

JUL 12 1972

ENVIRON

Docket Nos. 50-275
and 50-323

Mr. Frederick T. Searls
Vice President and General Counsel
Pacific Gas and Electric Company
77 Beale Street
San Francisco, California 94106

Dear Mr. Searls:

A visit to the Diablo Canyon Nuclear Power Plant was made on June 19-20, 1972 by a team from our Directorate of Licensing and the Oak Ridge National Laboratory to review environmental factors related to the construction and operation of the plant. Discussions were held with members of the Pacific Gas and Electric Company's staff in San Francisco on June 22, 1972.

As a result of this visit and our continuing review, additional information will be required to continue our review. Accordingly, please submit the information requested as identified in the enclosure to this letter. Your reply should consist of three signed originals and 297 additional copies as a sequentially numbered supplement to your Environmental Report.

In order to maintain our licensing review schedule we will need a completely adequate response by July 28, 1972. Please inform us within seven days after receipt of this letter of your confirmation of the schedule or the date you will be able to meet. If you cannot meet our specific date or if your reply is not fully responsive to our requests, it is highly likely that the overall schedule for completing the licensing review for this project will have to be extended. Since reassignment of the staff's efforts will require completion of the new assignment prior to returning to this project, the extent of extension will most likely be greater than the extent of delay in your response.

Sincerely,

Respectfully,
Daniel R. Muller

Daniel R. Muller, Assistant Director
for Environmental Projects
Directorate of Licensing

DM

OFFICE ▶						
SURNAME ▶						
DATE ▶						

JUL 1 1964

SECRET

CONFIDENTIAL

To

Director, FBI
Washington, D.C.

Mr. Frederick T. Searls

-2-

JUL 12 1972

Enclosure:
Request for Additional Information

cc: Mr. Philip A. Crane, Jr.
Pacific Gas and Electric Company
245 Market Street
San Francisco, California 94106

DISTRIBUTION:

AEC PDR
Local PDR
J. R. McWherter, ORNL
E. G. Struxness, ORNL
DOCKET FILE (ENVIRON) (2)
RP Reading File
EP-2 Reading File
A. Giambusso, DDRP, L
D. R. Muller, ADEP, L
G. K. Dicker, EP-2, L
L. B. Werner, EP-2, L
R. L. Wade, EP-2, L
R. C. DeYoung, ADPWR's, L
L. L. Kintner, PWR-2, L
H. Denton, ADSS, L
L. Silverstrom, OGC
F. Logan, DR

OFFICE ▶	EP-2:L <i>LBW</i>	EP-2:L <i>for</i>	ADEP:L: <i>DM</i>			
SURNAME ▶	L. B. Werner:peb	G. K. Dicker	D. R. Muller			
DATE ▶	7/6/72	7/4/72	7/12/72			

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- R. C. DeYoung, ADPR's, J
- R. L. Wade, EP-2, J
- L. B. Werner, EP-2, J
- G. K. Dicker, EP-2, J
- D. R. Fuller, ADEP, J
- A. Giambusso, DDRP, J
- EP-2 Reading File
- RP Reading File
- DOCKET FILE (ENVIRON) (S)
- E. G. Struxness, ORAL
- J. R. McWhorter, ORAL
- Local PDR
- REC PDR

7/1/75
 Blumer: pep
 GKDicker
 7/1/75
 DR Fuller
 ADEP: L.
 EP-2: J

ADDITIONAL INFORMATION REQUIRED FOR REVIEW OF
ENVIRONMENTAL IMPACT OF DIABLO CANYON PLANT

DOCKET NOS. 50-275 AND 50-323

A. Site Features

1. List any water sources within 10 miles of the site and give the location, type of usage, and number of people involved.
2. List other uses of the ocean in the vicinity of the station.

B. Thermal Effluent

1. What is the mean longitudinal diffusion coefficient in the ocean, determined as a result of dye studies? Include the method of determining this factor.
2. Describe an offshore outfall that would utilize some form of diffuser to dissipate condenser effluent. Supply details of locations and plume analyses. Give cost estimates.

