- d. Conceptual restoration design, including:**
 - 1. Proposed grading and excavation; water control structures; planting; integration of public access, if feasible; buffers and transition areas; management and maintenance requirements.**
 - 2. Proposed habitat types (including approximate size and location).**
 - 3. Preliminary assessment of significant impacts of design (especially on existing habitat values) and net habitat benefits.**

4. Evaluation of steps for implementation e.g. permits and approvals, development agreements, acquisition of property interests.

5. A graphic depiction of proposed plan.

3.0 PHASE I PLAN REQUIREMENTS

In consultation with Commission staff, the permittee shall develop a **final** wetland restoration plan for the wetland site identified through the site selection process for Phase I. **The wetland restoration based on the preliminary Phase I plan, which the permittee shall submit to the Commission as part of the Coastal Development Permit Application described in Section 4.0. The final** plan shall **also** meet the minimum standards and incorporate as many as feasible of the objectives in subsections 3.1 and 3.2, respectively.

3.1 Minimum Standards

The Phase I wetland restoration project site and preliminary plan must meet the following minimum standards:

- a. Location within Southern California Bight;
- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;
- c. Creates or substantially restores a minimum of 37 acres of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;
- d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and substantially at least 100 feet wide, as measured from the upland edge of the transition area. The Executive Director or the Commission may make exceptions to the 100-foot buffer requirement in certain locations if they determine that the exceptions are de minimis, or that a lesser buffer is sited and/or designed to prevent impacts that would significantly degrade wetland areas and that they are compatible with the continuance of those areas;
- e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;
- f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;
- g. Feasible methods are available to protect the long-term wetland values on the site, in perpetuity;

- h. Does not result in a net loss of existing wetlands; and
- i. Does not result in an adverse, impact on endangered animal species, or an adverse unmitigated impact on endangered plant species.

3.2 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides substantial maximum overall ecosystem benefits, e.g. substantial maximum upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;
- b. Provides substantial fish habitat compatible with other wetland values at the site;
- c. Provides a buffer zone of at least an average of at least 300 feet wide, depending on the feasibility at the selected site(s), and not less than 100 feet wide, as measured from the upland edge of the transition area, subject to the exemptions set forth in subsection 3.1(d);
- d. Provides substantial maximum upland transition areas (in addition to buffer zones);
- e. Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;
- f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;
- g. Restoration design is that most likely to produce and support wetland-dependent resources;
- h. Provides potential habitat for rare or endangered species;
- i. Provides for restoration of reproductively isolated populations of native California species;
- j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;
- k. Requires minimum maintenance;
- l. Restoration project can be accomplished in a reasonably timely fashion; and
- m. Site is in proximity to the Carlsbad desalination facility.

3.3 Restrictions

(a) The permittee may propose a wetland restoration project larger than the minimum necessary size specified in subsection 3.1(c) above, if biologically appropriate for the site, but the additional acreage must (1) be clearly identified, and (2) must not be the portion of the project best satisfying the standards and objectives listed above.

(b) If the permittee jointly enters into a restoration project with another party: (1) the permittee's portion of the project must be clearly specified, (2) any other party involved cannot gain mitigation credit for the permittee's portion of the project, and (3) the permittee may not receive mitigation credit for the other party's portion of the project.

(c) The permittee may propose to divide the mitigation requirement between a maximum of ~~four~~two wetland restoration sites, unless the Executive Director determines that the standards and objectives of subsections 3.1 and 3.2 will be better met at more than ~~four~~two sites.

4.0 PHASE I PLAN IMPLEMENTATION

4.1 Coastal Development Permit Application

The permittee shall submit a complete Coastal Development Permit application for the Phase I restoration plan along with CEQA documentation and local or other state agency approvals by either 24 months following the issuance of the Coastal Development Permit for the Carlsbad desalination facility, ~~or the commencement of commercial operations at the facility, whichever is later.~~ The Executive Director may grant an extension to this time period at the request of and upon a demonstration of good cause by the permittee. The restoration plan shall substantially conform to Section 3.0 above and shall include, but not be limited to the following elements:

- a. Detailed review of existing physical, biological, and hydrological conditions; ownership, land use and regulation;
- b. Evaluation of site-specific and regional restoration goals and compatibility with the goal of mitigating for Poseidon's marine life impacts;
- c. Identification of site opportunities and constraints;
- d. Schematic restoration design, including:
 1. Proposed cut and fill, water control structures, control measures for stormwater, buffers and transition areas, management and maintenance requirements;
 2. Planting Program, including removal of exotic species, sources of plants and or seeds (local, if possible), protection of existing salt marsh plants, methods for preserving

top soil and augmenting soils with nitrogen and other necessary soil amendments before planting, timing of planting, plans for irrigation until established, and location of planting and elevations on the topographic drawings;

3. Proposed habitat types (including approximate size and location);
4. Assessment of significant impacts of design (especially on existing habitat values) and net habitat benefits;
5. Location, alignment and specifications for public access facilities, if feasible;
6. Evaluation of steps for implementation e.g. permits and approvals, development agreements, acquisition of property rights;
7. Cost estimates;
8. Topographic drawings for final restoration plan at 1" = 100 foot scale, one foot contour interval; and
9. Drawings shall be directly translatable into final working drawings.
 - g. Detailed information about how monitoring and maintenance will be implemented;
 - h. Detailed information about construction methods to be used;
 - i. Defined final success criteria for each habitat type and methods to be used to determine success;
 - j. Detailed information about how Poseidon will coordinate with any other agency or panel that will have a role in implementing and monitoring the restoration plan, including the respective roles of the parties in independent monitoring, contingency planning review, cost recovery, etc.;
 - k. Detailed information about contingency measures that will be implemented if mitigation does not meet the approved goals, objectives, performance standards, or other criteria; and
 - l. Submittal of "as-built" plans showing final grading, planting, hydrological features, etc. within 60 days of completing mitigation site construction.

4.2 Wetland Construction Phase

Within 12 months of approval of the Phase I restoration plan, subject to the permittee's obtaining the necessary permits, the permittee shall commence the construction phase of the wetland restoration project. The permittee shall be responsible for ensuring that construction is carried out in accordance with the specifications and within the timeframes specified in the approved

restoration plan and shall be responsible for any remedial work or other intervention necessary to comply with plan requirements.

4.3 Timeframe for Resubmittal of Project Elements

If the Commission does not approve any element of the project (i.e. site selection, restoration plan), the Commission will specify the time limits for compliance relative to selection of another site or revisions to the restoration plan.

5.0 PHASE I WETLAND MONITORING, MANAGEMENT AND REMEDIATION

Monitoring, management (including maintenance), and remediation shall be conducted over the "full operating life" of Poseidon's desalination facility, which shall be 30 years from the date "as-built" plans are submitted pursuant to subsection 4.1(l).

The following section describes the basic tasks required for monitoring, management and remediation for Phase I. Condition B specifies the administrative structure for carrying out these tasks, including the roles of the permittee and Commission staff.

5.1 Monitoring and Management Plan

A monitoring and management plan will be developed in consultation with the permittee and appropriate wildlife agencies, concurrently with the preparation of the restoration plan for Phase I, to provide an overall framework to guide the monitoring work. It will include an overall description of the studies to be conducted over the course of the monitoring program and a description of management tasks that are anticipated, such as trash removal. Details of the monitoring studies and management tasks will be set forth in a work program (see Condition B).

5.2 Pre-restoration site monitoring

Pre-restoration site monitoring shall be conducted to collect baseline data on the wetland attributes to be monitored. This information will be incorporated into and may result in modification to the overall monitoring plan.

5.3 Construction Monitoring

Monitoring shall be conducted during and immediately after each stage of construction of the wetland restoration project to ensure that the work is conducted according to plans.

5.4 Post-Restoration Monitoring and Remediation

Upon completion of construction of the wetland, monitoring shall be conducted to measure the success of the wetland in achieving stated restoration goals (as specified in restoration plan) and in achieving performance standards, specified below. The permittee shall be fully responsible for any failure to meet these goals and standards during the facility's full operational years. Upon determining that the goals or standards are not achieved, the Executive Director shall prescribe remedial measures, after consultation with the permittee, which shall be implemented by the permittee as soon as practicable with Commission staff direction. If the permittee does not agree with the remedial measures prescribed by the Executive Director, or that remediation is necessary, the matter may be set for hearing and disposition by the Commission.

Successful achievement of the performance standards shall (in some cases) be measured relative to approximately four reference sites, which shall be relatively undisturbed, natural tidal wetlands within the Southern California Bight. The reference sites and the standard of comparison, i.e. the measure of similarity to be used, shall be specified in the work program.

In measuring the performance of the wetland project, the following physical and biological performance standards will be utilized:

- a. Longterm Physical Standards. The following long-term standards shall be maintained over the full operative life of the desalination facility:
 - 1) Topography. The wetland shall not undergo major topographic degradation (such as excessive erosion or sedimentation);
 - 2) Water Quality. Water quality variables [to be specified] shall be similar to reference wetlands; and
 - 3) **Tidal Prism. If the plan requires dredging, the permittee shall provide such dredging for the duration of the "full operating life" of the project (as defined in Section 5.0), in exchange for a dredging credit consistent with the credit provided to Edison for the SONGS restoration project, and any designed tidal prism shall be maintained, and tidal flushing shall not be interrupted.**
 - 4) ~~3~~-Habitat Areas. The area of different habitats shall not vary by more than 10% from the areas indicated in the restoration plan.
- b. Biological Performance Standards. The following biological performance standards shall be used to determine whether the restoration project is successful. Table 1, below, indicates suggested sampling locations for each of the following biological attributes; actual locations will be specified in the work program:

- 1) Biological Communities. Within 4 years of construction, the total densities and number of species of fish, macroinvertebrates and birds (see Table 1) shall be similar to the densities and number of species in similar habitats in the reference wetlands;
- 2) Vegetation. The proportion of total vegetation cover and open space in the marsh shall be similar to those proportions found in the reference sites. The percent cover of algae shall be similar to the percent cover found in the reference sites;
- 3) Spartina Canopy Architecture. The restored wetland shall have a canopy architecture that is similar in distribution to the reference sites, with an equivalent proportion of stems over 3 feet tall;
- 4) Reproductive Success. Certain plant species, as specified by in the work program, shall have demonstrated reproduction (i.e. seed set) at least once in three years;
- 5) Food Chain Support. The food chain support provided to birds shall be similar to that provided by the reference sites, as determined by feeding activity of the birds; and
- 6) Exotics. The important functions of the wetland shall not be impaired by exotic species.

Table 1: Suggested Sampling Locations

	Salt Marsh			Open Water		Mudflat	Tidal Creeks
	Spartina	Salicornia	Upper	Lagoon	Eelgrass		
1) Density/spp:							
Fish				X	X	X	X
Macroinvertebrates				X	X	X	X
Birds	X	X	X	X		X	X
2) % Cover							
Vegetation	X	X	X		X		
Algae	X	X				X	
3) Spar. arch.	X						
4) Repro. suc.	X	X	X				
5) Bird feeding				X		X	X
6) Exotics	X	X	X	X	X	X	X

6.0 MITIGATION REQUIRED AFTER PHASE II PRECONDITION

6.1 Reasonably Feasible Technologies

Following the occurrence of either of the Phase II Pre-Conditions, as defined in subsection 1.1, the permittee shall:

- a. Conduct a new analysis of the environmental effects of ongoing desalination facility operations. The analysis shall provide information about the project's actual impacts from operations, taking into account all project features and mitigation measures;
- b. Using that analysis, the permittee shall investigate and evaluate new and developing technologies that are reasonably feasible and unavailable today, which may further reduce any marine life impacts;
- c. Within 24 months of the occurrence of the applicable Phase II pre-condition, the permittee shall provide that analysis and its evaluation of potential and reasonably feasible technologies to the Commission for review. The determination of feasibility shall consider costs, potential impacts, and acceptability to the Encina Power Station, among other things; and
- d. The analysis and evaluation provided to the Commission shall also include an evaluation of whether the 37 acres of wetland restoration implemented by the permittee has fully or only partially mitigated marine life impacts for stand-alone operations, taking into account actual operating conditions from facility operations for Phase I and potential reductions to impacts that would occur as a result of any new and reasonably feasible technologies that the permittee may implement pursuant to this subsection 6.1.

Upon receiving the evaluation of new and available technologies from the permittee, the Commission may request a hearing to determine whether those technologies are reasonably feasible and whether the permittee can implement any of the technologies to reduce marine life impacts. If the Commission determines that any such technologies are reasonably feasible and may further reduce marine impacts, this Marine Life Mitigation Plan may be amended after a public hearing before the Commission to require implementation of reasonably feasible technologies. The Commission also may determine the additional mitigation, if any, required after implementation of available technologies to reduce marine life impacts from Phase II operations.

6.2 Additional Mitigation

The permittee also shall comply with the following mitigation measures after the occurrence of either Phase II Pre-Condition:

- a. If within 24 months of the occurrence of the applicable Phase II Pre-Condition, the permittee assumes dredging obligations of the Agua Hedionda Lagoon from the Encina Power Station or other applicable entity, the permittee shall provide evidence to the Executive Director in the form of a contract or other agreement that demonstrates the permittee's assumption of dredging obligations, along with an evaluation of the permittee's dredging activities and supporting documentation for the proposed mitigation credit the permittee is seeking for this activity. Pursuant to Special Condition 12 of this Permit, the permittee shall not dredge the Agua Hedionda Lagoon without obtaining a new Coastal Development Permit approval from the Commission for dredging activities. If such dredging obligations are assumed, the Commission shall evaluate and determine the mitigation credit the permittee is entitled to receive for Lagoon dredging using substantially the same methodology the Commission used for the San Onofre Nuclear Generating Station's dredging approvals. If the Commission's evaluation set forth in subsection 6.1 determines that there is any remaining mitigation obligation following the implementation of reasonably feasible technologies to reduce marine impacts, the credit for Lagoon dredging shall be applied to satisfy any remaining mitigation obligation of the permittee; or
- b. If the permittee does not assume the dredging obligations for the Agua Hedionda Lagoon (for any reason other than delays by the Commission in issuing the Coastal Development Permit for dredging) and the analysis and evaluation set forth in subsection 6.1 identifies that additional wetland restoration is necessary to mitigate Phase II impacts not fully mitigated by the 37-acre restoration project, then within 24 months of the occurrence of the applicable Phase II Pre-Condition, the permittee shall apply for a new Coastal Development Permit to perform additional wetland mitigation to mitigate marine life impacts for Phase II operations that meets the following criteria:
 - (i) the Phase II wetland mitigation shall credit the 37-acres of restoration required under this Plan for Phase I, and may require additional mitigation of up to an additional 5.5 acres. The Commission shall proportionally reduce the potential 5.5 acre restoration requirement based on: (1) any reduction to marine life impacts caused by the permittee's implementation of reasonably feasible technologies, as set forth in subsection 6.1; and (2) any demonstration that actual plant operations have caused less marine life impacts than originally anticipated during the project's initial evaluation;
 - (ii) the permittee shall apply for a new Coastal Development Permit to perform the wetland restoration, and the restoration shall be of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area, and consistent with the objectives and restrictions in subsections 3.1 (excluding subsection 3.1(c)), 3.2 and 3.3 above;

- (iii) the permittee shall select a wetland restoration site for Phase II mitigation in a manner generally in accordance with section 2.0 above;
- (iv) the restoration plan for Phase II mitigation shall be generally in accordance with the requirements in section 4.0 above, and shall be monitored in a manner generally in accordance with that set forth in section 5.0 above; and
- (v) Phase II wetland restoration shall be included in and administered as part of the same administrative structure created for Phase I mitigation and set forth in Condition B of this Plan.

CONDITION B: ADMINISTRATIVE STRUCTURE

1.0 ADMINISTRATION

Personnel with appropriate scientific or technical training and skills will, under the direction of the Executive Director, oversee the mitigation and monitoring functions identified and required by Condition A. The Executive Director will retain scientific and administrative support staff to perform this function, as specified in the work program.

This technical staff will oversee the preconstruction and post-construction site assessments, mitigation project design and implementation (conducted by permittee), and monitoring activities (including plan preparation); the field work will be done by contractors under the Executive Director's direction. The contractors will be responsible for collecting the data, analyzing and interpreting it, and reporting to the Executive Director.

The Executive Director shall convene a scientific advisory panel to provide the Executive Director with scientific advice on the design, implementation and monitoring of the wetland restoration. The panel shall consist of recognized scientists, including a marine biologist, an ecologist, a statistician and a physical scientist.

2.0 BUDGET AND WORK PROGRAM

The funding necessary for the Commission and the Executive Director to perform their responsibilities pursuant to these conditions will be provided by the permittee in a form and manner reasonably determined by the Executive Director to be consistent with requirements of State law, and which will ensure efficiency and minimize total costs to the permittee. The amount of funding will be determined by the Commission on a biennial basis and will be based on a proposed budget and work program, which will be prepared by the Executive Director in consultation with the permittee, and reviewed and approved by the Commission in conjunction with its review of the restoration plan. ~~Permit application fees paid by the permittee for Coastal~~

Development Permits (or amendments thereto) for the restoration program shall be credited against the budget to be funded by the permittee. If the permittee and the Executive Director cannot agree on the budget or work program, the disagreement will be submitted to the Commission for resolution.

The budget to be funded by the permittee will be for the purpose of reasonable and necessary costs to retain personnel with appropriate scientific or technical training and skills needed to assist the Commission and the Executive Director in carrying out the mitigation. In addition, reasonable funding will be included in this budget for necessary support personnel, equipment, overhead, consultants, the retention of contractors needed to conduct identified studies, and to defray the costs of members of any scientific advisory panel(s) convened by the Executive Director for the purpose of implementing these conditions.

Costs for participation on any advisory panel shall be limited to travel, per diem, meeting time and reasonable preparation time and shall only be paid to the extent the participant is not otherwise entitled to reimbursement for such participation and preparation. The amount of funding will be determined by the Commission on a biennial basis and will be based on a proposed budget and work program, which will be prepared by the Executive Director in consultation with the permittee, and reviewed and approved by the Commission in conjunction with its review of the restoration plan. **Total costs for such advisory panel shall not exceed \$100,000 per year adjusted annually by any increase in the consumer price index applicable to California.** If the permittee and the Executive Director cannot agree on the budget or work program, the disagreement will be submitted to the Commission for resolution.

The work program will include:

- a. A description of the studies to be conducted over the subsequent two year period, including the number and distribution of sampling stations and samples per station, methodology and statistical analysis (including the standard of comparison to be used in comparing the mitigation project to the reference sites);
- b. A description of the status of the mitigation projects, and a summary of the results of the monitoring studies to that point;
- c. A description of up to four reference sites;
- d. A description of the performance standards that have been met, and those that have yet to be achieved;
- e. A description of remedial measures or other necessary site interventions;
- f. A description of staffing and contracting requirements; and

- g. A description of the scientific advisory panel's role and time requirements in the two year period.

~~Any amendment to the work program requested by the permittee shall require an amendment to the Coastal Development Permit for the restoration plan, unless the Executive Director determines that no Coastal Development Permit amendment is necessary or required. Any amendment to the work program proposed by the Executive Director shall be made in consultation with the permittee. If the permittee and the Executive Director cannot agree on an amendment to the work program, the disagreement will be submitted to the Commission for resolution.~~

The Executive Director may amend the work program at any time, subject to appeal to the Commission.

3.0 ANNUAL REVIEW AND PUBLIC WORKSHOP REVIEW

The permittee shall submit a written review of the status of the mitigation project to the Executive Director each year on April 30 for the prior calendar year. The written review will discuss the previous year's activities and overall status of the mitigation project, identify problems and make recommendations for solving them, and review the next year's program.

Every fifth year, the Executive Director or the Commission shall also convene and conduct a duly noticed public workshop to review the status of the mitigation project. The meeting will be attended by the contractors who are conducting the monitoring, appropriate members of the Scientific Advisory Panel, the permittee, Commission staff, representatives of the resource agencies (CDFG, NMFS, USFWS), and the public. Commission staff and the contractors will give presentations on the previous five years' activities and the overall status of the mitigation project, identify problems and make recommendations for solving them, and review the next period's program.

The workshop review will include discussions on whether the wetland mitigation project has met the performance standards, identified problems, and recommendations relative to corrective measures necessary to meet the performance standards. The Executive Director will utilize information presented at the public review, as well as any other relevant information, to determine whether any or all of the performance standards have been met, whether revisions to the standards are necessary, and whether remediation is required. Major revisions shall be subject to the Commission's review and approval.

The mitigation project will be successful when all performance standards have been met each year for a three-year period. The Executive Director shall report to the Commission upon determining that all of the performance standards have been met for three years and that the

project is deemed successful. If the Commission determines that the performance standards have been met and the project is successful, the monitoring program will be scaled down, as recommended by the Executive Director and approved by the Commission. The work program shall reflect the lower level of monitoring required. If subsequent monitoring shows that a standard is no longer being met, monitoring may be increased to previous levels, as determined necessary by the Executive Director.

The ~~Commission~~Executive Director may make a determination on the success or failure to meet the performance standards or necessary remediation and related monitoring at any time, not just at the time of the workshop review.

4.0 ADDITIONAL PROCEDURES

4.1 Dispute Resolution

In the event that the permittee and the Executive Director cannot reach agreement regarding the terms contained in or the implementation of any part of this Plan, the matter may be set for hearing and disposition by the Commission.

4.2 Extensions

Any of the time limits established under this Plan may be extended by the Executive Director at the request of the permittee and upon a showing of good cause.

EXHIBIT B

EXHIBIT B

RESPONSES TO ISSUES IDENTIFIED IN JULY 24, 2008 STAFF REPORT

In response to Commission Staff's specific concerns regarding Poseidon's proposed Marine Life Mitigation Plan ("MLMP"), as identified on page 15 of the July 24, 2008 Staff Report, Poseidon has modified its MLMP to address Staff's concerns. Below we have listed each of Staff's identified concerns, followed by Poseidon's response. In addition to the responses herein, Exhibit A is a redline of Poseidon's MLMP that shows the changes Poseidon has made in response to Staff's concerns. Note that this document does not address the three issues discussed in Poseidon's letter responding to the Staff Report: mitigation acreage, phased mitigation and restoration credit for lagoon dredging.

I. Responses to Bullet Points on Page 15: In this section, Poseidon has responded to each of the bullet points listed on page 15 of the Staff Report.

Issue 1: *Staff recommended that Poseidon submit a complete coastal development permit application for its Final Restoration Plan within 24 months of Commission approval of its Preliminary Plan (i.e., the Plan being reviewed herein). Poseidon modified that recommendation in Section 4 of its Plan to allow submittal of that application either 24 months after issuance of the project coastal development permit or commencement of commercial operations of the desalination facility, whichever is later. This could substantially delay the implementation of mitigation and could result in several years of impacts occurring without mitigation.*

- **Poseidon Response to Issue 1:** In Section 4.1 of Poseidon's MLMP, Poseidon has revised its Plan so that the Coastal Development Permit for the Final Restoration Plan will be submitted within 24 months of Commission approval of its Preliminary Plan.

