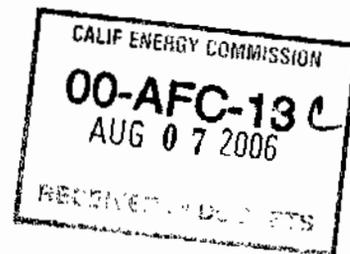




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August 4, 2006

Via FedEx and Via Facsimile to (916) 654-3882

Paul Richins
Environmental Office
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Re: AES Huntington Beach Retool Project For Units 3 & 4
Docket No. 00-AFC-13

Dear Mr. Richins:

AES Huntington Beach submits this letter to provide additional comments on the California Energy Commission's ("Commission") July 14, 2006 "Staff Analysis - Huntington Beach Units 3 & 4 Entrainment and Impingement Study Results, Mitigation Options, Staff and Working Group Recommendations" and the July 25, 2006 Staff presentation title "Huntington Beach Units 3 & 4 Entrainment and Impingement Study Results and Mitigation Options" for the Huntington Beach Generating Station ("HBGS") Units 3 & 4.

For the reasons articulated both in our letter of May 17, 2006 and our presentations to the Commission, as well as the additional reasons detailed below, we continue to disagree with the staff's technical approach and recommended mitigation measures. Moreover, the representations by staff regarding certain working group conclusions fail to respond to any of the substantial objections raised by individual members of the working group, including representatives of the HBGS.

While there are threshold issues regarding the existence of *any* significant impact to species of coastal fish, AES Huntington Beach is nevertheless committed to compensate for actual and expected entrainment losses in consideration of the staff's position and to avoid any implication that AES is not meeting Condition of Certification ("Condition") BIO-5. As explained more fully below, however, the staff's approach is fundamentally flawed and would require unjustified mitigation that is inconsistent with the Conditions of Certification, and creates concerns regarding the viability of ongoing operation of Units 3 & 4.

Since AES Huntington Beach is willing to commit to compensate for losses due to entrainment and impingement despite our valid objections, the following comments start by identifying flaws in the method and assumptions staff relied on to calculate the appropriate level of compensation.

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1. The Area Of Habitat Production Foregone (APF) Approach To Estimating Impacts And Scaling Mitigation Has Been Misapplied To The Huntington Beach Retool Project For Units 3 & 4.

The APF approach to scaling restoration projects to help compensate for entrainment mortality has only been applied to estuarine and rocky nearshore reef habitats because the area estimate from APF for such habitat can be translated into adult habitat. This is how APF was applied at the Morro Bay and Moss Landing Power Plants. It should not be applied to open coastal habitats, as the staff has done here, where the primary habitat is the water column.¹

Indeed, the Staff proposal presented on July 25, 2006 on slide #46 for mitigation of Huntington Beach wetlands contradicts the Staff statement on slide #39 that the new bay habitat should have "a comparable mixture of habitats to that in the source water body." The misfit of the APF approach in this case is further highlighted by the disconnect between the staff's calculated restoration area of 104 acres of wetlands, and the lost production of coastal species that do not inhabit or spawn in wetlands.

One of the necessary steps in interpreting empirical transport model ("ETM") results is providing context for the results. One method of providing that context is the APF approach used in the Commission staff presentation on July 25, 2006. Another important context is the total estimate of entrainment or demographic model results, if available.² Since the ETM is based on ratio estimates of daily entrainment mortality, large ETM estimates can occur even if the underlying abundances of the fish larvae in the entrainment and source water samples are very low. For example, entrainment for white croaker under maximum flow for all Units 1-4 was estimated at 17.6 million larvae, but an older fully mature white croaker may release almost 900,000 eggs per year. Queenfish, with an entrainment of 17.8 million larvae, can release more than 2 million eggs per year. The fecundity of other species is even higher. For example, the total entrainment of California halibut by all four units of the HBGS assuming maximum permitted flow is equivalent to the annual spawning of a single individual fish. Thus, by

¹ As AES Huntington Beach pointed out in its comment letter dated May 17, 2006, if wetlands restoration is required, the staff should maintain consistency with previous entrainment restoration projects (including the one for Morro Bay) required by the Commission and apply the Habitat Equivalency Approach ("HEA") used to categorize different habitat types based on their services and functions (such as nursery, feeding, spawning, migration, etc.). This approach allows more appropriate comparisons or scaling (*i.e.*, conversion), and would further reduce the restoration area.

