

September 14, 1982



SECY-82-374

**ADJUDICATORY ISSUE**  
(Notation Vote)

For: The Commission

From: Martin G. Malsch  
Deputy General Counsel

Subject: REVIEW OF DD-82-7 (PACIFIC GAS AND  
ELECTRIC CO. - GUENTHER 2.206  
PETITION) *50-133*

Facility: Humboldt Bay Power Plant, Unit 3

Purpose: To inform the Commission of a  
*EX. 5* Director's Decision which in our  
opinion

Review Time Expires: September 27, 1982 (as extended)

Discussion: A. Background

The Humboldt Bay Power Plant is a 63-megawatt BWR which received a provisional operating license (OL) in 1962. In response to an ACRS and staff review for a full-term OL, Pacific Gas and Electric (PG&E) agreed to perform a seismic reanalysis to define the proper response spectra and anchoring accelerations and to identify the need for corresponding modification of safety-related structures and

Contact:  
Mark E. Chopko, GC  
X-41493

Information in this record was deleted  
in accordance with the Freedom of Information  
Act, exemptions 5  
FOIA- 92-436

components. The full-term OL was issued in 1969 but PG&E agreed to continue to study the seismic issues on site. Those studies were completed in 1971 and the staff review of them was essentially completed in 1973. The staff directed PG&E to update the seismic design analysis on safety-related structures and components using 0.25g as the size of the Operating Basis Earthquake and to designate the size of the Safe Shutdown Earthquake and the significance of nearby faults. See 14 NRC 101, 102 (1981). After reviewing those further PG&E efforts, the staff in 1976 concluded no further operation was warranted beyond the next scheduled refueling outage until seismic requalification to the 0.25g OBE was completed. On May 21, 1976 the Commission issued an order modifying the OL to add "License Condition E" which incorporated the staff's conclusions and to order still further investigations of the seismic safety of the plant. In June 1976 the plant was shut down for refueling and the staff-ordered seismic modifications and it remains in cold shutdown today.

In 1977, PG&E sought an OL amendment to revoke the condition keeping the plant shut down and to restart the plant following successful completion of the staff-ordered studies and certain modifications directed in the May 1976 Order. Petitions for leave to intervene were filed in response to the NRC Notice of Proposed

Amendment (42 Fed. Reg. 31847 (June 23, 1977)), and those petitions were granted by a Licensing Board in May 1978. In August 1977, the NRC staff informed PG&E it could not support the license amendment. Since that time the proceeding essentially has been held in abeyance while PG&E and its consultants analyze seismic-related information and the cost of compliance with TMI-related requirements.

The report of PG&E's seismic consultant underscored the NRC staff's concern that the plant is located in an active seismic area near three capable faults. In submitting that report to the Licensing Board, PG&E asked the Board for further delay in the proceeding to give it an opportunity to review the seismic findings in detail and a separate report by Bechtel on possible TMI and other backfits at Humboldt Bay. On the basis of both reports, PG&E sought to withdraw its application for amendment and terminate the proceeding but without prejudice to its opportunity for a renewed application. Joint Intervenors sought denial with prejudice and requested that PG&E be ordered to decommission the plant.

The NRC staff questioned the jurisdiction of the Board to do anything beyond either granting or denying PG&E's application. The staff asserted that the amendment proceeding and decommissioning proceeding must be separate. In

the Board's view this was too narrow an approach. LBP-81-20, 14 NRC 101, 105 (July 14, 1981). The Board viewed the proceeding on the amendment as deciding the conditions of restart based on the degree of compliance by PG&E with the NRC seismic requirements. The Board viewed the Notice of Hearing giving rise to the proceeding as a grant of authority from the Commission to resolve certain seismic and geologic requirements of the license. Id. In addition, the Board found the alternatives of granting or denying the amendment would have the unacceptable effect of allowing PG&E to preserve the status quo when, in the Board's view,

. . . [PG&E] has in effect conceded that presently it is unable or unwilling to expend the funds necessary either to complete the seismic and geologic investigations ordered by the Commission more than five years ago, and to upgrade the plant as necessary, or to bring the plant into compliance with newly issued post-Three Mile Island safety regulations promulgated by the Commission. It is apparent that the design of Humboldt Bay Unit 3 has become deficient in a number of respects.

Because of the Board's concern "about the lack of definitive plans and schedules for either upgrading of the facility or disposition of



the spent fuel, (id.)" the Board deferred ruling on the motion to withdraw and ordered PG&E to provide a sworn statement of its intentions within thirty days, including a schedule for bringing the plant into compliance.

PG&E provided no such definitive statement of intent. Instead PG&E said it could not reach any realistic final decision until it had analyzed the full economic consequences of the NRC backfit policy for older plants such as Humboldt and had the benefit of the NRC's safety goal then (and still) under development. The Joint Intervenors urged the Board to terminate the license. The Board sought the staff's views on the scope of NRC requirements applicable to the shutdown plant, whether PG&E was complying with those requirements, the risks associated with long shutdown, evidence of seismic-related damage to the plant or the site, status of the plant and so on. The staff response is attached to the Director's Decision. In pertinent part the staff concluded that in several areas PG&E had not satisfied the necessary requirements but that there was no risk to the public from the fuel retained on site (even if there was a loss-of-coolant accident), that there was no evidence of seismic damage within the plant exclusion area, and that the plant could be properly maintained in cold shutdown. After considering the comments of the parties the Board

issued an Order on February 16, 1982 essentially preserving the status quo in the proceeding until the NRC sets its safety goal and any other necessary implementing standards. The Board directed PG&E to advise it within six months after the NRC decision either (a) that it is prepared to modify and upgrade the plant to permit restart of Humboldt Bay or (b) that it will decommission the plant. In the meantime, PG&E is required to submit quarterly status reports. The most recent quarterly report is attached for your information (Attachment 1). No appeals were taken of the Licensing Board order.

B. Guenther Petition for Decommissioning

On January 16, 1982 Ron Guenther filed a petition for decommissioning the Humboldt Bay reactor with both Harold Denton and Robert Lazo, Chairman of the Board presiding in the Humboldt Bay proceeding (Attachment 2). That petition listed nine reasons alleged to require the decommissioning of the facility, including an alleged poor operating history, lack of compliance with NRC requirements, the extensive seismic activity in the area, the risk of an accident causing offsite consequences, and various economic advantages to decommissioning. On January 25, 1982, the petition was received by Mr. Lazo and served on the parties to the Humboldt Bay proceeding. In a February 17 letter ELD counsel explained to

Mr. Guenther that because he had not sought intervention before the Licensing Board and had not been admitted as party to the proceeding, he had no standing to seek any relief from the Board, especially a decommissioning order. ELD explained that he could seek relief under 10 CFR 2.206 but would be required to resubmit his proposal as such but did not explain an avenue for Board action through untimely petition for leave to intervene. Mr. Guenther resubmitted his proposal on February 20 as a 2.206 petition, which was accepted as such by Mr. Denton on March 26, 1982. On June 8, 1982, Mr. Guenther supplemented his filing by references to various newspaper articles citing some of the problems at Humboldt Bay. On July 7, 1982, Mr. Denton denied Mr. Guenther's petition.

The staff denial rebuts Mr. Guenther's petition point by point and attaches as an appendix to the decision various affidavits of the technical staff demonstrating that the facility may be safely maintained in a cold shutdown status for the immediate future without risk to the public offsite. Even if all coolant were lost in an accident, the staff denial states that because the fuel has sufficiently cooled there is no risk of a release of radioactivity offsite. The denial states that before the reactor may be restarted the NRC will require PG&E to upgrade the seismic design and to

comply with all applicable NRC  
rules for operating facilities.  
The decision is attached as  
Attachment 3.

C. Analysis & Conclusion

G.Y.E

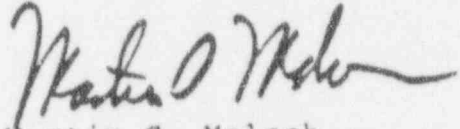
For these reasons, \*/

other hand, we  
[Continued on next page]

On the

Ex. 5

we recommend that



Martin G. Malsch  
Deputy General Counsel

Attachments:

- 1. Status Report, 7/1/82
- 2. Guenther 2.206 Petition
- 3. DD-82-7, 7/7/82

[

Ex. 5

Commissioners' comments or consent should be provided directly to the Office of the Secretary by c.o.b. Monday, September 27, 1982.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Monday, September 20, 1982, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

DISTRIBUTION:

Commissioners

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ATTACHMENT 1



PACIFIC GAS AND ELECTRIC COMPANY

PG&E +

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July 1, 1982

Judge Robert M. Lazo, Esq., Chairman  
Atomic Safety and Licensing Board  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Judge David R. Schink  
Atomic Safety and Licensing Board  
Department of Oceanography  
Texas A&M University  
College Station, TX 77840

Judge Gustave A. Linenberger  
Atomic Safety and Licensing Board  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Re: Docket No. 50-133, OL DPR-7  
Humboldt Bay Power Plant, Unit No. 3

Gentlemen:

In its Memorandum and Order ("Order") dated February 16, 1982, the Board directed PG&E to file a detailed status report with the Board starting April 1, 1982, and each three months thereafter, until final resolution of the future operation of Humboldt Bay Power Plant, Unit No. 3.

