



**Pacific Gas and  
Electric Company**

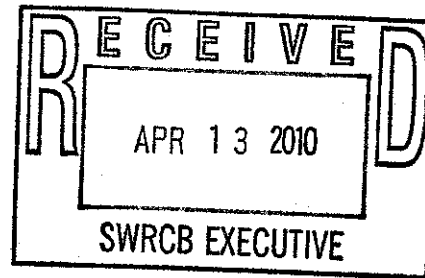
5/4/10 Board Meeting  
Once Through Cooling  
Deadline: 4/13/10 by 12 noon

Mark Krausse  
Director  
State Agency Relations

1415 L Street, Suite 280  
Sacramento, CA 95814  
(916) 388-5709  
Fax: (916) 388-5720  
MCKD@pge.com

April 13, 2010

Charles Hoppin, Chair  
State Water Resources Control Board  
1001 I Street  
Sacramento, CA 95814  
[commentletters@waterboards.ca.gov](mailto:commentletters@waterboards.ca.gov)



RE: Comments on the State Water Resources Control Board's Revised OTC Policy

Dear Chairman Hoppin:

On March 23, 2010, the State Water Resources Control Board ("Board") released a revised version of the "Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling," set a hearing date of May 4<sup>th</sup> and notified the public that comments on the revisions would be accepted until April 13<sup>th</sup>.

PG&E continues to actively participate in the Board's policy development process and strongly supports adoption of a reasonable, workable policy that protects California's marine resources, ensures reliability of the state's electric grid, and is consistent with the state's GHG-emission-reduction mandates. With final adoption appearing imminent, we remain concerned that the policy does not provide an adequate framework to effectively assess the feasibility and reasonability of retrofitting California's nuclear power generation facilities, thereby jeopardizing a significant portion of the state's baseload electric generation capacity and the state's ability to meet the mandates of the Global Warming Solutions Act of 2006.

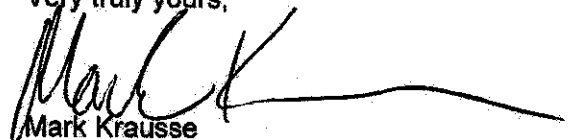
Below we have summarized our key comments on the revised policy and have included more detailed comments as an attachment.

- PG&E is pleased to see the current draft policy acknowledges the unique contributions of the state's nuclear power plants to both baseload power and meeting the state's greenhouse-gas-reduction goals.
- PG&E continues to strongly believe that a wholly disproportionate cost-benefit test provides the best overall assessment framework for determining the need for an alternative compliance standard. The test has thirty years of history behind it, both in California and nationwide, and has been endorsed by the U.S. Supreme Court's Entergy decision as an allowable method of considering cost.
- If the cost-cost test remains the only method to determine alternative compliance requirements for nuclear facilities, the draft policy should be modified to 1) replace the "wholly out of proportion" standard with the "significantly greater" standard; 2) clarify how the factors described in paragraph 3.D.7 are considered along with compliance costs and 3) confirm that the costs considered by the Board are those contained in the Substitute Environmental Document. This would ensure a consistent and effective application of the test.

- PG&E strongly recommends that as a first step in the proposed Nuclear Review Committee process, existing cooling tower feasibility studies prepared on behalf of the utilities be peer reviewed by independent experts with significant nuclear engineering and nuclear plant management experience. If the existing studies meet peer-review standards, the Nuclear Review Committee may be able to complete its work in well under the three-year timeframe provided in the policy.
- If the Nuclear Review Committee determines that further studies are necessary to fully evaluate the costs, impacts and feasibility of retrofits at nuclear plants, they must be conducted by an outside consultant with significant experience in the fields of nuclear engineering and nuclear plant management.
- In the event that not all impacts from entrainment and impingement at nuclear plants are eliminated through alternative compliance requirements, PG&E supports the concept that funds be directed to the Marine Protected Areas program.
- PG&E is concerned that the staff has not yet responded to public comments submitted in September and December 2009 on earlier versions of the policy. Direct responses to the major issues raised by various stakeholders would provide a deeper understanding of staff's thinking and greater transparency in the policy development process. For these reasons, PG&E urges that responses to public comments be provided at least two weeks prior to final adoption of the policy.