² Two approaches that use demographic data are adult equivalent loss ("AEL") and fecundity hindcasting ("FH"). Both express entrainment losses in terms of adult fish.

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using APF alone, instead of also considering demographic modeling that expresses entrainment losses in terms of adult fish, the staff presentation grossly distorts the impact of the operations of Units 3 & 4.³

Slide #33 of the July 25, 2006 staff presentation shows the importance of interpreting the proportion of larvae lost over the area from which they are at risk of entrainment ("P_M") within the context of the source water. The definition of the source water population is critical to the interpretation of the results since it is the best estimate of the population of larvae potentially affected by entrainment and P_M is the best estimate of that impact. To argue that the loss is more or less important based on APF misses the point. If the P_M is very small then the process of entrainment is likely to have very little effect on the population. Just because the APF translates into a seemingly large value does not make the impact any more significant.

The effects on the population level for the species entrained by HBGS are negligible. This is a benefit of placing the cooling water intake in a location offshore in a marine environment that is relatively homogeneous and subject to strong alongshore currents. Therefore, the implication in slide #35 that the effects in Scenario 2 are much worse is not correct. If the source water for the population is only one acre, then the loss of 10% of the larvae could lead to deleterious effects even if the APF is only 0.1 acre since the spatial extent of the source water population is so limited; in the second case the risk is much less, even though the APF is larger. APF is a useful method for scaling restoration; it is not always a useful method for interpreting entrainment results. APF is also difficult to translate from P_M when a non-uniform distribution is used in calculating source water populations, which is critical to estimating the effects for taxa that have larvae that extend out into deeper water as is the case for many of the species entrained at HBGS. An APF estimate for northern anchovy was not included because the source population for this species extends far offshore, but this is also the case for all of the croakers and California halibut. The fact that APF cannot account for this is a serious flaw in its application for interpreting entrainment effects especially for the open coast fishes entrained by the HBGS.

It appears as if Commission staff have arbitrarily ruled out use of other approaches, and misapplied the APF approach to determining the scale of impact and mitigation in order to generate the maximum number of acres of wetland restoration or creation possible. The Commission should reject that approach because it is scientifically and legally

³ As pointed out below, the staff also exaggerates the impacts by using total maximum permitted flow for the HBGS instead of the actual flow for Units 3 & 4. During the 2003-4 impingement study, HBGS flow averaged 350.3 mgd, or 69% of maximum flow. See Final Report for the AES HBGS Entrainment and Impingement Study at p. 146 (submitted April 25, 2005) ("IM&E Report").

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unjustified. Instead, it should adopt an approach to estimating impacts and a scope of mitigation that is scientific, reasonable and scaled to the ten-year span of the permitted operations.

2. Commission Staff Arbitrarily Omitted The Revised APF Estimates From Their Restoration Recommendations.

The multiple problems with the Commission staff proposal are especially disturbing since additional work was done by AES at the request of the Commission staff under the direction of the technical workgroup to calculate a value of APF for gobies. The use of APF is appropriate for fishes such as gobies or rockfishes that occupy a habitat as adults that can be quantified into numbers of adults per unit area. This allows the larval mortality to be equated with the loss of the production from a percentage of that habitat and in these cases should be similar to estimates derived using a demographic model.

