

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL
(TEMPORARY FORM)

CONTROL NO: 11952

FILE: ENVIRO

FROM: Department of Fish & Game Calif. Sacramento, Calif. E.C. Fullerton		DATE OF DOC 95814 10-7-75	DATE REC'D 10-15-75	LTR XX	TWX	RPT	OTHER
TO: Mr. Gordon Dicker		ORIG 1 signed	CC	OTHER	SENT NRC PDR <u>XX</u> SENT LOCAL PDR <u>XX</u>		
CLASS	UNCLASS XXX	PROP INFO	INPUT	NO CYS REC'D 1	DOCKET NO: 50-275/823		

DESCRIPTION: Ltr furnishing info on the potential impacts of the Diablo Canyon Plant aquatic ecosystem of Diablo & South Coves adjacent coastal regions.

ENCLOSURES:

~~Remove~~

PLANT NAME: Diablo Canyon 1 & 2

FOR ACTION/INFORMATION DHL 10-18-75

BUTLER (L) W/ Copies	SCHWENCER (L) W/ Copies	ZIEMANN (L) W/ Copies	REGAN (E) W/ Copies	REID (L) W/ COPIES
CLARK (L) W/ Copies	STOLZ (L) W/ Copies	DICKER (E) W/ Copies	LEAR (L) W/ Copies	
PARR (L) W/ Copies	VASSALLO (L) W/ Copies	KNIGHTON (E) W/ Copies	SPIES W/ Copies	
KNIEL (L) W/ Copies	PURPLE (L) W/ Copies	YOUNGBLOOD (E) W/ Copies	LPM W/ Copies	

INTERNAL DISTRIBUTION

<u>REG FILE (2)</u> NRC PDR (2) LOGC, ROOM P-506A GOSSICK/STAFF CASE GIAMBUSSO BOYD MOORE (L) DEYOUNG (L) SKOVHOLT (L) GOLLER (L) (Ltr) P. COLLINS DENISE REG OPR FILE & REGION (2) MPC	<u>TECH REVIEW</u> SCHROEDER MACCARY KNIGHT PAWLICKI SHAO STELLO HOUSTON NOVAK ROSS IPPOLITO TEDESCO COLLINS LAINAS BENAROYA VOLLMER	<u>ENVIRO</u> DENTON GRIMES GAMMILL KASTNER BALLARD SPANGLER MULLER DICKER KNIGHTON YOUNGBLOOD REGAN PROJECT LDR W. ROSS WARLESS	<u>LIC ASST</u> R. DIGGS (L) H. GEARIN (L) E. GOULBOURNE (L) P. KREUTZER (E) J. LEE (L) M. RUSHBROOK (L) S. REED (E) M. SERVICE (L) S. SHEPPARD (L) M. SLATER (E) H. SMITH (L) S. TEETS (L) G. WILLIAMS (E) W. WILSON (L) R. INGRAM (L) M. DUNCAN (E)	<u>A/T IND.</u> BRAITMAN SALTZMAN MELTZ <u>PLANS</u> MCDONALD CHAPMAN DUBE (Ltr) E. COUPE PETERSON HARTFIELD (2) KLECKER EISENHUT WIGGINTON
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EXTERNAL DISTRIBUTION

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| <ul style="list-style-type: none"> 1 - LOCAL PDR San Luis Obispo, Calif. 1 - TIC (ABERNATHY) (1) (2) (10) 1 - NSIC (BUCHANAN) 1 - ASLB 1 - Newton Anderson - ACRS HOLDING/SENT | <ul style="list-style-type: none"> 1 - NATIONAL LABS <u>ORNL</u> 1 - W. PENNINGTON, Rm E-201 GT 1 - CONSULTANTS
NEWMARK/BLUME/AGBABIAN. | <ul style="list-style-type: none"> 1 - PDR-Walnut Creek 1 - PDR-SAN LUIS 1 - BROOKHAVEN NAT LAB 1 - G. ULRIKSON ORNL |
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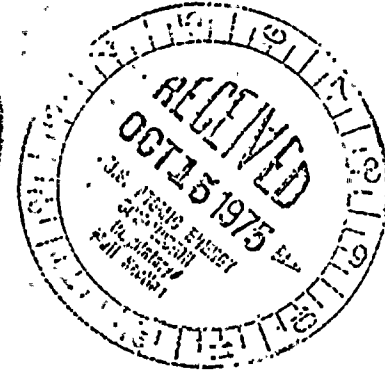
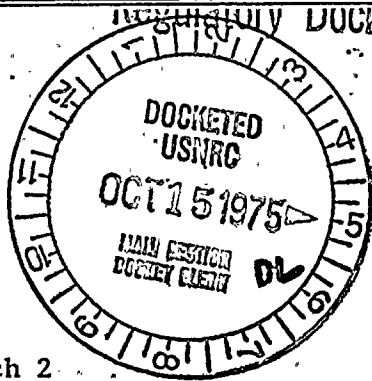
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DEPARTMENT OF FISH AND GAME

