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 50-323 Diablo Canyon Nuclear Power Plant, Unit 2, Pacific Ga 05000323
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 RECIP. NAME RECIPIENT AFFILIATION
 Ofc of Enforcement (Post 870413)

SUBJECT: Responds to NRC 900313 NOV & proposed imposition of civil penalty in amount of \$50,000 re IRS 50-275,323/89-31.

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James D. Shiffer
Senior Vice President and
General Manager
Nuclear Power Generation

March 12, 1990

PG&E Letter No. DCL-90-070



Director, Office of Enforcement
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Re: Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Reply to Notice of Violation
NRC Enforcement Action 89-241

Gentlemen:

On February 13, 1990, NRC Region V issued Enforcement Action 89-241 that included a Notice of Violation and proposed imposition of a civil penalty in the amount of \$50,000 associated with NRC Inspection Report Nos. 50-275/89-31 and 50-323/89-31. The Enforcement Action contained a Notice of Violation citing a Severity Level III problem regarding the Diablo Canyon Units 1 and 2 containment recirculation sumps. PG&E's response to the Notice of Violation is enclosed, including a check for full payment of the civil penalty payable to the Treasurer of the United States. The response incorporates discussions and corrective actions described in previous PG&E correspondence to the NRC and PG&E-NRC meetings regarding containment recirculation sump issues. PG&E recognizes the importance and significance of the problems and has taken appropriate measures to improve performance in these areas.

As discussed in past correspondence with the NRC and in PG&E-NRC management meetings, PG&E has and will continue to place emphasis on management and supervisory oversight of maintenance and surveillance activities, personal accountability and problem ownership, and increased involvement by the quality and engineering organizations in plant activities. PG&E will continue to require that all matters be addressed using sound judgment, with particular emphasis on the identification, timely resolution, and appropriate followup of potential safety concerns and problems.

PG&E believes that its ongoing programs in the area of configuration management are appropriate for identifying and correcting discrepancies and inconsistencies at the plant. PG&E's System Engineer Program, including the quarterly system walkdowns, has been implemented and is continually being strengthened. PG&E's enhanced Design Criteria Memoranda (design basis documentation) program is proving to be both useful and effective in clarifying the design bases and identifying discrepancies and inconsistencies. PG&E's Safety System Functional Audit and Review Program is also proving to

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March 12, 1990

be effective for identifying inconsistencies in both documentation and operational practices and improving system operation.

In addition, numerous improvements have been made since 1981 in PG&E's processes for design control, drawing revisions, FSAR updating, and preliminary walkdowns of proposed plant modifications. Finally, a theme that is being stressed is the significance of an individual's signoff that an activity has been correctly accomplished. PG&E is confident that aggressive pursuit of these programs and their betterment will enable us to identify conditions such as those associated with the sump, and that these programs will significantly reduce the likelihood of recurrence. While continuous reemphasis is warranted, PG&E believes significant progress has been made in the above areas.

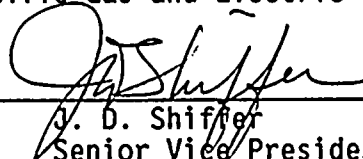
Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Subscribed to in San Francisco, California this 12th day of March 1990.

Respectfully submitted,

Pacific Gas and Electric Company

By

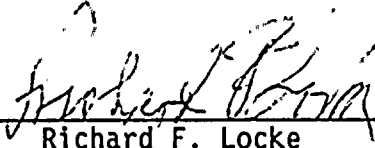


J. D. Shiffer
Senior Vice President and
General Manager
Nuclear Power Generation

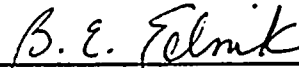
Howard V. Golub
Richard F. Locke
Attorneys for Pacific
Gas and Electric Company

Subscribed and sworn to before me
this 12th day of March 1990

By



Richard F. Locke



Bianca E. Zelnyk, Notary Public
for the City and County of San Francisco
State of California

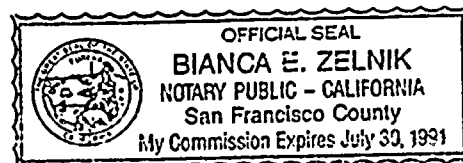
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Diablo Distribution

My commission expires July 30, 1991.