Issue 2: *A proposed change to Poseidon's Plan at Section 3.1(d) and at Section 3.2(c) would reduce the required buffer zone at its mitigation sites from no less than 100 feet wide to an average that could be much less than 100 feet.*

- **Poseidon Response to Issue 2:** Poseidon has removed the word "substantially" from Section 3.1(d) so that it is evident that buffer zones will be at least 100 feet wide. (See Poseidon's MLMP, Page 4 of 16.)

Issue 3: *A proposed change to Section 3.1(i) would allow the Plan to affect endangered species in a way not allowed under the Edison requirements.*

- **Poseidon Response to Issue 3:** Poseidon has revised Section 3.1(i) to indicate that Poseidon's Plan will not result in an adverse impact on endangered animal species, and that it will require mitigation for Plan impacts on endangered plant species. (See Poseidon's MLMP, Page 5 of 16.) The formulation of this provision in the Edison plan does not take into account that substantially all wetlands restoration projects will have impacts on sensitive plant species, which would likely be mitigated through relocation

to upland areas. The Edison plan's formulation would not allow mitigation in any area where there is a sensitive plant. Accordingly, Poseidon modified this language to ensure there are no adverse impacts to endangered animals, but to allow for mitigation and relocation of sensitive plants.

Issue 4: *Poseidon proposes to change Section 3.3(c) to allow mitigation to occur in up to four sites, rather than up to two sites, as required of Edison, which could fragment the mitigation and reduce its overall value.*

- **Poseidon Response to Issue 4:** Poseidon has revised Section 3.3(c) to allow mitigation to occur only at up to two sites without Executive Director approval. (See Poseidon's MLMP, Page 6 of 16.)

Issue 5: *Poseidon also proposed deleting a requirement at Section 5.4 that would require a designed tidal prism to be maintained to ensure the wetland mitigation site has adequate tidal action.*

- **Poseidon Response to Issue 5:** Poseidon has revised its Plan to include a requirement at Section 5.4(a)(3) that would require a designed tidal prism be maintained if the Plan requires dredging. (See Poseidon's MLMP, Page 9 of 16.)

Issue 6: *Poseidon Proposes that any fees it pays for coastal development permits or amendments be credited against the budget needed to implement the mitigation plan.*

- **Poseidon Response to Issue 6:** Poseidon has revised Condition B, Section 2.0 to remove its proposal regarding the crediting of fees paid for coastal development permits or amendments. (See Poseidon's MLMP, Pages 13-14 of 16.)

II. Responses to Staff's Recommendation to Include Conditions in Exhibit 2: In this section we have responded to Staff's comment on page 15 of the Staff Report that Poseidon's Plan should be modified to include the conditions in Exhibit 2 by identifying each of the differences between Poseidon's Plan and Staff's Exhibit 2, followed by Poseidon's response.

- Poseidon's Plan removes the requirement in Section 2.0 that would require Poseidon to submit the proposed site and preliminary plan to the Commission within 9 months of the effective date of the approval, and removes Exhibit 2's "Preliminary Plan" requirements set forth in Staff's Exhibit 2 at §1.2.
 - **Poseidon Response:** Poseidon has revised its Plan to include the "Preliminary Plan" requirements (Poseidon's MLMP § 2.1, Pages 3-4 of 16.) and has modified its Plan so that a proposed site and preliminary plan will be submitted to the Commission within 10 months of the effective date of the approval. (See Poseidon's MLMP § 2.0, Page 2 of 16.)
- Poseidon's Plan adds three potential restoration sites (Agua Hedionda, San Elijo, and Buena Vista) for a total of 11 sites in Section 2.0.

- **Poseidon Response:** This remains part of Poseidon's proposal because these sites are in close proximity to the Project site, and have been recommended as potential mitigation sites by local and state agencies.
- Poseidon's Plan allows Poseidon to consider other sites that may be recommended by the Department of Fish and Game ("DFG") as high-priority wetlands restoration projects, while Staff's MLMP only allows additional sites to be considered with approval from the Executive Director. (Section 2.0.)
 - **Poseidon Response:** This remains part of Poseidon's proposal to allow consideration of sites that could be proposed by DFG.
- Poseidon's MLMP has objectives of providing "substantial" upland buffer and upland transition areas, as compared to Staff's objective of providing "maximum" upland buffer and upland transition areas. (See Poseidon's MLMP §§ 3.2(a),(d).)
 - **Poseidon Response:** Poseidon has revised Sections 3.2(a) and (d) of its Plan to incorporate Staff's proposed "maximum" language. (See Poseidon's MLMP, Page 5 of 16.)
- Poseidon's Plan deletes Staff's Objective in Section 3.2(c) of providing a buffer zone of an average of at least 300 feet wide, and includes a 100 feet-wide Objective.
 - **Poseidon Response:** Poseidon has revised Section 3.2(c) so that the Objective provides for a buffer zone that is an average of 300 feet wide, depending on the feasibility at the selected site(s), and not less than 100 feet wide. (See Poseidon's MLMP, Page 5 of 16.) This modification addresses Staff's concerns and will allow Poseidon to have necessary flexibility in selecting the mitigation site(s).
- Poseidon proposes commencing restoration construction within 12 months of approval of the restoration plan (Poseidon's MLMP § 4.2), while Staff proposes construction within 6 months of approval of the restoration plan (Staff's Exhibit 2 at § 2.2).
 - **Poseidon Response:** This remains part of Poseidon's proposal because it is a more reasonable estimate of time that will be required to undertake the restoration efforts.
- Poseidon's Plan adds a provision to assure that the mitigation is in place for 30 years, and therefore adds a definition of the facility's "full operating life" of 30 years from the date as-built plans are submitted. (See Poseidon's MLMP § 5.0)
 - **Poseidon Response:** This remains part of Poseidon's proposal because it provides clarity for Poseidon's responsibilities and obligations under the Plan.
- Poseidon modifies the requirement that the Executive Director will retain approximately two scientists and one administrative support staff to oversee the plan's mitigation and monitoring functions, and provides that the Executive Director shall retain staff as set forth in the "work program." (See Poseidon's MLMP Condition B § 1.0, Page 13 of 16.)

- **Poseidon Response:** This remains part of Poseidon's proposal because Poseidon does not believe this amount of staffing is necessary given the significantly smaller scope of Poseidon's restoration obligations compared to SONGS. Poseidon's proposal provides that the work program will identify the necessary staffing.
- Poseidon's Plan removes the cap on total costs for the advisory panel of \$100,000 per year contained in Staff's Exhibit 2, and requires the Executive Director to submit a proposed budget for the advisory panel to the Commission for approval on a biennial basis, and provides that any disagreement over the budget to be submitted to the Commission for resolution. (Poseidon's MLMP Condition B § 2.0.)
 - **Poseidon Response:** Poseidon has revised Condition B Section 2.0 to include Staff's language regarding the \$100,000 cap, but has retained its procedures for the budget due to the fact that the scope of Poseidon's restoration obligations will be significantly smaller than Edison's, and the budget for the advisory panel should bear a reasonable relationship to the scope of restoration. (See Poseidon's MLMP, Page 14 of 16.)
- Poseidon's Plan modifies the Executive Director's ability to amend the work program. (Poseidon's MLMP Condition B § 2.0.)
 - **Poseidon Response:** Poseidon has modified Condition B, § 2.0 so that it is now consistent with the language in Staff's Exhibit 2. (See Poseidon's MLMP, Page 15 of 16.)
- Poseidon's Plan requires submission of a written review of the restoration project's previous year by April 30 instead of an annual public workshop. Poseidon provides for a public workshop every fifth year, regardless of whether the project's performance standards have been met. (Poseidon's MLMP Condition B § 3.0, Pages 15-16 of 16.) Staff's Exhibit 2 provides for an annual public workshop, and would lower the frequency of this obligation to a five year review once performance standards are achieved.
 - **Poseidon Response:** This remains part of Poseidon's proposal because of the substantially limited size of the Poseidon's restoration project as compared to Edison's SONGS restoration project, and the significant cost already imposed on Poseidon's mitigation program.
- Poseidon's Plan gives the Commission, rather than the Executive Director, the authority to determine the success or failure to meet the performance standards, or necessary remediation and related monitoring.
 - **Poseidon Response:** Poseidon has modified Condition B, § 3.0 so that it is consistent with the language in Staff's Exhibit 2. (See Poseidon's MLMP, Page 10 of 16.)
- Poseidon's Plan adds a general dispute resolution provision that would allow any disputes to be heard by the Commission. (Poseidon's MLMP Condition B § 4.1, Page 16 of 16.)

- **Poseidon Response:** This remains part of Poseidon's proposal because it retains and states the permittee's implicit rights.
- Poseidon's MLMP allows for time extensions by the Executive Director at Poseidon's request upon a showing of good cause. Poseidon's MLMP Condition B § 4.2, Page 16 of 16.)
 - **Poseidon's Response:** This remains part of Poseidon's proposal.

EXHIBIT C

EXHIBIT C

MARINE LIFE MITIGATION PLAN RATIONALE

In addition to the reasons set forth in Poseidon's letter to the Commission, below Poseidon has provided more detailed support for its position that the Commission should accept Poseidon's arguments concerning mitigation acreage, mitigation phasing and dredging over those offered by Staff. Accordingly, and for the following reasons, Poseidon respectfully asks the Commission to adopt Poseidon's Marine Life Mitigation Plan ("MLMP") as amended and set forth in Exhibit A, and without Staff's requested modifications from the Staff Report.

I. POSEIDON'S RESTORATION ACREAGE IS CONSISTENT WITH COMMISSION PRACTICE

Independent review has confirmed that Poseidon's proposed 42.5 acres is sufficient restoration to fully mitigate the Project's marine life impacts. Poseidon's entrainment study, which provides the basis for Poseidon's proposed 42.5 acres of wetland restoration, was reviewed by the Coastal Commission's independent expert, Dr. Pete Raimondi of UC Santa Cruz. Dr. Raimondi confirmed, among other things, that: (1) Poseidon's study design is consistent with recent entrainment studies conducted in California; (2) using CEC methodology and Coastal Commission precedent, the habitat restoration required to mitigate the Project's "stand-alone" operations would be 42.5 acres (37 acres to compensate for Agua Hedionda Lagoon ("Lagoon") species impacts, and 5.5 acres to compensate for open ocean species impacts); and (3) habitat mix for mitigation should include mudflat/tidal channel and open water habitat. This methodology is also consistent with the peer-reviewed and approved methodology the CEC applied to the Morro Bay Power Plant and the Moss Landing Power Plant.

Notably, Commission Staff originally recommended that Poseidon use CEC methodology to determine the Project's mitigation requirement. Staff, however, is now recommending a substantial *increase* in the mitigation acreage by applying a new standard that has not been peer-reviewed and which adjusts variables in the modeling estimates. Specifically, Dr. Raimondi suggested that in order to provide an even *greater* level of assurance that impacts to lagoon and ocean species will be mitigated, Poseidon could restore 12.9 to 25.7 acres above the 42.5 acres required under CEC methodology – for a total of 55.4 to 68.2 acres – to provide an unprecedented level of mitigation for the Project's "stand-alone" impacts that the Commission has never applied before. This "enhanced mitigation" proposal is inconsistent with CEC methodology and established, peer-reviewed methodology and precedent. Notably, Dr. Raimondi has not advocated that the Commission should apply the "enhanced mitigation" methodology, and has appropriately left to the Commission the decision of which methodology should be used.

In contrast to the "enhanced mitigation" proposal, Poseidon's restoration acreage methodology conforms entirely to Commission-accepted precedent, and Staff has not identified any mitigation projects using this methodology that have resulted in under-compensation for marine impacts. Poseidon's Area Production Foregone ("APF") calculation is extremely conservative because it assumes that the proportional mortality resulting from entrainment occur

across the entire area of the Lagoon. In fact, the habitat areas in the Lagoon for the three species used to calculate the APF estimate are all much smaller than the entire Lagoon. Accordingly, an averaging approach was used because it accounts for the uncertainty associated with the estimates of the exact areas of habitat associated for each species. This methodology is considered conservative and conforms entirely to standards and procedures used for APF determination at the Moss Landing project.

Staff has also suggested that if Poseidon does not use Staff's "enhanced mitigation" proposal, that Poseidon should be required to apply a mitigation ratio (such as 2:1 or 3:1) to its mitigation acreage so that Poseidon considers mitigation that may be "out of kind" or provided at some distance from the affected area. Staff, however, has not and cannot provide examples of any California entrainment mitigations that have applied a mitigation ratio on top of a conservative "in-kind" approach to mitigation that is consistent with CEC methodology, such as the mitigation acreage contained in the MLMP. Moreover, the MLMP ensures that Poseidon will provide "in-kind" restoration in the Southern California Bight similar to the affected area in the Lagoon.

For these reasons, Poseidon asks the Commission to approve its 42.5 acreage calculation over that proposed by Staff to ensure that the Project's mitigation is consistent with prior Commission approvals rather than subject to an obligation that is based on un-proven methodology.

II. PHASED MITIGATION IS APPROPRIATE FOR THIS PROJECT

Poseidon's phased approach to mitigation would fully compensate for the Project's impacts to marine life under either of the power plant's operating scenarios. The initial phase of the mitigation plan would provide 37 acres of wetland restoration, which would fully compensate for Project-related impacts during the period when both the Encina Power Station ("EPS") and the Project are operating ("Phase I"). The second phase would provide up to 5.5 acres of additional restoration to address any additional unmitigated impacts occurring from Project operations when the EPS is decommissioned or when the EPS is providing less than 15% of the water needed for the Project based on the EPS's average water use over any three-year period¹ ("Phase II"). Below, Poseidon has identified the benefits of phased mitigation for this Project and explained why Staff's arguments against phasing are unsupported and inconsistent with the benefits that phasing would provide.

A. Phase I Mitigation Over-mitigates Project Impacts

Under Phase I, Poseidon would restore 37 acres of wetland habitat similar to the affected habitats in Agua Hedionda Lagoon. Using CEC and prior Coastal Commission methodology, the Phase I mitigation would mitigate 87% of the total requirements for the Project's "stand alone" operations (when the EPS has ceased operating). Accordingly, the Phase I mitigation

¹ This threshold is very conservative. The Phase I restoration project would fully mitigate the Project's impacts as long as at least 13% of the Project's seawater requirements are provided by the EPS. Poseidon's MLMP is conservative in that it requires Poseidon to implement Phase II mitigation if the EPS is providing an average of less than 15% of the Project's seawater requirements over a three-year period.

would fully mitigate the Project's impacts as long as at least 13% of the Project's seawater requirements are provided by the EPS. By providing this level of mitigation while the Project and the power plant are both operating, Poseidon will perform more mitigation than what is necessary to mitigate this stage of the Project's operations. For example, in the last 18 months the EPS would have provided over 65% of the water needed for the Project. Based on that number, Poseidon would have been required to provide only 14.9 acres of mitigation using CEC methodology and Commission precedent. Poseidon's Phase I restoration of 37 acres would be approximately 2.5 times the mitigation actually required. Therefore, through the phased approach to mitigation, Poseidon is actually providing the substantial majority of the mitigation required for the Project's stand-alone operations up front.

B. Phase II Mitigation Provides New Opportunities to Reduce Impacts

The MLMP requires Poseidon to implement mitigation measures for Phase II (including up to 5.5 acres of additional restoration) if the EPS stops using its existing seawater intakes for cooling purposes, or if the intakes provide less than 15% of Poseidon's needed water based on the EPS' average water use over any three-year period ("Phase II Pre-Conditions"). To ensure that the Commission is aware of the amount of water the EPS is providing to the Project, and when Phase II mitigation should commence, the MLMP requires Poseidon to submit that information to the Executive Director annually.

Wetland habitat restoration under Phase II would credit the 37 acres of restoration already provided for under Phase I, and provide assurances that stand-alone operations are fully mitigated in Phase II. Once either of the Phase II Pre-Conductions occur, the MLMP requires Poseidon to: (1) analyze the environmental effects of ongoing Project operations; (2) use that analysis to investigate and evaluate reasonably feasible technologies that are unavailable today, which may reduce any marine life impacts; and (3) provide its analysis of environmental effects and its evaluation of any reasonably feasible technologies to reduce marine life impacts to the Commission within 24 months. Accordingly, the Commission will be able to determine if Poseidon can further reduce the Project's impacts to marine life through reasonably feasible technologies, and may proportionally reduce Poseidon's habitat restoration obligation for Phase II mitigation based on that mitigation.²

In addition, Poseidon may assume dredging obligations of the Agua Hedionda Lagoon from the EPS within 24 months of the occurrence of either Phase II Pre-Condition, if feasible.³ If Poseidon assumes dredging obligations, it will provide evidence of its obligations to the Commission, along with an analysis of how Lagoon dredging is beneficial to the Lagoon and

² Note that in the event the Phase II Pre-Conditions do not occur, Poseidon's approval from the State Lands Commission requires Poseidon to undertake a substantially similar evaluation of environmental effects of ongoing Project operations and to investigate and evaluate new and developing technologies that are unavailable today to reduce any marine life impacts ten years after Project operations commence. Accordingly, if the State Lands Commission requires Poseidon to implement any such technologies that constitute "development", such development would be subject to Coastal Commission review and approval.

³ Since Special Condition 12 of the Project's Coastal Development Permit requires Poseidon to obtain a new Permit approval from the Coastal Commission for any dredging activities, the Commission shall have oversight over any Lagoon dredging.

how such dredging activities may entitle Poseidon to some amount of restoration credit. (See Section C below).

In the event that Poseidon does not assume Lagoon dredging obligations (for example, if the EPS never fully ceases use of its intakes but operates the intakes at very low levels and continues to dredge the Lagoon), Poseidon's MLMP requires it to develop a plan within 24 months in which: (1) the Commission shall evaluate whether Poseidon's 37 acres of wetland restoration under Phase I has fully mitigated the Project's stand-alone operations; and (2) the Commission may reduce Poseidon's Phase II restoration based on the reduction to marine impacts caused by Poseidon's implementation of new, reasonably feasible technologies (as discussed above).

Accordingly, phased MLMP implementation would provide a tremendous incentive for Poseidon to investigate and invest in new technologies and opportunities to further reduce Project impacts and avoid additional mitigation costs. If Poseidon is required to provide all of the mitigation for the "stand-alone" operations upfront, there is substantially less incentive to invest in additional avoidance measures. In addition, the opportunity for the Commission to consider these issues once Project operations have commenced is another valuable benefit of phased implementation of the MLMP: with phased mitigation, Poseidon, the Commission and other regulatory agencies would have an opportunity to measure the actual impacts of the Project, and to evaluate new opportunities to further reduce the impacts and refine the scope of the Phase II mitigation as necessary to ensure the "stand-alone" Project impacts are fully mitigated.

If the Commission determines that none of the above-opportunities are feasible or if these opportunities in combination with the Phase I mitigation plan do not fully mitigate the "stand-alone" Project impacts, then the MLMP requires Poseidon to restore up to an additional 5.5 acres consistent with the performance standards and objectives used for the 37 acres provided under Phase I restoration.

C. Phased Mitigation is Not Speculative

Commission Staff argue in the Staff Report that the Commission should require Poseidon to provide all mitigation up-front, rather than in two phases, because it considers "phasing to be speculative in that it is tied to unknown future operations of the power plant." Staff's argument is without merit. As set forth in MLMP Section 1.1, Poseidon will be obligated to provide the Executive Director annually with data demonstrating the power plant's seawater intake for the prior year, which will ensure that the Commission is always informed of the power plant's operations. Since the MLMP requires Poseidon to undertake Phase II mitigation when the power plant is decommissioned or when it provides less than 15% of the Project's water over a three-year period, the Commission will have the necessary data about power plant operations so that it will not need to "speculate" about when Poseidon will need to implement Phase II mitigation.

Staff also contends in the Staff Report that tying phased mitigation to the power plant's operations would be "inappropriate" because the power plant is not a co-applicant on the Project's Permit. Poseidon's Permit application and the Commission's approval, however, provide that the desalination facility's intake would be connected to the power plant's discharge

channel. Accordingly, the discharge from the power plant, to the extent it is available, will serve the Project's needs. In the past 18 months, the power plant would have provided over 65% of the water needed for the Project. It is both appropriate and there is no prohibition on allowing the phased approach proposed by Poseidon.

In addition to the reasons discussed above, a phased approach to mitigation for this Project is based on sound policy for the following three reasons:

- (1) EPS will operate indefinitely: As discussed above, while the EPS continues to operate, it will provide a significant portion of the seawater required for the Project, and the need for Project mitigation would be proportionally reduced. The power plant's generating capacity is subject to "Reliability Must Run" status, as contracted by the California Independent System Operator (Cal-ISO), which is meant to provide electrical grid reliability. At the October 2007 State Lands Commission meeting, an EPS representative testified that the units will remain in service indefinitely and that Cal-ISO would determine when they are no longer needed for grid stability. Further, in a July 12, 2007 letter to the Commission, EPS stated that at least two of its generating units "can be reliably operated for the foreseeable future." Because the power plant will continue to operate in some capacity and provide water to the Project, requiring more than 37 acres of mitigation up-front would substantially over-mitigate the Project's impacts for many years.
- (2) Phasing allows the Commission to retain authority and evaluate impacts: Due to the phased approach, the Commission would have ongoing involvement in the implementation of the MLMP alongside other regulatory agencies. This will allow the Commission to evaluate the impacts of the Project's *actual* operations, rather than relying on estimates, and will enable the Commission to more accurately determine what additional mitigation should be required to fully mitigate the Project's marine impacts (if any).
- (3) Other regulatory agencies retain authority to evaluate and address impacts: The Regional Water Quality Control Board ("Regional Board") and the State Lands Commission have indicated that upon decommissioning of the power plant, they will undertake an environmental review of the Project to determine what, if any, additional design, technology or mitigation measures should be required. Further, and to the extent that there are modifications to the Project as a result of power plant decommissioning or to comply with State Lands Commission or Regional Board requirements, such modifications would also be subject to review by the Coastal Commission for Coastal Act compliance.

For these reasons, Poseidon asks the Commission to reject Staff's argument about phasing, and to approve Poseidon's MLMP as set forth in Exhibit A, without Staff's recommended changes from the Staff Report.

III. LAGOON DREDGING CREDIT SHOULD BE EVALUATED IN THE FUTURE

Pursuant to Poseidon's proposed MLMP, the Commission may decide at a later date whether Poseidon should receive any restoration credit for assuming dredging obligations of the Agua Hedionda Lagoon. Poseidon has not requested that dredging credit be applied to its mitigation obligations now; on the contrary, Poseidon is asking the Commission only to leave open the possibility of allowing such credit in the future if Poseidon assumes dredging obligations. Staff argues, however, that the Commission should decide now that Poseidon's potential dredging is not subject to restoration credit – even though approval of the MLMP does not involve any dredging approval.

