

**BEFORE THE STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
Central Coastal Region**

June 09, 2003

**COMMENTS OF THE NUCLEAR INFORMATION AND RESOURCE SERVICE
(NIRS)
REGARDING CONSENT JUDGMENT
IN THE CASES INVOLVING ALLEGED VIOLATIONS OF
NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM
PERMIT NO. CA0003751
BY PACIFIC GAS AND ELECTRIC COMPANY
AT DIABLO CANYON NUCLEAR POWER PLANT
SAN LUIS OBISPO COUNTY**

Nuclear Information and Resources Service (NIRS) is providing written comment in a joint response with the San Luis Obispo Mothers for Peace in regards to the Waste Discharge Water Order No. RB3-2003-0009 for the Diablo Canyon Nuclear Generating Station Units 1 and 2.

The Diablo Canyon units operated by Pacific Gas and Electric (PG&E) take in and discharge over 2.5 billion gallons of coastal water impacting the environmental quality and marine life habitat of the Diablo Cove.

There is no dispute that the operation of these nuclear units has had and continues to have a harmful environmental impact on both habitat and wildlife, including endangered and protected species.

NIRS is opposed the current proposed negotiated settlement for the following reasons:

1) It does not adequately protect the marine and coastal environment and a growing variety of protected and endangered species and does not address the ongoing discharges from Diablo Canyon which are in violation of duly promulgated law.

From 1988 to 1991, following the startup of the Diablo Canyon units, the red and black abalone population in Diablo Cove declined by almost 90% as the result of withering syndrome, a chronic progressive disease exacerbated by elevated sea water temperatures. Thermal pollution from the Diablo Canyon units was identified by the Water Quality Control Board to be a significant contributor to the decline of the red and black abalone. Water temperatures in north Diablo Cove now prevent the successful developmental growth of black abalone and red abalone, both indigenous coastal water mollusk species. In 1997, the California legislation imposed a moratorium, making it unlawful to take

abalone for commercial purposes from San Francisco south.¹ The statute defines “take” as including killing or attempted to kill.² The California Courts have determined that the definition of take in the Fish and Game Code included killing and that nothing suggested that the proscribed killing must result from hunting and fishing.³ The routine operation of the once through cooling system at Diablo Canyon is therefore in violation of the statute.

Furthermore, National Marine Fisheries Services lists the black abalone as a “candidate species” under the Endangered Species Act.⁴

The Water Quality Control Board and the California Department of Fish and Game duly prepared a cease and desist order for the reactor discharges into the ocean cove.

“Overall, the effects of the discharge include loss and degradation of habitat, decrease in several species’ diversity and density, and loss of entire species. It has been shown that the effects continue to expand beyond Diablo Cove and are greater than predicted. The discharge does not provide for the protection of propagation of species and does not provide habitat suitable for indigenous species.”⁵

The agency further concluded:

“The question presented is whether the degradation of the marine environment near DCPD [Diablo Canyon Power Plant] is acceptable to the Department of Fish and Game. Based on review of law and policies administered by the Department, and other laws requiring enhancement and protection of the marine ecosystem, the answer is no.”⁶

The draft order cites that 97% of the cove’s surface kelp forest (Bull Kelp) has literally been clear cut from its former habitat, with more kelp forests potentially impacted beyond the cove.⁷ As a result, the inter-tidal communities of Diablo Cove are now devoid of historically abundant quantities of perennial algae cover. Surfgrass, once the predominant plant thriving in continuous bands throughout the cove, survives only in isolated locations.

The Department of Fish and Game maintained, based upon “the effects of elevated water temperature and the sever decrease in the adult populations densities below the recommended Department levels, that it is questionable whether or not abalone populations will recover naturally in Diablo Cove should temperatures return to normal.”⁸

¹ Fish and Game Code 5521: Stats. 1997, chapter 787, p. 2.

² Fish and Game Code, p. 86.

³ Department of Fish and Game v. Anderson-Cottonwood Irrigation District, (1992) 8 Cal.App. 4th 1554.

⁴ 64 Federal Register 129, June 23, 1999.

⁵ Joseph Milton, staff counsel, California Department of Fish and Game, Memo to California Regional Water Quality Control Board, Draft Cease and Desist Order for Pacific Gas and Electric and Electric National Pollution Discharge Elimination System Permit Order 90-09, February 20, 2000, p.5.