By replacing habitat, production is compensated assuming that the new habitat will be occupied by adults at the same density. In these cases there is an understanding that there is some limitation on the population due to availability of habitat. There is no indication that in open coastal pelagic there is any limitation on habitat that could affect productivity. In many cases the fishes are widely distributed across large coastal and pelagic areas. In addition, there could be cases where the species of larvae entrained do not even occur in the vicinity of the source water due to transport by ocean currents. This is why we calculated an APF for gobies:

- Gobies were the most abundant fish larvae in the entrainment samples accounting for almost 40% of the total.
- The APF estimate for wetlands would result in mitigation that directly benefits other fishes that occupy wetland areas for all or a portion of their life – another 10-15% of the total entrainment.
- The APF estimate for wetlands would result in mitigation that provides indirect benefits to other fishes in the nearshore areas as larvae produced in the wetlands are transported out into nearshore areas where they provide forage for larger larval and juvenile fishes.
- The APF estimate for wetlands would result in mitigation that provides many other direct and indirect environmental benefits.
- The APF estimate for gobies is conservative since the entrainment losses occurred to larvae in the nearshore areas that have been transported out of their natural habitat and as a result will experience almost 100% mortality.
- There was greater confidence in the ETM estimate for gobies and a few other species, which were collected from both entrainment and source water stations

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during most of the surveys. Other nearshore fishes such as queenfish, spotfin and black croakers, and salema were only collected from a few source water surveys.

The only approach that can be scientifically supported using the entrainment results is a mitigation proposal that is based on the APF calculations for gobies and then is scaled up to compensate for the level of restoration required in the existing Huntington Beach wetlands, and scaled down to account for actual or proposed flow volumes.

If Commission staff insist on using the APF approach to selecting and scaling mitigation for the ten-year operation of Units 3 & 4, then they should use the revised APF that AES Huntington Beach submitted for their consideration on June 1, 2006. The revised APF estimates are for gobies, which constituted almost 40% of entrainment losses in the IM&E Report. Adult gobies live and spawn in wetland areas such as the Huntington Beach wetlands, unlike most of the other species analyzed during the study. The revised APF for gobies is 15.35 acres, so 15.35 acres of wetland restoration makes perfect sense as a mitigation measure for the entrainment impacts of Units 3 & 4. Restoring 15.35 acres of wetlands would restore the foregone production of gobies. Therefore, that is the only scientifically defensible scope of wetland restoration in response to the operation of Units 3 & 4.

Although Commission staff point out that the number should be increased to account for the fact that the projects would only supplement habitat that is already partially functioning as wetland habitat, this argument has to be balanced with the other long-term benefits that the wetlands are providing to numerous other species, including birds, and the conservative estimate of entrainment mortality on which the APF estimate is based. In the case of gobies, the entrainment losses do not translate into lost production, because the larvae entrained have already been lost from the wetland habitat where they could settle and grow into adults.

In sharp contrast, the 104 acres of wetland restoration recommended by staff was calculated using coastal species that will never be produced in the restored wetlands. As we have pointed out before and reiterate below, there is no evidence that the impact on other species of coastal fish is significant. Thus, the staff's application of APF to coastal species in order to scale wetland restoration yields a surplus of 88.65 acres of habitat that the impacted coastal species would never use to replenish larvae lost to entrainment.⁴

⁴ Furthermore, mitigation monitoring would be able to verify increased production from wetlands as gobies occupied new habitat, but it would be impossible to verify increases in the coastal fishes the mitigation is proposed for since they would never benefit from the proposed restoration. Also, as the fecundity for those fishes show, the numbers represent such a small loss to the populations that it would be impossible to ever detect a change in the populations if the larvae lost due to entrainment were replaced even one hundredfold.

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15.35 acres of coastal wetlands restoration makes sense; 104 acres does not. Therefore, the Commission should not adopt the staff recommendation because it ignores actual losses and the scientific rationale for wetlands restoration.

3. The Scope Of Mitigation Should Be Proportionate To Actual Estimated Entrainment And Impingement, Not The Amount Estimated Based On Maximum Permitted Water Intake.