PG&E remains committed to working with the Board, its staff and other interested parties to ensure adoption of the most effective once-through-cooling policy for the state of California. Please contact me if you wish to discuss any of our comments in more detail.

Very truly yours,



Mark Krausse

cc: Frances Spivy-Weber, Vice Chair, SWRCB  
Arthur Baggett, Jr., Member, SWRCB  
Tam Doduc, Member, SWRCB  
Walt Pettit, Member, SWRCB  
Dorothy Rice, Executive Director, SWRCB  
Jonathan Bishop, Chief Deputy Director, SWRCB  
Michael Lauffer, Chief Counsel, SWRCB  
Susan Kennedy, Chief of Staff, Office of the Governor  
Dan Pellissier, Deputy Cabinet Secretary, Office of the Governor  
Linda Adams, Secretary for CalEPA  
Cindy Tuck, Undersecretary for CalEPA  
Mike Chrisman, Secretary, Natural Resources Agency  
Karen Douglas, Chair of Energy Resources, Conservation & Development  
Commission  
Jim Boyd, Vice Chair of Energy Resources, Conservation & Development Commissions  
Jeff Byron, Commissioner, Energy Resources, Conservation & Development  
Commission  
Robert Weisenmiller, Commissioner, Energy Resources, Conservation &  
Development Commission  
Michael Jaske, Energy Resources, Conservation & Development  
Yakout Mansour, CEO, California ISO  
Dennis Peters, External Affairs Manager, California ISO  
Michael Peevey, President, Public Utilities Commission  
Robert Strauss, Public Utilities Commission  
Jeanie Townsend, Clerk of the Board, SWRCB

Statewide Water Quality Control Policy on the  
Use of Coastal and Estuarine Waters for Power Plant Cooling  
March 23, 2010 Draft

Comments of Pacific Gas and Electric Company

Revised Draft Acknowledges Unique Contributions of State's Nuclear Plants

PG&E is pleased to see the current draft policy acknowledges the unique contributions of the state's nuclear power plants to both baseload power and meeting the state's greenhouse-gas-reduction goals. Without generation from the nuclear plants, the ability of California to meet its GHG reduction goals is nonexistent. Unlike older fossil plants, these facilities cannot repower to gain greater efficiency or reduce air emissions. Any retrofit would in fact reduce generation capacity and create additional air emissions from the fossil plants likely to provide the replacement power.

Cost-Benefit Test is the Most Effective Method to Determine Need for Alternative Compliance

PG&E continues to believe that a wholly disproportionate cost-benefit test would provide the best overall assessment framework for determining the appropriateness of alternative compliance at a specific facility. The test has over thirty years of history behind it, both in California and nationwide. It has recently been used both at Moss Landing and through a draft permitting process at Diablo Canyon. Most importantly, as the Entergy decision clearly states, "...it is *not reasonable* to interpret Section 316(b) as requiring use of technology whose cost is wholly disproportionate to the environmental benefit to be gained." 129 S.Ct. 1509 (2009). The reasonable balancing of compliance costs and environmental benefits is a key component of regulatory decision making. "Every real choice requires a decisionmaker to weigh advantages against disadvantages, and disadvantages can be seen in terms of (often quantifiable) costs." *Id.* at 1513 (Breyer, J., concurring in part, dissenting in part).

Further, as mentioned in our previous comments, the U.S. EPA has published guidance documents on how to prepare cost-benefits analyses. U.S. EPA, *Guidelines for Preparing Economic Analysis* (2000). Other agencies have published guidance in the natural resources damages context. The SED includes statements indicating that a key difficulty in quantifying benefits is that only 2% of fish entrained are recreationally important and therefore, any economic analysis leaves out 98% of entrained species. This is not the case. While the analysis varies by power plant, at Diablo Canyon, the representative species evaluated through our entrainment study accounted for 70% of all fish and the remainder were valued through mechanisms such as trophic transfer. The only species that were not directly "valued" were those forms that remain planktonic for their lifespan. EPA's own guidelines indicate that these species generally need not be evaluated given their short lifespans and short regeneration times.

The bottom line is that the wholly disproportionate test is the most reasonable way to balance compliance costs and benefits – and there is substantial precedent supporting its use.

