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50-323 Diablo Canyon Nuclear Power Plant, Unit 2, Pacific Ga 05000323
AUTH.NAME AUTHOR AFFILIATION
GIGLIOTTI,T.C. Pacific Gas & Electric Co.
RECIP.NAME RECIPIENT AFFILIATION
CLARK,D. Army,Dept.of

SUBJECT: Forwards application for Dept of Army permit for repair of damaged west breakwater,Map,plant & profile project description & proposed marine monitoring program encl.

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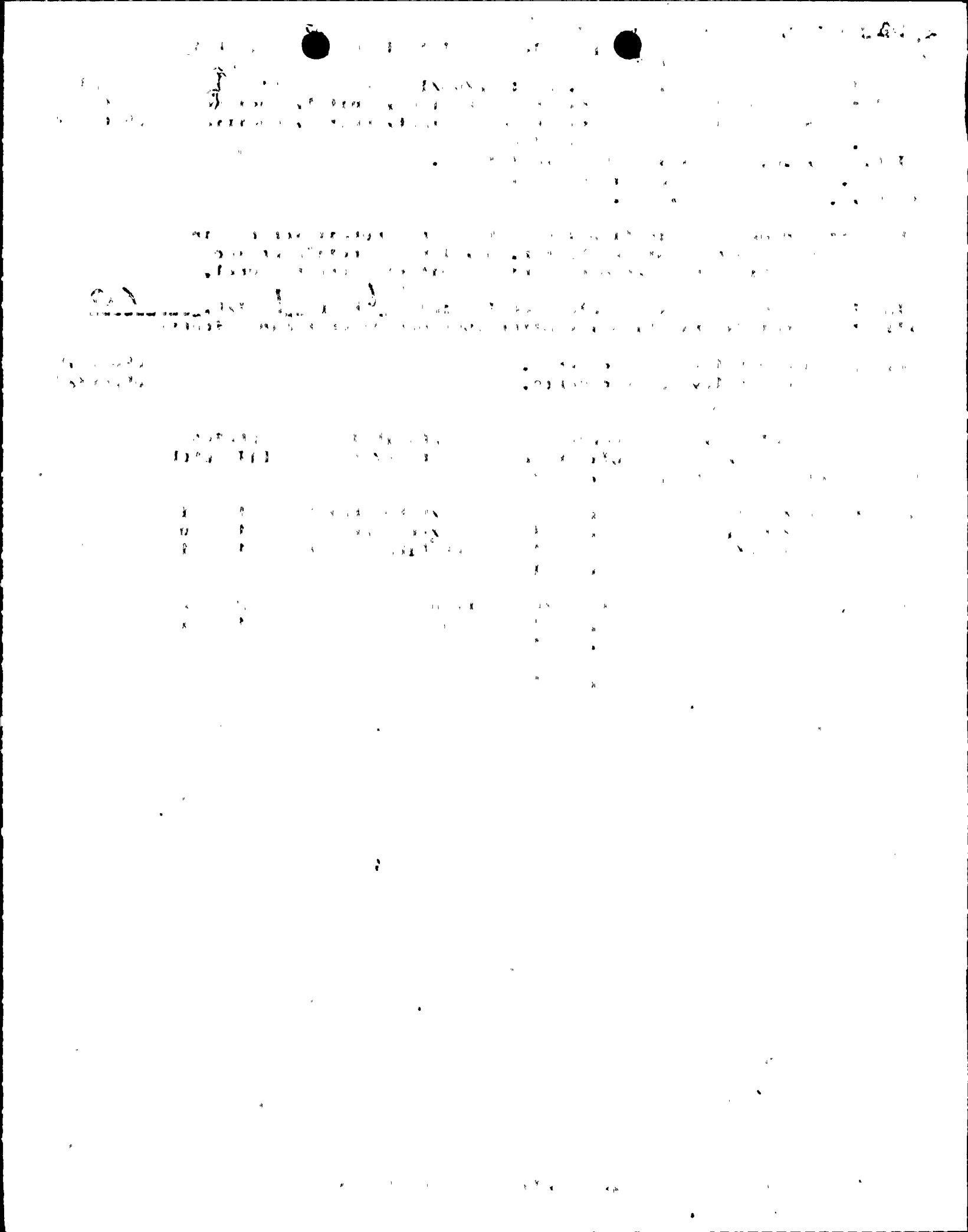