C. Chemical Effluent

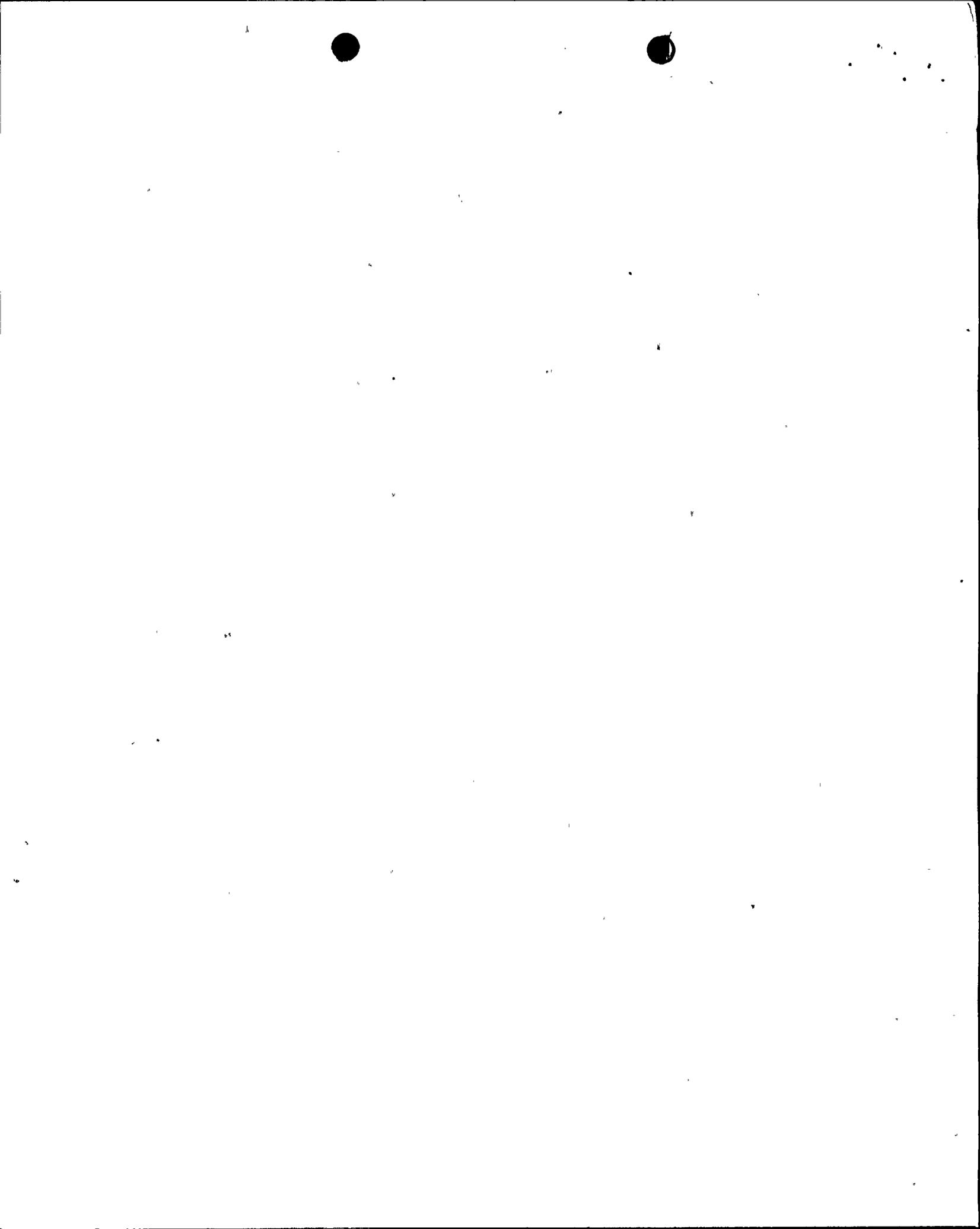
1. Give the design load and the expected load for each of the three sewage treatment facilities that will be used during plant operation. Estimate the quantity of chlorine that will be used and the concentration of residual chlorine in the sewage effluent.
2. Give the expected chlorine consumption and chlorination schedule for condenser cooling water treatment.
3. Give details including chemical treatment (quantities and concentrations of chemicals used and frequency of treatment) of the raw water supply.
4. List the demineralizer resins that will and will not be chemically regenerated. List the chemicals and quantities of chemicals to be used in the regeneration; give the amounts and concentrations of reaction products produced, the frequency of regeneration, and the method and route to be used to dispose of the waste solutions.
5. Give estimates of the laundering frequency, the volume of laundry waste, and the amount and chemical composition of the detergent to be used.
6. What chemicals will be used for treatment of the steam generator feed water? State the purpose of each chemical and give the quantities and concentration of each chemical used. Will any chemicals from this system be discharged into the environment and, if so, how much and at what rate? How will leakages from the system be treated?