Staff argues that Lagoon dredging would be inconsistent with Special Condition 8's requirement that mitigation be in the form of creation, enhancement or restoration of wetland habitat, but that argument is not supported by the evidence. The Lagoon supports a wide range of beneficial uses, including over 300 acres of marine wetlands and a variety of recreational activities, and needs to be dredged for those uses to continue. The sand dredged from the Lagoon would be placed on adjacent beaches so as to maintain, restore and enhance habitat for grunion spawning and enhance opportunities for public access and recreation along the shoreline. In recognition of the value these uses, the Commission previously granted wetlands restoration credit for inlet maintenance for Edison's SONGS project, and this precedent allowed one acre of restoration credit for every 3.3 acres of tidally exchanged wetlands supported by dredging. As applied to Poseidon, such credit would represent seventeen times the required 5.5 acres of mitigation required under Phase II. The MLMP does not specify the amount of restoration credit Poseidon should receive for dredging, and ultimately the Commission would need to determine the amount of credit to which Poseidon is entitled (if any) if Poseidon applies for such credit.

Finally, Staff argues that credit for dredging cannot be granted because EPS is obligated to dredge the Lagoon, and there is neither an agreement with EPS for Poseidon to undertake dredging nor is EPS a co-applicant for the Project. As discussed above, Poseidon is not asking for dredging credit now, only the possibility of such credit in the future, and Poseidon would provide the Commission with any dredging agreement with EPS, or a new Coastal Development Permit Application that may include EPS as a co-applicant, at the time it requests such credit. Accordingly, Staff's argument is without merit, and Poseidon asks the Commission to approve the MLMP as proposed by Poseidon in Exhibit A.

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W5b

CONDITION COMPLIANCE

July 24, 2008

To: To Commissioners and Interested Parties

From: Peter Douglas, Executive Director
Alison Dettmer, Deputy Director, Energy, Ocean Resources, and Federal Consistency Division
Tom Luster, Staff Environmental Scientist, Energy, Ocean Resources, and Federal Consistency Division

Regarding: **Condition Compliance for CDP No. E-06-013** – Poseidon Resources (Channelside), LLC; **Special Condition 8:** Submittal of a Marine Life Mitigation Plan

SUMMARY

On November 15, 2007, the Commission conditionally approved CDP E-06-013 for Poseidon Resources (Channelside), LLC (Poseidon) for construction and operation of a desalination facility to be located adjacent to the Encina Power Plant in Carlsbad, San Diego County. As part of the Adopted Findings for its approval, the Commission imposed **Special Condition 8**, which required Poseidon to submit for further Commission review and approval, a Marine Life Mitigation Plan.¹

On July 7, 2008, Poseidon submitted to Commission staff its proposed Marine Life Mitigation Plan (the Plan). This report provides staff's analysis of the Plan, staff's evaluation of whether the Plan conforms to the Adopted Findings and **Special Condition 8**, and staff's recommendation as to whether the Commission should approve the Plan.

In brief, staff's analysis shows that the Plan as submitted does not conform to the Adopted Findings and **Special Condition 8**. However, if modified as described herein, staff believes the modified Plan would conform to the applicable Findings and **Special Condition 8**. Staff therefore recommends the Commission **approve** the Plan, as modified herein. The modifications staff has identified as being necessary for Plan approval are summarized below and are further detailed in Sections 1.1 and 4.0 of this memorandum.

¹ The Commission's approval of this CDP also included **Special Condition 10**, which required Poseidon to submit for Commission review and approval an Energy Minimization and Greenhouse Gas Reduction Plan. That Special Condition and Poseidon's submitted plan are evaluated in a separate staff report under Item W5a of the August 6, 2008 Commission hearing.

Staff recommends the Plan be modified to include the following:

- 1) Poseidon shall create or restore between 55 and 68 acres of coastal estuarine wetland habitat within the Southern California Bight.
- 2) Poseidon shall implement its Marine Life Mitigation Plan in conformity to the conditions provided in Exhibit 2 of this memorandum.
- 3) Within 60 days of the Commission's approval of this modified Plan, Poseidon shall submit for the Executive Director's review and approval a revised Plan that includes these modifications.

The first recommendation is based on a review of Poseidon's proposed Plan by staff and the Commission's independent scientific experts.² Poseidon's entrainment study identified impacts that these reviewers believe require more mitigation than Poseidon has proposed. Staff further believes that this amount of mitigation is necessary to ensure the project conforms to **Special Condition 8** and Sections 30230, 30231, and 30260 of the Coastal Act. Based on results from Poseidon's entrainment study, this range in acreage – from 55 to 68 acres – represents the range in statistical confidence that would provide the Commission with 80% (i.e., 55 acres) to 95% confidence (i.e., 68 acres) that the mitigation would fully mitigate the impacts identified in the study. Section 4.2 of this memorandum provides a more detailed discussion.³

The second recommendation is meant to ensure that mitigation is timely and successful. It would require Poseidon to implement its mitigation subject to the conditions similar to those the Commission required of Southern California Edison at its San Dieguito Restoration Project (see, for example CDPs #183-73 and #6-04-88). Although Poseidon's current Plan does not commit to provide mitigation at a particular site, Poseidon had previously identified a mitigation site in San Dieguito Lagoon adjacent to Edison's as the best location to mitigate for its entrainment impacts. Staff recommends the two projects be held to similar standards. The Commission's scientific experts concur with this recommendation. Section 4.2 provides a more detailed discussion of this recommendation.

The third recommendation is meant to help Poseidon and the Commission implement the approved mitigation plan. Additionally, the 60-day deadline in the recommendation would be consistent with the requirement imposed by the San Diego Regional Water Quality Control Board that Poseidon provide a mitigation plan for Board approval by October 9, 2008.⁴

² Staff consulted with members of the Commission's Marine Review Committee. Committee members are identified in Section 3.0 of this memorandum.

³ As an alternative to staff's recommendation, the Commission may wish to require mitigation in a manner similar to past decisions in which it applied a mitigation ratio to the identified level of impact. If the Commission selects this alternative approach, staff recommend mitigation be provided at between a 2:1 to 3:1 ratio, which would result in from 85 to 127.5 acres of coastal estuarine wetland habitat as mitigation.

⁴ The Regional Board's Order, adopted on April 9, 2008 requires, in part: "*Within six months of adoption of this resolution, Poseidon shall submit to the Regional Board Executive Officer, for approval by the Regional Boards an amendment to the 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, as required by Section VI.C.2(e) of Order No. R9-2006-0065; and shall resolve the concerns identified in the Regional Board's February 19, 2008 letter to Poseidon Resources, and the following additional concerns:*

With these recommended modifications, staff believes Poseidon’s Plan would conform to applicable provisions of **Special Condition 8**.

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Exhibit 1 – Poseidon’s Proposed Marine Life Mitigation Plan

Exhibit 2 – Staff’s Proposed MLMP Conditions

1.0 MOTION & RESOLUTION

Motion:

*“I move that the Commission approve the Marine Life Mitigation Plan attached to the staff recommendation as Exhibit 1 if modified as shown in Section 1.1 below and Exhibit 2 of this memorandum, as compliant with **Special Condition 8** of CDP E-06-013.”*

Resolution to Approve:

*The Commission hereby finds that the compliance plan titled “Marine Life Mitigation Plan” prepared and submitted by the permittee, Poseidon Resources (Channelside) LLC, dated July 3, 2008, if modified as shown in Section 1.1 and Exhibit 2 of the July 24, 2008 Commission staff report, is adequate, if fully implemented to comply with **Special Condition 8** of CDP E-06-013.*

-
- a) Identification of impacts from impingement and entrainment;
 - b) Adequate monitoring data to determine the impacts from impingement and entrainment;
 - c) Coordination among participating agencies for the amendment of the Plan as required by Section 13225 of the California Water Code;
 - d) Adequacy of mitigation; and
 - e) Commitment to fully implement the amendment to the Plan.

Staff Recommendation:

Staff recommends a “**YES**” vote, which will result in the **approval** of the modified plan as compliant with the Adopted Findings and **Special Condition 8** and adoption of the motion, resolution, and findings herein. The motion passes only by an affirmative vote of a majority of the Commissioners present. Staff’s recommended modifications are provided in Section 1.1 below, and further detailed in Section 4.0 of this memorandum. If these recommended modifications are not incorporated into the Plan, staff recommends the Commission find the Plan, as submitted, does not conform to **Special Condition 8** and staff would therefore recommend the Plan be denied.

1.1 RECOMMENDED MODIFICATIONS

- 1) Poseidon shall create or restore between 55 and 68 acres of coastal estuarine wetland habitat within the Southern California Bight.
- 2) Poseidon shall implement its Marine Life Mitigation Plan in conformity to the conditions provided in Exhibit 2 of this memorandum.
- 3) Within 60 days of the Commission’s approval of this modified Plan, Poseidon shall submit for the Executive Director’s review and approval a revised Plan that includes these modifications.

2.0 STANDARD OF REVIEW

The Commission must determine whether the subject plan conforms to **Special Condition 8**, which states:

*“**Marine Life Mitigation Plan: PRIOR TO ISSUANCE OF THE PERMIT**, the Permittee shall submit to and obtain from the Commission approval of a Marine Life Mitigation Plan (the Plan) that complies with the following:*

- a) Documentation of the project’s expected impacts to marine life due to entrainment and impingement caused by the facility’s intake of water from Agua Hedionda Lagoon. This requirement can be satisfied by submitting a full copy of the Permittee’s Entrainment Study conducted in 2004-2005 for this project.*
- b) To the maximum extent feasible, the mitigation shall take the form of creation, enhancement, or restoration of aquatic and wetland habitat.*
- c) Goals, objectives and performance criteria for each of the proposed mitigation sites. It shall identify specific creation, restoration, or enhancement measures that will be used at each site, including grading and planting plans, the timing of the mitigation measures, monitoring that will be implemented to establish baseline conditions and to determine whether the sites are meeting performance criteria. The Plan shall also identify contingency measures that will be implemented should any of the mitigation sites not meet performance criteria.*
- d) Requires submittals of ”as-built” plans for each site and annual monitoring reports for no less than five years or until the sites meet performance criteria.*

- e) *Defines legal mechanism(s) proposed to ensure permanent protection of each site – e.g., conservation easements, deed restriction, or other methods.*

The Permittee shall comply with the approved Plan. Prior to implementing the Plan, the Permittee shall submit a proposed wetlands restoration project that complies with the Plan in the form of a separate coastal development permit application for the planned wetlands restoration project.”

The Commission’s Findings supporting **Special Condition 8** state that the Plan is ensure that all project-related entrainment impacts will be fully mitigated and that marine resources and the biological productivity of coastal waters, wetlands, and estuaries, will be enhanced and restored in compliance with Coastal Act Sections 30230 and 30231. The Findings further state that the Plan must provide mitigation to the maximum extent feasible through creating, enhancing, or restoring aquatic and wetland habitat and must include acceptable performance standards, monitoring, contingency measures, and legal mechanisms to ensure permanent protection of the proposed mitigation sites.

3.0 PLAN DEVELOPMENT AND REVIEW

On November 15, 2007, the Commission approved CDP No. E-06-013 for Poseidon’s proposal to construct and operate a desalination facility in Carlsbad, San Diego County. As part of that approval, the Commission required Poseidon, through **Special Condition 8**, to submit for additional Commission review and approval a Marine Life Mitigation Plan addressing the impacts that will be caused by the facility’s use of estuarine water and entrainment of marine organisms.

Since the Commission’s project approval in November 2007, staff and Poseidon have worked to develop a Plan that would meet the requirements of **Special Condition 8** and would be consistent with the Commission’s Findings. In March 2008, and as required by **Special Condition 8**, Poseidon provided a copy of its entrainment study for Commission staff review. Staff provided the study to Dr. Pete Raimondi, an independent scientist with expertise in evaluating entrainment studies, for his review and recommendations (described in more detail in Section 4.0 below).⁵ Dr. Raimondi provided the initial results of his review and recommendations to Poseidon in April 2008. In May 2008, staff conducted with Poseidon an interagency meeting with representatives from state and local agencies to determine what mitigation options might be available and feasible for Poseidon to include as part of its Plan.

⁵ Dr. Raimondi is Professor and Chair of Ecology and Evolutionary Biology at the University of California, Santa Cruz Center for Ocean Health, Long Marine Lab. Dr. Raimondi is considered by many to be California’s leading expert on entrainment analysis. He has been a key participant and reviewer of most of the entrainment studies done along the California coast during the past decade, including those done for the Diablo Canyon Nuclear Power Plant, the Huntington Beach Generating Station, Morro Bay Power Plant, and Moss Landing Power Plant. He is also a member of the Coastal Commission’s Marine Review Committee responsible for determining mitigation needed for the San Onofre Nuclear Generating Station (SONGS) and providing review and oversight for the SONGS mitigation work at San Dieguito Lagoon.

Attendees include representatives from:

California Department of Fish and Game	City of Carlsbad
California Department of Transportation	City of Vista
California State Lands Commission	U.S. Fish and Wildlife Service
San Diego Regional Water Quality Control Board	

In June 2008, based in part on concerns Poseidon expressed about Dr. Raimondi's review and recommendations, staff asked the Commission's Marine Review Committee (MRC)⁶ to review Dr. Raimondi's conclusions and make further recommendations for Poseidon to include in its proposed Plan. The MRC review is described in more detail in Section 4.0.

Also in June 2008, staff provided Poseidon a copy of the conditions the Commission had required of Southern California Edison (Edison) for its wetland restoration project at San Dieguito Lagoon. Until June, Poseidon had been proposing a site adjacent to Edison's as the best site for its mitigation. Based on the Commission's Findings and discussion at the November 2007 hearing, staff recommended to Poseidon that it incorporate modified versions of the Edison conditions into its proposed Plan to ensure the two adjacent mitigation sites would be subject to compatible and consistent mitigation requirements. These conditions are in Exhibit 2.

On July 7, 2008, staff received Poseidon's currently proposed Plan for review by the Commission (see Exhibit 1). On July 14, 2008, staff again consulted with the MRC to evaluate changes Poseidon had proposed in this most recent submittal. Poseidon's current proposed Plan, and the results of reviews by staff, Dr. Raimondi, and the MRC are described in Section 4.0 below.

4.0 ANALYSIS FOR CONFORMITY TO SPECIAL CONDITION 8

Staff's evaluation of the proposed Plan shows that the Plan, as submitted, does not ensure conformity to **Special Condition 8**. Staff recommends the Plan be modified to address two main areas in which the Plan does not yet conform to the condition: 1) the adequacy of mitigation proposed in the Plan; and, 2) assurances that the Plan will result in successful mitigation being implemented in a timely manner.

Section 4.1 below describes the submitted Plan's key elements. Sections 4.2 and 4.3 evaluate elements of the Plan that staff believes require modification. Staff's recommendations are based on review by staff and by members of the Commission's Marine Review Committee (MRC), as

⁶ The Marine Review Committee is a team of independent scientists that provides guidance and oversight to the Commission on ecological issues associated with the San Dieguito Restoration Project. That Project is being implemented by Southern California Edison pursuant to requirements of coastal development permits issued by the Commission and is meant to mitigate for marine resources losses caused by the San Onofre Nuclear Generating Station (SONGS). The Marine Review Committee consists of **Dr. Richard Ambrose**, Professor and Director of Environmental Science & Engineering Program, Department of Environmental Health Sciences, University of California Los Angeles; **Dr. John Dixon**, Senior Ecologist, California Coastal Commission; **Dr. Mark Page**, Marine Science Institute, University of California at Santa Barbara; **Dr. Pete Raimondi**, Professor and Chair of Ecology and Evolutionary Biology, University of California at Santa Cruz; **Dr. Dan Reed**, Marine Science Institute, University of California at Santa Barbara; **Dr. Steve Schroeter**, Marine Science Institute, University of California at Santa Barbara; and, **Dr. Russ Schmitt**, Director of Coastal Research Center, University of California at Santa Barbara.

described in Section 3.0. They also reflect comments received from other agencies, including the U.S. Fish and Wildlife Service and the California State Lands Commission. The discussions below also identify concerns Poseidon expressed about staff's recommendations and staff's response to those concerns. Staff believes its third recommendation, which would require Poseidon to submit a revised Plan that incorporates these modifications, would help the Commission and Poseidon in implementing the modified Plan.

4.1 PLAN DESCRIPTION

Poseidon's proposed Plan includes the following main elements:

- **Phased Mitigation Approach:** Poseidon proposes that it implement necessary mitigation in two phases. Phase I would result in 37 acres of wetland restoration or creation within the Southern California Bight. During this phase, Poseidon would also conduct technology review to determine whether new or developing technologies would be reasonably feasible to reduce entrainment. It would also conduct a new entrainment study ten years after beginning operations to determine whether additional mitigation is needed for the facility's entrainment impacts. Phase I would apply during the time Poseidon's desalination facility operations are concurrent with operations of the power plant's cooling water system.

Phase II would occur if the power plant stops operating or, for three consecutive years, operates at a level that provides less than 15% of the water Poseidon needs to operate the desalination facility (i.e., about 16.6 billion gallons per year)⁷. This amount would be based on the power plant's average water use over any three-year period. Under Phase II, Poseidon would conduct a new entrainment analysis and evaluate potential new technologies, similar to the review described in Phase I. Poseidon would then provide the results of those analyses to the Commission for review. If the Commission determines the analyses show a need for additional mitigation or the evaluations show certain technologies might reduce entrainment impacts, Poseidon would request its Plan be amended to require those changes. If additional mitigation is needed, Poseidon would propose one of the following:

- Assume dredging obligations for Agua Hedionda Lagoon from the power plant and obtain mitigation credit of up to 81 acres of restoration credit for conducting dredging; or,
 - Provide additional wetland mitigation of up to 5.5 acres.
- **Suggested Conditions:** The Plan includes suggested conditions that Poseidon would use to implement further studies, evaluate new technologies, select its mitigation site(s), and implement mitigation options. Many of these are modified versions of conditions the Commission required Edison use to implement its mitigation measures for the impacts to marine life from the San Onofre Nuclear Generating Station. These are discussed in Section 4.3 below.

⁷ Poseidon's average withdrawal of 304 million gallons per day would equal almost 111 billion gallons per year. 15% of that amount is about 16.6 billion gallons, or about 45 million gallons per day.

4.2 ANALYSIS – ADEQUACY OF MITIGATION

This section evaluates the following elements of Poseidon’s proposed Plan:

- Section 4.2.1: Analysis of Poseidon’s entrainment study
- Section 4.2.2: Determining the mitigation needed to address identified impacts
- Section 4.2.3: Analysis of Poseidon’s phased approach
- Section 4.2.4: Analysis of dredging as proposed mitigation

4.2.1 Analysis of Poseidon’s Entrainment Study

Special Condition 8 required Poseidon to submit its entrainment study for Commission staff review. In March 2008, Poseidon submitted data and modeling results from its study. The study was conducted using the Empirical Transport Model (ETM), which is used to identify the level of adverse effect caused by entrainment. The model compares the portion of a population at risk of entrainment to the portion of that population actually entrained. It calculates this proportional mortality for each of the main species subject to entrainment, and uses the source water area of each species – that is, the total volume or area of water in which species are at risk of being entrained – to calculate the Area of Production Foregone (APF), which provides an estimate of the average area of habitat that would be needed to produce the organisms lost to entrainment. As shown below, this APF provides the basis for determining the amount of mitigation needed to address entrainment impacts.

As described in Section 3 above, staff provided Poseidon’s data and study results to Dr. Raimondi for review. In reviewing the study, Dr. Raimondi concluded the following:

- **Adequacy of Study:** Dr. Raimondi found that, as submitted, Poseidon’s study could not be evaluated for its technical merits or its estimates of impacts. However, by reviewing additional relevant Poseidon documents and documents from the associated power plant’s entrainment study, and by working with the consultants that had conducted Poseidon’s study (Tenera Consultants), Dr. Raimondi was able to determine that the study’s sampling and data collection methods were consistent with those used in other recent studies conducted in California pursuant to the protocols and guidelines used by the U.S. EPA, Regional Water Quality Control Boards, California Energy Commission, and Coastal Commission.

Dr. Raimondi also found that the study provided adequate data to determine the types and numbers of organisms that would be subject to entrainment and to determine the area of the source water bodies – that is, the area of Agua Hedionda and nearshore ocean waters where entrainable organisms would be subject to entrainment. The study identified a source water area within Agua Hedionda of 302 acres and a nearshore source water area of about 22,000 acres. Poseidon’s calculations were generally consistent with those used in other recent studies, although the calculations Poseidon used to determine its source water areas differed from those used in other recent studies to reflect the tidal exchange between Agua Hedionda Lagoon and the nearshore ocean environment.

- Determining the Effects of Poseidon’s Entrainment:** Poseidon concluded that the entrainment caused by 302 MGD of water withdrawal by the desalination facility would result in an Area of Production Foregone (APF) of 37 acres in Agua Hedionda Lagoon. Dr. Raimondi’s review revealed that Poseidon’s APF calculation was accurate, albeit at the 50% confidence level – that is, the 37-acre APF represented the area for which the study could assure at least 50% confidence that the area reflected the full extent of Poseidon’s entrainment impacts in the Lagoon. This calculation is based on applying standard statistical techniques to the error rates Poseidon generated in its study. Dr. Raimondi also used those error rates to calculate APFs at the 80% and 95% confidence levels – that is, the number of acres for which the area of full entrainment impacts could be described with at least 80% or 95% confidence. This resulted in APFs of 49 and 61 acres, respectively.

Poseidon’s study did not include an APF for the area of nearshore ocean waters that would be affected by entrainment; therefore, using Poseidon’s data, Dr. Raimondi calculated an APF for the entrainment effects Poseidon would cause in these nearshore waters. At the same 50%, 80%, and 95% confidence levels, the APFs would be 55, 64, and 72 acres, respectively. The APFs for both source water areas and each confidence level are shown in Table 1 below.

Table 1: APF Totals

Source water areas:	APF (in acres) at three levels of confidence:		
	50%	80%	95%
Estuarine: 302 acres of source water	37	49	61
Nearshore: 22,000 acres of source water	55	64	72
Total APF	92 acres	113 acres	133 acres

Poseidon raised a number of concerns with staff’s and Dr. Raimondi’s review (see Exhibit B of the MLMP). In response, and to supplement Dr. Raimondi’s review, Commission staff requested that the MRC assess the review and respond to Poseidon’s concerns.

Poseidon stated its study made a number of conservative assumptions that result in an overestimate of the mitigation needed and that those conservative assumptions include:

- The study overestimated the number of larvae in the lagoon and assumed a greater amount of entrainable larvae than are actually present.* In response, Dr. Raimondi and the MRC noted that this type of study is based on actual sampling data, not estimates. The data reviewed were those Poseidon provided from its sampling efforts, so there should be no overestimate or assumption of a greater number of larvae than were actually sampled. If Poseidon believes the data are incorrect, that would suggest either that the raw data should be re-evaluated or the study should be run again. Further, if Poseidon’s contention were true – that is, if the study overstated the number of larvae in the Lagoon

– this would result in a higher APF and would therefore result in a need for *more* mitigation.⁸

- *The study assumes the project will render all affected acreage (i.e., the APF) non-functional, even though that acreage would only be partially affected and would continue to allow numerous other species to function.* In response, the MRC reiterated that these entrainment studies do not assume the complete loss of ecosystem function within an area of APF; instead, they identify only the area that would be needed to replace the numbers and types of species identified in the study as subject to entrainment. The APF is used to determine impacts to only those species most affected by entrainment, and the mitigation resulting from the APF is meant to account only for those effects.