Again, in an apparent effort to generate the maximum possible number of wetland acres, Commission staff have used half of the total *maximum* permitted cooling water intake for AES Huntington Beach and used that number to estimate entrainment, APF, and their 104 acre estimate. Since Units 3 & 4 have not, and most likely will never use half the maximum permitted intake of water, it would be arbitrary, capricious, and contrary to law for the Commission to adopt the staff recommendation of 104 acres, which was estimated based on maximum permitted flow.⁵

As AES Huntington Beach has pointed out before, HBGS entrainment from operation of Units 3 & 4 over the ten-year permit period should be based on actual rather than maximal flow. This is all that Condition BIO-5 requires. AES Huntington Beach is committed to maintaining records to document actual Unit 3& 4 pump operation. Indeed, there is already operating data available for the first four years of operation. When used in combination with the 2003/2004 entrainment data, these records can be used to quantify actual annual entrainment losses for the permit period.⁶ If at the end of the ten-year permit period any entrainment losses have not been adequately compensated, AES Huntington Beach will undertake further projects to offset the actual APF, thus guaranteeing fulfillment of Condition BIO-5.

⁵ Commission staff arrived at an APF for HBGS Units 1-4 of 370.6 acres based on the average for all species analyzed using coastal nearshore source water. Since the empirical data from the last four years show that Units 3 & 4 account for approximately one third of the actual intake at HBGS, the staff should at least acknowledge that one-third of an APF of 370.6 acres is 123 acres, and assuming a scaling of 20:1 (approximately one-half of the range documented at Morro Bay) this results in a 6-acre restoration project of coastal wetlands. Despite the fact that AES Huntington Beach pointed this out in its May 15, 2006 comment letter, the staff continued to use the maximum permitted flows in its presentation on July 25, 2006. See, e.g., Table 5-1 on Slide #18, and the table on Slide #30.

⁶ Indeed, during the 2003/2004 impingement study itself, HBGS flow for Units 1-4 averaged 350.3 mgd, or 69% of maximum flow. See IM&E Report at 146.

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To require mitigation on a scale based on what Commission staff members know to be inaccurate overestimates of entrainment and impingement would be arbitrary, capricious, and contrary to law.

4. The Certification Only Permits Units 3 & 4 To Operate For 10 Years, Hence Construction Of Permanent Tidal Wetlands Should Be Scaled To Mitigate Impacts From 10 Years Of Operation.

Commission staff recommends 104 acres of wetlands restoration to mitigate impacts on coastal fish and invertebrates that will occur for the ten-year permit period. However, the wetlands restoration will function as habitat and breeding grounds for decades, if not indefinitely beyond the ten-year permit period. Thus, the scope of the staff's recommended restoration far exceeds the impacts of the permitted operation it is supposed to mitigate because it is based on the false assumption that the wetlands will function only for the ten-year permit period.

The Commission should at least dramatically scale down the required acres of wetlands restoration to account for the fact that the wetlands will continue to function long after the ten-year permit period has expired, thus offsetting foregone production over time.⁷ To require restoration of wetlands sufficient to offset all impacts during the ten-year period of permitted operation would be arbitrary, capricious, and contrary to law.

5. Entrainment And Impingement May Be Reduced By Changes Mandated By EPA's 316(b) Final Phase II Rule, Thus Mitigation Measures Should Be Scaled To Account For Reductions Due To Technological Or Operational Measures.

On July 7, 2004 EPA issued the final 316(b) Phase II Rule. As we have pointed out in prior comments and presentations, Rule 316(b)'s use of restoration measures to mitigate entrainment and impingement has been challenged, and the California State Water Resources Control Board ("SWRCB") issued a scoping document for Rule 316(b) that requires the use of technologies and/or operational measures to reduce entrainment and impingement.

Two key conclusions follow from these facts. First, since wetlands restoration may soon be limited by regulation or forbidden by law, it makes no sense to mandate 104 acres of wetlands restoration as the sole mitigation measure for Units 3 & 4. Second, since Rule

⁷ AES Huntington Beach recognizes that staff may be concerned that Units 3 & 4 may be re-permitted for continued operation beyond the current ten-year period. However, if that occurs, then appropriate permit conditions will be imposed *at that time*, and it is clearly arbitrary to require as a condition of a current permit to operate mitigation of operational impacts that may occur under a subsequent permit.