7. What chemicals will be used in the reactor cooling system? Give the purpose of each chemical, the amount and concentration of each chemical to be used. Will any of these chemicals be discharged into the environment and, if so, how much and how will the discharge be made? How will leakages from this system be handled?
8. What chemicals will be used in other closed cooling systems within the plant? What are the anticipated quantities of these to be used? Will any of these chemicals be released to the environment? If releases are to be made, how much will be discharged and at what concentration? How will leakages from these systems be treated?
9. Give an estimate of the corrosion rate of the condenser tubing and the concentration of the corrosion products in the discharge conduit.
10. Give the method of disposal of all trash and non-radioactive solid waste.
11. List the chemicals and estimated quantities associated with the alternate cooling systems described in the Applicant's Environmental Report Supplement.
12. List the chemicals used and the chemicals discharged into the environment from operation of the flash evaporator. Also give the quantities consumed and the quantities discharged into the environment. Give the frequency of discharge.

D. Ecological Effects

1. Identify the terrestrial species comprising the flora and fauna for: (a) the nuclear plant site and (b) each of the areas in the transmission line right-of-way. For each species, and each area, indicate the abundance, habitat preference, manner in which each will be effected by construction and operation of the plant; and by the transmission lines.
2. Characterize the land crossed by the transmission lines. Provide detailed information on:
 - a. Location of transmission lines and construction and maintenance of roads.
 - b. Vegetation maps for areas beneath the transmission lines or adjacent to the roads.
 - c. Current and projected land use in the transmission line corridors.
 - d. Methods used for control of erosion, and to promote revegetation in the areas disturbed by the transmission lines.



3. Identify the principal species of fish, mollusks, and arthropods present in the intake cove and also those present in the discharge cove. Where data are available, indicate densities (or numbers) and area compositions of adults; and provide information on the abundance of eggs, larvae, and juveniles.
4. Provide detailed information on the distribution of marine organisms in the intake and discharge coves.
5. Provide available information on the feeding relationship between organisms comprising the marine community.
6. Identify any "unique" species present in the intake or discharge cove and provide information on the distribution of the more common forms in adjacent coastal areas.
7. Provide the results of any work done on reconcentration of copper or nickel from condenser tubes by marine organisms.
8. Provide complete time-temperature data which would describe the exposure to an entrained organism in passing from:
 - a. The intake to the discharge.
 - b. From the discharge structure through the centerline of the plume, until the plume reaches 2° of ambient.
9. Provide records of diurnal temperature variation at each water monitoring station. Show the location of each station on a map.
10. Provide detailed maps indicating the location and nature of all biological monitoring points and transects. For each station or transect, provide:
 - a. The type of data collected.
 - b. The group collecting the data.
 - c. The frequency of data collection.
 - d. The methods used for data collection.
11. Provide a discussion of the environmental effects expected from each of the alternatives discussed in the November 1971 Supplement to the Environmental Report. Include a discussion of impacts on the terrestrial and marine communities as well as changes in the physical environment.



E. Commitments of Resources

1. What are your plans for use of the site when operation of the nuclear plant finally terminates? Identify the structures that will be removed. Describe other action that will be taken to clear the site. Identify any licensable quantities of radioactive materials that would be stored on site, the term of such storage, and arrangements for custodial care. If decisions on these measures have not yet been made, provide this information for each alternative that you believe to be practicable.