Enclosed is Pacific Gas and Electric Company's second quarterly status report, dated July 1, 1982. This report summarizes the current plant status and status of PG&E's activities.



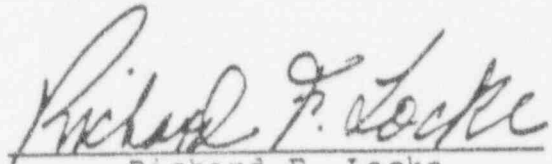
July 1, 1982

In accordance with Item 1 of the Order, PGandE will complete studies to support a decision regarding the future disposition of the Humboldt Bay Power Plant, Unit No. 3, within six months of the issuance by the NRC of a final reactor safety policy statement and its associated goals and guidelines.

Respectfully submitted,

ROBERT OHLBACH  
PHILIP A. CRANE, JR.  
RICHARD F. LOCKE  
Attorneys for Pacific Gas  
and Electric Company

By:

  
Richard F. Locke

cc: Service List

Enclosure

PACIFIC GAS AND ELECTRIC COMPANY  
HUMBOLDT BAY POWER PLANT, UNIT NO. 3

Quarterly Status Report

July 1, 1982

Since PGandE's last status report dated March 31, 1982, activities on Humboldt Bay, Unit 3, can be broken down into five items. The activities on each of these items are discussed below:

1. Plant Operational Status

Humboldt Bay Unit 3 continues to be maintained in a cold shutdown condition. The reactor coolant system is filled with reactor coolant but depressurized. The reactor vessel head and shield plug are in place. The reactor core is loaded with 184 fuel assemblies, 44 of which are new fuel assemblies. In the spent fuel pool, 250 spent fuel assemblies continue to be stored. There are 236 empty spaces remaining in the spent fuel pool.

Reactor control rods are fully inserted. The control rod drive system is de-energized and cannot be re-energized without the knowledge and consent of the shift foreman. In addition, the control rod hydraulic system is depressurized. This system would need to be filled and vented before control rods could be withdrawn. The emergency boration system, reactor clean up system, liquid radwaste processing system, refueling building ventilation system, nuclear instrumentation, and radiation monitoring systems are all maintained operational.

Surveillance testing is performed as required by the Technical Specifications. Fire protection, radiation protection, material accountability, radioactive waste management, training and quality assurance programs are being implemented and are audited by NRC's Region V inspectors.

PGandE has continued to comply with the shift manning requirements for the shutdown mode in accordance with the Humboldt Bay Technical Specifications. The current numbers of licensed operating personnel available to cover four shifts are the following:

- a. 5 Senior Operator Licensees, SOL (4 Shift Foremen, 1 Relief Shift Supervisor).
- b. 9 Operator Licensees, OL (4 Control Operators, 4 Senior Control Operators, Operators, 4 Senior Control Operators, 1 Senior Control Operator in Training for a SOL).
- c. 4 management personnel at the plant who hold a current SOL to supplement the operating staff if needed.

PGandE has continued to fully comply with the latest (Revision 2) Humboldt Bay Power Plant Security Plan dated November 16, 1976. This security plan has been approved by the NRC Staff as being adequate. Any further changes in the Plant Security Plan will be submitted to the NRC Staff in accordance with current regulations.

Reports regarding Unit 3 are routinely submitted to the NRC as required by the license and other regulations. These include: Monthly Operating Status Reports; Radioactive Effluent Release and Waste Disposal Reports, and Licensee Event Reports, if required.

Scheduled and unscheduled inspections of the plant have been conducted by the NRC's Inspection and Enforcement Region V Inspectors. Any violations and/or deviations have been resolved to the satisfaction of the NRC Staff.

No revisions or modifications in the Humboldt Bay Unit 3 design or operation have been made that would bear upon the bases on which the NRC Staff concluded that the plant, in its present shutdown condition, poses no risk to the health and safety of the public.

## 2. Plant Improvements

PGandE has commenced activities that will result in the construction of a new low level radwaste storage building on the Humboldt Bay Power Plant site. When complete, the new building will provide a weather protected radioactive waste storage and handling area. The building has been designed to meet all applicable NRC requirements. The building design has been completed and a local building permit obtained. Construction was started in early June 1982.

3. Monitoring of the NRC's Safety Goal Rulemaking

As noted in the Order, the NRC has published for comment a proposed policy statement on safety goals for nuclear power plants. A report discussing the development of the proposed policy statement has been published separately as NUREG-0880, Safety Goals for Nuclear Power Plants: A Discussion Paper. Public comments were due by May 18, 1982. PGandE assumes that the NRC will evaluate the public comments received and issue final policy recommendations later this year.

4. Review of New NRC Requirements for Operating Nuclear Plants

PGandE is continuing to review NRC promulgated information such as I&E Circulars, Bulletins, Information Notices, NUREGs, and the Federal Register notices for regulations and guidance applicable to the Humboldt Bay plant in its current cold shutdown status. PGandE's review also considers the potential for significant safety problems associated with the plant for all other operational modes and considers those actions which are necessary to comply with the intent of NRC requirements. Those applicable requirements which are not immediately acted upon are placed on a list of work items that must be satisfactorily resolved prior to restart of Unit 3.

5. Evaluation of Steam Plant Conversion Alternatives

PGandE is continuing its evaluation of various fossil fired steam system conversion alternatives. The conversion alternatives presume the decommissioning of the nuclear portion of Unit 3 while retaining the power generation portion of the plant available for continued use with a new steam supply source.

The alternative steam supply systems being evaluated include: a coal fired boiler; an oil/natural gas fired boiler; a biomass (wood chip) fired boiler; and a combined cycle waste heat boiler. The evaluations focus on engineering feasibility and trade-offs, fuel supply and transportation, pollution control requirements, cycle efficiencies, waste management, permit requirements, PGandE generation and transmission requirements, equipment capital costs, and operation and maintenance costs.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of )  
 )  
PACIFIC GAS AND ELECTRIC COMPANY ) Docket No. 50-133  
 ) License No. DPR-7  
(Humboldt Bay Power Plant, Unit No. 3) )  
 )

CERTIFICATE OF SERVICE

The foregoing document of Pacific Gas and Electric Company has been served today on the following by deposit in the United States mail, properly stamped and addressed:

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San Francisco, CA 94102

Mitzi Young, Esq.  
Office of Executive Legal  
Director  
BETH 042  
U.S. Nuclear Regulatory  
Commission  
Washington, D.C. 20555

Secretary  
U.S. Nuclear Regulatory  
Commission  
Washington, D.C. 20555  
Attn: Docketing and Service  
Section

Gretchen Dumas, Esq.  
California Public Utilities  
Commission  
350 McAllister, Room 5243  
San Francisco, CA 94102

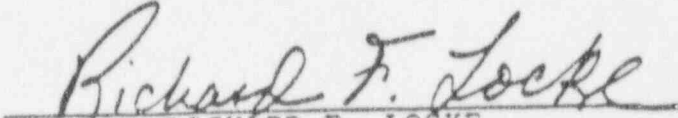
Dated: July 1, 1982

Robert M. Lazo, Esq., Chairman  
Atomic Safety and Licensing  
Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. Gustave A. Linenberger, Member  
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ATTACHMENT 2

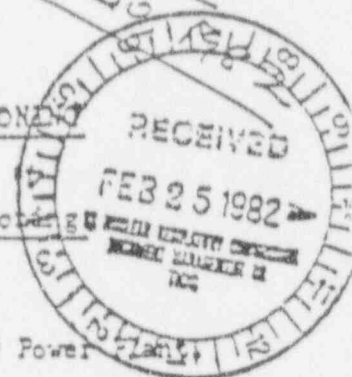


To: Harold Denton  
Director of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

January 16, 1982  
29900 Highway 20  
Fort Bragg, California 95437

To: Mr. Robert Lazo, Chairman  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

PETITION FOR DECOMMISSIONING



Public Record - Humboldt Bay Nuclear Power Plant Decommissioning

Mr. Chairman and Members of the Board:

This is a petition for the decommissioning of the Humboldt Bay Nuclear Power

My reasons for petitioning the Board in this matter are as follows:

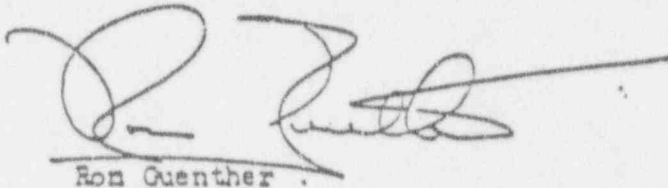
- 1) The subject nuclear power plant is poorly and inadequately designed for safe operation, and has a long history of operating and safety failures deriving directly from design deficiencies.
- 2) Three earthquake faults have been discovered within 4,000 feet of the reactor, and appropriate design safety measures were not incorporated into either the reactor's design or construction. The subject plant does not conform to the Nuclear Regulatory Commission seismic standards. The cost of bringing the subject plant into compliance with these standards could exceed \$300 million, compared with estimated decommissioning costs of \$35 million. Decommissioning is therefore the preferred economic alternative.
- 3) The subject nuclear power plant's operating record is among the worst in the history of nuclear power. The public has been presented with no convincing evidence that this sorry and irresponsible operating history will, or even can change for the better. The latest evidence indicates that the utility will continue to operate the subject plant in a negligent, irresponsible, and unsafe manner.
- 4) The utility has failed to comply with an Atomic Safety and Licensing Board order to reveal how the company expects to bring the subject power plant up to current Nuclear Regulatory Commission standards. This latest example of the utility's continuing reckless disregard for the public health and safety indicates plant decommissioning as the only practicable solution for problems of public protection.
- 5) The subject power plant is one of the oldest commercial nuclear power plants under the Board's jurisdiction. It went on line in 1963. Approximately 1/2 to 1/3 of the plant's life expectancy has elapsed. Decommissioning at this time would save future ratepayers substantial expenditures before embrittlement, increased residual radioactivity, and other safety problems become acute, and decommissioning costs rise dramatically.
- 6) As the utility continues to engage in delaying tactics which prolong the process of solving public protection problems, it continues to maintain, and to protect the subject plant. Since 1976 the costs of maintenance have been approximately \$15 million. Decommissioning the plant would eliminate at least maintenance problems for core loadings, and would cut the necessary costs of plant surveillance until the plant could be either dismantled and moved to its final repository, or entombed in situ.

YEO3  
5/0

- 7) No permanent facility for safely disposing of the nuclear wastes deriving from the operation of the subject plant exists at this time. This would include the approximately 35 tons of high-level waste now being stored at the plant site at substantial risk to the public health and safety in the area, downwind, and down-current from the site.
- 8) Human population densities exist only a very short distance from the subject plant site. As examples, heavily travelled Highway 101 is only 1,500 feet from the reactor. There exists a nearby residential community, beginning only 1/4 mile from the plant. In case of accident, release of radioactivity from the plant would seriously endanger human life in the area. Additionally, cumulative losses of life could occur in areas downwind and downcurrent from the subject site.
- 9) Humboldt Bay is immediately proximate to the subject nuclear power plant site. Safety problems inherent in the plant's radioactive discharges on sealife, and on the human foodchain, have not been effectively recognized, evaluated, or dealt with.

\* \* \* \* \*

Thank you for your consideration. I request your immediate action on this petition for decommissioning.

  
Ron Guenther

Ron Ouenther  
29900 Highway 20  
Fort Bragg, California 95437



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

Pct

64:32

→

ATTACHMENT 3

July 7, 1982

Mr. Ron Guenther  
29900 Highway 20  
Fort Bragg, California 95437

Dear Mr. Guenther:

This is in response to your letters dated January 16, 1982 and June 8, 1982. Those letters requested that the Humboldt Bay Nuclear Power Plant be decommissioned.

I have considered the information contained in your letters and letters received from others on the same subject. Based on this information and on the NRC requirement that the plant remain in a shutdown condition, I have determined that decommissioning of the Humboldt Bay Plant is not warranted. Accordingly, I have denied your request. The decision I have reached is set forth in the "Director's Decision" dated July 7, 1982. A copy of that decision is enclosed for your information.

I appreciate your interest in the safety of the Humboldt Bay plant and will continue to require that the public health and safety is adequately protected.

Sincerely,

Original Signed by  
H. R. Denton

Harold R. Denton, Director  
Office of Nuclear Reactor Regulation

Enclosure:  
Director's Decision

cc: See next page

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION  
Harold R. Denton, Director

In the Matter of )

PACIFIC GAS & ELECTRIC COMPANY )  
(Humboldt Bay Power Plant) )

Docket No. 50-133

DIRECTOR'S DECISION UNDER 10 CFR 2.206

Mr. Ron Guenther by letter dated January 16, 1982 to the Atomic Safety and Licensing Board requested that the Humboldt Bay Power Plant, Unit No. 3 be decommissioned. That letter was resubmitted to the Director of Nuclear Reactor Regulation on February 20, 1982. Notice of receipt of this request was published in the FEDERAL REGISTER on April 4, 1982 (47 FR 14632). Mr. Guenther submitted additional information to support his request by letter dated June 8, 1982.

Mr. Guenther asserts a number of reasons why the Humboldt Bay Plant should be decommissioned. After considering the request, for the reasons set forth below, I have concluded that the maintenance of the Humboldt Bay Plant in its present status does not adversely affect the public health and safety and therefore no basis exists to require the decommissioning of the Humboldt Bay Plant at this time. Accordingly, I have determined that Mr. Guenther's request must be denied.

I.

On July 2, 1976, the Humboldt Bay Plant was shutdown for replacement of some of the fuel in the core. By Order dated May 21, 1976, the NRC required that before resuming operation, the Pacific Gas and Electric Company (the licensee) complete certain activities. The licensee was required to upgrade as necessary, the seismic capability of safety-related equipment (e.g., the reactor coolant pressure boundary) to current requirements, and to resolve



more recent seismic concerns having to do with earthquake vulnerability that had arisen since the time the operating license was issued on August 29, 1962.

The licensee has replaced the fuel in the core, undertaken extensive geological investigations, and completed some plant modifications. The question of future operation of the Humboldt Bay Plant is before a Licensing Board which on February 16, 1982 issued a Memorandum and Order which accepted the staff's conclusion that the Humboldt Bay Plant in its present shutdown condition poses no undue risk to the health and safety of the public. In addition, the Board established a time table for the licensee to decide whether it would resume operation of the plant or decommission it.

All of the issues which Mr. Guenther cited in his letters had been previously considered by the staff. The letters contained no new information or safety concerns unknown to the NRC. The seven issues raised by Mr. Guenther's letter that are within NRC jurisdiction are discussed in detail below. The other issues regarding economic impacts on ratepayers of a decision to decommission do not lie within the purview of the NRC and, therefore, are not addressed in this decision.

1. Plant Design and Operating History

Mr. Guenther's letter alleges that

"The subject nuclear power plant is poorly and inadequately designed for safe operation, and has a long history of operating and safety failures deriving directly from design deficiencies."

As noted above, the Humboldt Bay facility is presently shutdown. The NRC staff is not aware of previous problems of a type which would cause concern as to the ability of the licensee to maintain the plant in its present safe shutdown condition. The enclosed Staff Affidavits (Enclosure 1), originally submitted to the Atomic Safety and Licensing Board on November 19, 1981, describe the current status of the Plant and its recent inspection history.

Before approving the resumed operation of Humboldt Bay Power Plant Unit No. 3, the NRC staff will require correction of significant design deficiencies. The operating history of the plant will also be considered prior to approving resumed reactor operation, to the extent that the history is pertinent, considering the elapsed shutdown interval of greater than five years duration. The staff considers the plant design, as well as its operational record, to be acceptable for the present shutdown condition of the plant.

## 2. Seismic Design

Mr. Guenther's letter also alleges that

"Three earthquake faults have been discovered within 4,000 feet of the reactor, and appropriate design safety measures were not incorporated into either the reactor's design or construction. The subject plant does not conform to the Nuclear Regulatory Commission seismic standards. The cost of bringing the subject plant into compliance with these standards could exceed \$300 million, compared with estimated decommissioning costs of \$35 million. Decommissioning is therefore the preferred economic alternative."