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316(b) may soon impose technological and/or operational changes on AES Huntington Beach that would reduce entrainment and impingement, the scope of the 104-acre wetland restoration recommended by Commission staff may well far exceed actual impacts for this reason, as well as for the reasons stated above.⁸

AES Huntington Beach is committed to mitigating actual impacts from entrainment and impingement caused by operation of Units 3 & 4 as required by Condition BIO-5. In order to account for any uncertainty regarding the legal mandates that Rule 316(b) as interpreted by the courts may impose on AES Huntington Beach, it is appropriate to mitigate now for past and near-future losses prior to potential new technology requirements, then undertake additional mitigation, if necessary, based on any uncompensated losses at the end of the ten-year license period.⁹

6. Condition BIO-5 Contemplates Mitigation Of Significant Impacts On Coastal Fish, Not Coastal Birds.

Condition BIO-5 states, in relevant part,

[i]f the entrainment and impingement study [IM&E Report] determines that *significant impacts to one or more species of coastal fish is occurring*, the project owner will provide funds for mitigation/compensation for impacts to Southern California Bight fish populations. (Emphasis added.)

Commission staff, however, have expanded consideration of significance to the hypothetical and admittedly indirect impact of Units 3 & 4 on coastal birds. Additionally, the staff members have linked effects on bird habitat by considering entrainment of invertebrate larvae. Condition BIO-5 does not mention coastal birds or coastal invertebrates, but focuses instead on coastal, Southern California Bight fish populations.

⁸ Namely, the 104 acre recommendation (i) is based on maximum permitted flows, not actual flows, and (ii) results in creation of permanent wetlands that will "mitigate" entrainment and impingement long after the ten-year permit period during which any such effects occurred.

⁹ Staff may argue that if this approach is adopted, it would risk losses now that cannot be retroactively compensated. However, Commission staff members have not identified any species, even of the endangered bird species it has focused on in excess of Condition BIO-5 requirements, that faces extinction if some losses to coastal fish and invertebrates near the facility are compensated beginning in 2010.

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Although entrainment of fish and invertebrate larvae may have an indirect effect on certain coastal bird habitat, this was not a consideration contemplated in the original, Conditions of Certification. Again, it appears Commission staff selected coastal birds considered threatened, endangered or of concern under federal and/or state law to support their otherwise unfounded determination that Units 3 & 4 would have a "significant" effect requiring mitigation. It is arbitrary, capricious and contrary to law for Commission staff to stray well beyond the scope of review contemplated by the Condition BIO-5 to determine the significance of the impact of Units 3 & 4 on species of coastal fish by looking to the significance of a hypothesized impact on coastal birds.

Additionally, the IM&E Report did not show significant impacts on any of the coastal fish studied, even incorrectly assuming HBGS always operates at its maximal permitted flow. For instance, entrainment for white croaker under maximum permitted flow for Units 1-4 was estimated at 17.6 million larvae, but an older, fully mature white croaker may release almost 900,000 eggs per year. Queenfish, with an entrainment of 17.8 million larvae under maximum permitted flow, can release more than 2 million eggs per year. The total entrainment for the even more fecund California halibut by HBGS is equivalent to the annual spawning of a single adult female. Reduce these numbers by two-thirds to account for the actual flow created by Units 3 & 4, and it becomes crystal clear that none of these species is suffering a significant impact.

Therefore, there is no evidence to support the staff finding that such coastal species are suffering significant impacts, as required by Condition BIO-5 to trigger a duty to fund mitigation or compensation efforts. Nevertheless, AES Huntington Beach is willing to fund restoration of 15.35 acres of coastal wetland to compensate estimated actual losses for gobies.