⁶ Legal Office, California Department of Fish and Game, Memo, February 29, 2000, p. 1

⁷ Ibid, Milton, Fish and Game, February 20, 2000, p. 3.

⁸ California Department of Fish and Game, Memo to Michael Thomas, RWQCB-CCR, February 29, 2000.

Recent events document that a growing variety of endangered species are further threatened by the ongoing operation of Diablo Canyons once through condenser cooling system. An event report filed to the U.S. Nuclear Regulatory Commission on March 22, 2003 documents the taking of an endangered species, a baby sea otter, into the Auxiliary Saltwater Pump Inlet between the bar racks and the screens.⁹

The artificial cultivation and seeding of coastal waters with abalone as proposed by the settlement does nothing to address the ongoing harmful effects of the routine operation of the reactors' condenser cooling system. Artificial seeding does nothing to improve the quality of the habitat that is being adversely impacted by the cooling system's routine operation.

Pacific Gas and Electric has thus far escaped any significant and meaningful penalty for its virtual elimination of abalone population in its water and the near complete destruction of the indigenous habitat in Diablo Cove.

The Consent Judgment does nothing to alter or mitigate the ongoing destruction of indigenous coastal marine habitat as a result of the continued operation of the Diablo Canyon once through condenser cooling system.

2) It allows the ongoing entrainment and impingement of marine life without abatement or mitigation.

The environmental consequences from the intake of extremely large volumes of sea water into the condenser system must also be addressed. With the intake of 2.5 billion gallons of water from Diablo Cove each day, the entrainment of wildlife and marine life has a significant and equally disastrous impact on the marine environment.

The current Consent Judgment does not address the impact of entrainment of undetermined volumes of marine larvae which are then pasteurized in the condenser system and spewed out as not only lifeless sediment but as additional sediment which clouds over the discharge zone filtering out light and shading the Diablo Cove ocean floor. This umbrella/shading of the cove floor from sunlight further adversely impacts indigenous habitat. Undetermined but tremendous amounts of nutrients are robbed from the cove each day of station operation without knowledge of its impact on the marine environment.

3) It allows the ongoing destructive scouring and thermal degradation of the coastal water environment without abatement or mitigation.

Previous testimony before the WQCB confirms that the ongoing operation of the Diablo Canyon once through cooling system has significantly harmed the once vital, densely covered marine habitat in Diablo Cove. Michael Thomas, WQCB project manager for

⁹ Daily Event Reports, Event Number:39690, Diablo Canyon, U.S. Nuclear Regulatory Commission, March 24, 2003. <http://www.nrc.gov>.

the Diablo Canyon Studies testified to the board the thermal pollution and scouring effect of the discharge has turned a significant portion of Diablo Cove into “essentially bare rock—what I call bare rock.”¹⁰

4) It does not address PG&E’s deliberate withholding of evidence of environmental destruction caused by the operation of the Diablo Canyon once through cooling system.

In 1982, prior to Diablo Canyon’s operation, the state established effluent limitations for heat discharges into Diablo Cove. PG&E’s permit stipulated that: 1) there shall be no degradation of indigenous species; 2) there shall be no degradation in marine communities, to include plants, invertebrate and vertebrate animals and: 3) the elevated temperatures of the receiving water shall not have any adverse effect on beneficiary uses, including shellfish harvesting and the marine habitat.¹¹

The permit relied upon a Thermal Discharge Assessment Report, prepared by PG&E . The report predicted very limited harm to a small percentage of the Diablo Cove habitat and its species. Also in 1982, PG&E submitted a report entitled “Assessment of Alternatives to Existing Cooling Water System” that, after exploring options for reducing discharge water temperature, concluded that all the alternatives, including the installation of cooling tower and ponds, were economically prohibitive.