The Humboldt Bay Plant was issued a provisional operating license in 1962 based on seismic design practices acceptable at that time. In the course of review associated with changing the provisional operating license to a full term operating license in 1969, questions arose which resulted in further seismic studies at the site. During the course of this seismic reevaluation as the regional geologic picture was developed in greater detail, the confidence that the original plant design could withstand all postulated seismic events declined. For this reason the geologic/seismic investigations and the seismic design upgrading were required to be completed prior to restart from the 1976 refueling outage. Therefore, seismic design inadequacy has already been identified as a deficiency that must be corrected before approval of resumed operation. The

decision of whether to incur the costs of implementing whatever design changes are deemed necessary or decommission the facility is one which the company and the state ratesetting body must make. Such economic decisions are not within the purview of the NRC.

Mr. Guenther's letter alleges that

"The subject nuclear power plant's operating record is among the worst in the history of nuclear power. The public has been presented no convincing evidence that this sorry and irresponsible operating history will, or even can change for the better. The latest evidence indicates that the utility will continue to operate the subject plant in a negligent, irresponsible, and unsafe manner."

Humboldt Bay Power Plant Unit No. 3 has been shutdown since July 2, 1976. Since that time, the standard inspection (surveillance) program for a shutdown reactor has been performed by the NRC regional office at the Humboldt Bay Nuclear Power Plant. This inspection consists of inspections of design changes and modifications, activity of the Onsite Review Committee, QA program, overall training program, fire prevention and protection, surveillance of equipment during extended shutdown, security and material accountability, radiation protection program (as reported in news clipping attached to Mr. Guenther's June 6, 1982 letter), transportation of radioactive materials, and radioactive waste management. Recent inspections have not revealed any major problems at the plant (See attached affidavit of Tolbert Young). Before approving resumption of operation, the staff will review this operating record, the operational history of the plant prior to 1976, and other considerations to determine that the utility and operating staff are capable of safely operating the plant. The staff considers, based on our review of the operation of the facility since 1976, that the staffing and servicing of the plant is adequate for its present shutdown condition.

#### 4. Disregard for Public Health and Safety

Mr. Guenther's letter alleges that

"The utility has failed to comply with an Atomic Safety and Licensing Board order to reveal how the company expects to bring the subject power plant up to current Nuclear Regulatory Commission Seismic standards. This latest example of the utility's continuing reckless disregard for the public health and safety indicates plant decommissioning as the only practicable solution for problems of public protection"

The Atomic Safety and Licensing Board has ordered (Memorandum and Order dated February 16, 1982) that the licensee report, at a future date, plans for long term use of the Humboldt Bay Plant, and in the meantime submit every three months, status reports to the Board. The licensee has submitted these reports, and the Board has not found the licensee's responses unacceptable. The staff does not regard the licensee's response to the Board Order as exhibiting any failure to comply nor as evidence of an attitude of disregard for public safety. In summary, the staff does not believe that the conduct of the utility during the proceedings before the Board represents a disregard for the public health or safety.

#### 5. and 6. Economic Considerations

Mr. Guenther's letter alleges

"The subject power plant is one of the oldest commercial nuclear power plants under the Board's jurisdiction. It went on line in 1963. Approximately 1/2 to 1/3 of the plant's life expectancy has elapsed. Decommissioning at this time would save future ratepayers substantial expenditures before embrittlement, increased residual radioactivity, and other safety problems become acute, and decommissioning costs rise dramatically,"

and also,

"As the utility continues to engage in delaying tactics which prolong the process of solving public protection problems, it continues to maintain and to protect the subject plant. Since 1976 the costs of maintenance have been approximately \$15 million. Decommissioning the plant would eliminate at least maintenance problems for core loadings, and would cut the necessary costs of plant surveillance until the plant could be either dismantled and moved to its final repository, or entombed in situ."

As previously noted, the impacts on ratepayers or shareholders of a utility's decision to operate or decommission its facility is not within the purview of the NRC.

## 7. Waste Disposal

Mr. Guenther's letter alleged that

"No permanent facility for safely disposing of the nuclear wastes deriving from the operation of the subject plant exists at this time. This would include the approximately 35 tons of high-level waste now being stored at the plant site at substantial risk to the public health and safety in the area, downwind, and downcurrent from the site."

The Department of Energy (DOE) is responsible for developing the methods and technology for the permanent disposal of high-level radioactive waste in a Federal repository and for submitting a license application for a potential repository. DOE is currently studying the feasibility of high-level waste disposal in deep geologic media. The Nuclear Regulatory Commission (NRC) has promulgated licensing procedures for disposal of high-level wastes in geologic repositories and has published proposed technical criteria.

In its present shutdown condition the Humboldt Bay Plant is not generating additional radioactive waste. The staff considers that the health and safety of the public is adequately protected from the radioactive waste presently stored at the Humboldt Bay Plant.

## 8. Population Density

Mr. Guenther's letter alleges that

"Human population densities exist only a very short distance from the subject plant site. As examples, heavily travelled Highway 101 is only 1,500 feet from the reactor. There exists a nearby residential community, beginning only 1/4 mile from the plant. In case of accident, release of radioactivity from the plant would seriously endanger human life in the area. Additionally, cumulative losses of life could occur in areas downwind and downcurrent from the subject site."

The consequences and types of accidents are greatly diminished because of the present condition of the plant. Staff analysis has concluded that Humboldt Bay fuel has decayed sufficiently that air cooling is adequate to preserve fuel cladding integrity. Therefore, measures to assure core cooling or mitigate loss of coolant consequences are unnecessary. Due to the long period since the reactor last operated, mobile radioactivity has decayed very significantly.

Population density was considered in the original licensing of the Humboldt Bay Plant, as well as the possibility of population growth and redistribution. For the present shutdown condition of the plant, the population around the plant is adequately protected. The staff will consider changes in population density near the Humboldt Bay Plant before approving resumed plant operation.

## 9. Proximity of Humboldt Bay

Mr. Guenther's letter alleges that

"Humboldt Bay is immediately proximate to the subject nuclear power plant site. Safety problems inherent in the plant's radioactive discharges on sealife, and on the human foodchain, have not been effectively recognized, evaluated or dealt with."



Before approving the resumption of operation for the Humboldt Bay Plant, the staff will perform any evaluations of the environmental effects of the operation of the Humboldt Bay Plant which might be required. As discussed in the response to Item 8, the significance of accidents is reduced by the present condition of the plant. In the plant's present shut-down condition, plant radioactive discharges are much less than when the plant was operating and are well within NRC regulatory limits. The releases are considered acceptable.

## II.

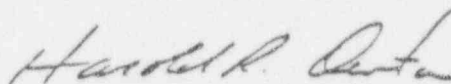
Based on the foregoing I have determined that the requested decommissioning of the Humboldt Bay Power Plant, Unit No. 3 is not warranted. The health and safety of the public are adequately protected from the facility in its present shutdown condition. All safety issues pertinent to an operating reactor will be resolved before future operation of the Humboldt Bay facility is permitted. Consequently, Mr. Guenther's petition for decommissioning of the Humboldt Bay facility is denied.

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street N.W., Washington, D.C. 20555 and in the local public document room at the Humboldt County Library, 636 F Street, Eureka, California 95501.

Additionally, a copy of this decision will be filed with the Secretary of the Commission for review by the Commission in accordance with 10 CFR



Section 2.206(c) of the Commission's regulations. As provided in 10 CFR 2.206(c), this decision will constitute final action of the Commission twenty-five (25) days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.



Harold R. Denton, Director  
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland  
this 7th day of July 1982.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

Enclosure 1

November 19, 1981

Richard M. Lazo, Esq., Chairman  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Gustave A. Linenberger  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dr. David R. Schink  
Administrative Judge  
Department of Oceanography  
Texas A & M University  
College Station, Texas 77840

In the Matter of  
PACIFIC GAS AND ELECTRIC COMPANY  
(Humboldt Bay Power Plant, Unit No. 3)  
Docket No. 50-133

Dear Administrative Judges:

In its Memorandum and Order of October 20, 1981, the Licensing Board directed the Staff to provide answers to eight questions within thirty days of the date of service of the Order. Order at 2-3. This letter regarding question 1 and the accompanying affidavits of Vernon Rooney, Project Manager, Tolbert Young, Jr., Office of Inspection and Enforcement, and Ina Alterman and Jeffrey K. Kimball, Geosciences Branch, variously addressing the balance of the questions constitute the Staff response.

Question 1: "What regulatory requirements apply to a plant in cold shutdown mode?"