7. AES Huntington Beach Is Committed To Mitigating And/Or Reducing Entrainment And Impingement From The Ten-Year Permitted Operation Of Units 3 & 4.

The recommended restoration of 104 acres of coastal wetlands is based on false assumptions and measures that are not required by Condition BIO-5. In summary, the 104-acre restoration is based on:

- Misapplication of the APF approach to species of coastal fish that inhabit and breed in the water column to maximize the number of acres of wetland to be restored.
- The scientifically indefensible assumption that 104 acres of wetland will somehow mitigate entrainment of coastal species that do not inhabit or breed in coastal wetlands.
- The incorrect assumption that Units 3 & 4 will continually draw seawater at half the maximum permitted rate of flow for the entire HBGS where data from the

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last four years refute this assumption, and show that actual entrainment and impingement is far lower than estimated by staff.

- The false assumption that Condition BIO-5 requires mitigation and compensation be completed within ten years, where Condition BIO-5 only requires mitigation of ten years of actual operation, and does not require that the mitigation take place in the same time frame.
- The use of indirect and hypothetical effects on habitat for an assortment of coastal birds to manufacture "significance" far beyond that demonstrated by the IM&E Report upon which all determinations of significance are to be based under Condition BIO-5.
- A finding of significant impact on numbers of larvae entrained for certain coastal species where the number of larvae entrained, even assuming maximal permitted intake flow, amounts to the annual number of larvae produced by a handful of adult females.
- Ignoring the potential reductions of entrainment and impingement due to mandatory technological and/or operational changes under EPA's Rule 316(b) as well as judicial and SWRCB interpretation of 316(b).

Condition BIO-5 imposes an obligation on AES Huntington Beach to mitigate and/or compensate for losses to one or more species of coastal fish if, and only if, the entrainment and impingement study determines that actual operation of Units 3 & 4 will have "significant impacts" on one or more species of coastal fish. AES Huntington Beach has demonstrated that there are no significant impacts. At most, the only species of coastal fish to suffer a recognized impact are the various species of goby. Thus, the only impact that could conceivably merit compensation would result in AES Huntington Beach restoring 15.35 acres of coastal wetlands, which serve as habitat and breeding grounds for gobies.

Nevertheless, AES Huntington Beach is committed to compensating for all actual losses for the ten-year permit period. Therefore, AES Huntington Beach recommends the following approach as both scientifically and legally defensible:

- Base entrainment mitigation on actual rather than maximum flow.
- Base mitigation on operations during the ten-year license period, as required by Condition BIO-5.
- Base mitigation on the significant impacts to coastal fish, as required by Condition BIO-5, and select restoration or other mitigation projects that will compensate for actual entrainment and impingement over time.

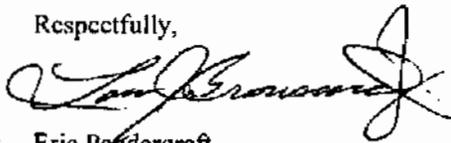
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- Stage mitigation to account for past and near-future losses, so as to allow for reduced entrainment and impingement due to new regulatory mandates under Rule 316(b).
- Undertake additional mitigation, if necessary, to make up for any uncompensated actual losses at the end of the ten-year license period.

This plan exceeds the requirements of Condition BIO-5 in a manner that is efficient and scientifically justified. AES Huntington Beach has timely complied with all Conditions of Certification imposed as part of the Retool Project, and remains committed to completing this Condition on time.

Thank you for your consideration of our comment.

Respectfully,



ROR Eric Pendergraft
Plant Manager, AES Huntington Beach

cc: Donna Stone, California Energy Commission (Via First Class Mail)
Roger Johnson, California Energy Commission (Via First Class Mail)
Rick York, California Energy Commission (Via First Class Mail)

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bcc: Lou Bronsard (Via Email Only)
Paul Hurt (Via Email Only)
Shane Beck (Via Email Only)
John Steinbeck (Via Email Only)
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Rick Rothman, Esq. (Via Email Only)

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