- *The study protocols assume 100% mortality for entrained organisms; however, Poseidon believes actual mortality will be significantly lower. Poseidon also contends that it should be required to provide less mitigation based on its contention of a lower mortality rate.* In response, the MRC noted that the protocols used in these entrainment studies include an assumption of 100% mortality based on guidance from the U.S. EPA and reflecting the practice of California’s State and Regional Water Boards, the California Energy Commission, and the Coastal Commission in conducting and evaluating these studies. This assumption applies to these studies regardless of the type of intake and discharge system being evaluated. For example, although each power plant or desalination facility may use different water volumes, have different and variable water velocities and levels of turbulence, use different types of screens, pumps, and other equipment, and draw in a different mix of organisms, all entrainment studies similar to Poseidon’s have used this same 100% mortality rate. Further, there are no peer-reviewed scientific studies that support using a lower mortality rate for different types of power plant or desalination systems that cause entrainment. In the case of Poseidon’s desalination facility, entrained organisms will be subject to a number of stressors – including high pressures, significant changes in salinity, possible high temperature differences if the power plant is operating, etc. – and they will then be discharged to a different environment than is found in Agua Hedionda. Any one or a combination of these stressors could result in mortality.

Poseidon’s proposed phased mitigation approach, which is based in part on its contention of lower mortality rates, is evaluated in more detail below. One element of this approach, however, is that Poseidon states it might use alternative screening systems to reduce entrainment or entrainment mortality. However, staff considers this only speculative at this time, and notes that screening systems that have been tested for reducing entrainment have not been found effective in the marine environment. The current scientific understanding is that entrainment impacts are based on an assumption of 100% mortality of organisms present in the full volume of water drawn into an intake system, and that is the basis of the analysis herein.

⁸ To provide a simple example, the APF is based in part on proportional mortality, which is the ratio of the number of organisms entrained compared to those at risk of being entrained. Assuming the number of entrained organisms remains the same, the fewer organisms in the Lagoon, the higher the proportion of those organisms entrained – therefore, Poseidon’s contention results in a higher proportional impact area.

4.2.2 Determining the mitigation needed to address identified impacts

The APFs generated from the study and shown in Table 1 identify the extent of expected entrainment impacts, and also serve as the basis for identifying the type and amount of mitigation needed to address those impacts. Past entrainment studies have generally used the 50% confidence level APF as the basis for mitigation and applied a mitigation ratio (e.g., 1:1, 2:1, 3:1, etc.) to compensate for mitigation occurring at a distance from the affected area, to reflect a temporal loss of habitat functions caused by the impact, to reflect mitigation that provides a different type of habitat than the affected area, or other concerns. This option is described briefly later in this Section.

For this review, however, Dr. Raimondi provided an alternative approach to determine the amount of mitigation needed, based on two main assumptions:

- First, that any mitigation provided would be in the form of restored habitat similar to the types of habitat that produced or supported the affected entrained organisms – that is, that mitigation would consist of tidally-influence salt marsh or shallow water areas similar to those found in Agua Hedionda Lagoon.
- Second, that the mitigation provided would be fully successful – that is, the mitigation site would provide fully functioning habitat that would meet required performance standards, contingency plans, etc., required for such projects to ensure success. This was based on an additional assumption – that Poseidon would be providing mitigation at a site in San Dieguito Lagoon adjacent to Edison’s restoration site and would be subject to the same conditions the Commission required of Edison. Dr. Raimondi and the MRC believe the conditions required of Edison provide a high level of certainty that Edison’s restoration efforts will be successful and that they would provide a similar level of certainty for Poseidon’s mitigation at this location.

Using the above assumptions, and using the APF figures noted above, Dr. Raimondi concluded with at least 50% confidence that creating or restoring 37 acres of suitable and fully functioning estuarine habitat would fully replace the lost productivity of Agua Hedionda Lagoon, that 49 acres would be needed to provide an 80% level of certainty, and that 61 acres would be needed to reach a 95% level of certainty. By applying the same approach to the nearshore APFs, Dr. Raimondi concluded that creating or restoring 55 acres of open water habitat would be needed to provide at least 50% certainty that that entrainment effects in that source water area would be fully mitigated, that 64 acres were needed to provide 80% certainty, and 72 acres would provide 95% certainty. However, in recognition of the impracticality of creating 55 to 72 acres of offshore open water habitat and recognizing the relatively greater productivity rates per acre of estuarine wetland habitats, Dr. Raimondi suggested that these offshore impacts be “converted” to estuarine mitigation areas. That is, by assuming that successfully restored wetland habitat would be ten times more productive than a similar area of nearshore ocean waters, every ten acres of nearshore impacts could be mitigated by creating or restoring one acre of estuarine habitat.⁹

⁹ This approach – converting offshore entrainment impacts to areas of wetland mitigation – has been used to help determine mitigation in several recent California power plant siting cases, including Huntington Beach (00-AFC-13), Morro Bay (00-AFC-12), and others.

Applying this 10:1 ratio to the nearshore APFs results in 5.5, 6.4, and 7.2 acres, respectively. Although this approach would result in “out of kind” mitigation, it is also expected to produce overall better mitigation – not only is it not practicable to create nearshore, open water habitat, that habitat type is already well-represented along the shoreline, whereas creating or restoring coastal estuarine habitat types would support a long-recognized need to increase the amount of those habitat types in Southern California.¹⁰ These totals are shown Table 2 below.

Table 2: Adjusted APF Totals

Habitat Type	APF (in acres) at three levels of confidence			Conversion ratio	Resulting APF (in acres) at three levels of confidence		
	50%	80%	95%		50%	80%	95%
Estuarine	37	49	61	1:1	37	49	61
Nearshore	55	64	72	10:1	5.5	6.4	7.2
Total Mitigation					42.5	55.4	68.2

In sum, Dr. Raimondi concluded that creating 55.4 to 68.2 acres of fully functioning estuarine habitat similar to habitat in Agua Hedionda Lagoon would provide between 80 to 95% confidence that Poseidon’s entrainment impacts would be fully mitigated. This conclusion is also based on Poseidon’s mitigation being subject to conditions similar to Edison’s, which is discussed in more detail in Section 4.2.3 below.

Poseidon contends that Dr. Raimondi’s recommendation to apply an 80-95% level of certainty for mitigation is “extraordinary and unprecedented” and would result in excess mitigation for the project’s expected impacts. In response, Dr. Raimondi and the MRC state that the confidence levels used are based on the error rates Poseidon calculated as part of its study, and generating these calculations is a standard practice for this type of entrainment study. Dr. Raimondi’s recommendation of using the 80-95% confidence level is “unprecedented” only in that past studies have used the 50% confidence level and then applied a mitigation ratio, such as 2:1 or 3:1, to reflect the lower confidence level and to include consideration of mitigation that may be “out of kind” or provided at some distance from the affected area. Dr. Raimondi’s proposal, as supported by the MRC and Commission staff, would actually result in less mitigation acreage than that standard mitigation approach, but it would have higher certainty of success.

Staff recognizes that the Commission could apply a mitigation ratio to the identified level of impact, consistent with past mitigation determinations for wetland impacts. For example, applying a 2:1 ratio to the 50% 42.5 acre total APF would yield 85 acres of restored coastal wetland habitat, and applying a 3:1 ratio would yield 127.5 acres of habitat. If the Commission selects this approach, staff believes these ratios would be appropriate minimums to apply to reflect that the Plan does not identify specific mitigation sites and the site(s) selected could be more than a hundred miles from the impact site at and near Agua Hedionda.

¹⁰ See, for example, the Southern California Wetlands Recovery Project at <http://www.scwrp.org/index.htm>

However, as described previously, Commission staff believes that Dr. Raimondi's proposed approach of creating 55.4 to 68.2 acres would be an adequate and preferable approach – if Poseidon's proposed Plan is also modified to include staff's other recommended modifications, including the one described in the next section of this memorandum.

4.2.3 Analysis of Proposed Mitigation Phasing

As noted above, Poseidon's Plan includes a proposed phased approach to mitigation, which would be based on changes in power plant operations or possible changes in technology. For several reasons, staff recommends the Commission not accept this aspect of the Plan and instead require a specific type and amount of mitigation as described above. The entrainment impacts described in the Commission's Findings were based on Poseidon application to withdraw 304 million gallons per day of estuarine water to operate its desalination facility, and staff recommends the Commission use this as the basis for its decision on the amount of mitigation needed to address this impact.

Staff believes this phasing approach is speculative in that it is tied to unknown future operations of the power plant. Additionally, information in the record shows that the power plant owner expects to replace the existing power plant within the next few years and to operate the existing plant only at very low levels or on a back-up basis until it is no longer needed to support the regional electrical power grid. More recently, the power plant owner announced that it would consider constructing its own desalination facility to provide water for its proposed new power plant. If built, this facility would use only about one percent of the water Poseidon proposes to use, and so would likely have a relatively minor affect on the overall mitigation needed to adequately address the impacts of both facilities.

Staff also believes that tying Poseidon's mitigation to power plant operations would be inappropriate for purposes of the coastal development permit and the Commission's Findings. Poseidon's coastal development permit application did not include the power plant owner as a co-applicant, and the Commission has made no determinations about how the power plant should or may operate.

4.2.4 Analysis of dredging as project mitigation

Similarly, staff recommends the Commission not approve Poseidon's proposal to allow it to use as mitigation during Phase II the dredging activities now being conducted by the power plant owner. Poseidon proposes a formula by which it could obtain up to 81 acres of credit for conducting dredging in Agua Hedionda Lagoon. However, the Commission has not considered dredging in and of itself to be mitigation. Dredging that the power plant has conducted in the past has been done to maintain its intake channel, and similarly, Poseidon's main purpose for dredging would be to maintain that channel. The Commission has considered habitat benefits resulting from dredging for that primary purpose as merely incidental to the primary purpose of the dredging activities rather than mitigation. Had those dredging activities instead been considered mitigation, the power plant owner may have been required to continue dredging to maintain the area of mitigation, regardless of the need for an intake structure.

Further, as noted in the Findings, the power plant owner also owns the Lagoon and has expressed its intentions to maintain the Lagoon for the foreseeable future. Additionally, the power plant owner is not a permit co-applicant with Poseidon, and the permit record includes no agreement between Poseidon and the owner regarding dredging, so staff believes it would not be appropriate for the Commission to approve a plan that may create an expectation that Poseidon would take on these activities on the owner's property without landowner approval.

As Poseidon notes in its Plan, the Commission accepted as part of Edison's San Dieguito restoration project a commitment by Edison to maintain the San Dieguito tidal inlet in an open condition in perpetuity. However, in that instance, dredging was necessary for that project to support the more than 100 acres of restored tidal wetlands Edison had created as a substantial portion of the mitigation required pursuant to its SONGS coastal development permit. The Commission's acceptance of that mitigation element was also based on multiple years of study by the MRC, whose recommendation the Commission used in its decision. The MRC has not made a similar recommendation for Poseidon's proposal. Further, Poseidon has not proposed mitigation within Agua Hedionda that would require dredging.

Finally, Poseidon's proposal would not meet the provision of **Special Condition 8** requiring mitigation to be in the form of creation, enhancement, or restoration of aquatic and wetland habitat, to the maximum extent feasible. As noted above, there are wetland mitigation opportunities within the Southern California Bight well in excess of the amount needed to mitigate for this project's impacts, and Poseidon has not shown that it would be infeasible to provide the required type of mitigation.

4.3 ANALYSIS – ASSURANCE THAT MITIGATION WILL SUCCEED

Until recently, Poseidon had proposed that it provide wetland restoration at a site in San Dieguito Lagoon, adjacent to Edison's restoration project. Review by staff, Dr. Raimondi, and the MRC had been based on determining whether that site would provide suitable mitigation. In April 2008, Dr. Raimondi concluded that Poseidon's proposed San Dieguito site would likely provide suitable habitat for the losses of estuarine larvae at Agua Hedionda if the restored habitat was similar to the habitat affected at Agua Hedionda. In June 2008, Dr. Raimondi and the MRC also concluded that the San Dieguito site would also provide at least partial mitigation for some species affected in Poseidon's nearshore impact area. Also in June, staff provided Poseidon with a modified version of the conditions the Commission required Edison to meet for conducting its site selection, construction, monitoring, and other aspects of its restoration plan, and recommended that Poseidon include these conditions as part of its proposed Plan. These are provided in Exhibit 2.

Since then, Poseidon altered its Plan so that San Dieguito is no longer necessarily Poseidon's preferred site. The Plan instead proposes that Poseidon select a site or sites somewhere within the Southern California Bight that meet conditions shown in Sections 3.1 and 3.2 of the Plan. Those conditions include further modifications to the conditions staff provided in June.

Staff asked the MRC to review Poseidon's two proposed changes – that is, its proposal to consider sites other than San Dieguito and the modifications in its Plan to staff's previously recommended conditions. Regarding staff's proposed conditions, the MRC believes those conditions – i.e., Exhibit 2 – would generally provide adequate assurance of success for a

restoration project to be implemented in most coastal estuarine areas of Southern California, although a higher degree of assurance would result if specific sites were identified. The MRC also determined that the changes Poseidon proposed to staff's conditions and included in its Plan would result in lesser mitigation standards than those required of Edison and would not provide equal assurance of mitigation success. The changes Poseidon proposed include the following:¹¹

- Staff recommended that Poseidon submit a complete coastal development permit application for its Final Restoration Plan within 24 months of Commission approval of its Preliminary Plan (i.e., the Plan being reviewed herein). Poseidon modified that recommendation in Section 4 of its Plan to allow submittal of that application either 24 months after issuance of the project coastal development permit or commencement of commercial operations of the desalination facility, whichever is later. This could substantially delay the implementation of mitigation and could result in several years of impacts occurring without mitigation.
- A proposed change to Poseidon's Plan at Section 3.1(d) and at Section 3.2(c) would reduce the required buffer zone at its mitigation sites from no less than 100 feet wide to an average that could much less than 100 feet.
- A proposed change at Section 3.1(i) would allow the Plan to affect endangered species in a way not allowed under the Edison requirements.
- Poseidon proposes to change Section 3.3(c) to allow mitigation to occur in up to four sites, rather than up to two sites, as required of Edison, which could fragment the mitigation and reduce its overall value.
- Poseidon also proposed deleting a requirement at Section 5.4 that would require a designed tidal prism be maintained to ensure the wetland mitigation site has adequate tidal action.
- Poseidon proposes that any fees it pays for coastal development permits or amendments be credited against the budget needed to implement the mitigation plan.

Staff and the MRC reviewed these proposed changes and believe they would result in inadequate assurance that successful mitigation would be conducted in a timely manner. Staff's recommendation, therefore, is that the Plan be modified to include the conditions in Exhibit 2.

¹¹ For a full comparison, see Section 3 of Poseidon's Plan and Exhibit 2 showing staff's originally recommended conditions.



P O S E I D O N R E S O U R C E S

July 3, 2008

THIS DOCUMENT HAS BEEN PROVIDED TO COASTAL COMMISSION STAFF

VIA FEDEX

Chairman Krueger and Honorable Commissioners
California Coastal Commission
North Central Coast District
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Re: Carlsbad Desalination Project, CDP Application No. E-06-013
Proposed Marine Life Mitigation Plan Per Special Condition 8

Dear Chairman Krueger and Honorable Commissioners:

Poseidon Resources (Channelside) LLC (the "Applicant") requests that the Commission approve at its August 2008 meeting the proposed Marine Life Mitigation Plan (the "MLMP"), attached hereto as Exhibit A, which the Applicant has prepared pursuant to Special Condition 8 of the above-referenced Coastal Development Permit (the "Permit") for the Carlsbad Desalination Facility (the "Project"). The Commission approved the Permit at its November 15, 2007 hearing, including Special Condition 8, which requires the Applicant to submit a Marine Life Mitigation Plan for Commission review and approval before the Permit will issue.

This letter addresses several key issues regarding the MLMP that will be presented to the Commission at its August hearing. Specifically, the letter explains that the Applicant's proposed restoration acreage levels are accurate and conservative; that a phased approach to mitigation is appropriate for this Project and would ensure that any impacts to marine life are fully mitigated; and that the Applicant is entitled to receive restoration credit from the Commission if it assumes dredging obligations for the Agua Hedionda Lagoon and obtains a Coastal Development Permit for such dredging. For those reasons and others presented below, the Applicant believes that the MLMP fully addresses the Commission's concerns from the November 2007 meeting and the requirements of Special Condition 8, and that the Commission should therefore approve the proposed MLMP.

In addition to the MLMP, the Applicant is also submitting several related documents to assist the Commission in its evaluation of the MLMP. The contents of each of the submittals attached to this letter are explained in greater detail below, followed by a brief discussion of the Commission's authority to adopt the Plan and a discussion of outstanding administrative issues.

A. Marine Life Mitigation Plan

The Applicant's proposed MLMP (Exhibit A) is the culmination of several years of research and study by respected scientists – including evaluation from independent Coastal

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EXHIBIT NO. 1

APPLICATION NO.
E-06-013

Condition Compliance

Special Condition 8

Commission experts – and collaboration and input from a myriad of local, state and federal agencies including the California Coastal Commission, California State Lands Commission, San Diego Regional Water Quality Control Board, California Department of Fish and Game, California Department of Transportation, U.S. Fish and Wildlife Service, the City of Vista, San Diego County Water Authority and the City of Carlsbad. The MLMP sets forth the performance standards with which the Applicant will comply to develop and implement a wetland restoration project of up to 42.5 acres of wetland habitat that not only fully mitigates the Carlsbad Desalination Facility's "stand-alone" marine life impacts, but also provides mitigation beyond what is required to create, enhance and restore aquatic and wetland habitat and ensure long-term protection of the mitigation consistent with the Coastal Act. Specifically, the MLMP contains each of the following elements, as required by Special Condition 8:

- Requires the creation, enhancement, or restoration of aquatic and wetland habitat;
- Requires a Coastal Development Permit be submitted for a mitigation site or sites prior to commencement of project operations that exceeds any marine impacts caused by the project;
- Contains goals, objectives and performance criteria for proposed mitigation sites, ensures that the Applicant will provide specific creation, restoration, or enhancement measures that will be used at the selected mitigation site(s), and identifies certain contingency measures that may be implemented should there be issues in meeting the performance criteria;
- Requires submittals of plans and monitoring reports until the restoration site(s) meet the performance criteria; and
- Defines legal mechanism(s) to ensure permanent protection of each site.

Also pursuant to Special Condition 8, the Applicant has previously provided Commission Staff with a full copy of its Entrainment Study conducted in 2004-2005 to document the Project's expected impacts to marine life due to entrainment and impingement caused by the facility's intake of water from Agua Hedionda Lagoon.

B. Marine Life Mitigation Plan Rationale

Attached hereto as Exhibit B is a detailed explanation of the rationale that underlies several of the key elements contained in the MLMP (the "MLMP Rationale").

First, the MLMP Rationale provides support for the determination that up to 42.5 acres of habitat restoration, including 37 acres to compensate for Lagoon species impacts and an additional 5.5 acres to compensate for open species impacts, would more than fully mitigate the Project's "stand-alone" impacts to marine life. As set forth in the MLMP Rationale, the Applicant's proposed acreage for wetlands restoration is based on California Energy Commission ("CEC") methodology, is consistent with methodology used by the Commission to determine mitigation for the San Onofre Nuclear Generating Station ("SONGS") and the Moss

Landing Power Plant, and is consistent with the Regional Water Quality Control Board's methodology for analyzing marine impacts for the Diablo Canyon Power project. The MLMP Rationale also demonstrates that Dr. Pete Raimondi, the Commission's own independent expert, concluded that the Applicant's calculations are consistent with CEC methodology and Commission precedent, are consistent with Commission-accepted standards and procedures, and that the Applicant's entrainment study design is consistent with recent entrainment studies. In addition, the MLMP Rationale shows that the proposed restoration acreage is a very conservative overestimate of the number of acres needed to mitigate the facility's impacts to marine life because it is based on a multi-species approach to mitigation that: (1) assumes a greater amount of entrainable fish larvae in the Lagoon than are likely present; and (2) does not lower the restoration acreage based on the facts that the facility only partially impacts some of the Lagoon acreage.¹

Second, the MLMP Rationale presents the MLMP's phased mitigation approach, which addresses the fact that the Carlsbad Desalination Facility will function under different operating scenarios (first, as a co-located facility operating concurrently with the Encina Power Station, and later as a stand-alone facility once the Power Station is decommissioned) that will have different impact levels on marine life.

1. Mitigation During Co-Located Operations

As Poseidon's previous submissions have demonstrated, the Project would cause marine impacts from impingement and entrainment only when the Power Station is not utilizing its intakes for Power Station operations. Under the initial mitigation phase ("Phase I"), the Applicant would provide 37 acres of wetland restoration, which would substantially over-mitigate the Project's minor impacts to marine life by 2.5 times while the Power Station continues to operate.² This approach to project mitigation is extremely conservative for the following reasons that are explained in detail in Exhibit B:

- 37 acres of restoration would more than fully mitigate the Project's impacts as long as the Power Station provides at least 13% of the seawater for the Project. For example, from January 2007 to June 2008, the Power Station would have provided 65% of the water needed for the Project. Accordingly, only 14.9 acres of mitigation would have been required to completely mitigate the Project's marine impacts during that time period using CEC methodology;
- The Power Station is expected to operate for many years to provide grid stability to the San Diego Region, and last year it would have supplied 61% of the

¹ We understand that Commission Staff is advocating for a larger amount of restoration acreage, based on a standard that departs from past practice and has not been subject to peer review. Poseidon disagrees with Staff's approach, as set forth in more detail in Exhibit B.

² Based on Power Station operations from January 2007 to June 2008, during which the Power Station would have provided 65% of the water needed for the project.

seawater required for the Project, while through June of this year it would have provided 73% of the seawater required;

- While the Power Station continues to operate, new technologies or processes that are not available or feasible to implement today could be developed to reduce the Project's impacts to marine life. The Applicant would be incentivized to investigate and invest in those technologies so that it could implement reasonably feasible technologies once the Power Station is decommissioned to avoid additional mitigation costs; and
- The phased approach would enable the Applicant to evaluate its actual operations, whether its actual impacts to marine life are less than currently expected, and whether the 37-acres of restoration already provided would fully mitigate the Project's impacts when the Power Station is decommissioned.

2. Mitigation During "Stand-Alone" Operations

The MLMP Rationale also describes the second phase of mitigation ("Phase II"), which would be triggered if either the Power Station stops altogether using its existing seawater intakes for cooling purposes, or if the intakes provide less than 15% of the Applicant's needed water based on the Power Station's average water use over any three-year period. As set forth in the MLMP Rationale, under Phase II the Applicant would:

- Evaluate reasonably feasible technologies that are currently unavailable that could reduce marine life impacts, apply for a coastal development permit to implement any such technologies (if required), and proportionally reduce any remaining mitigation obligations based on the reduction to impacts resulting from implementation of the technologies;
- Assume dredging obligations for the Agua Hedionda Lagoon from the Power Station (if feasible) and obtain mitigation credit based on Commission precedent for similar dredging activities (such as those undertaken by SONGS);
- Perform additional wetland restoration if the Applicant cannot assume dredging obligations. Such restoration would be for up to 5.5 acres of wetland habitat, subject to possible reductions by the Commission based on: (1) the implementation of new technologies that reduce marine impacts; and/or (2) an evaluation from the Applicant regarding the marine life impacts from the Project's actual operations that demonstrates the 37-acres of restoration provided under Phase I has mitigated more of the Project's stand-alone impacts than originally projected.