The regulations, with few exceptions,<sup>1/</sup> do not contain express references which indicate their applicability to a plant in cold shutdown. Generally, Part 50 contains the requirements for normal operation and certain transient conditions. In the absence of any express exclusion

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<sup>1/</sup> Appendix R focuses on the protection of structures, systems and components associated not only with achieving safe shutdown but also maintaining safe shutdown from the probability and effects of fires. The term "safe shutdown" as used in Appendix R to 10 C.F.R. Part 50 applies to both hot and cold shutdown. Appendix R(1). In addition, section 50.54(q), for example, requires a licensee "authorized to possess and/or operate a nuclear power reactor" to have emergency plans which meet the standards in § 50.47(b) and the requirements in Appendix E to Part 50.

in the regulations of cold shutdown and because it is one of the five modes of operation defined by the NRC and in a facility's license, the regulations that apply to a plant in normal operation will also apply to a plant in cold shutdown. Therefore, the provisions of 10 C.F.R. Parts 20, 30, 40, 50, 51, 55, 70, and 73, which are not expressly limited by their terms, are applicable to plants in a cold shutdown operating mode. However, with respect to a facility whose license is to be limited to shutdown condition, the various provisions applicable to normal operation, transients and accidents should be construed as relating to the shutdown condition (i.e., normal shutdown conditions, transients affecting the shutdown condition, accidents and abnormal occurrences as they affect the shutdown condition). For example, those provisions requiring consideration of LOCA conditions would then consider the effect of loss of coolant under conditions of a cold depressurized primary system and a core with essentially no decay heat. Thus, in many cases very little, if anything, is needed to demonstrate compliance. For example, little would be needed to show appropriate protection against pipe whip (General Design Criterion 4) when all fluids are cold and depressurized. Rooney Affidavit.

The licensee must also comply with any conditions or requirements imposed by Order, its license and technical specifications. Humboldt Bay has not received Orders regarding the implementation of NUREG-0578 and NUREG-0737 standards and modifications.

Sincerely,



Steven C. Goldberg  
Counsel for NRC Staff

cc: w/enclosure  
Service List

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of )  
PACIFIC GAS AND ELECTRIC COMPANY ) Docket No. 50-133  
(Humboldt Bay Power Plant, )  
Unit No. 3) )

AFFIDAVIT OF VERNON ROONEY RESPONDING TO  
MEMORANDUM AND ORDER OF OCTOBER 20, 1981

I, Vernon Rooney, being duly sworn state the following:

1. I am employed by the U.S. Nuclear Regulatory Commission as a Senior Project Manager in the Division of Licensing, Office of Nuclear Reactor Regulation. A copy of my professional qualifications are attached and are true and correct to the best of my knowledge and belief.
2. I am the project manager assigned to the Humboldt Bay facility.
3. In its Memorandum and Order of October 20, 1981, the Board directed the Staff to answer questions listed on pages 2-3. The Staff's response to questions 2, 3, 5-8 are provided below and in the attached affidavit from the Office of Inspection and Enforcement.

4. Question 2:

Are the applicable regulatory requirements currently being met by Licensee?

With respect to a facility whose license is to be limited to shutdown condition, the various provisions applicable to normal operation,

transients and accidents should be construed as relating to the shutdown condition (i.e., normal shutdown conditions, transients affecting the shutdown condition, accidents and abnormal occurrences as they affect the shutdown condition). For example, those provisions requiring consideration of LOCA conditions would then consider the affect of loss of coolant under conditions of a cold depressurized primary system and a core with essentially no decay heat. Thus, in many cases very little, if anything, is needed to demonstrate compliance. For example, little would be needed to show appropriate protection against pipe whip (General Design Criterion 4) when all fluids are cold and depressurized.

Based on review of correspondence with the licensee and the results of surveillance conducted by the Office of Inspection and Enforcement (See attachment 1), the staff is aware that applicable regulatory requirements are not being met in the following areas:<sup>1/</sup>

- (1) 10 C.F.R. §50.46 and Appendix K (ECCS). 10 CFR §50.46(a)(1) states that ECCS cooling performance shall be calculated in accordance with an acceptable evaluation model. Appendix K sets forth required model features. The licensee has not performed ECCS analyses for Humboldt Bay using currently approved ECCS models and, therefore, is not technically in compliance with the noted regulatory requirement.

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<sup>1/</sup> Exemptions have been granted by the Staff under 10 CFR § 50.12 for the following. An exemption to the containment integrated leak rate test requirements of 10 CFR Part 50, Appendix J, III(A) was granted on July 13, 1979. An exemption to the requirements for operator training in 10 CFR Part 55, Appendix A, §3a to include ten reactivity control manipulations every two years was granted on January 11, 1978. An exemption to the requirements of 10 CFR §73.55 relative to implementation dates was granted on March 16, 1978.

However, despite the absence of required calculations, emergency cooling is not required to remove fuel decay heat. Staff studies show that Humboldt Bay fuel has decayed sufficiently that air cooling is adequate to preserve cladding integrity. Therefore, measures to assure core cooling or mitigate loss of coolant consequences are unnecessary.

- (2) 10 C.F.R. §50.48 and Appendix R (Fire protection). Section 50.48(a) requires a fire protection program that satisfies Criterion 3 of Appendix A to 10 C.F.R. Part 50. Section 50.48(b) states that Appendix R establishes fire protection features required to satisfy Criterion 3. Appendix R requires a fire hazards analysis and certain fire prevention features. These have not been provided for Humboldt Bay. Nevertheless, the reactor is fully shutdown, with measures to assure continued shutdown as discussed in paragraphs 8 and 9 below. The mechanisms which maintain rod insertion would continue to function in event of fire. Protection of equipment to assure the capability to shutdown is unnecessary. Fire protection for core cooling systems is not needed because air cooling is adequate. Due to the long period since shutdown, mobile radioactivity has decayed very significantly. The Staff, therefore, believes that in all cases the public health and safety is being protected, despite the fact that the licensee has not complied with Appendix R to 10 C.F.R. Part 50.

- (3) 10 C.F.R. Part 50, Appendix A, Criteria 2 and 3. Criterion 2 requires design to withstand the effects of earthquakes. The Humboldt Bay plant does not meet this criterion. The Staff has considered the seismic capability of equipment important to safety in the present shutdown condition of the plant and found it adequate to assure the continued protection of the public health and safety. Criterion 3 requires fire protection design, which is not provided at Humboldt Bay, as discussed above.

5. Question 3:

Has the Staff given consideration to the question of whether the exceptionally long shutdown of Humboldt Bay Unit No. 3 might give rise to the potential for significant safety problems? What unusual problems might arise?

Yes, the Staff has given consideration to this question. See answers to questions 5, 6, 7, and 8 for potential problem areas. The staff concluded that in all cases the public health safety is adequately protected.

6. Question 5(a):

What physical security measures are currently in force?

Based on the requirements of 10 CFR 50.34(c) and 10 CFR Part 73 (1976) and guidance provided in AEC Regulatory Guide 1.17 - 1973, "Protection of Nuclear Plants Against Industrial Sabotage" and ANSI N18.17 - 1973, "Industrial Security for Nuclear Power Plants", the licensee submitted the "Pacific Gas and Electric Company Humboldt Bay Power Plant Security Plan", Revision 0 dated March 12, 1974,



Revision 1 dated April 14, 1975 and Revision 2 dated November 16, 1976.

Briefly, the current security program contains:

- 1) Designation of three areas within the owner controlled area at which access to the plant is controlled (Restricted Area, Protected Area and Inner Security Area).
- 2) Surveillance and intrusion detection capabilities through the use of guard patrols, closed-circuit television and intrusion detection systems.
- 3) Personnel access controls ranging from vehicle access control at the Restricted Area to searches for weapons, explosives, etc., and badging of personnel at the Protected Area.
- 4) Redundant communication capabilities to local law enforcement agencies to assure assistance can be summoned should the need arise.
- 5) Personnel selection, screening and appraisal programs to detect aberrant behavior or other characteristics which could be a detriment to plant security.
- 6) Periodic training programs for plant employees to make them aware of their roles in plant security and the security procedures they are required to meet.
- 7) Periodic contract security force training program to provide specialized training and requalification of all guards in the physical security program and procedures at the site.

Question 5(b):

What was the date and nature of the last change to the physical security procedures?

The most recent change was Revision 2 of the "Pacific Gas and Electric Company Humboldt Bay Power Plant Security Plan" dated November 16, 1976. This revision was submitted to clarify and consolidate information regarding implementation of physical security measures indentified in the licensee's letters of July 22, 1975 and August 6, 1975.

Question 5(c):

What changes are planned between now and the end of CY 1982?  
(Assume no change in operational status)

Based on an exemption from the requirements of 10 C.F.R. § 73.55 issued by letter dated March 16, 1978 to Pacific Gas and Electric Company from the Staff, we do not anticipate any regulatory required changes to the Humboldt Bay security plan between now and the end of CY 1982.