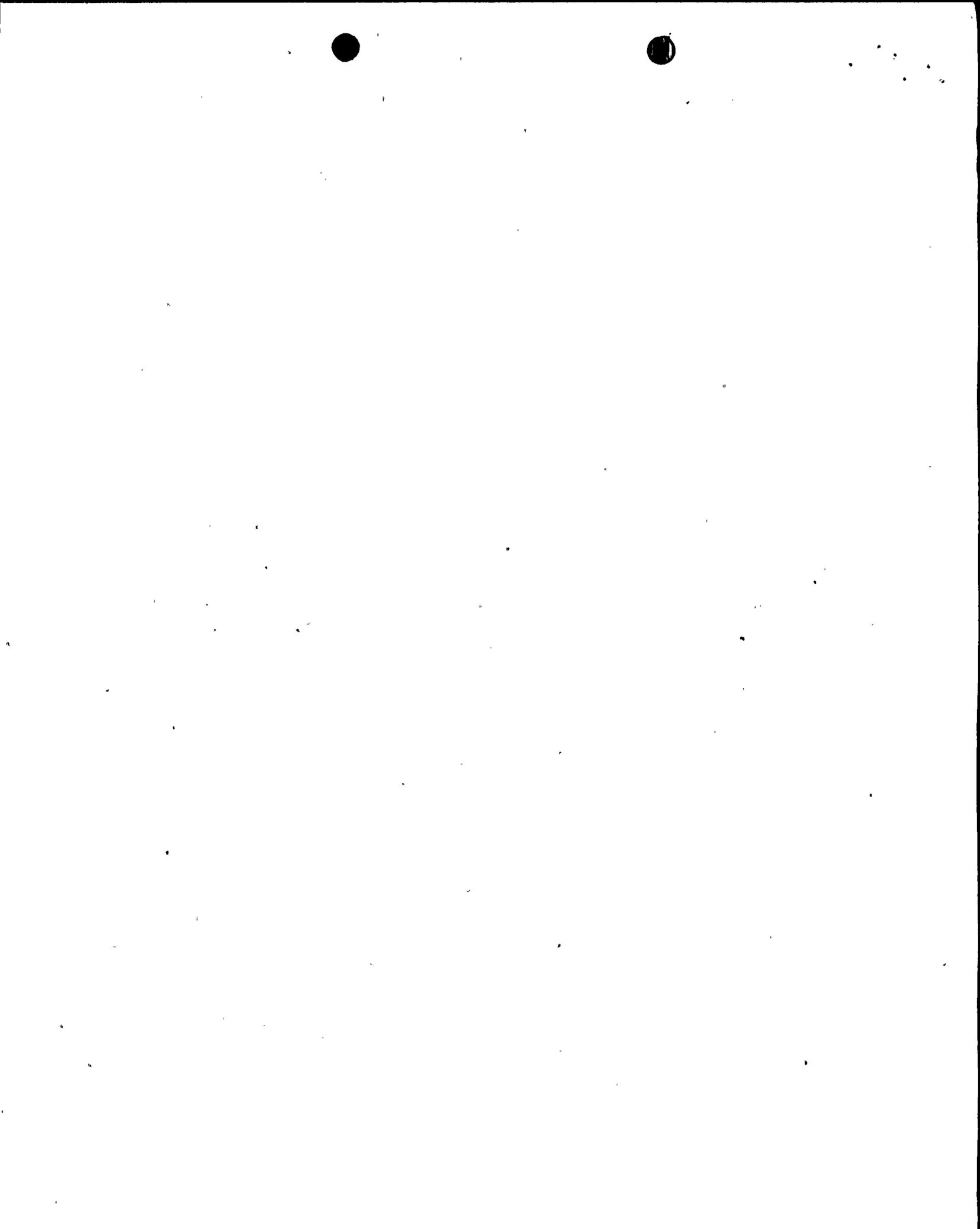
2. State the quantities (in kg) of the following materials that will be utilized during the term of the operating license for initial and replacement loadings of reactor core components (neglect H, C, N, O, and trace elements):
 - a. Control elements, including fixed shims -- specify for each element (e.g., Fe, Ni, Cd, B).