Enclosure

DCO-89-EN-N025

3043S/0080K/DWO/2237





ENCLOSURE

RESPONSE TO NOTICE OF VIOLATION - ENFORCEMENT ACTION 89-241 REGARDING
NRC INSPECTION REPORT NOS. 50-275/89-31 AND 50-323/89-31

On February 13, 1990, as followup to an Enforcement Conference held with PG&E on December 19, 1989, NRC Region V issued Enforcement Action 89-241 that included a Notice of Violation associated with NRC Inspection Report Nos. 50-275/89-31 and 50-323/89-31. Enforcement Action 89-241 cited three violations that were categorized in the aggregate as a Severity Level III problem applicable to Diablo Canyon Units 1 and 2 related to the containment recirculation sumps. Potential degradation of the sumps due to inadequate procedures and personnel error was reported by PG&E to the NRC in Licensee Event Report (LER) 1-89-014-01, dated January 19, 1990 (DCL-90-018). PG&E recognizes the importance and significance of these concerns and has taken appropriate measures to improve performance in these areas. A discussion of the sump problems and PG&E's corrective actions are provided below.

STATEMENT OF VIOLATION A.

- A. 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, requires in part, that measures be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

FSAR Section 6.2.3.2.2.1, Containment Recirculation Sump, states in part, that a baffle arrangement surrounds the sumps to prevent floating debris or anything larger than 3/16-inch from entering the sumps. FSAR Figure 6.2-11 shows the configuration.

Contrary to the above, on August 2, 1985, the licensee identified a condition adverse to quality related to gaps in the Unit 1 recirculation sump in excess of the dimensions described in the FSAR. The licensee's corrective actions were inadequate to identify and correct all of the nonconforming conditions. Additional gaps in excess of the dimensions described in the FSAR were discovered on November 26, 1989.

ADMISSION/DENIAL AND REASON FOR VIOLATION IF ADMITTED

During the Unit 1 third refueling outage (which commenced October 6, 1989), a walkdown verification of the containment recirculation sump (sump) identified a 1-inch vertical gap in the upper grating assembly between the screen sections and other gaps around a concrete column pedestal in the inclined section of the upper grating assembly (see Figures 1, 2, and 3). PG&E acknowledges that the gaps in the sump screen assembly identified in 1985 and again in 1989 were not in accordance with the intended design configuration of