7. Question 6:

What surveillance is being routinely performed by I&E? What was date and nature of last change in routine surveillance? What changes are planned between now and end of CY 1982? What non-routine surveillance has been performed? What were the results of surveillance efforts in 1980, 1981? (Assume no change in operational status)

The standard inspection (surveillance) program for a shutdown reactor is being performed at the Humboldt Bay Nuclear Power Plant. This inspection consists of inspections of design changes and

modifications, activity of the Onsite Review Committee, QA program, overall training program, fire prevention and protection, surveillance of equipment during extended shutdown, security and material accountability, radiation protection program, transportation of radioactive materials, and radioactive waste management.

These activities are inspected annually except when demonstrated satisfactory performance justifies reducing the frequency to once per 18 months. In addition, licensee event reports, instances of noncompliance, and various other areas identified by other NRC offices are inspected as required. Twenty percent of the inspector's time is used to inspect areas of his own choosing.

The last change in routine inspection occurred when the reactor was shutdown on July 2, 1976, at which time operational aspects of inspection were scheduled at a reduced frequency consistent with the operational status of the facility and allocation of the NRC's resources, resulting in the program described above. There have been no other changes in inspection except for implementation of the Revised Inspection Program (NUREG-0397) and the general upgrading and refinement of existing programs. No changes in the inspection program between now and the end of CY 1982 are anticipated. One nonroutine inspection was performed (post-earthquake inspection); none are planned. Inspection efforts in 1980 and 1981 revealed three infractions, one deficiency and one violation-severity level V. See Attachment 2.

8. Question 7(a):

What is status of facility, including components and systems that are routinely operated; and including location and conditions of storage of all new, partially used, and spent fuel?

Humboldt Bay Power Plant, Unit No. 3 is in the cold shutdown condition. The master reactor switch is locked in the COLD SHUTDOWN mode which removes electric power from the control rods, all of which are fully inserted. Without electric power the rods cannot be withdrawn. The key to the master reactor switch is in the locked key cabinet, and the key to the key cabinet is in the possession of the Shift Foreman. Components and systems that are routinely operated include the reactor cleanup system, the emergency boration system, the liquid radioactive waste processing systems, the refueling building ventilation system (including the gas treatment system), nuclear instrumentation as required by the license, and the radiation monitoring system. The core is fully loaded with 140 partially irradiated assemblies and 44 new assemblies stored under water. The spent fuel pool contains 250 spent fuel assemblies stored under water. Thirteen new fuel pins, but no assemblies, are stored in air in the new fuel storage vault. The reactor vessel head is in place and the shield plug is installed.

9. Question 7(b):

What is currently being done to maintain fuel integrity and assure its safety with respect to security, criticality and thermal stability?

The safety of the fuel is maintained by the following measures:

- a) with respect to security, the licensee is in compliance with its 1976 Security Plan and is audited against this plan (see answer to Question 5).
- b) With respect to criticality, the rods are fully inserted with the master reactor switch locked in the COLD SHUTDOWN mode (as discussed above). In addition, control rod power is deenergized at various other locations. The liquid poison system is available for backup criticality control of the reactor core if needed. Criticality in the spent fuel pool is avoided by the design of the spent fuel storage racks and the absence of large amounts of highly enriched fuel.
- c) With respect to thermal stability, the irradiated Humboldt Bay fuel is maintained water covered. The staff has concluded that the fuel cladding would remain intact with only air cooling, if there were complete loss of water.

10. Question 8(a):

Describe physical and preventive maintenance being performed to assure continued integrity of safety related components.

Physical and preventive maintenance is performed as necessary to maintain as operable the systems described in the answer to question 7. Technical Specification requirements for surveillance testing during cold shutdown include requirements for the fire protection system, the gas treatment system, the ventilation system, the radiation monitoring system, and the security systems.

11. Question 8(b):

What is size, makeup (by discipline) and duty cycle of standby crew? The Humboldt Bay Power Plant, Unit 3 is at a site which also accommodates two additional fossil units (Units 1 and 2) in addition to two mobile emergency power generating units which are frequently used to provide peak load generating capacity in the absence of the shutdown Unit 3. The crew staffing the site operates all generating units, and is therefore not really a standby crew. The normal minimum 7 man operating shift crew is maintained at all times. Each of the four shift crews have the following minimum personnel:

<u>Position</u>	<u>Qualification</u>	<u>Assignment</u>
1 Shift Foreman	Sr. Reactor Operator License	entire plant
1 Control Operator	Reactor Operators License	Unit 3 only
1 Sr. Control Operator	Reactor Operators License	Units 1, 2 and 3
1 Control Operator	No license	Ur ; 1 & 2
1 Auxiliary Operator	No license	Units 1 & 2
2 Auxiliary Operators	No license	entire plant

The Senior Reactor Operator and Reactor Operator Licenses have been maintained current with the exception of startup experience requirements (which are not pertinent for a shutdown condition). The shift crews rotate between day shift, swing shift, and graveyard shift so that complete cycle of rotation is completed every 28 days.

12. Question 8(c): What will be required to return facility to operational readiness? The modifications required to return the facility to operation have not yet been determined. The PG&E economic analysis filed on December 31, 1980 described a range of modifications identified by a Bechtel Corporation study as potential backfit requirements. In addition to modification it is likely that most existing equipment would be overhauled and preoperational performance tested before startup, and the plant would perform startup tests similar to a new plant.

13. Question 8(d):

Is there known deterioration of any components such that replacement is contemplated in order to retain adequate standby conditions - in order to achieve operational readiness?

Systems that are not needed in the cold shutdown mode are not being maintained, and consequently should be overhauled and tested as above prior to operation. However, there is no known deterioration of any components such that replacement is contemplated in order to retain adequate standby conditions, or operational readiness.

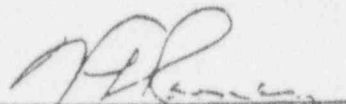
14. Question 8(e):

Has state of technology advance to such an extent that any significant components on instrumentation and control systems will need to be modified to achieve operational readiness?


The licensee has informed the staff that it is not aware of any instrumentation and control systems which would require modification due to technological obsolescence, but may elect to do some modification because of the present day availability of improved



instrumentation. Some changes would be made as part of seismic upgrading which has already been started. The review of the acceptability of Humboldt Bay Unit 3 instrumentation with respect to both seismic qualification and current NRC requirements would be considered by the staff prior to approving restart for the Humboldt Bay Power Plant, Unit No. 3.

  
\_\_\_\_\_  
Vernon Rooney

Subscribed and sworn to before me  
this 7<sup>th</sup> day of November, 1981.

  
\_\_\_\_\_  
Notary Public

My commission expires: July 1, 1982

VERNON L. ROONEY, JR.

PROFESSIONAL QUALIFICATIONS

I am a Senior Project Manager in the Division of Licensing, Office of Nuclear Reactor Regulation of the U. S. Nuclear Regulatory Commission. In this position my responsibilities include management and coordination of matters related to license changes for operating reactors, and interacting with the licensee and the Office of Inspection and Enforcement in matters related to the safety of the plant.

I have been assigned as a Project Manager for operating reactors since I joined the U. S. Nuclear Regulatory Commission in October of 1972 except for a period of about a year in 1978 when I was assigned to the Reactor Safety Branch and performed technical reviews of operating reactor license amendment applications in the areas of core physics and thermal hydraulics.

I received a B.S. degree with a major in chemical engineering from Leland Stanford, Jr. University in 1951. I received an M.S. degree in 1969 and a Ph.D. degree in 1970 from the University of Arizona with a major in nuclear engineering and a minor in physics.

From 1951 to 1961 I was employed by General Electric Company at Richland, Washington and was involved primarily in operation of various Hanford production reactors and the Plutonium Recycle Test Reactor. In addition to reactor operating experience, this period also included experience in reactor production scheduling, new reactor startup and testing, and major reactor modifications.

From 1961 to 1972 I was employed by the Atomic International Division of North American Aviation. I supervised the installation and operation of the SNAP 8 Experimental Reactor. This included direct management of the operating and maintenance personnel from initial startup through final shutdown and disassembly of the plant. I was Lead Engineer for the postmortem analysis of the SNAP 8 Development Reactor and performed systems analysis and test planning for the Closed Loop Systems for the Fast Flux Test Facility.

I am a member of the American Nuclear Society Physics and Operations Divisions.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

PACIFIC GAS AND ELECTRIC COMPANY

HUMBOLDT BAY POWER PLANT  
UNIT NO. 3

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}  
}

Docket No. 50-133

(Amendment to facility operating  
license)

AFFIDAVIT OF TOLBERT YOUNG JR.