COPY

May 18, 1982

Diablo Canyon West
Breakwater Repair
025.811 CE 1208

The District Engineer
U.S. Army Engineer District,
Los Angeles
Post Office Box 2711
Los Angeles, California 90053

Attention: Mr. Dick Clark

Gentlemen:

Enclosed is an application for a Department of the Army permit for repair of the damaged west breakwater at the Diablo Canyon Power Plant. Also enclosed are the following:

1) map, plan and profile
2) project description
3) an assessment by PGandE biologists outlining potential biological impacts of various project activities
4) a proposed marine monitoring program of such activities
5) a copy of a letter from the Executive Director of the California Coastal Commission

Please contact Mr. Peter Hartman at (415) 541-5687 if you have any questions or need further information.

Sincerely,

T. C. Gigliotti
Supervisor, Permits and
Environmental Planning

PH:ss
Enclosures

cc: Mr. Frank J. Miraglia
Attention: Mr. Bart Buckley
Licensing Branch No. 3
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
Enclosures

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
Enclosures

Mr. Ken R. Jones, Executive Officer
Central Coast Regional Water Quality Control Board
1122-A Laurel Lane
San Luis Obispo, California 93401

Aool 5-11

APPLICATION FOR A DEPARTMENT OF THE ARMY PERMIT

For use of this form, see EP 1145-2-1

Form Approved - Office of Mgmt & Budget No. 49-R0420

The Department of the Army permit program is authorized by Section 10 of the River and Harbor Act of 1899, Section 404 of P. L. 92–500 and Section 103 of P. L. 92–532. These laws require permits authorizing structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Information provided in ENG Form 4345 will be used in evaluating the application for a permit. Information in the application is made a matter of public record through issuance of a public notice. Disclosure of the information requested is voluntary; however, the data requested are necessary in order to communicate with the applicant and to evaluate the permit application. If necessary information is not provided, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and checklist) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

1. Application number (To be assigned by Corps)

2. Date: 17 (Day) 5 (Mo.) 82 (Yr.)

3. For Corps use only.

4. Name and address of applicant.

Pacific Gas and Electric Company
77 Beale Street
San Francisco, CA 94106

Telephone no. during business hours

A/C ( ) _____

A/C ( ) _____

5. Name, address and title of authorized agent.

T. C. Gigliotti/Peter Hartman
Pacific Gas and Electric Co. Land Dept.
77 Beale St., San Francisco, CA 94106

Telephone no. during business hours

A/C (415) 541-5687

A/C ( ) _____

6. Describe in detail the proposed activity, its purpose and intended use (private, public, commercial or other) including description of the type of structures, if any to be erected on fills, or pile or float–supported platforms, the type, composition and quantity of materials to be discharged or dumped and means of conveyance, and the source of discharge or fill material. If additional space is needed, use Block 14.

See Project Description (attached).

7. Names, addresses and telephone numbers of adjoining property owners, lessees, etc., whose property also adjoins the waterway.

Pacific Gas and Electric Company
77 Beale Street
San Francisco, California 94106

8. Location where proposed activity exists or will occur.

Address:

Diablo Canyon Power Plant
Street, road or other descriptive location

Avila Beach
In or near city or town

San Luis Obispo, California
County State Zip Code

Tax Assessors Description: (If known)

Map No.	Subdiv. No.	Lot No.
24*	31 S.	10 E. MDB&M
Sec.	Twp.	Rge.