Cost-Cost Test Must Be Modified to Ensure Consistent and Effective Application

As stated above, PG&E strongly supports the use of a cost-benefit test, alone or in conjunction with a cost-cost test. However, if the cost-cost test remains the only method to determine alternative compliance requirements, the draft policy should be modified to clarify a number of issues.

First, it is unclear how the non-cost factors described in paragraph 3.D.7 are considered along with compliance costs. The factors include engineering, permitting and space constraints and adverse environmental impacts of retrofitting - along with the concept of costs per MWh amortized over a 20-year period. It is unclear if consideration of these factors would be qualitative in nature or would also be reduced in some fashion to a "cost." Clarity in how the factors would be considered in the analysis ensures that there is a consistent and effective application of the test - and that the discharger fully understands the information required for Regional and State Board review.

Second, PG&E does not believe that cost per MWh is a useful data point. Given that the comparison applies only to nuclear plants, it does not provide information in any context that would aid the decisionmaker. For example, one context would be the fact that the cost of a retrofit per MWh published in the SED based upon Tetra Tech cost estimates equates to a 25% increase in the cost of power production at Diablo Canyon. Using the more detailed estimates developed by Enercon, PG&E believes that the increase will be, at a minimum, in the 75% range. If the board is determined to leave cost per MWh in the policy, it should be compared against the current cost of generation at that facility.

Third, it is PG&E's understanding based upon conversations with Board staff that the costs considered by the Board in developing Track 1 are those contained in the SED that were developed by Tetra Tech in their February 2008 report. Any subsequently developed compliance costs, from either the reports prepared by the utilities and peer reviewed or through special studies commissioned by the Nuclear Review Committee, would be compared to the SED costs.

Finally, it should be noted that the revised policy's use of the term "wholly out of proportion" is very similar to the test established by U.S. EPA for alternative compliance requirements for *new* plants. Thus, PG&E believes that it makes sense to reconsider a "significantly greater" cost-cost test in order to provide flexibility to existing nuclear power plants, rather than merely subject them to essentially the same test used for new plants of any type across the country.

Nuclear Review Committee Process Requires Further Clarification

PG&E strongly recommends that the first step in the proposed Nuclear Review Committee process be the peer review of the existing cooling tower feasibility studies prepared on behalf of the utilities. These studies provide a thorough review of the unique retrofit challenges at each site and thus, the costs developed in these reports reflect the true magnitude of compliance costs for such an installation. The peer review must be performed by independent parties with significant experience in the fields of nuclear engineering and nuclear plant management. If the results of the peer review confirm that the studies are reliable, the Committee may be able to complete its work in well under the three year timeframe provided in the policy.

If the Nuclear Review Committee determines that further studies are necessary to fully evaluate the costs, impacts and feasibility of retrofits at nuclear plants, the additional studies must be conducted by an outside consultant with significant experience in the fields of nuclear engineering and nuclear plant management. This is absolutely essential to ensuring a competent, accurate study.

Funding Options for Mitigation Under Alternative Compliance Requirements are Appropriate  
In the event that not all impacts from entrainment and impingement at nuclear plants are eliminated through alternative compliance requirements, PG&E supports the concept that funds be directed to the Marine Protected Areas program.

Response to Stakeholder Comments Would Provide Additional Insight  
PG&E is concerned that the staff has not yet responded to public comments submitted in September or December 2009 on earlier versions of the policy. Direct responses to the major issues raised by various stakeholders would provide a deeper understanding of staff's thinking and greater transparency in the policy development process. This is the minimum that is due to the many stakeholders who provided several rounds of comments, without receiving a response to date.

## Pacific Gas and Electric Company's PROPOSED REVISIONS TO MARCH 2010 DRAFT POLICY

Below PG&E provides suggested revisions to the draft policy. Additions are included as underlined text and deletions are shown in strikeout.

D. No later than [three months of the effective date of this Policy] the Executive Director of the State Water Board, using the authority under section 13267(f) of the Water Code, shall request that Southern California Edison (SCE) and Pacific Gas & Electric Company (PG&E) conduct special studies for submission to the State Water Board.

(1) The special studies shall investigate alternatives for the *nuclear-fueled power plants\** to meet the requirements of this Policy, including the costs for these alternatives.