In approving the 1982 discharge permit, the WQCB considered the utility’s high cost for a technological fix of its discharge problem and determined what were “reasonable” levels of environmental degradation in accepting a daily effluent discharge objective of 20 degrees Fahrenheit above ambient temperatures in the Diablo Cove and a periodical 100 degrees Fahrenheit above ambient discharge to kill mussel and barnacle infestations in the cooling system piping. The WQCB recognized that once operational, their effects would be further studied and that additional regulation might be require if the effects were different from those predicted. The WQCB stipulated that, should the thermal effects prove inadequate, the regional regulatory would have the authority to modify or revoke the permit in order to protect the beneficial uses of Diablo Cove.¹²

Defined as an “existing discharge” under state regulation, the National Pollution Discharge Elimination System issued in 1990 provides Diablo Canyon with a waiver to allow a maximum discharge temperature of 22 degrees F above the natural temperature of Diablo Cove. This is 2 degrees F higher than the stated water quality discharge objective. However, the 1990 discharge permit again stipulated that: “Water discharge

¹⁰ Hearing Before the California Regional Water Quality Control Board, Central Coastal Region, for Consideration of a Cease and Desist Order Against PG&E Company’s Diablo Canyon Nuclear Power Plant for Alleged Violations of the Facility’s NPDES, Transcript of Proceedings, San Luis Obispo, CA, March 30, 2000, p.

¹¹ Jennifer Soloway, staff counsel, California regional Water Quality Control Board, Central Coastal Region, “Response to Legal Argument Opposing Adoption of Draft Cease and Desist Order 00-032 for Diablo Canyon Nuclear Power Plant, May 5, 2000, p. 2

¹² Staff Counsel, CRWQCB, “Legal Argument in Support of Adoption of Cease and Desist Order 00-32 for PG&E’s Diablo Canyon Nuclear Power Plants,” March 1, 2000, p.3.

shall not individually or collectively cause temperature of the receiving water to adversely affect beneficial uses.”¹³

As part of the permit, the utility was required to environmentally monitor Diablo Cove to analyze hot water discharge effects on the cove. In December 1997, PG&E submitted a study that determined that there were large, statistically significant and ecologically important changes in habitat-forming species as earlier referenced caused by the reactor cooling system. The study not only indicated that the utility prediction of impact was entirely wrong but also that PG&E failed to predict accurately how far and wide the hot water discharge would extend. The original plume pollution predictions were literally off by more than a mile, significantly affecting an additional 4.2 miles to the north of the reactors. Where utility predictions place a 0.3 mile area of Diablo Cove at risk from thermal pollution, the actual impacts extended for 1.4 miles of nearly complete loss of all habitat in the inter-tidal zone. For 10 years, PG&E did not submit 1986 infrared images that showed the much more widespread distribution of thermal plumes from the reactors. PG&E further withheld an extensive set of 20-year time series photographs of ocean monitoring stations, showing a steady degradation of ocean habitat. PG&E delayed submittal of temperature-monitoring data, confirming elevated temperatures, until May 2000, even though the company submitted annual monitoring reports from 1998 and 1999.¹⁴ The temperature monitoring data only came to light during the discovery process.

PG&E’s track record for withholding data, for years and even decades, on the reactors’ actual discharge impacts has significantly undermined the company’s credibility for honoring its licensing, operational or settlement agreements.

The Consent Judgment does nothing to address this outstanding and significant issue.

5) It would signify the WQCB’s final capitulation and abdication of its primary responsibility to protect the marine and coastal environment without providing for the meaningful abatement of present and future degradation of coastal marine habitats.

The current settlement does nothing to address or abate the ongoing thermal discharges from Diablo Canyon which continue to violate the provisions of the water discharge permit that states that: (1) there shall be no degradation of indigenous species; (2) there shall be no degradation of marine communities, including plants and invertebrate and vertebrate animals, and also (3) the elevated temperature of the receiving water shall not have any adverse effect on beneficiary uses. The proposed settlement is an abdication of the board’s responsibilities to protect water resources and marine life from the

¹³ Hearing Before the CRWQCB-CCR, for Consideration of a Cease and Desist Order Against PG&E, for Alleged Violations of the Facility’s NPDES , Transcript of Proceeding, San Luis Obispo, CA, March 30 2000, line 24, p. 15- line 1, p. 16.

¹⁴ Michael Thomas, project manager, CRWQCB, Rebuttal Testimony in Support of Cease and Desist Order No. 00-32, May 5, 2000, p. 6.

indisputable ongoing and growing damage from the generators' condenser cooling system.

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