*Projected, project is within a portion of the Rancho Canada De Los Osos Y Pecho Y Islay.

9. Name of waterway at location of the activity.

Pacific Ocean

10. Date activity is proposed to commence. June, 1982

Date activity is expected to be completed November, 1982

11. Is any portion of the activity for which authorization is sought now complete? ☐ YES ☒ NO
If answer is "Yes" give reasons in the remark section. Month and year the activity was completed _____. Indicate the existing work on the drawings.

12. List all approvals or certifications required by other federal, interstate, state or local agencies for any structures, construction, discharges, deposits or other activities described in this application.

Issuing Agency	Type Approval	Identification No.	Date of Application	Date of Approval
Calif. Coastal Comm.	None required, per letter of Michael Fisher, Executive Director, dated March 9, 1982, attached.			

13. Has any agency denied approval for the activity described herein or for any activity directly related to the activity described herein?

☐ Yes ☒ No (If "Yes" explain in remarks)

14. Remarks or additional information.

15. Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

Pacific Gas and Electric Company

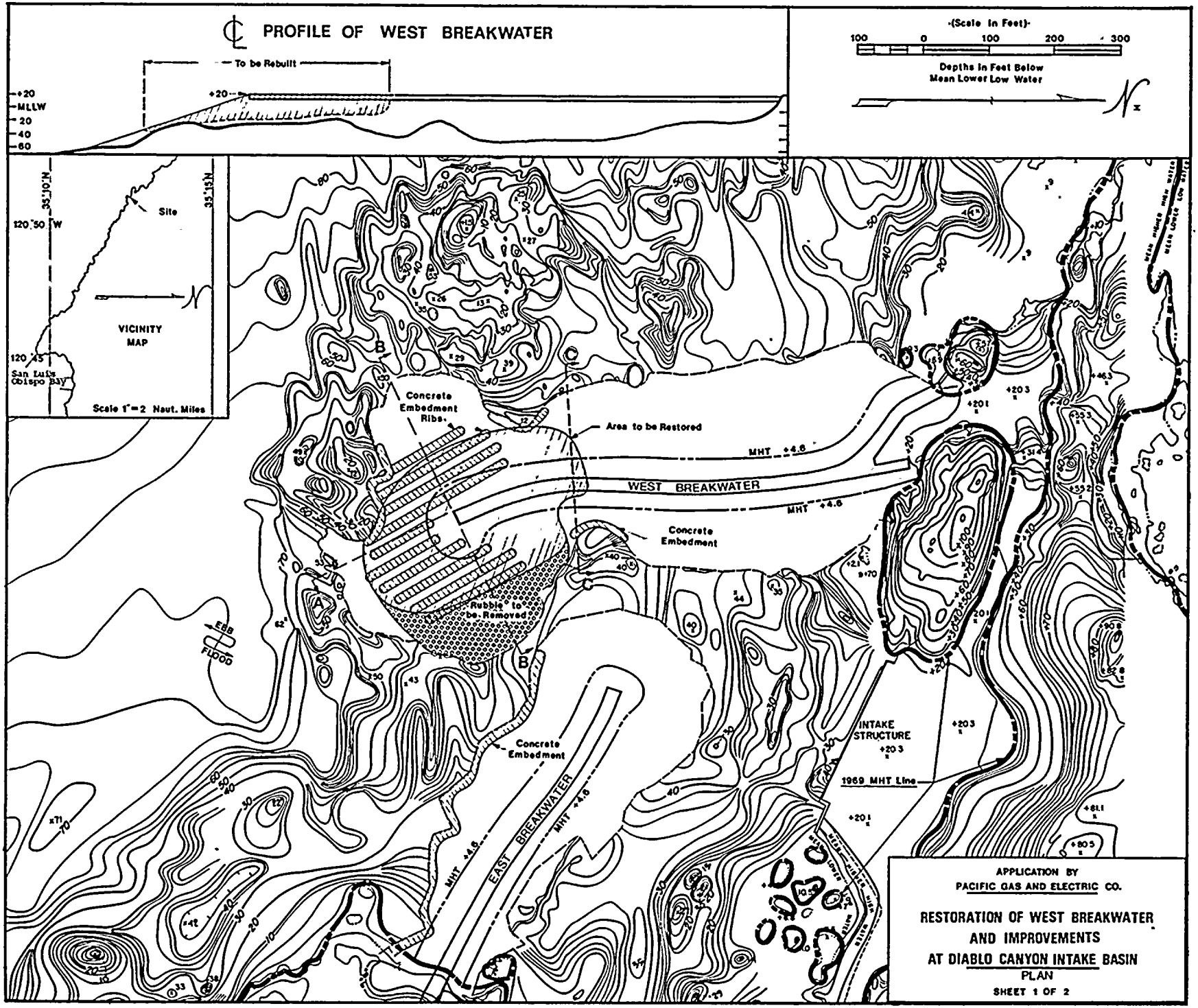
Signature of Applicant or Authorized Agent