Third, the MLMP rationale demonstrates how the Applicant's assumption of dredging obligations for the Agua Hedionda Lagoon would provide benefits to the marine environment. Based on Commission precedent for Lagoon dredging (including SONGS), such dredging activities should entitle the Applicant to substantial restoration credit to offset any outstanding

mitigation obligations. As explained in the MLMP Rationale, the Commission would determine the exact amount of credit that should be conferred on the Applicant after a hearing once the Applicant has assumed dredging obligations.

In sum, the MLMP Rationale demonstrates that the MLMP was prepared based on sound reasoning, that it is consistent with Commission practice and precedent, and that the MLMP is appropriate for approval.

C. Potential Mitigation Site in the San Dieguito Lagoon

In addition to preparing the MLMP, the Applicant has also prepared a detailed example of how the restoration of a specific wetlands site would comply with the requirements and obligations set forth in the MLMP, which is attached as Exhibit C. In its review of potential mitigation sites, the Applicant has spent considerable time, effort and resources evaluating the San Dieguito Lagoon as a site where a wetlands restoration project consistent with the MLMP could be feasibly implemented. Accordingly, and as set forth in Exhibit C, the Applicant has demonstrated how a restoration project in the San Dieguito Lagoon would conform to each of the MLMP's performance criteria in a manner consistent with the Coastal Act's requirements. This example confirms that the MLMP is a feasible mitigation plan, and that it is would be appropriate for the Commission to approve if specific restoration project local approvals are obtained. The MLMP contains several other mitigation sites that will be evaluated, and Poseidon will submit a Coastal Development Permit application for review by the Commission for one of those sites prior to the commencement of operations.

D. Commission Authority to Approve Marine Life Mitigation Plan

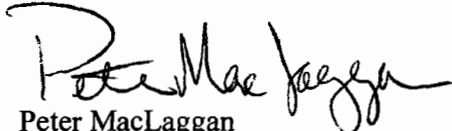
For the Commission's convenience, we would also like to clarify the Commission's authority to approve the MLMP. Pursuant to the Coastal Act regulations, mitigation measures "may specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way." (Cal Code Regs, tit. 14, §15126.4(a)(1)(B).) It also is consistent with Commission practice and precedent to approve mitigation plans such as the MLMP, which contain performance standards that may require later discretionary approvals from the Commission or a local agency. (See, e.g., CDP Application No. E-6-81-330-A (formerly 183-73), Southern California Edison, May 1997 (approving wetlands mitigation and reef mitigation plans for adverse impacts to the marine environment, which would later require CEQA and/or NEPA environmental impact analyses in connection with local, State or other agency approvals); CDP Application No. E-08-001, Southern California Edison, May 2008 (habitat mitigation and restoration plan providing for 1:1 mitigation for all impacts to native vegetation affected during project activities, requiring approval from the U.S. Fish and Wildlife Service after Commission's approval of project); CDP Application No. E-08-003, PG&E, May 2008 (wetlands mitigation plan that includes specific performance standards for target vegetation coverage, and monitoring plan to allow Executive Director to compensate for portions of mitigation that potentially fail to meet standards). Accordingly, and consistent with the Commission's prior approval of similar mitigation plans, it is appropriate for the Commission to approve the MLMP.

E. Outstanding Administrative Issues

At the Commission's June 12, 2008 meeting, the Commission requested Staff to agendize the MLMP for the Commission's August 2008 meeting. We understand from our communications with Commission Staff that Staff has agreed to place the MLMP on the August 2008 agenda. Poseidon believes that it has provided the Commission with a detailed plan and supporting documentation that demonstrates full compliance with Special Condition 8. In the event the Staff does not agendize the MLMP for hearing in August, Poseidon requests that any issues preventing such consideration be brought to the Commission for hearing at the Commission's August 2008 meeting pursuant to the dispute resolution provisions in California Code of Regulations, title 14, sections 13166 and/or 13056(d).

Based on the discussion above, as well as the attachments provided with this letter, we respectfully request that the Commission approve the Applicant's Marine Life Mitigation Plan at its August 2008 meeting.

Sincerely,



Peter MacLaggan
Poseidon Resources

cc: Tom Luster
Rick Zbur, Esq.

EXHIBIT A

MARINE LIFE MITIGATION PLAN

CONDITION A: WETLAND RESTORATION MITIGATION

The permittee shall develop, implement and fund a wetland restoration project that compensates for marine life impacts from Poseidon's Carlsbad desalination facility.

1.0 PHASED IMPLEMENTATION

Poseidon's Carlsbad desalination facility will function under two operating scenarios: (1) using the Encina Power Station's seawater intake while the Power Station continues to operate ("Phase I"); and (2) as a stand-alone facility ("Phase II"). The permittee's restoration project shall be phased to address marine life impacts from each of the applicable operating scenarios.

To mitigate marine life impacts for Phase I operations, the permittee shall develop, implement and fund a 37-acre wetland restoration project consistent with the terms and conditions set forth in this Plan. The permittee's additional obligations to mitigate marine life impacts for Phase II operations, which may include up to 5.5 acres of additional wetland restoration, are set forth in section 6.0. Combined, mitigation for Phase I and Phase II would require up to 42.5 acres of wetland restoration.

1.1 Technology Review During Phase I Operations

On or before April 30 of each year following the commencement of the Carlsbad desalination facility's commercial operations, the permittee shall provide the Executive Director with data demonstrating the Encina Power Station's cooling water intake for the prior calendar year. On or before April 30 following the first three years of the Carlsbad desalination facility's commercial operations, the permittee shall also provide the Executive Director with the calculation demonstrating the Power Station's average water use during the prior three-year period. The permittee shall thereafter provide the Executive Director with that calculation annually, on or before April 30, until either of the occurrence of either of the "Phase II Pre-Conditions," as defined in subsection 1.2 below.

Consistent with the permittee's approvals from the State Lands Commission, the permittee shall perform the following ten years after the commencement of commercial operations, unless either of the "Phase II Pre-Conditions" occur before that time (as defined in subsection 1.2 below):

- a. Conduct a new analysis of the environmental effects of ongoing desalination facility operations ten years after the commencement of commercial operations. The analysis

shall provide information about the project's actual impacts from operations, taking into account all project features and mitigation measures;

- b. Using that analysis, the permittee shall investigate and evaluate new and developing technologies that are reasonably feasible and unavailable today, which may further reduce any marine life impacts; and
- c. Within 24 months of the date that the permittee commenced its analysis of the environmental effects of ongoing desalination facility operations, the permittee shall provide that analysis and its evaluation of potential and reasonably feasible technologies to the Commission for review. The determination of feasibility shall consider costs, potential impacts, and acceptability to the Encina Power Station, among other things.

Upon receiving the analysis of environmental effects of ongoing desalination facility operations and the evaluation of new and available technologies from the permittee, the Commission may request a hearing to determine whether those technologies are reasonably feasible and whether the permittee can implement any of the technologies to reduce marine life impacts. If the Commission determines that any such technologies are reasonably feasible and may further reduce marine impacts, this Marine Life Mitigation Plan may, after a public hearing before the Commission, be amended to require implementation of reasonably feasible technologies.

1.2 Implementation of Phase II Mitigation

The permittee's Phase I mitigation obligations will not be affected by whether or not the permittee is ultimately required to undertake mitigation for Phase II. If either the Encina Power Station stops using its existing seawater intake for cooling water, or the Encina Power Station's use of its seawater intake provides less than 15% of Poseidon's needed water based on the Power Station's average water use over any three-year period ("Phase II Pre-Conditions"), then the permittee shall also undertake the Phase II mitigation obligations set forth in section 6.0.

2.0 PHASE I SITE SELECTION

In consultation with Commission staff, the permittee shall select a wetland restoration site for Phase I mitigation in accordance with the following process and terms.

The location of the wetland restoration project shall be within the Southern California Bight. The permittee shall select from sites including, but not limited to, the following eleven sites: Tijuana Estuary in San Diego County; San Dieguito River Valley in San Diego County; Agua Hedionda Lagoon in San Diego County; San Elijo Lagoon in San Diego County; Buena Vista Lagoon in San Diego County; Huntington Beach Wetland in Orange County, Anaheim Bay in Orange County, Santa Ana River in Orange County, Los Cerritos Wetland in Los Angeles

County, Ballona Wetland in Los Angeles County, and Ormond Beach in Ventura County. The permittee may also consider any sites that may be recommended by the California Department of Fish & Game as high priority wetlands restoration projects.

The basis for the selected site shall be an evaluation of the site against the minimum standards and objectives set forth in subsections 3.1 and 3.2 below. The permittee shall take into account and give consideration to the advice and recommendations of the scientific advisory panel established and convened by the Executive Director pursuant to Condition B.1.0. The permittee shall select the site that meets the minimum standards and best meets the objectives.

3.0 PHASE I PLAN REQUIREMENTS

In consultation with Commission staff, the permittee shall develop a wetland restoration plan for the wetland site identified through the site selection process for Phase I. The wetland restoration plan shall meet the minimum standards and incorporate as many as feasible of the objectives in subsections 3.1 and 3.2, respectively.

3.1 Minimum Standards

The Phase I wetland restoration project site and preliminary plan must meet the following minimum standards:

- a. Location within Southern California Bight;
- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;
- c. Creates or substantially restores a minimum of 37 acres of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;
- d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and substantially at least 100 feet wide, as measured from the upland edge of the transition area. The Executive Director or the Commission may make exceptions to the 100-foot buffer requirement in certain locations if they determine that the exceptions are de minimis, or that a lesser buffer is sited and/or designed to prevent impacts that would significantly degrade wetland areas and that they are compatible with the continuance of those areas;
- e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;
- f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;

- g. Feasible methods are available to protect the long-term wetland values on the site, in perpetuity;
- h. Does not result in a net loss of existing wetlands; and
- i. Does not result in an adverse, un-mitigated impact on endangered species.

3.2 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides substantial overall ecosystem benefits, e.g. substantial upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;
- b. Provides substantial fish habitat compatible with other wetland values at the site;
- c. Provides a buffer zone of at least 100 feet wide, as measured from the upland edge of the transition area, subject to the exemptions set forth in subsection 3.1(d);
- d. Provides substantial upland transition areas (in addition to buffer zones);
- e. Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;
- f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;
- g. Restoration design is that most likely to produce and support wetland-dependent resources;
- h. Provides potential habitat for rare or endangered species;
- i. Provides for restoration of reproductively isolated populations of native California species;
- j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;
- k. Requires minimum maintenance;
- l. Restoration project can be accomplished in a reasonably timely fashion; and
- m. Site is in proximity to the Carlsbad desalination facility.

3.3 Restrictions

(a) The permittee may propose a wetland restoration project larger than the minimum necessary size specified in subsection 3.1(c) above, if biologically appropriate for the site, but the additional acreage must (1) be clearly identified, and (2) must not be the portion of the project best satisfying the standards and objectives listed above.

(b) If the permittee jointly enters into a restoration project with another party: (1) the permittee's portion of the project must be clearly specified, (2) any other party involved cannot gain mitigation credit for the permittee's portion of the project, and (3) the permittee may not receive mitigation credit for the other party's portion of the project.

(c) The permittee may propose to divide the mitigation requirement between a maximum of four wetland restoration sites, unless the Executive Director determines that the standards and objectives of subsections 3.1 and 3.2 will be better met at more than four sites.

4.0 PHASE I PLAN IMPLEMENTATION

4.1 Coastal Development Permit Application

The permittee shall submit a complete Coastal Development Permit application for the Phase I restoration plan along with CEQA documentation and local or other state agency approvals by either 24 months following the issuance of the Coastal Development Permit for the Carlsbad desalination facility, or the commencement of commercial operations at the facility, whichever is later. The Executive Director may grant an extension to this time period at the request of and upon a demonstration of good cause by the permittee. The restoration plan shall substantially conform to Section 3.0 above and shall include, but not be limited to the following elements:

- a. Detailed review of existing physical, biological, and hydrological conditions; ownership, land use and regulation;
- b. Evaluation of site-specific and regional restoration goals and compatibility with the goal of mitigating for Poseidon's marine life impacts;
- c. Identification of site opportunities and constraints;
- d. Schematic restoration design, including:
 1. Proposed cut and fill, water control structures, control measures for stormwater, buffers and transition areas, management and maintenance requirements;
 2. Planting Program, including removal of exotic species, sources of plants and or seeds (local, if possible), protection of existing salt marsh plants, methods for preserving

- top soil and augmenting soils with nitrogen and other necessary soil amendments before planting, timing of planting, plans for irrigation until established, and location of planting and elevations on the topographic drawings;
3. Proposed habitat types (including approximate size and location);
 4. Assessment of significant impacts of design (especially on existing habitat values) and net habitat benefits;
 5. Location, alignment and specifications for public access facilities, if feasible;
 6. Evaluation of steps for implementation e.g. permits and approvals, development agreements, acquisition of property rights;
 7. Cost estimates;
 8. Topographic drawings for final restoration plan at 1" = 100 foot scale, one foot contour interval; and
 9. Drawings shall be directly translatable into final working drawings.
- g. Detailed information about how monitoring and maintenance will be implemented;
 - h. Detailed information about construction methods to be used;
 - i. Defined final success criteria for each habitat type and methods to be used to determine success;
 - j. Detailed information about how Poseidon will coordinate with any other agency or panel that will have a role in implementing and monitoring the restoration plan, including the respective roles of the parties in independent monitoring, contingency planning review, cost recovery, etc.;
 - k. Detailed information about contingency measures that will be implemented if mitigation does not meet the approved goals, objectives, performance standards, or other criteria; and
 - l. Submittal of "as-built" plans showing final grading, planting, hydrological features, etc. within 60 days of completing mitigation site construction.

4.2 Wetland Construction Phase

Within 12 months of approval of the Phase I restoration plan, subject to the permittee's obtaining the necessary permits, the permittee shall commence the construction phase of the wetland restoration project. The permittee shall be responsible for ensuring that construction is carried out in accordance with the specifications and within the timeframes specified in the approved

restoration plan and shall be responsible for any remedial work or other intervention necessary to comply with plan requirements.

4.3 Timeframe for Resubmittal of Project Elements

If the Commission does not approve any element of the project (i.e. site selection, restoration plan), the Commission will specify the time limits for compliance relative to selection of another site or revisions to the restoration plan.

5.0 PHASE I WETLAND MONITORING, MANAGEMENT AND REMEDIATION

Monitoring, management (including maintenance), and remediation shall be conducted over the "full operating life" of Poseidon's desalination facility, which shall be 30 years from the date "as-built" plans are submitted pursuant to subsection 4.1(I).

The following section describes the basic tasks required for monitoring, management and remediation for Phase I. Condition B specifies the administrative structure for carrying out these tasks, including the roles of the permittee and Commission staff.

5.1 Monitoring and Management Plan

A monitoring and management plan will be developed in consultation with the permittee and appropriate wildlife agencies, concurrently with the preparation of the restoration plan for Phase I, to provide an overall framework to guide the monitoring work. It will include an overall description of the studies to be conducted over the course of the monitoring program and a description of management tasks that are anticipated, such as trash removal. Details of the monitoring studies and management tasks will be set forth in a work program (see Condition B).

5.2 Pre-restoration site monitoring

Pre-restoration site monitoring shall be conducted to collect baseline data on the wetland attributes to be monitored. This information will be incorporated into and may result in modification to the overall monitoring plan.

5.3 Construction Monitoring

Monitoring shall be conducted during and immediately after each stage of construction of the wetland restoration project to ensure that the work is conducted according to plans.

5.4 Post-Restoration Monitoring and Remediation

Upon completion of construction of the wetland, monitoring shall be conducted to measure the success of the wetland in achieving stated restoration goals (as specified in restoration plan) and in achieving performance standards, specified below. The permittee shall be fully responsible for any failure to meet these goals and standards during the facility's full operational years. Upon determining that the goals or standards are not achieved, the Executive Director shall prescribe remedial measures, after consultation with the permittee, which shall be implemented by the permittee as soon as practicable with Commission staff direction. If the permittee does not agree with the remedial measures prescribed by the Executive Director, or that remediation is necessary, the matter may be set for hearing and disposition by the Commission.

Successful achievement of the performance standards shall (in some cases) be measured relative to approximately four reference sites, which shall be relatively undisturbed, natural tidal wetlands within the Southern California Bight. The reference sites and the standard of comparison, i.e. the measure of similarity to be used, shall be specified in the work program.

In measuring the performance of the wetland project, the following physical and biological performance standards will be utilized:

- a. Longterm Physical Standards. The following long-term standards shall be maintained over the full operative life of the desalination facility:
 - 1) Topography. The wetland shall not undergo major topographic degradation (such as excessive erosion or sedimentation);
 - 2) Water Quality. Water quality variables [to be specified] shall be similar to reference wetlands; and
 - 3) Habitat Areas. The area of different habitats shall not vary by more than 10% from the areas indicated in the restoration plan.
- b. Biological Performance Standards. The following biological performance standards shall be used to determine whether the restoration project is successful. Table 1, below, indicates suggested sampling locations for each of the following biological attributes; actual locations will be specified in the work program:
 - 1) Biological Communities. Within 4 years of construction, the total densities and number of species of fish, macroinvertebrates and birds (see Table 1) shall be similar to the densities and number of species in similar habitats in the reference wetlands;
 - 2) Vegetation. The proportion of total vegetation cover and open space in the marsh shall be similar to those proportions found in the reference sites. The percent cover of algae shall be similar to the percent cover found in the reference sites;

- 3) **Spartina Canopy Architecture.** The restored wetland shall have a canopy architecture that is similar in distribution to the reference sites, with an equivalent proportion of stems over 3 feet tall;
- 4) **Reproductive Success.** Certain plant species, as specified by in the work program, shall have demonstrated reproduction (i.e. seed set) at least once in three years;
- 5) **Food Chain Support.** The food chain support provided to birds shall be similar to that provided by the reference sites, as determined by feeding activity of the birds; and
- 6) **Exotics.** The important functions of the wetland shall not be impaired by exotic species.

Table 1: Suggested Sampling Locations

	Salt Marsh			Open Water		Mudflat	Tidal Creeks
	Spartina	Salicornia	Upper	Lagoon	Eelgrass		
1) Density/spp:							
Fish				X	X	X	X
Macroinvertebrates				X	X	X	X
Birds	X	X	X	X		X	X
2) % Cover							
Vegetation	X	X	X		X		
Algae	X	X				X	
3) Spar. arch.	X						
4) Repro. suc.	X	X	X				
5) Bird feeding				X		X	X
6) Exotics	X	X	X	X	X	X	X

6.0 MITIGATION REQUIRED AFTER PHASE II PRECONDITION

6.1 Reasonably Feasible Technologies

Following the occurrence of either of the Phase II Pre-Conditions, as defined in subsection 1.1, the permittee shall:

- a. Conduct a new analysis of the environmental effects of ongoing desalination facility operations. The analysis shall provide information about the project's actual impacts from operations, taking into account all project features and mitigation measures;
- b. Using that analysis, the permittee shall investigate and evaluate new and developing technologies that are reasonably feasible and unavailable today, which may further reduce any marine life impacts;
- c. Within 24 months of the occurrence of the applicable Phase II pre-condition, the permittee shall provide that analysis and its evaluation of potential and reasonably feasible technologies to the Commission for review. The determination of feasibility shall consider costs, potential impacts, and acceptability to the Encina Power Station, among other things; and
- d. The analysis and evaluation provided to the Commission shall also include an evaluation of whether the 37 acres of wetland restoration implemented by the permittee has fully or only partially mitigated marine life impacts for stand-alone operations, taking into account actual operating conditions from facility operations for Phase I and potential reductions to impacts that would occur as a result of any new and reasonably feasible technologies that the permittee may implement pursuant to this subsection 6.1.

Upon receiving the evaluation of new and available technologies from the permittee, the Commission may request a hearing to determine whether those technologies are reasonably feasible and whether the permittee can implement any of the technologies to reduce marine life impacts. If the Commission determines that any such technologies are reasonably feasible and may further reduce marine impacts, this Marine Life Mitigation Plan may be amended after a public hearing before the Commission to require implementation of reasonably feasible technologies. The Commission also may determine the additional mitigation, if any, required after implementation of available technologies to reduce marine life impacts from Phase II operations.

6.2 Additional Mitigation

The permittee also shall comply with the following mitigation measures after the occurrence of either Phase II Pre-Condition:

- a. If within 24 months of the occurrence of the applicable Phase II Pre-Condition, the permittee assumes dredging obligations of the Agua Hedionda Lagoon from the Encina Power Station or other applicable entity, the permittee shall provide evidence to the Executive Director in the form of a contract or other agreement that demonstrates the permittee's assumption of dredging obligations, along with an evaluation of the permittee's dredging activities and supporting documentation for the proposed mitigation credit the permittee is seeking for this activity. Pursuant to Special Condition 12 of this Permit, the permittee shall not dredge the Agua Hedionda Lagoon without obtaining a new Coastal Development Permit approval from the Commission for dredging activities. If such dredging obligations are assumed, the Commission shall evaluate and determine the mitigation credit the permittee is entitled to receive for Lagoon dredging using substantially the same methodology the Commission used for the San Onofre Nuclear Generating Station's dredging approvals. If the Commission's evaluation set forth in subsection 6.1 determines that there is any remaining mitigation obligation following the implementation of reasonably feasible technologies to reduce marine impacts, the credit for Lagoon dredging shall be applied to satisfy any remaining mitigation obligation of the permittee; or
- b. If the permittee does not assume the dredging obligations for the Agua Hedionda Lagoon (for any reason other than delays by the Commission in issuing the Coastal Development Permit for dredging) and the analysis and evaluation set forth in subsection 6.1 identifies that additional wetland restoration is necessary to mitigate Phase II impacts not fully mitigated by the 37-acre restoration project, then within 24 months of the occurrence of the applicable Phase II Pre-Condition, the permittee shall apply for a new Coastal Development Permit to perform additional wetland mitigation to mitigate marine life impacts for Phase II operations that meets the following criteria:
 - (i) the Phase II wetland mitigation shall credit the 37-acres of restoration required under this Plan for Phase I, and may require additional mitigation of up to an additional 5.5 acres. The Commission shall proportionally reduce the potential 5.5 acre restoration requirement based on: (1) any reduction to marine life impacts caused by the permittee's implementation of reasonably feasible technologies, as set forth in subsection 6.1; and (2) any demonstration that actual plant operations have caused less marine life impacts than originally anticipated during the project's initial evaluation;
 - (ii) the permittee shall apply for a new Coastal Development Permit to perform the wetland restoration, and the restoration shall be of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area, and consistent with the objectives and restrictions in subsections 3.1 (excluding subsection 3.1(c)), 3.2 and 3.3 above;

- (iii) the permittee shall select a wetland restoration site for Phase II mitigation in a manner generally in accordance with section 2.0 above;
- (iv) the restoration plan for Phase II mitigation shall be generally in accordance with the requirements in section 4.0 above, and shall be monitored in a manner generally in accordance with that set forth in section 5.0 above; and
- (v) Phase II wetland restoration shall be included in and administered as part of the same administrative structure created for Phase I mitigation and set forth in Condition B of this Plan.