STATE OF CALIFORNIA  
COUNTY OF CONTRA COSTA

}

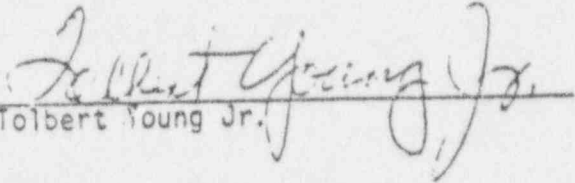
SS

I, Tolbert Young Jr., being duly sworn do depose and state as follows:

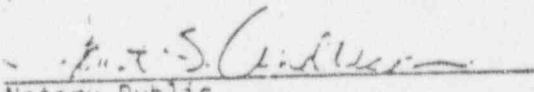
1. I am employed by the U.S. Nuclear Regulatory Commission in the Office of Inspection and Enforcement, Region V, Walnut Creek, California. My professional qualifications are attached.
2. I am Chief, Reactor Projects Section 2 of the Reactor Operations Project Branch, and have responsibility to direct the regional inspection program in the area of reactor operations at nuclear power plants, research and test reactors. I am the direct supervisor of reactor operations inspectors who have inspected the Humboldt Bay Power Plant.
3. I have read the Atomic Safety and Licensing Board's Memorandum and Order, dated October 21, 1981, regarding "Humboldt Bay Power Plant Unit No. 3 - Amendment to Facility Operating License". Regarding Board Questions Number 2 ("Are applicable regulatory requirements currently being met by licensee?") it is my professional opinion, based on the inspections performed at the facility and with the exceptions of identified items of noncompliance or exemptions granted by NRC-NRR, that the licensee is currently meeting applicable regulatory requirements. The exemptions that I am aware of are described in Mr. Vernon Rooney's testimony, to be filed November 19, 1981.

4. I have read the Declarations of Vernon Rooney, submitted in these proceedings and concur with the opinions and conclusions stated in each of the declarations.

I attest that the foregoing affidavit is true and correct to the best of my knowledge and belief.

  
Tolbert Young Jr.

Subscribed and sworn to before me  
this 12<sup>th</sup> day of October, 1981

  
Notary Public

My Commission expires: 2-7-84



Tolbert Young, Jr.  
Professional Qualifications

Region V - Walnut Creek, California  
Office of Inspection and Enforcement

My name is Tolbert Young, Jr. I am a Reactor Inspector with the Office of Inspection and Enforcement, assigned to the Walnut Creek, California Regional office.

I have a Master of Science Degree in Teaching in Mathematics. I received a B.A. in Mathematics and Physical Sciences from George Washington University in 1966 and my Masters from American University in 1968 - both schools are located in Washington, D.C.

I have a Professional Engineer certification in Nuclear Engineering from the State of California.

I served 20 years in the U.S. Army, retiring in 1971.

In 1961, I attended the U.S. Army Nuclear Power Plant Operators' Course. For the next ten years, I served in different capacities throughout the Army's Nuclear Power Program, qualifying as Equipment Operator, Control Room Operator, Shift Supervisor and Plant Superintendent. In 1966, I was appointed to the Training Division of that program and served in progressively more responsible positions until 1969 when I was appointed as Chief Instructor of that Division. In my capacity as Chief Instructor, I was responsible for the training of students and operators in all phases of nuclear power plant operations and maintenance.

In June 1971, I joined the then Atomic Energy Commission as a Reactor Inspector in the Region I, Newark, New Jersey Office. Since that time, I have been the principal inspector for over 15 research, test and power reactor facilities. From August 1972 to March 1974, I was assigned as principal inspector for the Vermont Yankee, Pilgrim 1 and Millstone 1 facilities, all Boiling Water Reactors (BWR). In June 1974, I was assigned as principal inspector for Diablo Canyon and was appointed resident inspector there in August 1978. In March 1981, I was reassigned to the regional office and became the principal inspector for San Onofre 2 and 3. In August 1981, I was promoted to my present position as Chief, Reactor Projects Section 2, Reactor Operations Project Branch.

I have received the following special training:

- |                                                     |      |
|-----------------------------------------------------|------|
| 1. Fundamentals of BWR Plant Operations             | 1972 |
| 2. BWR Technology                                   | 1973 |
| 3. Pressurized Water Power (PWR) Reactor Facilities | 1974 |
| 4. PWR Refresher Training                           | 1975 |
| 5. PWR Simulator Training                           | 1976 |
| 6. BWR Facilities                                   | 1976 |

RESULTS OF INSPECTION EFFORTS IN 1980 AND 1981 AT HUMBOLDT BAY

(DN 50-133)

<u>Inspection of Functional Area</u>	<u>Dates</u>	<u>Manhours</u>	<u>Inspection Report Nos.</u>	<u>Results</u>
Operational	5/20-22/80	34	50-133/80-02	Clear
	10/26-24/81	23	50-133/81-05	Clear
Safeguards	11/19-21/79	18	50-133/79-03	Clear
	12/15-16/80	32	50-133/80-05	Clear
	4/06-09/81	27	50-133/81-02	Clear
Materials & Accountability	5/08-09/81	24	50-133/81-01	Clear
Health Physics	3/24-28/80	38	50-133/80-01	Infraction - Failure to post high radiation area. Infraction - Failure to control access to high radiation area. Deficiency - Failure to label container.
	12/01-05/80	60	50-133/80-04	Infraction - Failure to complete shipping papers.
	8/29 - 7/2/81	34	50-133/81-03	Violation - Severity Level V - Liquid waste system vent monitor set to alarm at 100 mr/hr instead of 10 mr/hr.
Special: To Examine Effects of Earthquake	11/10/80	5	50-133/80-03	Clear
Other: Independent Inspection: Measurement Verification	10/17-22/81*	38	50-133/81-04	Clear

(\*Announced inspection - all others were unannounced.)

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of  
PACIFIC GAS AND ELECTRIC COMPANY  
(Humboldt Bay Power Plant, Unit No. 3  
Amendment to Facility Operating License)

Docket No. 50-133 OLA

AFFIDAVIT OF INA B. ALTERMAN AND  
JEFFREY K. KIMBALL ON SEISMIC EFFECTS AT HUMBOLDT BAY

I, Ina B. Alterman being duly sworn, state as follows:

1. I am employed by the U.S. Nuclear Regulatory Commission as a Geologist in the Geosciences Branch of the Division of Engineering, Office of Nuclear Reactor Regulation. A copy of my professional qualifications are attached and are true and correct to the best of my knowledge and belief.

I, Jeffrey Kimball, being duly sworn, state as follows: I am employed as a Seismologist/Geophysicist in the Geosciences Branch of the Division of Engineering, Office of Nuclear Reactor Regulation. A copy of my professional qualifications are attached and are true and correct to the best of my knowledge and belief.

2. Question 4 in the Licensing Board's Memorandum and Order of October 20, 1981 stated:

Has there been any evidence whatsoever of seismic effects within the exclusion area? If so, please describe.

The Staff's reply to this question is provided below.



3. Since the licensing of the Humboldt Bay Nuclear Power Plant in 1962, two significant moderate seismic events have occurred in the site locality: one on June 7, 1975, and the other on November 8, 1980, after the plant had been shut down by the NRC pending resolution of some faulting problems. The first of these, in 1975, had its epicenter 35 km south of Eureka, with an  $M_L=5.2$ , and caused significant damage in the region. There were no geological or surficial effects of the earthquake within the exclusion area. The only known effects nearby were in the King Salmon Trailer Park, a half-mile west of the plant, where blacktop cracks occurred, and on a roadway one mile south of the plant in Fields Landing, where similar cracks were observed.

4. After the 1980 earthquake, which had an epicenter at least 60 km west of the California Coast on the sea floor, and an  $M_L=7$ , a team of NRC staff engineers and a geologist visited the site to examine the effects of the earthquake on the plant, the site, and the region. A report on the effects of the earthquake on plant structures was issued on January 19, 1981 and later published in April 1981 as NUREG-0766 ("Effects of November 8, 1980 Earthquake on Humboldt Bay Power Plant and Eureka California Area"). Conclusions of this report were that the peak ground acceleration in the free-field at the plant may have been in the range of about 0.15g to 0.25g in the East-West direction. The report also concluded that the effects of the earthquake on Humboldt Bay Unit 3 were minimal and did not endanger the health and safety of the public. The 1975 earthquake had more energy associated with the higher frequencies than did the 1980 earthquake. In general the 1975 event was of shorter duration compared to the far-field longer duration nature of the 1980 earthquake, qualitatively indicating less damage potential.

