STATE OF CALIFORNIA GEORGE DEUKMEJIAN, *Governor*

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
CENTRAL COAST REGION**

1102 A LAUREL LANE
SAN LUIS OBISPO, CA 93401
(805) 549-3147

October 1, 1986

Dr. Victor C. Furtado
Pacific Gas and Electric Company
P. O. Box 7640
San Francisco, CA 94120

SUBJECT: DOMESTIC SEWAGE TREATMENT PLANT DISCHARGE AT DIABLO CANYON NUCLEAR POWER PLANT

We have reviewed your request to reroute the subject discharge identified as 001N. We understand that this discharge will be secondary effluent from a package sewage treatment plant for domestic sewage only. The current proposal is to install a pump station with a two-pump system. One pump will operate as a stand-by in case of main pump failure. The effluent would be discharged to the Unit 2 cooling water discharge (001) which discharges to Diablo Cove. Should both pumps at the pump station fail, effluent would gravity flow to the seawater reverse osmosis system discharge (001P) which discharges to the auxiliary seawater cooling system (001B), then to 001. During a discharge to 001P, a portion of the effluent would be discharged to the intake screen wash water (003). Your staff has estimated effluent dilution in 003 would be approximately 1000:1, wash water to effluent. If the main cooling water intake and the auxiliary seawater cooling systems are not operating, which is highly unlikely, effluent would discharge directly to the intake cove. You also have the option of temporarily discharging to the existing leachfield as an alternative in case of pump station failure.

Rerouting, as proposed, is acceptable pursuant to conditions of Discharge Prohibition A.3. of NPDES Permit No. CA 0003751. Monitoring and Reporting Program No. 85-101 has been revised to include coliform sampling on the ocean-side of the breakwater during effluent discharge through 003. A copy of the revised Monitoring and Reporting Program is enclosed.

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If you have any questions regarding this matter, please contact Nora H. Kataoka or Roger W. Briggs at this office.,

Very truly yours,

KENNETH R. JONES
Executive Officer

NHK:lh

Enclosure

cc: Mr. John B. Martin, U. S. Nuclear Regulatory Commission
Mr. S. A. Varga, PWR Project Directorate No. 3

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

MONITORING AND REPORTING PROGRAM NO. 85-101

FOR

PACIFIC GAS & ELECTRIC COMPANY
DIABLO CANYON POWER PLANT
SAN LUIS OBISPO COUNTY
(Revised October 1, 1986)

Influent Monitoring

A sampling station shall be established at a point upstream of any treatment where representative samples of the influent can be obtained. The following shall constitute the influent monitoring program:

Parameter	Units	Type of Sample	Minimum Frequency of Analysis
Temperature	F	Metered	Continuously
Turbidity	NTU	Grab	Monthly
pH	-	Grab	Monthly
Grease & Oil	mg/l	Grab	Qtrly(Jan,Apr,Jul,Oct)
Total Non-Filtrable Residue* (Suspended Solids)	mg/l	Grab	Qtrly(Jan,Apr,Jul,Oct)
Arsenic	ug/l	Grab	Annually (Oct)
Cadmium	ug/l	Grab	Annually (Oct)
Total Chromium	ug/l	Grab	Qtrly(Jan,Apr,Jul,Oct)
Copper	ug/l	Grab	Qtrly(Jan,Apr,Jul,Oct)
Lead	ug/l	Grab	Annually (Oct)
Mercury	ug/l	Grab	Annually (Oct)
Nickel	ug/l	Grab	Qtrly(Jan,Apr,Jul,Oct)
Silver	ug/l	Grab	Annually (Oct)
Zinc	ug/l	Grab	Qtrly(Jan,Apr,Jul,Oct)
Cyanide	ug/l	Grab	Annually (Oct)
Phenolic Compounds (Non-Chlorinated)	ug/l	Grab	Annually (Oct)
Chlorinated Phenolics	ug/l	Grab	Annually (Oct)
Ammonia (as N)	ug/l	Grab	Qtrly(Jan,Apr,Jul,Oct)

Effluent Monitoring

A sampling station shall be established for each waste discharge and shall be located where representative samples of the discharge can be obtained. The following shall constitute the effluent monitoring program:

Parameter	Units	Discharge	Type of Sample	Minimum Frequency of Analysis
Temperature	F	001	Metered	Continuously
Flow	MGD	001	Recorded from Pump operating data	Daily
pH	-	001,002,003, and 004	Grab	Monthly grab sample
Turbidity	NTU	001	Grab	Monthly
Grease & Oil	mg/l	001 & 001F	Grab	Monthly
Grease & Oil	mg/l	001C,001D,001G, 001H,001I,001J, 001K,001L,001M, 002,003A, and 004	Grab	Qtrly(Jan,Apr, Jul,Oct)
Total Non-Filtrable Residue* (Suspended Solids)	mg/l	001 and 001I	Grab	Monthly
Total Non-Filtrable Residue	mg/l	001C,001D,001F, 001G,001H,001J 001K,001L,001M, 002, and 003A	Grab	Monthly
Arsenic	ug/l	001	Grab	Annual
Arsenic	ug/l	001B,001D,001F, 001H,001I,001L	Grab 1/	Annual
Cadmium	ug/l	001	Grab	Monthly
Total Chromium	ug/l	001	Grab	Monthly
Copper	ug/l	001	Grab	Monthly
Copper	mg/l	001D,001F, 001I,001L, and 001M	24-hr Composite	during metal cleaning operations
Lead	ug/l	001	Grab	Annual
Mercury	ug/l	001	Grab	Annual
Nickel	ug/l	001	Grab	Annual

1/ Composite of grab samples from these sources.