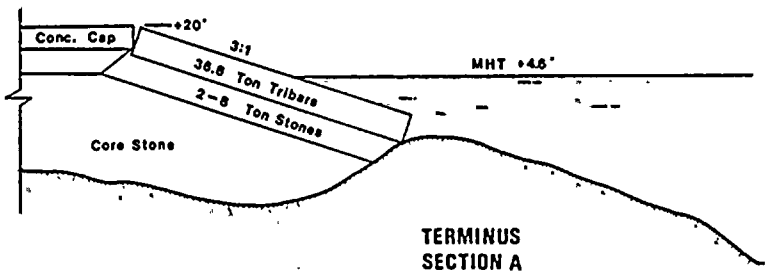
T. C. Gigliotti

Supervisor, Permits and Environmental Planning

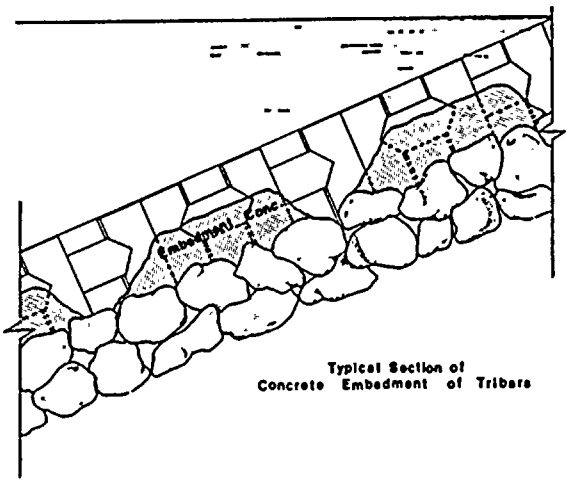
The application must be signed by the applicant; however, it may be signed by a duly authorized agent (named in Item 5) if this form is accompanied by a statement by the applicant designating the agent and agreeing to furnish upon request, supplemental information in support of the application.

18 U. S. C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of The United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisioned not more than five years, or both. Do not send a permit processing fee with this application. The appropriate fee will be assessed when a permit is issued.