(2) The special studies shall be conducted by an independent third party with significant expertise in nuclear engineering and nuclear plant management, selected by the Executive Director of the State Water Board.

(3) The special studies shall be overseen by a Review Committee, established by the Executive Director of the State Water Board no later than [three months of the effective date of the Policy], which shall include, at a minimum, representatives of SCE, PG&E, SACCWIS, the environmental community, and staffs of the State Water Board, Central Coast Regional Water Board, and the San Diego Regional Water Board.

(4) No later than [six months after the effective date of this Policy], the Review Committee shall initiate peer review of the alternative cooling feasibility studies completed by PG&E and SCE. The peer review must be conducted by independent third parties with significant expertise in nuclear engineering, nuclear plant management, and cooling system design and must be completed within [ten months after the effective date of this Policy]

(4 ~~5~~) No later than [one year after the effective date of this Policy], the Review Committee, described above, shall provide a report for public comment detailing the results of the peer review of existing, completed studies, and based on the degree to which the existing, completed studies can be relied upon, the scope of any additional special studies to be developed. ~~including the degree to which existing, completed studies can be relied upon.~~

(~~5~~ 6) No later than [three years after the effective date of this Policy] the Review Committee shall provide the final report and the Review Committee's comments

for public comment detailing the results of the special studies and shall present the report to the State Water Board.

(6 7) Meetings of the Review Committee shall be open to the public and shall be noticed at least 10 days in advance of the meeting. All products of the Review Committee shall be made available to the public.

(7 8) The State Water Board shall consider the results of the special studies, and shall evaluate the need to modify this Policy with respect to the *nuclear-fueled power plants\**. In evaluating the need to modify this Policy, the State Water Board shall base its decision to modify this Policy with respect to the *nuclear-fueled power plants\** on the following factors:

- (a) Costs of compliance in terms of total dollars;
- (b) Costs of compliance in terms of dollars per megawatt hour of electrical energy produced over an amortization period of 20 years;
- (~~b-c~~) Ability to achieve compliance with Track 1 or Track 2 considering factors including, but not limited to, engineering constraints, space constraints, permitting constraints, and public safety considerations;
- (~~e-d~~) Potential environmental impacts of compliance with Track 1 or Track 2, including, but not limited to, air emissions;
- (d e) Any other relevant information.

(8 9) If the State Water Board finds that the costs for a specific *nuclear-fueled power plant\** to implement Track 1 or Track 2, considering all the factors set forth in paragraph (7), are wholly out of proportion to the environmental benefits, both direct and indirect, use and nonuse, of compliance with this policy, then the State Water Board shall establish alternate requirements for that *nuclear-fueled power plant\**. The State Water Board shall establish alternative requirements no less stringent than justified by the wholly out of proportion (i) cost and (ii) factor(s) of paragraph (7), as compared to the environmental benefits achieved through compliance. The burden is on the person requesting the alternative requirement to demonstrate that alternative requirements should be authorized.

*If the Board does not adopt a cost-benefit provision, then the following alternative paragraph 9 is proposed to clarify the cost-cost provision:*

(8 9) If the State Water Board finds that the costs for a specific *nuclear-fueled power plant\** to implement Track 1 or Track 2, considering all the factors set forth in paragraph (7), are significantly greater than the costs identified in the Substitute Environmental Document considered by the State Water Board in



establishing Track 1, then the State Water Board shall establish alternate requirements for that *nuclear-fueled power plant\**. The State Water Board shall establish alternative requirements no less stringent than justified by the wholly out of proportion (i) cost and (ii) factor(s) of paragraph (7). The burden is on the person requesting the alternative requirement to demonstrate that alternative requirements should be authorized.

~~(9-10)~~ In the event the State Water Board establishes alternate requirements for *nuclear-fueled power plants\**, the difference in impacts to marine life resulting from any alternative, less stringent requirements shall be fully mitigated. Mitigation required pursuant to this paragraph shall be a *mitigation project\** directed toward the implementation, monitoring, maintenance and management of the State's Marine Protected Areas. Funding for the *mitigation project\** shall be provided to the California Coastal Conservancy, working with the Ocean Protection Council to fund an appropriate *mitigation project\**.