Parameter	Units	Discharge	Type of Sample	Minimum Frequency of Analysis
Silver	ug/l	001	Grab	Annual
Zinc	ug/l	001	Grab	Monthly Minimum Frequency
Cyanide	ug/l	001	Grab	Annual
Phenolic Compounds (Non-chlorinated)	ug/l	001	Grab	Quarterly
Chlorinated Phenolics	ug/l	001	Grab	Quarterly
Total Chlorine Residual	ug/l	001	Grab	At least twice during each chlorination cycle
Free available Chlorine	ug/l	001	Grab	At least twice during each chlorination cycle
Chlorine Used	lbs/day	001	Record of actual amount used	Monthly
Ammonia (as N)	ug/l	001	Grab	Monthly
Toxicity Concentrations**	tu	001	Grab	Quarterly
PCB's	ug/l	001,005	Grab	Quarterly
Iron	mg/l	001D,001F, 001I,001L, 001M	24-hr composite	During metal cleaning operations
Titanium	ug/l	001	Grab	Monthly
Dissolved Oxygen	mg/l	001	Grab	Quarterly
Lithium and Boron	ug/l	001	Monthly composite	Monthly

Hydrazine	ug/l	001D	Grab	Monthly
Parameter	Units	Discharge	Type of Sample	Minimum Frequency of Analysis
Cadmium, Chromium, Copper, Lead, Mercury Nickel, Silver, Zinc	ug/l	001D, 001H & 001L	Quarterly composite	Qtrly(Jan, Apr, Jul, Oct)
Cadmium, Chromium, Copper, Lead, Mercury Nickel, Silver, Zinc	ug/l	001F	Weekly composite	Qtrly(Jan, Apr, Jul, Oct)

Intake and discharge samples, when required, shall be coordinated so as to sample the same water mass (time of intake sampling, plus plant and conduit detention time, yields time that discharge is to be sampled).

* The total non-filtrable residue (suspended solids) analysis of brine waste streams shall be modified as follows: after determination of suspended matter by the Standard Methods Technique, a second determination using the identical procedure shall be made of the suspended matter in the filtrate. Both the first and second determinations as well as the difference between the two amounts shall be reported. The calculated difference shall be considered the concentration of non-filtrable residue in the effluent.

** Static bioassays (96-hr. TLm) using species indigenous to Diablo Cove (including red abalone and blue rock fish, when available), but obtained elsewhere, shall be conducted using water being discharged to Diablo Cove.

The State Water Resources Control Board and the Department of Fish and Game have issued Guidelines for Performing Static Acute Toxicity Bioassays. The guidelines contain the following reference to sample collection:

> "Samples must be collected in thoroughly cleaned containers. Containers should be completely filled with the effluent before capping. Sample degradation by biological action can be minimized by storing samples at 4 degrees C. Tests should begin as soon as possible after collecting the sample. Where samples are known to contain volatiles that may be toxic, or where samples may undergo rapid changes, bioassay tests must be conducted within 24 hours after the samples are collected."

Note that 24 hours is the total maximum time allowed from sample collection to the start of the test including all

transit time and is allowed only for refrigerated samples.

Yard Storm Drains and Stormwater Discharges

By November 1, 1985, the Discharger shall submit a special report proposing a monitoring program sufficient to fully characterize discharges 004 through 013. For discharges 008 through 013, the program must include provisions to assess the impact of the discharges on Diablo Creek. Utimately, the program must be sufficient to satisfy federal stormwater regulations when final regulations are promulgated.

Receiving Water Monitoring

Receiving Water Monitoring shall be conducted as outlined below:

1. Ecological studies shall continue as approved by the Executive Officer in order to evaluate changes in distribution and abundance of marine plant and animals within the vicinity of the discharge.

2. Sediment samples collected annually from two stations inside and two stations adjacent to Diablo Cove, as approved by the Executive Officer, shall be analyzed for arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc, using the following methods:

   a. At least three aliquot samples shall be taken at each station. Samples may be collected by divers using non-contaminating samplers or by a surface operated grab sampler which will obtain a relatively undisturbed sample. If the surface operated grab sampler is utilized, a sample (uncontaminated by the sampler) should be taken from the grab. Regardless of collection method, only the top 5 cm of material shall be analyzed. (Stations should be adjusted as necessary just prior to sampling to assure collection of optimal amounts of fine sediment).

   b. Reference stations (See Figure 1, attached) have been selected in areas which should provide similar sediments at similar depths to the outfall stations. If the collector encounters rocks or gravel at a station, he shall re-position the station, as necessary, to obtain a usable sediment sample. Station location changes shall be described in the final report.

   c. Samples shall be placed in air-tight polyethylene containers. Care shall be taken to ensure the containers are completely filled by the samples and that air bubbles are not trapped in the containers.