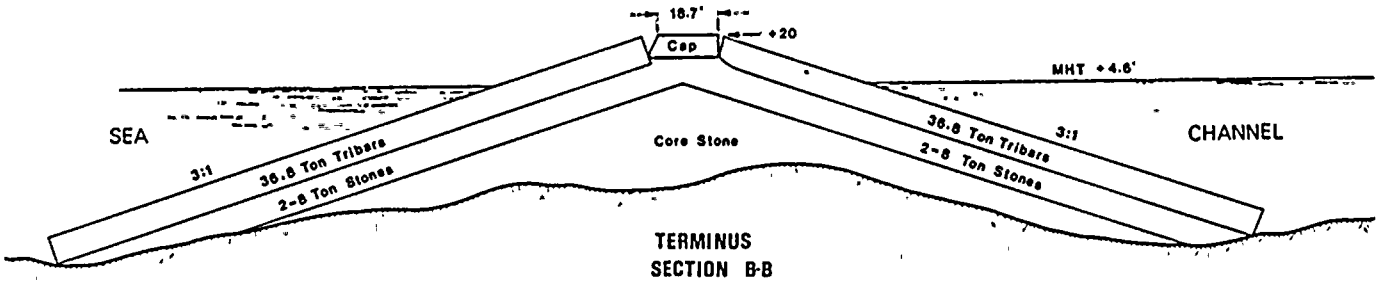

℄ PROFILE OF WEST BREAKWATER
To be Rebuilt
+20
MLLW
20
40
60
+20
(Scale in Feet)
100 0 100 200 300
Depths in Feet Below
Mean Lower Low Water
VICINITY MAP
Site
35°10'N
35°15'N
120°50'W
120°45'
San Luis Obispo Bay
Scale 1"=2 Naut. Miles
Concrete Embedment Ribs
Area to be Restored
MHT +4.6
WEST BREAKWATER
Concrete Embedment
Rubble to be Removed
EBB
FLOOD
EAST BREAKWATER
Concrete Embedment
INTAKE STRUCTURE
1969 MHT Line
APPLICATION BY
PACIFIC GAS AND ELECTRIC CO.
RESTORATION OF WEST BREAKWATER
AND IMPROVEMENTS
AT DIABLO CANYON INTAKE BASIN
PLAN
SHEET 1 OF 2
MAY, 1982



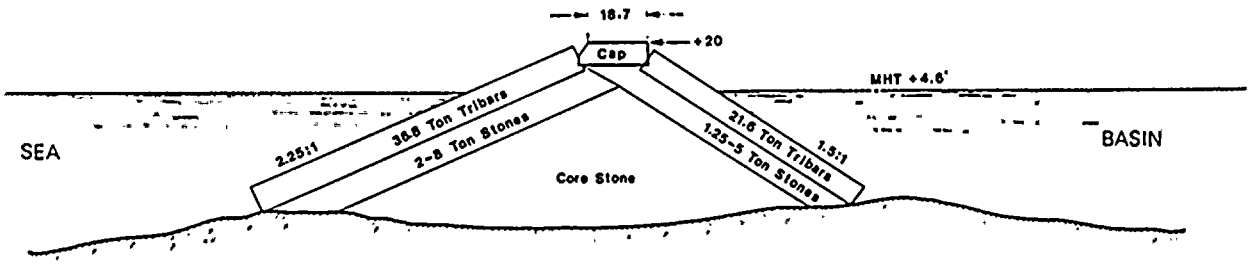
TERMINUS
SECTION A



Typical Section of
Concrete Embedment of Tribars



TERMINUS
SECTION B-B



TRUNK
SECTION C-C

NOTES

Restoration of the area of West Breakwater shown on Sheet 1 will be to the same cross-section and profile configurations that existed before damage was sustained.

Armor will be pre-cast concrete Tribars, a few of 7.2 feet height and most of 8.4 feet height.

Quarrystone under the Tribars is a selected mix. Those under the smaller Tribars vary in effective diameter between 3.1 and 4.9 feet. Under the larger Tribars they vary from 3.6 to 5.8 feet.

The concrete crest is cast in place, rests on stone at elevation +13 feet and is 7 feet by 21 feet in cross-sectional dimensions.

Embedment concrete will be placed around the lower half of rows of Tribars at the locations shown on Sheet 1. Placement will be by pumping, the hose discharge end being constantly immersed in the freshly delivered material and controlled manually by divers.