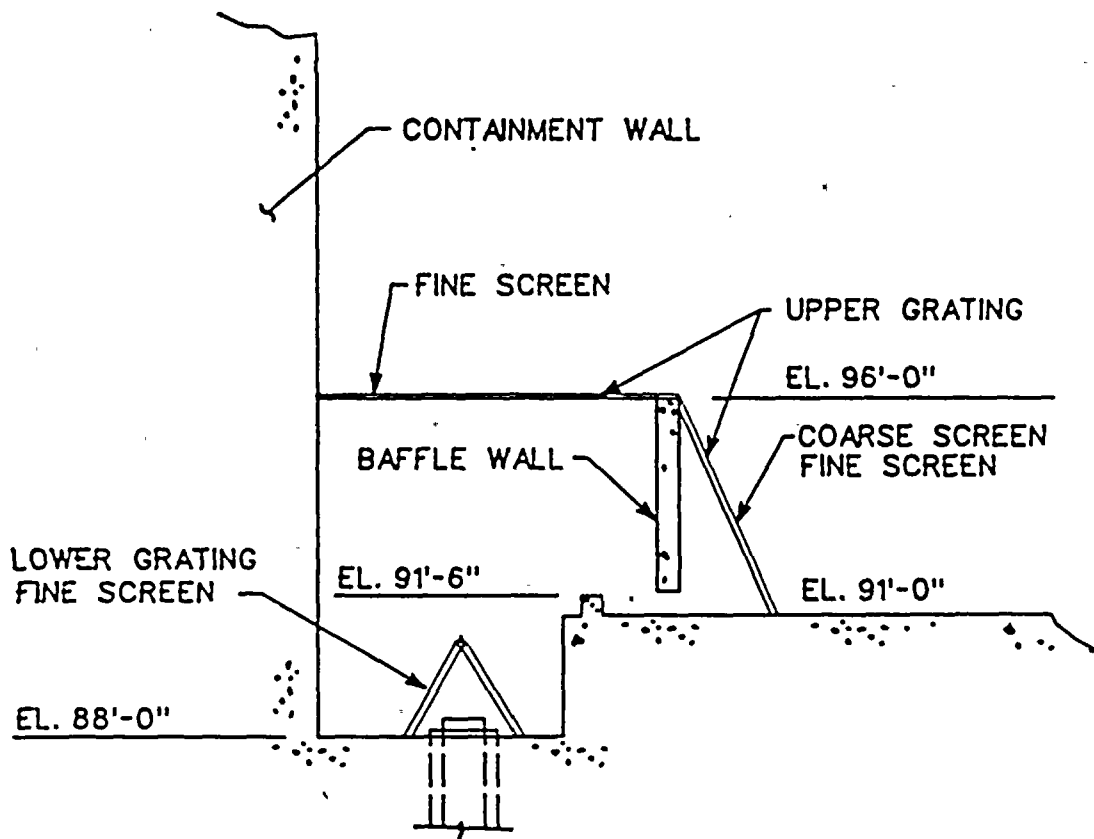


the sump as described in the FSAR Update, and that the corrective actions taken in 1985 were inadequate to identify and correct the nonconforming conditions. The reasons are as follows:

1. The critical construction parameter related to the maximum gap anywhere on the surface of the sump screens was not clearly defined by Engineering until December 15, 1986, when Revision 8 of sump Drawing 443259 was issued. The drawing revision was issued at that time to reflect the Unit 2 design changes that were made in 1985 to eliminate the gaps greater than 3/16-inch in the sump screen assembly. The apparent failure to specify adequate construction acceptance criteria for the sump screen gaps led to the Unit 1 as-built screen configuration described in the violation, i.e., screen gaps in excess of the dimensions described in the FSAR Update.
2. The 1985 problem report for Unit 1, which was based on a similar problem with the Unit 2 sump screens, identified potential deficiencies (gaps greater than 3/16-inch) in the unscreened portions only of the upper grating assembly. Two gaps were found and corrected in addressing the problem report. However, the inspection was not expanded to look for gaps in the screened portions of the upper grating assembly since the problem report did not identify that the screened portions might also be deficient.
3. The Unit 1 screen gaps were not identified during containment inspections since the procedures governing walkdowns and inspections of the sump lacked specific guidance regarding integrity of the sump screen assemblies.

As discussed at the Enforcement Conference and in LER 1-89-014-01, PG&E believes with a high degree of confidence that the emergency core cooling system (ECCS), even with the identified gaps in the sump screen assembly, would have been capable of performing its intended safety function in the event of a design basis loss-of-coolant-accident (LOCA) requiring containment recirculation. This conclusion is based on safety evaluations and supporting studies, which were documented in LER 1-89-014-01, that considered both the nature of the accident conditions and the conservative design of the sump with its relatively large screen areas, concrete baffle, curb, and multiple layers of screen and grating. These evaluations considered the unique and advantageous location of the sump in the annulus area of the containment structure where it is separated from a postulated pipe break by the concrete crane wall, the shielding labyrinths, and the locked wire mesh personnel doors. These evaluations also considered the nature of the debris created by postulated accidents (insulation debris and larger size paint particles) and PG&E's conclusion that this debris would sink and not be carried to the sump and the residual heat removal (RHR) inlet piping due to the low velocity of the flow.