 - b. Fuel-gross input
 - U (specify average enrichment) gross input to the core, assuming no recycling of recovered uranium
 - zirconium
 - other structural materials
 - ^{235}U consumed
 - ^{238}U consumed
 - ^{239}Pu (recoverable) produced
 - Th gross input to the core, assuming no recycling of recovered Th
 - ^{232}Th consumed
 - ^{233}U (recoverable) produced
 - other materials incorporated in fuel

 - c. Fuel -- recycle
 - If any of the material in b will definitely be recycled, specify the quantity (for each material) of net input, unreclaimed waste, and recoverable ^{233}U , ^{235}U , and ^{239}Pu .

 - d. Other core components -- specify for type of components and each element.

3. For the components (other than those covered in 2) that are expected to be sufficiently radioactive at the termination of operation (and terminal decontamination) that use or possession would require a specific AEC license:
 - a. Identify each type of component



- b. State principal activity
 - c. Principal material constituents and quantities.
4. Identify all minerals used in the plant (other than those covered by (2) which are either (a) usually reclaimed, (b) precious metals, (c) strategic or critical materials stockpiled in the U.S., or (d) generally known to have small natural reserves. State the total inventory or cumulative quantity of each material, the quantity that is expected to be reclaimed, and the quantity that will be unrecoverable.

F. Cost-Benefit Considerations

1. Provide the peak loads for Diablo Canyon Units 1 and 2 with respect to specific service area requiring this capacity.
2. Supply copies of CPUC Criteria used in utility line construction (General Order 95 and 131).
3. Provide a copy of the Cost-Benefit Supplement to the Environmental Report being prepared in accordance with the USAEC May 1972 guide.
4. Provide design details and cost details of an offshore discharge structure using a perforated pipe with upturned orifices.
5. Provide cost details on modifications to the heat removal system which will permit determination of the cost of a further reduction of the effluent temperature.
6. Provide cost details of reducing the effluent residual chlorine in the condenser discharge to less than 0.1 ppm.

G. Radiological

- *1. Provide a current detailed description of the environmental radiation monitoring program, including sampling locations, types of samples collected, frequency of sampling, method of sample collection, and method of analyses performed on each type of sample.
- *2. Provide information regarding other agency monitoring in vicinity of station (e.g., California Department of Health, etc.) and coordination or cooperation with applicant's program.

*Preliminary answers were obtained during site visit.



- *3. Provide the permanent population distribution within a 50-mile radius of the station according to the 1970 census. Data are needed for (a) sixteen 22.5° sectors and (b) distance increments of 0-1, 1-2, 2-3, 3-4, 4-5, 5-10, 10-20, 20-30, 30-40, and 40-50 miles. Projections for the years 1980, 1990, 2000, and 2010 are also needed.
- *4. Provide an estimate of the transient population at recreational areas within 50 miles of the site.
5. Provide the location of beach recreational areas within 50 miles of the site.
6. Provide the location of major fish and seafood harvest areas along the coast within a 50-mile radius of the station, and an estimate of the harvest of fish and seafoods from these areas.
7. Provide an estimate of the average yearly dilution of liquid effluents released by the station in fishing areas off the coast and in beach recreational areas on the coast within 50 miles of the station.
- *8. Provide on a map the locations of all permanent residences within a 5-mile radius of the site.

H. General

1. Provide details of the thermal and chemical monitoring programs during plant operation including frequency, location, and type of sampling (for plant effluents only).
2. Describe any transmission lines constructed in conjunction with the Diablo Canyon site and not presently described in the AEC Docket Nos. 50-275 and 50-323.
3. Provide a letter from the Historic Preservation Officer of the State of California regarding the historic significance of the Diablo Canyon Site.
4. Provide additions to the "Applications and Approvals" since July of 1971.
5. Describe provisions to reduce construction impacts including noise, dust, damage to vegetation, and erosion.

*Preliminary answers were obtained during site visit.



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6. Provide documentation to substantiate contention that purchase power from the Columbia River Basin will not be available after 1975.
7. Provide detailed programs and schedule for completion of redress of effects of transmission line and road construction; identify areas of action by maps, mileage reference and photographs. Identify progress reports to be made on these programs and other cognizant agencies to whom reports will be submitted.