The rubble shown on Sheet 1 at the entrance channel side of West Breakwater's Terminal cone is quarrystones and Tribar parts from the damaged breakwater. The rubble may be used to restore the breakwater core to original dimensions. If not so used, it will be removed and disposed of inland, remote from any access by waves or tides, on land owned by applicant.

APPLICATION BY
PACIFIC GAS AND ELECTRIC CO.

RESTORATION OF WEST BREAKWATER AND IMPROVEMENTS AT DIABLO CANYON INTAKE BASIN

SECTIONS

SHEET 2 OF 2

MAY, 1982

Project Description

The breakwaters at Diablo Canyon are privately owned structures that serve to protect the Diablo Canyon Power Plant cooling water intake structure and equipment from wave damage and excessive wave surge. The west breakwater was damaged by severe storm waves in January and November, 1981. More than 200 feet of the seaward end of the breakwater were eroded to the low-water level with damage extending to the minus 10 foot contour. Rubble from the damage, consisting of broken concrete Tribars and quarry stone, is deposited in the basin inlet channel on the leeward slope of the breakwater.

The breakwater is a rubble mound-type structure with a rock fill core protected by larger base stone and precast concrete Tribar armor units. A massive concrete cap protects the top of the structure from overtopping waves. The breakwater was initially completed in 1972 (authorized by Department of the Army Permit dated the 10th of June, 1969) and has served its function without incident except for some overtopping damage to the inside face of the east breakwater in December, 1974 which was subsequently repaired in 1975 (authorized by Department of the Army Permit No. 75-144 dated the 1st of August, 1975).

PGandE proposes to repair the current damage during the 1982 summer and fall season when wave conditions will be favorable for ocean construction. The breakwater will be restored to its original design dimensions. Approximately six hundred 37-ton and fifty 21.5-ton Tribars will be used to replace the original 21.5-ton Tribars which were displaced by the storms. A mobile crane will be used on the breakwater to reshape eroded core rock and place approximately 15,000 cubic yards of new stone and the new Tribars onto the breakwater. Approximately 12,000 cubic yards of concrete will be pumped at selected locations (see map attached) where model studies have indicated wave damage is likely to initiate in order to limit or prevent the future occurrence of damage. This technique was used in the repair of the east breakwater and has been successful in preventing further damage there. Some minor blasting may be required to reduce the displaced concrete cap blocks to pieces of a size that can be used in the core fill or removed by the available equipment. The cap blocks will be reconstructed using approximately 1,200 cubic yards of concrete. Rock materials required for the repair will be trucked overland to the worksite from the Santa Marguarita Quarry (Kaiser) in San Luis Obispo County. A barge-mounted or land-based crane rig with a clamshell or similar bucket will be used to clear approximately 15,000 cubic yards of concrete and rock rubble from the inlet channel. Rubble not reused for the repair work will be stored temporarily on adjacent PGandE upland property until removed to an approved upland disposal site yet to be determined.

Assessment of Potential Biological Impacts

A team of PGandE Department of Engineering Research biologists surveyed the damaged area of the west breakwater on April 20, 1982 to assess current biological productivity and define areas with sediment buildup. Their assessment is given below. This information was used to develop the recommended marine monitoring program for areas of potential impact during breakwater repair. The construction activities which could potentially impact marine ecology are blasting, clamshell dredging, and underwater concrete placement.

The biological assemblage associated with the damaged submarine section of breakwater does not correspond with assemblages at the same depths on the intact sections. During the storm damage to the breakwater, many shallow subtidal species, both algal and invertebrate, were carried with displaced tribars to depths up to 50 feet. The newly exposed surfaces of toppled and broken tribars developed a floral and faunal composition dependent on depth. The dominant alga, Nereocystis, and numerous other brown kelps and red algae make up a rich flora which is becoming established on tribars and tribar fragments in the damaged area.