CONDITION B: ADMINISTRATIVE STRUCTURE

1.0 ADMINISTRATION

Personnel with appropriate scientific or technical training and skills will, under the direction of the Executive Director, oversee the mitigation and monitoring functions identified and required by Condition A. The Executive Director will retain scientific and administrative support staff to perform this function, as specified in the work program.

This technical staff will oversee the preconstruction and post-construction site assessments, mitigation project design and implementation (conducted by permittee), and monitoring activities (including plan preparation); the field work will be done by contractors under the Executive Director's direction. The contractors will be responsible for collecting the data, analyzing and interpreting it, and reporting to the Executive Director.

The Executive Director shall convene a scientific advisory panel to provide the Executive Director with scientific advice on the design, implementation and monitoring of the wetland restoration. The panel shall consist of recognized scientists, including a marine biologist, an ecologist, a statistician and a physical scientist.

2.0 BUDGET AND WORK PROGRAM

The funding necessary for the Commission and the Executive Director to perform their responsibilities pursuant to these conditions will be provided by the permittee in a form and manner reasonably determined by the Executive Director to be consistent with requirements of State law, and which will ensure efficiency and minimize total costs to the permittee. The amount of funding will be determined by the Commission on a biennial basis and will be based on a proposed budget and work program, which will be prepared by the Executive Director in consultation with the permittee, and reviewed and approved by the Commission in conjunction with its review of the restoration plan. Permit application fees paid by the permittee for Coastal

Development Permits (or amendments thereto) for the restoration program shall be credited against the budget to be funded by the permittee. If the permittee and the Executive Director cannot agree on the budget or work program, the disagreement will be submitted to the Commission for resolution.

The budget to be funded by the permittee will be for the purpose of reasonable and necessary costs to retain personnel with appropriate scientific or technical training and skills needed to assist the Commission and the Executive Director in carrying out the mitigation. In addition, reasonable funding will be included in this budget for necessary support personnel, equipment, overhead, consultants, the retention of contractors needed to conduct identified studies, and to defray the costs of members of any scientific advisory panel(s) convened by the Executive Director for the purpose of implementing these conditions.

Costs for participation on any advisory panel shall be limited to travel, per diem, meeting time and reasonable preparation time and shall only be paid to the extent the participant is not otherwise entitled to reimbursement for such participation and preparation. The amount of funding will be determined by the Commission on a biennial basis and will be based on a proposed budget and work program, which will be prepared by the Executive Director in consultation with the permittee, and reviewed and approved by the Commission in conjunction with its review of the restoration plan. If the permittee and the Executive Director cannot agree on the budget or work program, the disagreement will be submitted to the Commission for resolution.

The work program will include:

- a. A description of the studies to be conducted over the subsequent two year period, including the number and distribution of sampling stations and samples per station, methodology and statistical analysis (including the standard of comparison to be used in comparing the mitigation project to the reference sites);
- b. A description of the status of the mitigation projects, and a summary of the results of the monitoring studies to that point;
- c. A description of up to four reference sites;
- d. A description of the performance standards that have been met, and those that have yet to be achieved;
- e. A description of remedial measures or other necessary site interventions;
- f. A description of staffing and contracting requirements; and
- g. A description of the scientific advisory panel's role and time requirements in the two year period.

Any amendment to the work program requested by the permittee shall require an amendment to the Coastal Development Permit for the restoration plan, unless the Executive Director determines that no Coastal Development Permit amendment is necessary or required. Any amendment to the work program proposed by the Executive Director shall be made in consultation with the permittee. If the permittee and the Executive Director cannot agree on an amendment to the work program, the disagreement will be submitted to the Commission for resolution.

3.0 ANNUAL REVIEW AND PUBLIC WORKSHOP REVIEW

The permittee shall submit a written review of the status of the mitigation project to the Executive Director each year on April 30 for the prior calendar year. The written review will discuss the previous year's activities and overall status of the mitigation project, identify problems and make recommendations for solving them, and review the next year's program.

Every fifth year, the Executive Director or the Commission shall also convene and conduct a duly noticed public workshop to review the status of the mitigation project. The meeting will be attended by the contractors who are conducting the monitoring, appropriate members of the Scientific Advisory Panel, the permittee, Commission staff, representatives of the resource agencies (CDFG, NMFS, USFWS), and the public. Commission staff and the contractors will give presentations on the previous five years' activities and the overall status of the mitigation project, identify problems and make recommendations for solving them, and review the next period's program.

The workshop review will include discussions on whether the wetland mitigation project has met the performance standards, identified problems, and recommendations relative to corrective measures necessary to meet the performance standards. The Executive Director will utilize information presented at the public review, as well as any other relevant information, to determine whether any or all of the performance standards have been met, whether revisions to the standards are necessary, and whether remediation is required. Major revisions shall be subject to the Commission's review and approval.

The mitigation project will be successful when all performance standards have been met each year for a three-year period. The Executive Director shall report to the Commission upon determining that all of the performance standards have been met for three years and that the project is deemed successful. If the Commission determines that the performance standards have been met and the project is successful, the monitoring program will be scaled down, as recommended by the Executive Director and approved by the Commission. The work program shall reflect the lower level of monitoring required. If subsequent monitoring shows that a standard is no longer being met, monitoring may be increased to previous levels, as determined necessary by the Executive Director.

The Commission may make a determination on the success or failure to meet the performance standards or necessary remediation and related monitoring at any time, not just at the time of the workshop review.

4.0 ADDITIONAL PROCEDURES

4.1 Dispute Resolution

In the event that the permittee and the Executive Director cannot reach agreement regarding the terms contained in or the implementation of any part of this Plan, the matter may be set for hearing and disposition by the Commission.

4.2 Extensions

Any of the time limits established under this Plan may be extended by the Executive Director at the request of the permittee and upon a showing of good cause.

EXHIBIT B

MARINE LIFE MITIGATION PLAN RATIONALE

Special Condition 8 of the Project's Coastal Development Permit requires Poseidon to develop a Marine Life Mitigation Plan ("MLMP") for further Commission review and approval. Poseidon has prepared an MLMP (Exhibit A), which sets forth specific performance standards that ensure Poseidon will implement and fund a wetland restoration project or projects that not only fully mitigate any Project impacts to marine life, but also provides additional mitigation that creates, enhances, and restores aquatic and wetland habitat, and ensures long-term performance, monitoring, and protection of the mitigation measures consistent with the Coastal Act Sections 30230 and 30231.

Based on Poseidon's entrainment study and using Coastal Commission precedent and California Energy Commission ("CEC") methodology, the MLMP contains specific wetland restoration acreage amounts that will fully mitigate the projects impacts to marine life. Due to the fact that the Project will most likely function under two operating scenarios (using the Encina Power Station's ("EPS") seawater intake while the EPS continues to operate, and using the intake system as a stand-alone facility if the EPS is decommissioned), Poseidon's MLMP also contains phased mitigation implementation to address the potential impacts that may result from each of these distinct operating "phases." Finally, the MLMP appropriately enables Poseidon to receive mitigation credit for the assumption of dredging obligations for the Agua Hedionda Lagoon, and for implementing technologies that are unavailable or infeasible to implement today, but which may be developed in the future to reduce the Project's impacts to marine life. Below we have described in greater detail the rationale underlying each of these MLMP elements.

I. DETERMINATION OF AMOUNT OF HABITAT RESTORATION

Poseidon conducted an entrainment study of the Project's potential impacts to marine life, and the Coastal Commission retained an independent expert, Dr. Pete Raimondi of UC Santa Cruz, to review the adequacy of Poseidon's study and its mitigation plan. Dr. Raimondi's analysis confirmed, among other things, that:

- Poseidon's study design is consistent with recent entrainment studies;
- Using CEC methodology and Coastal Commission precedent, the habitat restoration required to mitigate the Project's "stand-alone" operations would be 37 acres (to compensate for Lagoon species impacts), and an additional 5.5 acres¹ (to compensate for open ocean species impacts); and
- Habitat mix for mitigation should include mudflat/tidal channel and open water habitat.

¹ Acres of estuarine habitat required to compensate for potential impact to 55 acres of sandy bottom open water habitat.

Dr. Raimondi concurred that, using CEC methodology and Coastal Commission precedent, Poseidon would be required to restore up to 42.5 acres to fully mitigate the Project's "stand-alone" impacts. This is consistent with the peer-reviewed and approved methodology the Commission applied to the San Onofre Nuclear Generating Station and the Moss Landing Power Plant.

It appears, however, that Commission Staff is recommending an increase in this mitigation requirement from past practice, by applying a new standard that has not been peer-reviewed and by adjusting variables in the modeling estimates. We understand that Staff is basing this recommendation on a supplemental mitigation calculation made by Dr. Raimondi, which calculated mitigation acreage beyond what either CEC methodology requires or the Coastal Commission has imposed in the past. Specifically, Dr. Raimondi suggested that in order to provide an even *greater* level of assurance to compensate for potentially impacted lagoon and ocean species, that Poseidon restore 12.9 acres above the 42.5 acres required under CEC and Coastal Commission methodology – for a total of 55.4 acres – to provide an extraordinary and unprecedented degree of certainty that the Project's "stand-alone" impacts are fully mitigated. Dr. Raimondi's proposed "adjustment" is wholly inconsistent with Coastal Commission precedent, CEC methodology and the very methodology Dr. Raimondi used to determine restoration requirements for the Diablo Canyon Power project. Additionally, the "adjustment" is not an established, peer-reviewed standard for determining mitigation requirements.

In contrast, the MLMP's methodology is conservative and conforms entirely to Commission-accepted precedent. In fact, in December 2006, Commission Staff directed Poseidon to use CEC methodology to determine the Project's marine life impacts and proposed mitigation. The CEC methodology is Commission-approved, is considered to be conservative, and has been subjected to peer-review. It is also conservative in that it results in an overestimate of the number of restoration acres required to mitigate project impacts because: (1) it overestimates the larval fish population in the lagoon and assumes a greater amount of entrainable larvae than what are likely present; (2) assumes that the project will render all impacted acreage non-functional, even though that acreage would only be partially impacted and would continue to allow for numerous species to function and thrive; and (3) assumes a 100% mortality for entrained organisms, when the mortality rate will likely be significantly lower.

As discussed in additional detail below, the MLMP is fully consistent with CEC methodology and Coastal Commission precedent, and is appropriate for the Commission to approve.²

II. PHASED APPROACH TO MLMP IMPLEMENTATION.

Under Poseidon's phased approach to Project mitigation, the initial phase of the mitigation plan would fully compensate for Project related impacts during the period when both

² Poseidon notes that it does not waive its arguments that the Coastal Commission's authority is limited with respect to the coordination and control of water quality, and compliance with the Porter-Cologne Act, as set forth in Poseidon's submittals to the Coastal Commission dated April 30 and June 9, 2008.

the EPS and the Project are operating (“Phase I”). The second phase of the mitigation plan would address any additional unmitigated impacts arising out of the stand-alone Project operation following either the retirement of the power plant, or when the EPS’s operations are so minimal that water used by the EPS will account for less than 15% of the water needed for the Project based on the EPS’s average water use over any three-year period³ (“Phase II”).

There are compelling arguments in support of this phased approach. First, the ongoing need for the EPS to provide grid stability in the San Diego region ensures that it may be many years before the Project is operating on a truly “stand-alone” basis. In fact, the power plant’s generating capacity is subject to “Reliability Must Run” status, as contracted by the California Independent System Operator (Cal-ISO), which is meant to provide electrical grid reliability. At the October 2007 State Lands Commission meeting, an EPS representative testified that the units will remain in service indefinitely and that Cal-ISO would determine when they are no longer needed for grid stability. In the interim, a significant portion of the seawater required for Project would be provided by the EPS, and the near-term need for mitigation would be proportionally reduced.

Second, while the EPS continues to operate, new technologies or processes that are not available today could be developed that Poseidon could employ once the EPS is retired (or reduced to minimal operations) to further reduce the entrainment impacts. Phased implementation of the MLMP would provide a tremendous incentive for Poseidon to investigate and invest in such technologies and opportunities to further reduce Project impacts and avoid additional mitigation costs. If Poseidon is required to provide all of the mitigation for the “stand-alone” operations upfront, there is substantially less incentive to invest in additional avoidance measures.

Third, the phased approach provides the Commission with the authority to have ongoing involvement in the implementation of the MLMP alongside other regulatory agencies. The Regional Board and the State Lands Commission have indicated that upon decommissioning of the EPS, they will undertake an environmental review of the Project to determine what, if any, additional design, technology, or mitigation measures should be required. To the extent that there are modifications to the Project as a result of power plant decommissioning or to comply with State Lands Commission or Regional Board requirements, any development associated with such modifications would also be subject to review by the Coastal Commission for Coastal Act compliance.

Fourth, Poseidon’s Phase I wetlands restoration of 37 acres actually overmitigates the desalination facility’s impacts by several multiples while the EPS is still operating. In the last 18 months, the EPS would have provided 65% of the water needed for the Project. Based on that number, Poseidon would have been required to provide only 14.9 acres of mitigation using CEC methodology and Commission precedent. Poseidon’s Phase I restoration of 37 acres would be 2.5 times the mitigation actually required. Therefore, through the phased approach to mitigation,

³ Note that this threshold is very conservative. The Phase I restoration project would fully mitigate the Project’s impacts as long as at least 13% of the Project’s seawater requirements are provided by the EPS. Poseidon’s MLMP is conservative in that it requires Poseidon to implement Phase II mitigation if the EPS is providing an average of less than 15% of the Project’s seawater requirements over a three-year period.

Poseidon is actually providing most, if not all, of the mitigation required for the project's stand-alone operations up front.

A. Phase I Mitigation

The Phase I element of Poseidon's MLMP would restore 37 acres of wetland habitat similar to the affected habitats in Agua Hedionda Lagoon. Using CEC and prior Coastal Commission methodology, the Phase I mitigation would mitigate 87% of the total mitigation requirements for the Project's "stand alone" operations when the EPS has ceased operating. By providing this mitigation while the Project and the power plant are both operating, Poseidon will perform more mitigation than what should actually be required for this stage of the Project's operations. For example, and as discussed above, based on the EPS's intake flow over the past 18 months, Poseidon would only be required to restore 14.9 acres of wetland habitat in order to *fully* mitigate the Project's marine life impacts. By restoring 37 acres of wetland while the EPS is operating at a similar level, Poseidon will provide mitigation well above what would be needed to mitigate the Project's actual impacts to marine life. The Phase I mitigation would fully mitigate the Project's impacts as long as at least 13% of the Project's seawater requirements are provided by the EPS.

B. Phase II Mitigation

The MLMP requires Poseidon to implement mitigation measures for Phase II if the EPS stops using its existing seawater intakes for cooling purposes, or if the intakes provide less than 15% of Poseidon's needed water based on the EPS' average water use over any three-year period ("Phase II Pre-Conditions"). Wetland habitat restoration under Phase II would credit the 37 acres of restoration already provided for under Phase I, and provide assurances that stand-alone operations are fully mitigated in Phase II.

Dr. Raimondi estimated that 5.5 acres (using CEC and prior Coastal Commission methodology) of additional mitigation may be needed to fully mitigate the "stand-alone" Project operation once the Phase I mitigation is in place. Poseidon's MLMP proposes restoration of 5.5 acres of wetland habitat similar to the affected habitat in Agua Hedionda Lagoon to mitigate Phase II impacts, but subject to reduction based on restoration credits for activities that Poseidon may undertake to enhance the marine environment and to minimize impacts to marine life, as discussed below.

Specifically, once either of the Phase II Pre-Conductions occur, the MLMP requires Poseidon to: (1) analyze the environmental effects of ongoing Project operations; (2) use that analysis to investigate and evaluate reasonably feasible technologies that are unavailable today, which may reduce any marine life impacts; and (3) provide its analysis of environmental effects and its evaluation of any reasonably feasible technologies to reduce marine life impacts to the Commission within 24 months. Accordingly, the Coastal Commission will be able to proportionally reduce Poseidon's habitat restoration obligation for Phase II mitigation based on

the reduction to impacts resulting from Poseidon's implementation of reasonably feasible technologies.⁴

In addition to addressing newly developed technologies to reduce marine impacts, Poseidon is also obligated to assume dredging obligations of the Agua Hedionda Lagoon from the EPS within 24 months of the occurrence of either Phase II Pre-Condition, if feasible.⁵ When Poseidon assumes dredging obligations, it will provide evidence of its obligations to the Commission, along with an analysis of how Lagoon dredging is beneficial to the Lagoon and how dredging activities entitle Poseidon to some amount of restoration credit. As discussed more specifically in Section III below, based on prior Coastal Commission methodology for similar dredging activities (including dredging obligations undertaken by the San Onofre Nuclear Generating Station), Poseidon should be entitled to restoration credit for keeping the Lagoon inlet open through dredging. Using this credit, it is unlikely that Poseidon would need to restore any additional wetlands beyond its 37-acre obligation for Phase I mitigation if it assumes Lagoon dredging obligations.

In the event that Poseidon does not assume Lagoon dredging obligations for some reason (for example, if the EPS never fully ceases use of its intakes but operates the intakes at very low levels and continues to dredge the Lagoon), Poseidon's MLMP requires it to develop a plan within 24 months to restore up to an additional 5.5 acres of wetland habitat,⁶ subject to two possible reductions in acreage: (1) the Commission shall evaluate whether Poseidon's 37 acres of wetland restoration under Phase I has fully mitigated the Project's stand-alone operations and whether any portion of the additional 5.5 acres of restoration for Phase II is still required given the actual results of the impacts to marine life based on an evaluation of the desalination facility's actual operations; and (2) the Commission may reduce Poseidon's Phase II restoration obligation based on the reduction to marine impacts caused by Poseidon's implementation of new, reasonably feasible technologies (as discussed above). The opportunity for the Commission to consider these issues is another valuable benefit of phased implementation of the MLMP: with phased mitigation, Poseidon, the Commission and other regulatory agencies would have an opportunity to measure the actual impacts of the Project, and to evaluate opportunities to further reduce the impacts and refine the scope of the Phase II mitigation as necessary to ensure the "stand-alone" Project impacts are fully mitigated.

⁴ Note that in the event the Phase II Pre-Conditions do not occur, Poseidon's approval from the State Lands Commission requires Poseidon to undertake a substantially similar evaluation of environmental effects of ongoing Project operations and to investigate and evaluate new and developing technologies that are unavailable today to reduce any marine life impacts ten years after Project operations commence. Accordingly, if the State Lands Commission requires Poseidon to implement any such technologies, development undertaken to implement these technologies would be subject to Coastal Commission review and approval.

⁵ Since Special Condition 12 of the Project's Coastal Development Permit requires Poseidon to obtain a new Permit approval from the Coastal Commission for any dredging activities, the Commission shall have oversight over any Lagoon dredging.

⁶ Under CEC methodology and Coastal Commission precedent, as confirmed by Dr. Raimondi, this restoration would fully mitigate any marine life impacts caused by the Project's stand-alone operations along with the initial 37 acres of restored wetlands provided as mitigation for Phase I.

III. RESTORATION CREDIT FOR LAGOON DREDGING

As referenced above, based on Commission precedent, Poseidon should be entitled to restoration credit for assuming dredging obligations of the Agua Hedionda Lagoon. The Lagoon supports a wide range of beneficial uses, including 316 acres of marine wetlands and a variety of recreational activities, such as fishing, and water contact recreation. Nearly all of these uses are directly or indirectly supported by seawater flow and exchange created by circulation of seawater in the Lagoon. The tidal exchange renews the Lagoon's water quality and flushes nutrients, sediment and other watershed pollution, particularly from the Lagoon's upper reaches. In addition, the inflow of fresh supplies of ocean water carry planktonic organisms that nourish the many organisms and food chains of the Lagoon, including the White Sea Bass restoration program of the Hubbs Sea World Research Institute and the aquaculture operations in the outer Lagoon.

The Lagoon is connected to the Pacific Ocean by means of a manmade inlet. Seawater circulation throughout the outer, middle and inner lagoons is sustained both by routine dredging of the entrance by the owner of the EPS. Absent regular maintenance dredging, the Lagoon inlet would permanently close within a few years. The name, Agua Hedionda, which means "stinking water" in Spanish, reflects a former stagnant condition that existed prior to the dredging of the mouth of the Lagoon.

To avoid this significant loss of highly productive marine habitat, Poseidon has committed to assume responsibility for routine dredging of the entrance to the Agua Hedionda Lagoon when the EPS is decommissioned.⁷ The sand dredged from the Lagoon would be placed on adjacent beaches so as to maintain, restore and enhance habitat for grunion spawning and to maintain, restore and enhance opportunities for public access and recreation along the shoreline and within the coastal zone. Continued preservation of the Agua Hedionda Lagoon inlet and related beneficial uses would ensure the ongoing maintenance, restoration and enhancement of a number of high-priority Coastal Act goals described in the attached figure.

In recognition of the value of preserving these uses, the Coastal Commission has previously granted wetlands restoration credit for inlet maintenance. Specifically, the Coastal Commission granted Southern California Edison a 35-acre wetlands restoration credit in exchange for its commitment to keep the inlet to San Dieguito Lagoon dredged to support the 115 acres of tidally exchanged wetlands upstream. Consequently, there is precedent for the Coastal Commission allowing one acre of restoration credit for every 3.3 acres of tidally exchanged wetlands supported by dredging. As applied to Agua Hedionda Lagoon, such dredging would support 316 acres of tidally exchanged wetlands and a number of Coastal Act priority uses. However, with the stand-alone desalination Project operation in place, only 85% of the sand dredged from the Lagoon would be naturally occurring. The remaining 15% of the sand influx would be attributable to Project operations.

⁷ In the event that the EPS continues to operate, but provides less than an average of 15% of the desalination facility's water needs over a three year period, Poseidon will endeavor to assume dredging obligations early, if it is agreeable to the EPS and feasible.

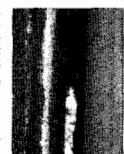
Following the Coastal Commission's precedent, Poseidon would be entitled to receive 81 acres of restoration credit for keeping the lagoon inlet open after the EPS is decommissioned.⁸ The 81 acres represent fifteen times the required mitigation using CEC methodology and Commission precedent, and over four times the required mitigation using Dr. Raimondi's enhanced mitigation proposal. The MLMP does not specify the amount of restoration credit Poseidon should receive for dredging, and ultimately the Commission would need to determine the amount of credit to which Poseidon is entitled based on an evaluation of Poseidon's dredging activities and the benefits of maintaining the Agua Hedionda Lagoon.

⁸ (316 acres)(0.85 natural sand influx)/(3.3 acres preserved/inlet credit provided) = 81 acres credit

Preserving the Agua Hedionda Lagoon



Warm Water Jetties Surf Break 2
The power plant's discharge channel acts as a manmade river mouth that delivers sand to the end of the jetties, creating a natural sand bar. The result is one of the most popular surfing spots in North County San Diego.