1416 Ninth Street
 Sacramento, California 95814
 Phone (916) 445 3531



October 7, 1975



Mr. Gordon K. Dicker, Chief
 Environmental Projects Branch 2
 Division of Reactor Licensing
 United States Nuclear Regulatory Commission
 Washington, D. C. 20555

Dear Mr. Dicker:

50-275
 50-323

Thank you for your request to provide data and information concerning the potential impacts of the Diablo Canyon Nuclear Plant (DCNP) on the aquatic ecosystem of Diablo and South Coves and adjacent coastal regions. Our Department has been conducting ecological baseline studies and water quality investigations during the construction phase at DCNP. We intend to continue those studies after the plant becomes fully operational in order to determine the effects of its discharge upon Diablo Cove and adjacent areas of the coast.

As you noted, we have observed certain definite changes in benthic communities near the plant site. The effects of siltation on South Cove and the abalone mortality in Diablo Cove were, of course, caused by separate events and have resulted in different degrees of damage to the marine environment.

In 1970 and 1971, the Department documented construction impacts to South Cove as a result of the intake structure cofferdam construction. Major environmental degradation to the entire biotic community of approximately 10 acres occurred when muds and silts from the cofferdam were released into the cove.

Pacific Gas and Electric Company (PG&E) commenced cleanup dredging within South Cove in January 1974 and has proceeded, more or less continuously, since that date. The dredge had purportedly made one pass over the entire basin by early spring of 1975, with intensive silt removal activities conducted immediately in front of the intake structure. At this time, considerable amounts of silt are still present over most of the cove. Our Department, in cooperation with the Office of the Attorney General of California, has requested PG&E to explore alternative methods of silt removal, including re-establishment of the natural circulation pattern of South Cove as well as methods to reduce cove siltation from land-runoff. A number of actions have been taken by PG&E to reduce the land-runoff impacts but we are unaware of any planning by the company with regard to the circulation problem.

There is presently no recreational or commercial abalone or sea urchin fishery in South Cove. We have prepared a comprehensive inventory of the plants and animals estimated to have been lost from the South Cove as a result of the silt deposition. Except for peripheral areas, most of the formerly diverse benthic

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communities have not recovered. The Department is continuing to seek restoration of the South Cove to as near original condition as possible.

During certain pump tests at DCNP in 1974 and 1975, the Department collected evidence that toxic concentrations of copper had been released to Diablo Cove. Those concentrations, identified by standard bioassay testing and heavy metal analysis, were recorded on several occasions during circulating pump testing in July 1975 and during start-up of the internal cooling water pump systems. Tissues from numerous plants and animals collected from Diablo Cove showed significantly elevated concentrations of copper in comparison with areas not affected by the discharge. Department staff established that abalone mortality and accumulation of copper resulted from the discharge of copper to Diablo Cove, which led, in part, to the decision by PG&E to replace the copper systems with titanium.

In Diablo Cove, however, assignment of losses has been complicated by other possibly interactive events. Populations of red abalone and sea urchins in Diablo Cove and control areas to the north have declined dramatically since the initial 1970-1971 surveys by the Department and several factors may have been responsible for those declines: sea otter predation (documented elsewhere in central California), increased commercial abalone take, red tide conditions in the fall of 1974, and the release of toxic concentrations of copper during pump testing in 1974 and 1975. The following percentage decreases of red abalone and sea urchins in Diablo Cove and control areas have been reported. In sub-tidal permanent stations for red abalone, Diablo Cove showed a 95 percent decrease in abundance while control areas showed an 80 percent decrease (1975 vs. 1970). In stratified random surveys, red abalone declines were 85 percent in Diablo Cove and 75 percent at control areas (1975 vs. 1974). Red sea urchin populations declined at similar rates in Diablo Cove and the control areas. The difficulties in identifying and differentiating between the causes of sea urchin and abalone reductions in Diablo Cove, reemphasizes the need for extremely comprehensive and intensive monitoring of all potential factors which influence the marine biota of that area.

I hope the above information will meet your needs. Please advise me if you would like further specific information and data regarding any phase of the investigations at Diablo Canyon by the California Department of Fish and Game.

Sincerely,

EC Fullerton

Director



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