The algal habitat supplies food and protection for a community of fish which include perch (black, striped, and kelp), blue rockfish, cabezon, lingcod, greenlings and many smaller, more cryptic species such as sculpins, kelpfish, and blennies. Juvenile rockfish and perch are common beneath the kelp canopy and can be expected to increase in abundance beginning in May and continuing through summer. Blasting in the area could have some impact on schooling species but such an effect would not be expected to have a measurable impact on the population. Since there is no feasible method to exclude fish from the area, blasting effects should be monitored by divers to estimate actual fish loss, if any. It is not expected that other construction activities would impact fish. Rather, displacement of fish during habitat modification would be temporary.

At the base of the stone core on the protected side of the breakwater is an accumulation of fine sediments typical of the intake cove. A thin veneer of sediment is also found associated with the stone and tribars below approximately 25 feet. Removal of the core and tribar fragments at the base of the core will resuspend these sediments which can affect several communities adversely. First, the benthic infauna can be smothered by excessive sedimentation. Second, a coating of sediments on the blades of algae inhibits utilization of incident light and thus decreases growth. Third, a veneer of sediment on hard substrate can prevent settling of invertebrate larvae and algal spores and sporophytes. Lastly, an increased water column sediment load decreases light penetration, thereby decreasing algal growth. These effects would be most pronounced in the low energy environment within the cove and on the lee side of the breakwater. However, water column sediment load would cease with construction activity. Other effects would be short term and not unlike normal embayment sedimentation. Benthic infauna would tolerate moderate sedimentation and would recover by recolonization if heavy sedimentation occurred.

Turbidity and sedimentation resulting from construction activity can be monitored in several ways. Photographs from an appropriate vantage point would visually define the limits of any turbidity plume. Measurements at various locations with appropriate instrumentation would give an indication of light attenuation compared to unaffected areas. Sediment stakes and chambers could be used to measure accretion and deposition, and qualitative and/or quantitative observations could determine sediment buildup on algae and hard surfaces.

Concreting the base of the reconstructed breakwater would not impact the unrecolonized substrate. However, concrete intrusion and deposition on the native substrate could impact organisms and should be avoided where possible. In addition, turbidity and the associated sediment veneer would have similar effects as those already described. Subtidal monitoring during the concreting phase could be used to assess any measurable changes.

All potential impacts would be short term, although effects would persist for a longer time in the low energy habitats. The reconstructed breakwater will again offer a variety of ecological habitats that will recolonize and through succession, will return to a species assemblage consistent with the association found before the breakwater damage. The proximity to established populations associated with the intact breakwaters will expedite that recolonization.

Marine Monitoring Program

1. To the extent feasible salvageable macro-invertebrates, including abalone, will be removed prior to construction and transplanted to suitable substrate in a non-impacted area.

2. Diver observations will supplement surface observations during blasting. An assessment of any fish loss will be made.

3. Photographs will be taken during construction activities to record visual limits of any turbidity plume.

4. Measurements of subsurface light attenuation will be made at selected stations daily during turbidity-associated construction activities.

5. Several permanent transects will be established from the water surface to the bottom along both sides of both breakwaters. The deep ends will terminate with sediment stakes and sediment collection chambers to monitor deposition rates. Permanent quadrats will be established along each transect for qualitative observations and if appropriate, quantitative measurements of sedimentation on substrate and algae.

6. Diver observations will be made during concreting to assess any incidental effects on benthic communities. Quantitative evaluation of those communities will be made to define any impact if qualitative observations indicate observable changes.

7. Biological surveys by divers will follow construction to document reestablishment of flora and fauna on and around the reconstructed breakwater section. These surveys will continue until community structure resembles that of comparable unaffected breakwater areas.

State of California, Edmund G. Brown, Governor

California Coastal Commission
631 Howard Street, 4th floor
San Francisco, California 94105
(415) 543-8555

Mar 9 1982

Ercole Caroselli —

So long as PG&E repairs or replaces the Diablo Canyon breakwater as it existed prior to storm damage (same size, length and location), no coastal permit is required.