The jetties would be removed when the power plant is decommissioned, resulting in a loss of this surf break. The existence of the desalination plant will ensure that the jetties remain and this popular surf spot exists for many years to come.

Enhancing Fish Habitat 3

Agua Hedionda Lagoon encompasses over 400 acres of marine, estuarine and wetlands habitat that is home to hundreds of fish, invertebrate and bird species, including the vibrant California state fish, the Garibaldi. The Garibaldi live in the rocks adjacent to the power plant intake structure. At this location, Garibaldi are found in greater numbers than comparable habitat in the pristine environments of Coronado, San Clemente and Santa Catalina islands.



Carlsbad Aquafarm 9

The Lagoon is home to the thriving Carlsbad Aquafarm where 1 million pounds of mussels and oysters are harvested and sold to seafood vendors and restaurants each year.



The Aquafarm has 20 employees and is a growing contributor to the \$1 billion US aquaculture industry, which helps reduce the toll that over-fishing takes on the ocean by providing high-quality farmed seafood.

Carlsbad Aquafarm is a growing contributor to the \$1 billion US aquaculture industry.

Recreational Boating 10

Boating remains one of the most popular Lagoon activities for residents and visitors. California Water Sports offers expert lessons and rents a variety of boats, including kayaks, canoes and paddleboards, to the general public.



California Water Sports offers expert lessons and rents a variety of boats, including kayaks, canoes and paddleboards, to the general public.

Agua Hedionda Lagoon Foundation Discovery Center 11

Opened in 2006, the Discovery Center offers visitors an opportunity to learn about the Lagoon's native plants and marine life through exhibits and educational programs.



Public Access to the Lagoon and Coast 3

The desalination plant will enhance public access and recreation, and maintain, restore and enhance marine life through the provision of four parcels of Lagoon and oceanfront land – over 13 acres – currently in private ownership.



Cabrillo Power will dedicate three parcels of land for use as hiking trails, beach access and beach parking.

Cabrillo Power will dedicate three parcels of land for use as hiking trails, beach access and beach parking.

The fourth parcel will be dedicated for the expansion of the Hubbs-SeaWorld fish hatchery.

The fourth parcel will be dedicated for the expansion of the Hubbs-SeaWorld fish hatchery.

New Recreation Areas 2

Providing enhanced public access to the coast and new recreational opportunities is just one of the public benefits of the Carlsbad desalination plant. Public access will be enhanced through the dedication of land for recreational activities including fishing.



Providing enhanced public access to the coast and new recreational opportunities is just one of the public benefits of the Carlsbad desalination plant.

YMCA Aquatic Park 1

The YMCA Aquatic Park, better known as Camp H.O., is a summer camp geared towards seven to twelve-year olds that offers affordable day camp activities including swimming, kayaking, paddleboards, rowboards and fishing.



The camp plays an important role in educating our youth about the precious marine environment and the need to preserve the Lagoon for future generations.

Hubbs-SeaWorld Fish Hatchery 2

Hubbs-SeaWorld Resources Enhancement and Hatchery Program includes a 20,000 square foot fish hatchery on the Lagoon. To date, Hubbs-SeaWorld has released over 1.5 million endangered white sea bass into the wild. Hubbs-SeaWorld will be able to expand its marine restoration activities as a result of additional acreage dedicated by the owners of the power plant, Cabrillo Power.



Hubbs-SeaWorld Resources Enhancement and Hatchery Program includes a 20,000 square foot fish hatchery on the Lagoon.

Desalination Plant 5

The Carlsbad desalination plant will provide the citizens of Carlsbad with a high quality, locally-controlled, drought-proof supply of drinking water. Nearly 10% of the region's potable water needs will be served by the desalination plant, which is scheduled to be completed as early as 2010.



The operators of the desalination plant will assume the role as the Agua Hedionda Lagoon's steward, which includes a financial commitment to restore 37 acres of wetland habitat.

The operators of the desalination plant will assume the role as the Agua Hedionda Lagoon's steward.

Beach Sand Replenishment 6

Historically, tidal patterns affecting Carlsbad State Beach removed most of the beach's sand, leaving only rough cobblestones. The periodic dredging of the Lagoon by the power plant provided the beach with a permanent sand supply. The operators of the desalination plant will take over responsibility for dredging the Lagoon, providing much-needed sand replenishment.



The operators of the desalination plant will take over responsibility for dredging the Lagoon, providing much-needed sand replenishment.

EXHIBIT C

SAMPLE WETLAND RESTORATION PROJECT

SAN DIEGUITO LAGOON

INTRODUCTION

The Applicant has prepared a detailed example of how the restoration of a specific wetlands site would comply with the requirements and obligations set forth in the Marine Life Mitigation Plan ("MLMP"), which is set forth in this document. In its review of potential mitigation sites, the Applicant has spent considerable time, effort and resources evaluating the San Dieguito Lagoon as a site where a wetlands restoration project consistent with the MLMP could be feasibly implemented. Accordingly, and as set forth herein, the Applicant has demonstrated how a restoration project in the San Dieguito Lagoon would conform to each of the MLMP's performance criteria in a manner consistent with the Coastal Act's requirements. This example confirms that the MLMP is a feasible mitigation plan, and that it is therefore appropriate for the Commission to approve this restoration project if specific restoration project local approvals are obtained.

SAN DIEGUITO LAGOON SITE IS AN EXAMPLE OF A SITE SATISFYING MLMP CONDITIONS

Poseidon conducted a preliminary investigation of some of the restoration sites listed in Section 2.0 of the MLMP. That investigation resulted in the identification of a plausible wetlands restoration project in the San Dieguito River Valley that has the potential to meet the minimum standards, objectives, and requirements set forth in the MLMP and described below for "Phase I" of operations when the desalination plant will be using Encina Power Station's seawater intake while the Power Station continues to operate. In May 2008, Poseidon prepared and submitted to the Commission the San Dieguito Lagoon Wetland Restoration Plan Element of the MLMP ("San Dieguito Lagoon Restoration Proposal"). The San Dieguito Lagoon Restoration Proposal is currently being reviewed by the San Onofre Nuclear Generating Station ("SONGS") Science Advisory Panel. An updated version of that San Dieguito Lagoon Restoration Proposal, dated July 3, 2008 will be provided to Commission Staff under a separate cover (Appendix 1).

Recognizing that final site selection is subject to landowner approvals and completion of environmental review and permitting, Poseidon will continue to develop the San Dieguito Lagoon Restoration Proposal while continuing to evaluate other restoration projects that are capable of meeting some or all of the minimum standards and objectives set forth in the MLMP.

In order to demonstrate the San Dieguito Lagoon Restoration Proposal's compliance with the MLMP, the specific sections from the MLMP containing the MLMP's minimum standards and objectives are provided below in bold (numbered as they are in the MLMP), followed by a brief explanation of how the Proposal satisfies the applicable standard or objective.

3.0 PHASE I PLAN REQUIREMENTS

3.1 Minimum Standards

The Phase I wetland restoration project site and preliminary plan must meet the following minimum standards:

a. Location within Southern California Bight;

The proposed restoration project is located at the western end of the San Dieguito River Valley within the southern California Bight.

b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;

The proposed restoration has been designed to be primarily intertidal, including intertidal channel, intertidal mudflat, and intertidal salt marsh. A preliminary break-down of habitats is presented in Appendix 1 (Table 1, page 10).

c. Creates or substantially restores a minimum of 37 acres of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;

The proposed restoration proposes to restore at least 37 acres of tidal wetland in San Dieguito Lagoon as Phase I mitigation for impacts to Agua Hedionda Lagoon. The proposed project would result in an increase of 42 acres of intertidal coastal wetland, 39 of which would be credited towards the requirements of the MLMP, thereby actually exceeding the requirement of the MLMP by about 2 acres. This mitigation is presented here as the "Phase I" of mitigation.

d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and substantially at least 100 feet wide, as measured from the upland edge of the transition area. The Executive Director or the Commission may make exceptions to the 100-foot buffer requirement in certain locations if they determine that the exceptions are de minimis, or that a lesser buffer is sited and/or designed to prevent impacts that would significantly degrade wetland areas and that they are compatible with the continuance of those areas;

The restoration plan currently provides wetland buffers exceeding 100 feet to the north, west and south of the mitigation site as presented in Figure 1 of the San Dieguito Lagoon Wetland Restoration Proposal (see Appendix 1, Figure 1, page 6). Refinement of the draft restoration plan would accommodate a minimum 100-foot buffer along El Camino Real to the southeast of the proposed restoration site.

- e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;***

It is not anticipated that the location of the proposed project within San Dieguito River Valley contains contaminated soils or other contamination. This area has historically been used for agriculture. Thus, residual DDT and its derivatives may occur in surface soils. Analysis of sediment characteristics would be required for discretionary permits; thus, Poseidon is committed to proper remediation or disposal of any contaminated sediments that might be encountered.

- f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;***

The San Dieguito River Park Joint Powers Authority ("JPA") has agreed to partner with Poseidon in the restoration effort. The JPA is the land owner for all lands proposed for restoration. This non-profit organization would guarantee preservation of the restored lands in perpetuity.

- g. Feasible methods are available to protect the long-term wetland values on the site, in perpetuity;***

Poseidon has committed to the same restoration success criteria set forth in the MLMP, thus ensuring attainment and protection of the restored wetland values on site in perpetuity.

- h. Does not result in a net loss of existing wetlands; and***

See opportunities and constraints Biology Issue #2, below (section 4.1(c)).

- i. Does not result in an adverse, un-mitigated impact on endangered species.***

See opportunities and constraints Biology Issue #1, below (section 4.1(c)).

3.2 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides substantial overall ecosystem benefits, e.g. substantial upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;***

The proposed restoration project would provide valuable, regionally rare intertidal wetland habitat that benefits southern California coastal wetlands in general and San Dieguito Lagoon in particular. The project would require a berm and weir system to protect the created wetland and convey river flows and sediment transport to the beach (see Appendix 1, Figure 1, page 6). Upland areas in excess of 100-feet in width that serve as buffers exist to the north, west and south. The southeast portion of the proposed project encroaches upon El Camino Real. A minimum 100-foot buffer along El Camino Real would be incorporated into the final plan

b. Provides substantial fish habitat compatible with other wetland values at the site;

The proposed project is compatible with and complimentary to the SCE restoration plan currently being constructed at San Dieguito Lagoon. The proposed project is primarily intertidal, including intertidal mudflats, intertidal channels, and intertidal salt marsh. These habitats support fisheries functions similar to existing habitat at San Dieguito Lagoon, the habitat restored by SCE, and other southern California lagoons and estuaries.

c. Provides a buffer zone of at least 100 feet wide, as measured from the upland edge of the transition area, subject to the exemptions set forth in subsection 3.1(d);

The restoration plan currently provides wetland buffers exceeding 100 feet to the north, west and south of the mitigation site as presented in the San Dieguito Lagoon Wetland Restoration Plan Element of the Marine Life Mitigation (see Appendix 1, Figure 1, page 6). Refinement of the draft restoration plan would accommodate a minimum 100-foot buffer along El Camino Real to the southeast of the proposed restoration site.

d. Provides substantial upland transition areas (in addition to buffer zones);

The proposed restoration plan abuts the SCE restoration plan to the north and west; existing wetlands to the south and by El Camino real to the east (see Appendix 1, Figure 1, page 6). The proposed project abuts a California least tern nesting island to the northwest and incorporates a berm and weir system to protect the created wetlands and ensure flood flows and sediment transport to the beach. Within the berm, the proposed project includes primarily intertidal wetland. An area of approximately 22 acres of degraded upland habitat located north of the project would be graded to facilitate flood flows. This area would serve as both buffer and transitional/upland habitat.

e. Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;

The majority of the site proposed for restoration is disturbed (see Appendix 1, Figure 3, page 8). Preliminary results indicate that only minor impacts to wetland habitats would occur from project construction. These include approximately 0.06 acre of wetland habitat at the proposed connection with the San Dieguito River and approximately 0.12

acre of man-made drainage channel that was part of the agricultural operations on the western boundary of the former Boudreau parcel.

f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;

The proposed restoration is expected to provide the following site specific and regional restoration goals:

- Improve, preserve, and create a variety of habitats to increase and maintain wildlife and ensure protection of endangered species;
- Ensure adequate tidal and fluvial flushing and circulation with an optimal tidal regime to support a diversity of biological resources while maintaining the appearance of a natural wetland ecosystem; and
- The project should not contribute to the net loss of sand reaching the beach at the river mouth.

g. Restoration design is that most likely to produce and support wetland-dependent resources;

The proposed project has been designed to compliment the SCE restoration currently under construction. The project would create functional intertidal wetland habitat that would support wetland structure and functions comparable to natural, undisturbed systems.

h. Provides potential habitat for rare or endangered species;

The proposed project would provide functional intertidal wetland habitat that may provide breeding and foraging habitat for state- and federally-listed rare and endangered species, such as the light-footed clapper rail and Belding's savannah sparrow, and provide foraging habitat for the state- and federally-listed endangered California least tern.

i. Provides for restoration of reproductively isolated populations of native California species;

The proposed project would provide restoration of reproductively isolated plant and animal populations currently associated with San Dieguito Lagoon.

j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;

The proposed project would result in an increase of 42 acres of intertidal coastal wetland, approximately 39 of which would be credited towards the requirements of the MLMP,

and 22 acres of restored upland, thereby adding to the overall acreage of wetland habitat in the southern California Bight. Although the MLMP only requires restoration of 37 acres of wetlands, this proposal goes beyond that requirement by an additional 2 acres. The proposed project also would create approximately 2.73 acres of habitat to serve as mitigation for the JPA for impacts to salt marsh and fresh/brackish marsh associated with the JPA's construction and operation of a trail and a series of wetland treatment ponds in the project area. The trail and treatment ponds were permitted in conjunction with the SCE restoration plan.

k. Requires minimum maintenance;

The intertidal wetlands restored by the proposed project would be self-sustaining and require little maintenance. The berm that protects the wetland and facilitates flood flows and sediment transport may require maintenance following a large storm event.

l. Restoration project can be accomplished in a reasonably timely fashion; and

It is anticipated that the proposed project can be constructed in approximately 9-12 months and support fully functional intertidal habitat within 2-3 years of construction.

m. Site is in proximity to the Carlsbad desalination facility.

The proposed project is located in northern San Diego County, approximately 12 miles south of Aqua Hedionda Lagoon.

4.0 PHASE I PLAN IMPLEMENTATION

4.1 Coastal Development Permit Application

The permittee shall submit a complete Coastal Development Permit application for the Phase I restoration plan...The restoration plan shall substantially conform to Section 3.0 above and shall include, but not be limited to the following elements:

a. Detailed review of existing physical, biological, and hydrological conditions; ownership, land use and regulation;

To comply with the MLMP, the San Dieguito Lagoon Wetland Restoration Plan Proposal includes a review of the existing physical, biological and hydrological conditions of the proposed restoration site, as well as land ownership and land use. The existing and proposed topography of the site was analyzed and presented by KTU+A, Landscape Architects (see Appendix 1, cover page). The existing and proposed biological conditions were analyzed and presented by Nordby Biological Consulting (see Appendix 1, page 19). The existing and proposed riverine hydrological conditions were analyzed and presented by Chang Consultants. The existing and proposed coastal and estuarine

processes were analyzed and presented by Dr. Scott A. Jenkins Consulting (see Appendix 1, pages 20-21).

The San Dieguito River Park JPA owns all of the lands proposed for restoration. The City of San Diego owns lands proposed for sediment disposal. The JPA and the City of San Diego regulate the lands under their ownership. The proposed restoration would require coordination between Poseidon, the JPA, the City of San Diego and Southern California Edison, as well as numerous state and federal regulatory agencies.

b. Evaluation of site-specific and regional restoration goals and compatibility with the goal of mitigating for Poseidon's marine life impacts;

The San Dieguito Lagoon Wetland Restoration Plan Proposal presents the design, implementation, and performance standards of a 42-acre coastal wetlands restoration plan located east of Interstate 5 in the western end of the San Dieguito River Valley, San Diego County, California. The proposed project includes the restoration/creation of approximately 42 acres of tidal wetlands; grading of approximately 22 acres of disturbed uplands adjacent to the proposed tidal wetlands to convey flood flows; and restoration of the graded area to native upland habitat. The proposed restoration would connect to and compliment an on-going restoration project at San Dieguito Lagoon: The San Dieguito Lagoon Wetland Restoration Project, funded by Southern California Edison (SCE), is essential to both the proposed project, and the SCE project is obligated to the restoration and maintenance of the lagoon's tidal prism. SCE is obligated to maintain the lagoon inlet in an open configuration in perpetuity. The proposed restoration plan would increase the tidal prism of the lagoon and reduce the frequency of dredging by SCE needed to maintain the inlet.

Of the 42 acres of tidal wetlands, the proposed project will provide approximately 39 acres of habitat as partial mitigation for the entrainment of oceanic and estuarine fish larvae resulting from the stand-alone-operations of the Project, and providing excess mitigation during the Projects co-location with the Encina Power Station. The Wetlands Restoration Project also would create approximately 2.73 acres of habitat to serve as mitigation for the JPA for impacts to salt marsh and fresh/brackish marsh associated with the JPA's construction and operation of a trail and a series of wetland treatment ponds in the project area. The trail and treatment ponds were permitted in conjunction with the SCE restoration plan.

The proposed restoration is expected to provide the following regional restoration goals, as modeled after the goals set forth in the SCE Final Restoration Plan:

- Improve, preserve, and create a variety of habitats to increase and maintain wildlife and ensure protection of endangered species;

- Ensure adequate tidal and fluvial flushing and circulation with an optimal tidal regime to support a diversity of biological resources while maintaining the appearance of a natural wetland ecosystem; and
- The project should not contribute to the net loss of sand reaching the beach at the river mouth.

The proposed restoration is expected to provide ecosystem support for a variety of vascular and non-vascular plants, invertebrates, fishes and birds, including fish spawning and nursery functions. The productivity of coastal salt marsh habitat and the food chain support of higher order consumers are documented in the San Dieguito Lagoon Wetland Restoration Proposal. (See Appendix 1, pages 10, 15-17.)

c. Identification of site opportunities and constraints;

The following presentation of project opportunities and constraints is modeled after a similar discussion presented in the SCE Final Restoration Plan December 18, 2000.

Hydrology

Issue #1: River flows must not affect SCE's project; specifically, the ability of the river to accommodate the 100-year flood event without raising the water level of that flood event; the ability of the river to accommodate flood flows without increasing scour at existing infrastructure, including berms constructed by SCE; and the ability of the river to transport sediment to the beach.

Design Consideration. Modeling of the riverine hydrodynamics has been conducted by Chang Consultants to ensure that the project will not affect SCE's restoration plan or infrastructure other than that associated with SCE's restoration plan, i.e., the I-5 bridge.

Issue #2. Flooding may induce additional sedimentation within the restoration site.

Design Consideration. A berm and weir, similar to that designed for the SCE restoration, have been incorporated into the design of the proposed restoration. The elevation of the berm and weir will prevent sedimentation associated with the 100-year flood from entering the restored site.

Biology

Issue #1. The project should not impact endangered species during or after construction.

Design consideration. The project will protect, to the extent possible and required by the agencies, all listed species within the project area. Poseidon will develop appropriate mitigation measures to assure long-term habitat for endangered species. Preliminary results indicate that there is no habitat for endangered species in the project footprint.

The use of the least tern island(s) currently under construction will be evaluated once construction is completed.

Issue # 2. The project should not impact jurisdictional wetlands.

Design Consideration. Poseidon will complete a jurisdictional delineation and assure compliance with state and federal regulations during construction. The final design will be developed so that there is no net loss of jurisdictional wetlands. Preliminary results indicate that only minor impacts to jurisdictional habitats will occur from project construction. These include approximately 0.06 acre of jurisdictional habitat at the proposed connection with the San Dieguito River and approximately 0.12 acre of man-made drainage channel that was part of the agricultural operations on the western boundary of the former Boudreau parcel. The creation of approximately 42 acres of tidal wetlands will offset these losses resulting in no net loss of jurisdictional habitat.

Issue #3. The project should not restrict wildlife corridors or buffer areas around wetlands.

Design Consideration. The project will not affect the width of wildlife corridors but will convert degraded upland within the greater San Dieguito River wildlife corridor to wetlands. Appropriate buffers have been included, as discussed above in 3.1(d).

Engineering

Issue #1. Access to construction and disposal sites.

Design Consideration. Poseidon will use the existing haul roads and disposal sites used by SCE to minimize environmental impacts.

d. Schematic restoration design, including:

- 1. Proposed cut and fill, water control structures, control measures for stormwater, buffers and transition areas, management and maintenance requirements;***

The San Dieguito Lagoon Wetland Restoration Proposal includes proposed grading and excavation, water control structures, buffers and transition areas, and management and maintenance requirements. (See generally, Appendix 1.)

- 2. Planting Program, including removal of exotic species, sources of plants and or seeds (local, if possible), protection of existing salt marsh plants, methods for preserving top soil and augmenting soils with nitrogen and other necessary soil amendments before planting, timing of planting, plans for irrigation until established, and location of planting and elevations on the topographic drawings;***

The San Dieguito Lagoon Wetland Restoration Proposal includes a proposed Planting Plan, discussing exotic species, sources of plants, marshes, upland habitats, irrigation, as-built conditions, monitoring methods, and performance standards. (See Appendix 1, pages 12-18.)

3. *Proposed habitat types (including approximate size and location);*

The San Dieguito Lagoon Wetland Restoration Proposal includes size and location of all proposed habitat types. (See Appendix 1, Table 1 page 10; Appendix 1, figure 2, page 7.)

4. *Assessment of significant impacts of design (especially on existing habitat values) and net habitat benefits;*

The San Dieguito Lagoon Wetland Restoration Proposal includes a detailed discussion of significant impacts of design and net habitat benefits. (see Appendix 1, pages 5-12.)

5. *Location, alignment and specifications for public access facilities, if feasible;*

Public access, if any, will be addressed in the final plan.

6. *Evaluation of steps for implementation e.g. permits and approvals, development agreements, acquisition of property rights;*

It is estimated that it would take approximately 2-3 years to obtain CEQA clearance, local approvals, and Coastal Commission approvals. Construction would be completed approximately 9-12 months after all clearances and approvals have been obtained.

7. *Cost estimates;*

A detailed project cost estimate for the mitigation project would be provided with Poseidon's Coastal Development Permit (CDP) application, should this restoration site be selected.

8. *Topographic drawings for final restoration plan at 1" = 100 foot scale, one foot contour interval; and*

Topographic drawings for final restoration plan at this scale will be provided.