5. Accompanied by our consultant, Tim Haitt of the USGS, Ina Alterman toured the plant site and region. No ruptures, or land slumps or slides of the ground surface were found within the exclusion area of the plant. No evidence of surface effects of any kind were seen in the exclusion area or on the marine terrace, on which the plant is built, just outside the exclusion area. The surface effects closest to the plant were seen in King Salmon, again in the trailer park. There, new blacktop was freshly cracked, one crack going through a concrete drainage box set into the roadway. This location is near the projected surface trace of the Bay Entrance fault. While the cracks do not suggest motion along the fault, it is interesting to observe that, further away, a number of cracks in the blacktop that suggested liquefaction were seen near a seafood stand on a road in Fields Landing that is also along the trace of the Bay Entrance fault. This was the same location as the Fields Landing crack observed after the 1975 earthquake.

6. An open-file report by the U.S. Geological Survey (Lajoie and Keefer)<sup>1/</sup> reports that the asphalt at one of the abutments of the highway bridge near the entrance to the plant was broken by two fresh cracks, a few millimeters wide, which the authors attributed to slight displacement of the bridge during the earthquake.

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<sup>1/</sup> Lajoie, Kenneth and Keefer, David, "Investigations of the 8 November 1980 earthquake in Humboldt County, California," (1981), USGS Open File Report 81-397.

The projected trace of the Buhne Point fault, discovered recently by PG&E consultants' Summary Report of October 1, 1980,<sup>2/</sup> comes close to this bridge, but the USGS reported that no evidence was observed to suggest fault rupture as the cause of the cracks.

7. The severest effects of the event within the plant region were in Fields Landing, where an MW VII is interpreted.<sup>3/</sup> Here houses were knocked off simple foundations, glass shattered, and some chimneys fell or were partially damaged. Besides a few fresh cracks in the roadtop previously mentioned and some fresh cracks in the sand quarry, no other geologic effects of the earthquake were observed. About 40 miles north of the plant, liquefaction-induced phenomena were observed on Big Lagoon Spit due east of the epicenter. These included sand boils, surface cracks, lateral spreads, and slumps at shoreline, in unconsolidated medium to coarse sand. Descriptions of other localities with minor surface disturbance resulting from the 1980 earthquake may be found in the USGS open-file report.

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<sup>2/</sup> Woodward-Clyde Consultants, "Evaluation of the Potential for Resolving the Geologic and Seismic Issues of the Humboldt Bay Power Plant Unit No. 3, Summary Report and Appendices," (prepared for Pacific Gas and Electric Company, Oct. 1, 1980).

<sup>3/</sup> Ruth B. Simon, "Intensity Survey for 8 November 1980 Eureka, California earthquake," Seismological Society of America (Abstract), SSA meeting, March 1981.

8. PG&E's geological and seismological consultants, Woodward-Clyde Consultants, Inc. submitted a report in October, 1980, referred to heretofore, describing the results of their geologic and seismic studies of the plant site and region with special emphasis on the locations, regional relationships and ages of last movements of the faults.

Ina B. Atterman  
Ina B. Atterman

Jeffrey K. Kimball  
Jeffrey K. Kimball

Subscribed and sworn to before me  
this 11<sup>th</sup> day of November, 1981

Ferdinand M. Egan  
Notary Public

My commission expires: July 1, 1982

INA B. ALTERMAN, PH.D.  
GEOSCIENCES BRANCH  
DIVISION OF ENGINEERING  
U. S. NUCLEAR REGULATORY COMMISSION

My name is Ina B. Alterman and I am presently employed as a Geologist in the Geosciences Branch, Division of Engineering, Office of Nuclear Reactor Regulation, Washington, D.C. 20555.

PROFESSIONAL QUALIFICATIONS

I have a B.S. in Geology (1963) which was awarded Magna Cum Laude from City College of New York, where I was also a member of Phi Beta Kappa. My Ph.D. in Structural Geology was awarded in 1972 by Columbia University where I held a Faculty Fellowship.

My professional experience began with University teaching and field and laboratory research. I taught Introductory Geology, Historical Geology, and Optical Mineralogy in various colleges (City, Hunter, Barnard and Columbia) as a part-time lecturer while in Graduate School. As a full time Assistant Professor at Lehman College, starting in 1971, I also taught Structural Geology, Tectonics, and Igneous and Metamorphic Petrology until coming to NRC in October, 1979.

My major research activities were grant-funded field mapping, structural analyses of multiple deformation, mechanisms of ductile deformation, and ancient plate tectonics. Some of this mapping, in Pennsylvania, is now included on the latest official geologic map of Pennsylvania, published by the Pennsylvania Geological Survey. For two summers in 1976 and 1977, I did a study of linear structures and brittle fracturing of the earth's crust for the National Aeronautics and Space Administration using Landsat and other remote sensing techniques.

I am often sent papers on various aspects of structural geology to edit and/or review for journals and proceedings volumes (for example, Journal of Geology, Basement Tectonics Vol.). My own publications include articles in the Earth Science Encyclopedia, Petrology Volume (still in press), articles on stratigraphy, mechanisms of slaty cleavage formation, Paleozoic plate tectonics in the Appalachian Piedmont and late brittle faulting in the Appalachians.

At NRC I have been involved in the review of recent geologic features near Rancho Seco, and at the Washington Nuclear Plant No. 2 on the Columbia River Basalt Plateau in Central Washington State. I recently supervised the compilation of information concerning the geologic and tectonic setting for every nuclear facility in California, including university and industrial research reactors and power plants.

I am a member of the following professional and scientific organizations:

Geological Society of America  
American Geophysical Union  
American Association for the Advancement of Science  
New York Academy of Science  
Potomac Geophysical Society  
Washington Geological Society  
Sigma XI  
Phi Beta Kappa

JEFFREY K. KIMBALL  
GEOSCIENCES BRANCH, P-314  
DIVISION OF ENGINEERING  
U. S. NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555

My name is Jeffrey K. Kimball. I am employed as a Seismologist/Geophysicist reviewer, Geosciences Branch, Division of Engineering, Office of Nuclear Reactor Regulation.

I received a B.S. degree in Oceanography from the University of Michigan in 1977 and a M.S. degree in Geology from the University of Michigan in 1979, with a specialty in seismology and geophysics.

I have been employed by NRC since May 1980 as a Seismologist/Geophysicist reviewer as applied to the evaluation of applications for construction and operation of nuclear facilities, and to determine the thoroughness of this information for defining the seismic hazard for which facilities must be designed. Since joining the Nuclear Regulatory Commission staff, I have participated in the licensing activity for approximately ten sites.

From 1977 to 1980, I was a research assistant and teaching assistant at the University of Michigan. My activity as a research assistant included seismic data compilation studies for the U. S. Geological Survey and data analysis and operation of a nine station seismic network. My M.S. thesis work involved a study on surface wave dispersion of the Atlantic Ocean Basins and has been presented at national meetings of professional societies and published in a professional journal. Teaching assistant experience consisted of helping teach both introductory and advanced geology field courses in Wyoming for two summers and an introductory geology laboratory class at the University of Michigan.

I am a member of the American Geophysical Union and the Seismological Society of America, and have co-authored 7 publications including abstracts of presentations to professional societies and NUREG documents.



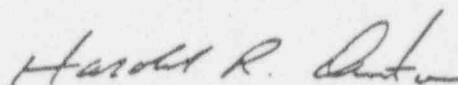
UNITED STATES NUCLEAR REGULATORY COMMISSION  
DOCKET NO. 50-133  
PACIFIC GAS & ELECTRIC COMPANY  
HUMBOLDT BAY POWER PLANT  
ISSUANCE OF DIRECTOR'S DECISION UNDER  
10 CFR 2.206

Mr. Ron Guenther by letters dated January 16, 1982 and June 8, 1982 has petitioned for the decommissioning of Humboldt Bay Power Plant Unit No. 3.

Mr. Guenther's letters have been treated as a request for action under 10 CFR 2.206 and have been referenced to the Office of Nuclear Reactor Regulation. Upon review of this matter, the Director of the Office of Nuclear Reactor Regulation has determined that the request does not provide an adequate basis for decommissioning of the Humboldt Bay Power Plant, Unit No. 3. Accordingly, the request has been denied.

Copies of the Director's decision are available for inspection in the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. 20555 and at the Humboldt County Library, 636 F Street, Eureka, California 95501. A copy of the decision will also be filed with the Secretary for the Commission's review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

As provided in 10 CFR 2.206(c), the decision will constitute the final action of the Commission twenty-five (25) days after the date of issuance, unless the Commission, on its own motion, institutes a review of the decision within that time.



Harold R. Denton, Director  
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland  
this 7th day of July 1982.