The samples shall be stored immediately at 2 to 4 degrees C and not frozen or dried. Total sample storage time shall not exceed two weeks.

d. When processing for analyses, macrofauna and remnants should be removed (taking care to avoid contamination).

e. Chemical extractions are to be run for 24 hours with dilute HCl (.5N) using guidelines recommended by the SWRCB. Subsequent analysis shall be conducted in accordance with the current edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants," promulgated by the United States Environmental Protection Agency. Any variations must be reported with the test results.

3. Aerial photographs of the existing kelp beds from Pecho Rock to Point Buchon shall be taken each year during February, June, and October, and shall continue until Unit 2 has operated commercially for at least two years. Photographic missions shall be scheduled based upon optimum weather and sea conditions.

4. Surface water temperature measurements during normal operation shall be determined at two-month intervals between Point Buchon and Pecho Rock for at least two years after Unit 2 begins commercial operation. Similar measurements shall be taken to characterize thermal plumes during heat treatment: once during heat treatment of Unit 1 and once during heat treatment of Unit 2. Isotherms shall be determined and contours plotted in 2 degree F increments. An infra-red radiometer shall be used in conjunction with thermal measurements to aid in plotting surface isotherms.

5. Water temperature shall be measured at 12 stations (Figure 2, attached) located inside and outside Diablo Cove. Stations 10, 11, and 12 located near the west entrance to Diablo Cove, and Pacific Gas and Electric Company's (PGandE) deep-water, offshore oceanographic monitoring stations (3a-3b-3c, 4a-4b-4c and 5a-5b-5c), shall be measured at one meter increments for the first five meters of the water column, at midwater, and at the ocean bottom. Measurements shall be made in February, June, and October. Precision of measurements shall be within plus or minus 0.5 degrees F.

6. Receiving water pH and dissolved oxygen sampling shall be conducted in conjunction with 5 above, with grab samples collected at ocean surface, midwater, and bottom depths and returned to a laboratory environment for analysis.

7. Underwater incident light measurements shall be recorded continuously at designated TEMP (Thermal Effects Monitoring

Program) stations 7-10, 11-10 and 11-15 (see Figure 3, attached). In addition, a terrestrial station shall be used to record surface light conditions continuously. Quantum sensors shall used to measure Photosynthetically Active Radiation (PAR) in the range of 400 to 700 nanometer wavelengths. Measurements shall be recorded in units of microEinsteins/m^2/second. Measurements are required if one or more circulating water pumps are operating. The data shall be reported quarterly in the form of hourly average daily irradiance curves for each month during the reporting period.

8. In-situ bioassay monitoring, as approved by the Executive Officer, shall continue until such time that the Board determines it is no longer of benefit. Results shall be transmitted simultaneously to the Regional Board and the State Water Resources Control Board. (Deviations from the sampling schedule is permissable if specimen cannot be collected due to: hazardous sea conditions, seasonal unavailability, or inability to locate with reasonable effort).

9. By July 1, 1986, the Discharger shall submit a proposal designed to determine the actual initial dilution achieved by the plant. The proposal shall include a time schedule for reaching said determination by January 1, 1990.

10. For the duration of a discharge from 001N to 003, grab samples shall be collected four times per week along the ocean-side of the western-most breakwater. Samples shall be collected at the water's surface, within ten feet of either side of discharge 003, on an incoming tide. Samples shall be analyzed for total and fecal coliform.

11. For the duration of a discharge from 001N to the intake cove, grab samples shall be collected four times per week at the mouth of the intake cove on the water's surface on an outgoing tide. Samples shall be analyzed for total and fecal coliform.

Reporting

The Discharger shall comply with the following:

1. Influent and effluent monitoring shall be submitted by the 20th day of the month following the month of sample collection.

2. Receiving water monitoring and photographs shall be submitted by the 20th day of the month following the month of sample collection except for quarterly samples that are not month-specific. These shall be submitted by the 20th

day of the month following each calendar quarter.

3. Notwithstanding Standard Provision C.4, details of any bypass or damage of the five-micron filters in the liquid radwaste system shall be reported to the Executive Officer immediately.

4. A copy of information contained in reports to the Nuclear Regulatory Commission and/or the California Department of Health Services related to the marine environment shall be submitted to the Executive Officer. Results of radiological monitoring of the receiving water shall be reported at the same time reports are made to the Nuclear Regulatory Commission.

5. Progress reports regarding studies required in Provision D.4. of the permit shall be submitted by May 1 of each year until the reports themselves are submitted.

6. Pump station failures resulting in discharges of sewage effluent from 001N to the intake cove or 003 shall be reported to Regional Board staff within 24 hours. Written confirmation of this discharge or rerouting to the existing leachfield shall be included in regular monthly monitoring reports.

ORDERED BY _____
Executive Officer

October 1, 1986
Date