9. *Drawings shall be directly translatable into final working drawings;*

Drawings will be directly translatable into final working drawings.

g. Detailed information about how monitoring and maintenance will be implemented;

Monitoring methods and performance standards will be in substantial conformance with the methods and standards set forth in the MLMP. The performance standards fall into two categories. The first category includes long-term physical standards relating to topography (erosion, sedimentation), water quality (e.g., oxygen concentration), tidal prism, and habitat areas. The second category includes biological performance standards relating to biological communities (e.g., fish, invertebrates, and birds), marsh vegetation, *Spartina* canopy architecture, reproductive success of marsh plants, food chain support functions, and exotic species. Monitoring and maintenance implementation is discussed in detail in the San Dieguito Lagoon Wetland Restoration Proposal. (See Appendix 1, pages 15-18.)

h. Detailed information about construction methods to be used;

Detailed information about the construction methods to be used would be included with the CDP application for the mitigation project.

i. Defined final success criteria for each habitat type and methods to be used to determine success;

The wetland restoration project will be considered successful when all of the performance standards have been met for each of three consecutive years. The methods to be used to determine success are discussed in the San Dieguito Lagoon Wetland Restoration Proposal. (See Appendix 1, pages 15-18.)

j. Detailed information about how Poseidon will coordinate with any other agency or panel that will have a role in implementing and monitoring the restoration plan, including the respective roles of the parties in independent monitoring, contingency planning review, cost recovery, etc.;

All monitoring, whether it be during Phase 1 or Phase 2, must be sufficient for assessing project compliance with the performance standards. If the restored wetland is not considered successful within 12 years post-construction or has not met the biological community standard by 4 years, then Poseidon shall be required to fund an independent study to collect the information necessary to determine what remediation is needed. Poseidon shall also be required to implement any remedial measures determined necessary by the CCC in consultation with state and federal resource agencies and will provide funds for independent monitoring that evaluates the success of the required remediation. Remediation monitoring may be different from the compliance monitoring required by the permit. (See Appendix 1, pages 15-18.)

- k. Detailed information about contingency measures that will be implemented if mitigation does not meet the approved goals, objectives, performance standards, or other criteria; and***

Remediation may be required if the performance standards are not met within ten years and if three successive years of compliance have not occurred within 12 years. Upon determination that all of the performance standards have been met for three consecutive years, a scaled-back level of monitoring (Phase 2) will ensue. All monitoring, whether it be during Phase 1 or Phase 2, must be sufficient for assessing project compliance with the performance standards. If the restored wetland is not considered successful within 12 years post-construction or has not met the biological community standard by 4 years, then Poseidon shall be required to fund an independent study to collect the information necessary to determine what remediation is needed. Poseidon shall also be required to implement any remedial measures determined necessary by the CCC in consultation with state and federal resource agencies and will provide funds for independent monitoring that evaluates the success of the required remediation. Remediation monitoring may be different from the compliance monitoring required by the permit. Contingency measures that will be implemented if mitigation does not meet the approved goals, objectives, performance standards or other criteria is discussed in detail in the San Dieguito Lagoon Wetland Restoration Proposal. (See Appendix 1, pages 15-18.)

- l. Submittal of "as-built" plans showing final grading, planting, hydrological features, etc. within 60 days of completing mitigation site construction.***

Within 60 days of completion of site preparation and planting, a report will be submitted describing the as-built status of the restoration project. Separate reports will be submitted for grading, plant installation, and erosion control measures. In addition, topographic maps showing as-built contours of the restoration site, as well as locations of plantings, will be provided. Changes from original plans will be indicated in indelible red ink. (See Appendix 1, page 14.)

CDP E-06-013
Condition Compliance
Special Condition 8

Exhibit 2

July 24, 2008

EXHIBIT NO. 2
APPLICATION NO. E-06-013
Condition Compliance
Special Condition 8

Staff's Proposed Draft MLMP Conditions

This is a modified version of conditions the Commission required of Southern California Edison in implementing its wetland restoration project at San Dieguito Lagoon pursuant to Coastal Development Permit xx

Staff provided these conditions to Poseidon on June 20, 2008 and recommended Poseidon include them in its Marine Life Mitigation Plan to present to the Commission. The modifications shown in ~~strike through~~ and underline reflect differences between Poseidon's proposal and Edison's and provide updated wetland mitigation standards since the Commission's approval of Edison's project. Staff's notes to Poseidon are shown in [*brackets and bold italics*].

CONDITION A: WETLAND RESTORATION MITIGATION

The permittee shall develop, implement and fund a wetland restoration project that compensates for ~~past, present and future fish~~ marine life impacts from ~~SONGS Units 2 and 3, as identified by the Marine Review Committee~~ Poseidon's Carlsbad desalination facility.

1.0 SITE SELECTION AND PRELIMINARY PLAN

In consultation with Commission staff, the permittee shall select a wetland restoration site and develop a preliminary plan in accordance with the following process and terms.

Within 9 months of the effective date of this permit, the permittee shall submit the proposed site and preliminary wetland restoration plan to the Commission for its review and approval or disapproval.

1.1 Site Selection

The location of the wetland restoration project shall be within the Southern California Bight. The permittee shall evaluate and select from sites including, but not limited to, the following eight sites: Tijuana Estuary in San Diego County, San Dieguito River Valley in San Diego County, Huntington Beach Wetland in Orange County, Anaheim Bay in Orange County, Santa Ana River in Orange County, Los Cerritos Wetland in Los Angeles County, Ballona Wetland in Los Angeles County, and Ormond Beach in Ventura County. Other sites proposed by the permittee may be added to this list with the Executive Director's approval.

The basis for the selection shall be an evaluation of the sites against the minimum standards and objectives set forth in subsections 1.3 and 1.4 below. The permittee shall take into account and give serious consideration to the advice and recommendations of an Interagency Wetland Advisory Panel, established and convened by the Executive Director. The permittee shall select the site that meets the minimum standards and best meets the objectives.

1.2 Preliminary Restoration Plan

[Note: This is the type of Preliminary Plan we anticipate you'll provide for the August hearing. The Plan should include the elements in Sections 1.2 – 1.4 below.]

In consultation with Commission staff, the permittee shall develop a preliminary wetland restoration plan for the wetland site identified through the site selection process. The preliminary wetland restoration plan shall meet the minimum standards and incorporate as many as possible of the objectives in subsections 1.3 and 1.4, respectively.

The preliminary wetland restoration plan shall include the following elements:

- a. Review of existing physical, biological, and hydrological conditions; ownership, land use and regulation.
- b. Site-specific and regional restoration goals and compatibility with the goal of mitigating for ~~SONGS impact to fish~~ Poseidon's marine life impacts.
- c. Identification of site opportunities and constraints.
- d. Conceptual restoration design, including:
 1. Proposed grading and excavation; water control structures; planting; integration of public access, if feasible; buffers and transition areas; management and maintenance requirements.
 2. Proposed habitat types (including approximate size and location).

3. Preliminary assessment of significant impacts of design (especially on existing habitat values) and net habitat benefits.
4. Evaluation of steps for implementation e.g. permits and approvals, development agreements, acquisition of property interests.
5. A graphic depiction of proposed plan.

[Note: As part of the elements above, the Preliminary Plan should describe the current and anticipated relationship between Poseidon's proposed mitigation and Edison's, including applicable conditions of the MOA and any written agreements between Poseidon, Edison, and/or the JPA, measures included that will ensure Poseidon's mitigation will not adversely affect Edison's mitigation, coordination with Edison's Scientific Advisory Panel, etc.]

1.3 Minimum Standards

The wetland restoration project site and preliminary plan must meet the following minimum standards:

- a. Location within Southern California Bight.
- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;
- c. Creates or substantially restores a minimum of ~~150 acres (60 hectares)~~ 55.4 to 68.2 acres of wetlands habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area; ***[Note: the acreage figures are from Pete Raimondi's evaluation at the 80% and 95% confidence levels.]***
- d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and not less than at least 100 feet wide, as measured from the upland edge of the transition area.
- e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration.
- f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use.
- g. Feasible methods are available to protect the longterm wetland values on the site, in perpetuity.
- h. Does not result in loss of existing wetlands.
- i. Does not result in impact on endangered species.

1.4 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site shall be that with the best potential to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides maximum overall ecosystem benefits e.g. maximum upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity.
- b. Provides substantial fish habitat compatible with other wetland values at the site.
- c. Provides a buffer zone of an average of at least 300 feet wide, and not less than 100 feet wide, as measured from the upland edge of the transition area.
- d. Provides maximum upland transition areas (in addition to buffer zones);
- e. Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats.
- f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals.
- g. Restoration design is that most likely to produce and support wetland-dependent resources.
- h. Provides rare or endangered species habitat.
- i. Provides for restoration of reproductively isolated populations of native California species.
- j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight.
- k. Requires minimum maintenance.
- l. Restoration project can be accomplished in a timely fashion.
- m. Site is in proximity to ~~SONGS~~ the Carlsbad desalination facility.

1.6 Restrictions

(a) The permittee may propose a wetland restoration project larger than the minimum necessary size specified in subsection 1.3(c) above, if biologically appropriate for the site, but the additional acreage must (1) be clearly identified, and (2) must not be the portion of the project best satisfying the standards and objectives listed above.

(b) If the permittee jointly enters into a restoration project with another party: (1) the permittee's portion of the project must be clearly specified, (2) any other party involved cannot gain mitigation credit for the permittee's portion of the project, and (3) the permittee may not receive mitigation credit for the other party's portion of the project.

(c) The permittee may propose to divide the mitigation requirement between a maximum of two wetland restoration sites, unless there is a compelling argument, approved by the Executive Director, that the standards and objectives of subsections 1.3 and 1.4 will be better met at more than two sites.

[Note: We'll probably recommend the text below, or similar, as conditions for the Commission to adopt in August to determine what will be required as follow-up to the Preliminary Plan to ensure it results in an adequate Final Plan – that is, while you may include them in your Plan for August, we'll probably handle them as conditions for approval.]

2.0 FINAL PLAN AND PLAN IMPLEMENTATION

2.1 Final Restoration Plan

Within ~~12-24~~ months [*Note: based on anticipated 18-month CEQA process*] following the Commission's approval of a site selection and preliminary restoration plan, the permittee shall submit a complete Coastal Development Permit application for a final restoration plan along with CEQA documentation ~~generated in connection with~~ and local or other state agency approvals, ~~to the Executive Director of the Coastal Commission for review and approval.~~ [*Note: the changes above reflect a difference between SONGS and Poseidon's processes. With SONGS, Edison applied for a CDP for its Preliminary Plan after Marine Resource Committee review and Commission approval of the selected site and applied for a CDP for its Final Plan. With Poseidon, your CDP application for the mitigation site work will come after CEQA is done and after other approvals are obtained.*] The final restoration plan shall substantially conform to the approved preliminary restoration plan as originally submitted or as amended by the Commission pursuant to a request by the permittee. The final restoration plan shall include, but not be limited to the following elements:

- a. Detailed review of existing physical, biological, and hydrological conditions; ownership, land use and regulation.
- b. Evaluation of site-specific and regional restoration goals and compatibility with the goal of mitigating for ~~SONGS impacts to fish~~ Poseidon's marine life impacts.
- c. Identification of site opportunities and constraints.

[Note: the above three elements should include a complete description of the relationship between Poseidon's mitigation and Edison's, and any legal/contractual relationships between

Poseidon, Edison, the JPA, and other involved entities. This should also describe how Poseidon's ongoing sampling, monitoring, maintenance, contingency planning, etc. may be associated with Edison's.]

d. Schematic restoration design, including:

1. Proposed cut and fill, water control structures, control measures for stormwater, buffers and transition areas, management and maintenance requirements.
2. Planting Program, including removal of exotic species, sources of plants and or seeds (local, if possible), protection of existing salt marsh plants, methods for preserving top soil and augmenting soils with nitrogen and other necessary soil amendments before planting, timing of planting, plans for irrigation until established, and location of planting and elevations on the topographic drawings.
3. Proposed habitat types (including approximate size and location).
4. Assessment of significant impacts of design (especially on existing habitat values) and net habitat benefits. [***Note: this should include a description of any effects on existing habitat values within Poseidon's mitigation site (e.g., are there existing wetlands within your site that would be altered by your project?) and Edison's site, along with proposed measures to mitigate those impacts – e.g., methods, locations, etc.***]
5. Location, alignment and specifications for public access facilities, if feasible.
6. Evaluation of steps for implementation e.g. permits and approvals, development agreements, acquisition of property rights.
7. Cost estimates.
8. Topographic drawings for final restoration plan at 1" = 100 foot scale, one foot contour interval.
9. Drawings shall be directly translatable into final working drawings.

g. Detailed information about how monitoring and maintenance will be implemented.

h. Detailed information about construction methods to be used.

i. Defined final success criteria for each habitat type and methods to be used to determine success.

j. Detailed information about how Poseidon will coordinate with the SONGS Scientific Advisory Panel, including its role in independent monitoring, contingency planning review, cost recovery, etc.

- k. Detailed information about contingency measures that will be implemented if mitigation does not meet the approved goals, objectives, performance standards, or other criteria.
- l. Submittal of "as-built" plans showing final grading, planting, hydrological features, etc. within 60 days of completing initial mitigation site construction.

[Note: the additions above reflect conditions generally included in more recent mitigation plans or needed to coordinate with Edison's efforts.]

2.2 Wetland Construction Phase

Within 6 months of approval of the final restoration plan, subject to the permittee's obtaining the necessary permits, the permittee shall commence the construction phase of the wetland restoration project. The permittee shall be responsible for ensuring that construction is carried out in accordance with the specifications and within the timeframes specified in the approved final restoration plan and shall be responsible for any remedial work or other intervention necessary to comply with final plan requirements.

2.3 Timeframe for Resubmittal of Project Elements

If the Commission does not approve any element of the project (i.e. site selection, restoration plan), the Commission will specify the time limits for compliance relative to selection of another site or revisions to the restoration plan.

3.0 WETLAND MONITORING, MANAGEMENT AND REMEDIATION

Monitoring, management (including maintenance), and remediation shall be conducted over the "full operating life" of ~~SONGS Units 2 and 3~~ Poseidon's desalination facility. ~~"Full operating life" as defined in this permit includes past and future years of operation of SONGS units 2 and 3 including the decommissioning period to the extent there are continuing discharges. The number of past operating years at the time the wetland is ultimately constructed, shall be added to the number of future operating years and decommission period, to determine the length of the monitoring, management and remediation requirement.~~

The following section describes the basic tasks required for monitoring, management and remediation. Condition II-D specifies the administrative structure for carrying out these tasks, including the roles of the permittee and Commission staff.

3.1 Monitoring and Management Plan

A monitoring and management plan will be developed in consultation with the permittee and appropriate wildlife agencies, concurrently with the preparation of the restoration plan, to

provide an overall framework to guide the monitoring work. It will include an overall description of the studies to be conducted over the course of the monitoring program and a description of management tasks that are anticipated, such as trash removal. Details of the monitoring studies and management tasks will be set forth in a work program (see Section II-D).

3.2 Pre-restoration site monitoring

Pre-restoration site monitoring shall be conducted to collect baseline data on the wetland attributes to be monitored. This information will be incorporated into and may result in modification to the overall monitoring plan.

3.3 Construction Monitoring

Monitoring shall be conducted during and immediately after each stage of construction of the wetland restoration project to ensure that the work is conducted according to plans.

3.4 Post-Restoration Monitoring and Remediation

Upon completion of construction of the wetland, monitoring shall be conducted to measure the success of the wetland in achieving stated restoration goals (as specified in restoration plan) and in achieving performance standards, specified below. The permittee shall be fully responsible for any failure to meet these goals and standards during the facility's full operational years of ~~SONGS Units 2 and 3~~. Upon determining that the goals or standards are not achieved, the Executive Director shall prescribe remedial measures, after consultation with the permittee, which shall be immediately implemented by the permittee with Commission staff direction. If the permittee does not agree that remediation is necessary, the matter may be set for hearing and disposition by the Commission.

Successful achievement of the performance standards shall (in some cases) be measured relative to approximately four reference sites, which shall be relatively undisturbed, natural tidal wetlands within the Southern California Bight. The Executive Director shall select the reference sites. The standard of comparison i.e. the measure of similarity to be used (e.g. within the range, or within the 95% confidence interval) shall be specified in the work program.

In measuring the performance of the wetland project, the following physical and biological performance standards will be utilized:

- a. Longterm Physical Standards. The following longterm standards shall be maintained over the full operative life of ~~SONGS Units 2 and 3~~ the desalination facility.
 - 1) Topography. The wetland shall not undergo major topographic degradation (such as excessive erosion or sedimentation).

- 2) Water Quality. Water quality variables (to be specified) shall be similar to reference wetlands.
 - 3) ~~Tidal prism. The designed tidal prism shall be maintained, and tidal flushing shall not be interrupted.~~ **[Note: this is Edison's requirement, but could be part of Poseidon's obligation based on the agreement you develop with Edison.]**
 - 4) Habitat Areas. The area of different habitats shall not vary by more than 10% from the areas indicated in the final restoration plan.
- b. Biological Performance Standards. The following biological performance standards shall be used to determine whether the restoration project is successful. Table 1, below, indicates suggested sampling locations for each of the following biological attributes; actual locations will be specified in the work program.
- 1) Biological Communities. Within 4 years of construction, the total densities and number of species of fish, macroinvertebrates and birds (see table 1) shall be similar to the densities and number of species in similar habitats in the reference wetlands.
 - 2) Vegetation. The proportion of total vegetation cover and open space in the marsh shall be similar to those proportions found in the reference sites. The percent cover of algae shall be similar to the percent cover found in the reference sites.
 - 3) Spartina Canopy Architecture. The restored wetland shall have a canopy architecture that is similar in distribution to the reference sites, with an equivalent proportion of stems over 3 feet tall.
 - 4) Reproductive Success. Certain plant species, as specified by in the work program, shall have demonstrated reproduction (i.e. seed set) at least once in three years.
 - 5) Food Chain Support. The food chain support provided to birds shall be similar to that provided by the reference sites, as determined by feeding activity of the birds.
 - 6) Exotics. The important functions of the wetland shall not be impaired by exotic species.

Table 1: Suggested Sampling Locations

	Salt Marsh			Open Water		Mudflat	Tidal Creeks
	Spartina	Salicornia	Upper	Lagoon	Eelgrass		
1) Density/spp:							
Fish				X	X	X	X
Macroinvertebrates				X	X	X	X
Birds	X	X	X	X		X	X
2) % Cover							
Vegetation	X	X	X		X		
algae	X	X				X	
3) Spar. arch.	X						
4) Repro. suc.	X	X	X				
5) Bird feeding				X		X	X
6) Exotics	X	X	X	X	X	X	X

...

CONDITION D: ADMINISTRATIVE STRUCTURE

[Note: The conditions below will likely vary based on the relationship you develop with Edison and the JPA regarding monitoring, review, administration, etc.]

1.0 ADMINISTRATION

Personnel with appropriate scientific or technical training and skills will, under the direction of the Executive Director, oversee the mitigation and monitoring functions identified and required by conditions II-A through C. The Executive Director will retain approximately two scientists and one administrative support staff to perform this function.

This technical staff will oversee the preconstruction and post-construction site assessments, mitigation project design and implementation (conducted by permittee), and monitoring activities (including plan preparation); the field work will be done by contractors under the

Executive Director's direction. The contractors will be responsible for collecting the data, analyzing and interpreting it, and reporting to the Executive Director.

The Executive Director shall convene a scientific advisory panel to provide the Executive Director with scientific advice on the design, implementation and monitoring of the wetland restoration and artificial reef. The panel shall consist of recognized scientists, including a marine biologist, an ecologist, a statistician and a physical scientist.

2.0 BUDGET AND WORK PROGRAM

The funding necessary for the Commission and the Executive Director to perform their responsibilities pursuant to these conditions will be provided by the permittee in a form and manner determined by the Executive Director to be consistent with requirements of State law, and which will ensure efficiency and minimize total costs to the permittee. The amount of funding will be determined by the Commission on a biennial basis and will be based on a proposed budget and work program, which will be prepared by the Executive Director in consultation with the permittee, and reviewed and approved by the Commission. If the permittee and the Executive Director cannot agree on the budget or work program, the disagreement will be submitted to the Commission for resolution.

The budget to be funded by the permittee will be for the purpose of reasonable and necessary costs to retain personnel with appropriate scientific or technical training and skills needed to assist the Commission and the Executive Director in carrying out the mitigation and lost resource compensation conditions (II-A through C) approved as part of this permit action. In addition, reasonable funding will be included in this budget for necessary support personnel, equipment, overhead, consultants, the retention of contractors needed to conduct identified studies, and to defray the costs of members of any scientific advisory panel(s) convened by the Executive Director for the purpose of implementing these conditions.

Costs for participation on any advisory panel shall be limited to travel, per diem, meeting time and reasonable preparation time and shall only be paid to the extent the participant is not otherwise entitled to reimbursement for such participation and preparation. Total costs for such advisory panel shall not exceed \$100,000 per year adjusted annually by any increase in the consumer price index applicable to California.

The work program will include:

- a. A description of the studies to be conducted over the subsequent two year period, including the number and distribution of sampling stations and samples per station, methodology and statistical analysis (including the standard of comparison to be used in comparing the mitigation projects to the reference sites.)

- b. A description of the status of the mitigation projects, and a summary of the results of the monitoring studies to that point.
- c. A description of the performance standards that have been met, and those that have yet to be achieved.
- d. A description of remedial measures or other necessary site interventions.
- e. A description of staffing and contracting requirements.
- f. A description of the Scientific Advisory Panel's role and time requirements in the two year period.

The Executive Director may amend the work program at any time, subject to appeal to the Commission.

3.0 ANNUAL REVIEW

A duly noticed public workshop will be convened and conducted by the Executive Director or the Commission each year to review the status of the mitigation projects. The meeting will be attended by the contractors who are conducting the monitoring, appropriate members of the Scientific Advisory Panel, the permittee, Commission staff, representatives of the resource agencies (CDFG, NMFS, USFWS), and the public. Commission staff and the contractors will give presentations on the previous year's activities, overall status of the mitigation projects, identify problems and make recommendations for solving them, and review the next year's program. The permittee shall report on the status of the behavioral barrier devices.

The public review will include discussions on whether the artificial reef and wetland mitigation projects have met the performance standards, identified problems, and recommendations relative to corrective measures necessary to meet the performance standards. The Executive Director will utilize information presented at the annual public review, as well as any other relevant information, to determine whether any or all of the performance standards have been met, whether revisions to the standards are necessary, and whether remediation is required. Major revisions shall be subject to the Commission's review and approval.

The mitigation projects will be successful when all performance standards have been met each year for a three-year period. The Executive Director shall report to the Commission upon determining that all of the performance standards have been met for three years and that the project is deemed successful. If the Commission determines that the performance standards have been met and the project is successful, the monitoring program will be scaled down, as recommended by the Executive Director and approved by the Commission. A public review shall thereafter occur every five years, or sooner if called for by the Executive Director. The work program shall reflect the lower level of monitoring required. If subsequent monitoring shows that

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

The Executive Director may make a determination on the success or failure to meet the performance standards or necessary remediation and related monitoring at any time, not just at the time of the annual public review.

CONDITION E: MRC DATA MAINTENANCE

The scientific data collected by the MRC will be stored in the Commission library in San Francisco, and at the Los Angeles County Museum of Natural Science, or at an alternative location in Southern California, as determined by the Executive Director; and will be made available for public use. The permittee shall purchase the necessary computer equipment for the Commission and the Southern California location to store and retrieve the data, and shall fund appropriate staff training on data storage and retrieval at both locations.