SECTION

DIABLO CANYON
CONTAINMENT RECIRCULATION SUMP

FIGURE 1



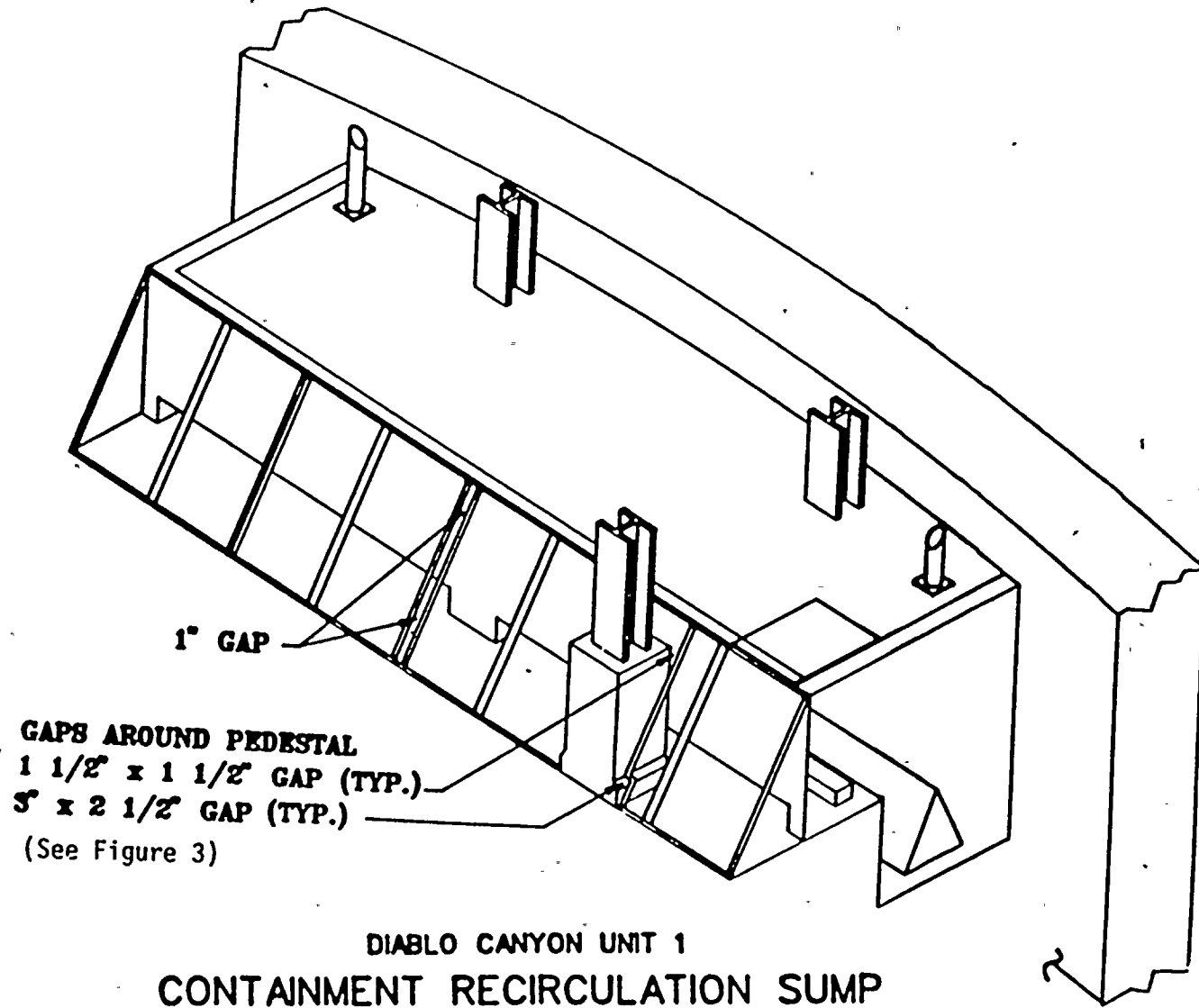


FIGURE 2



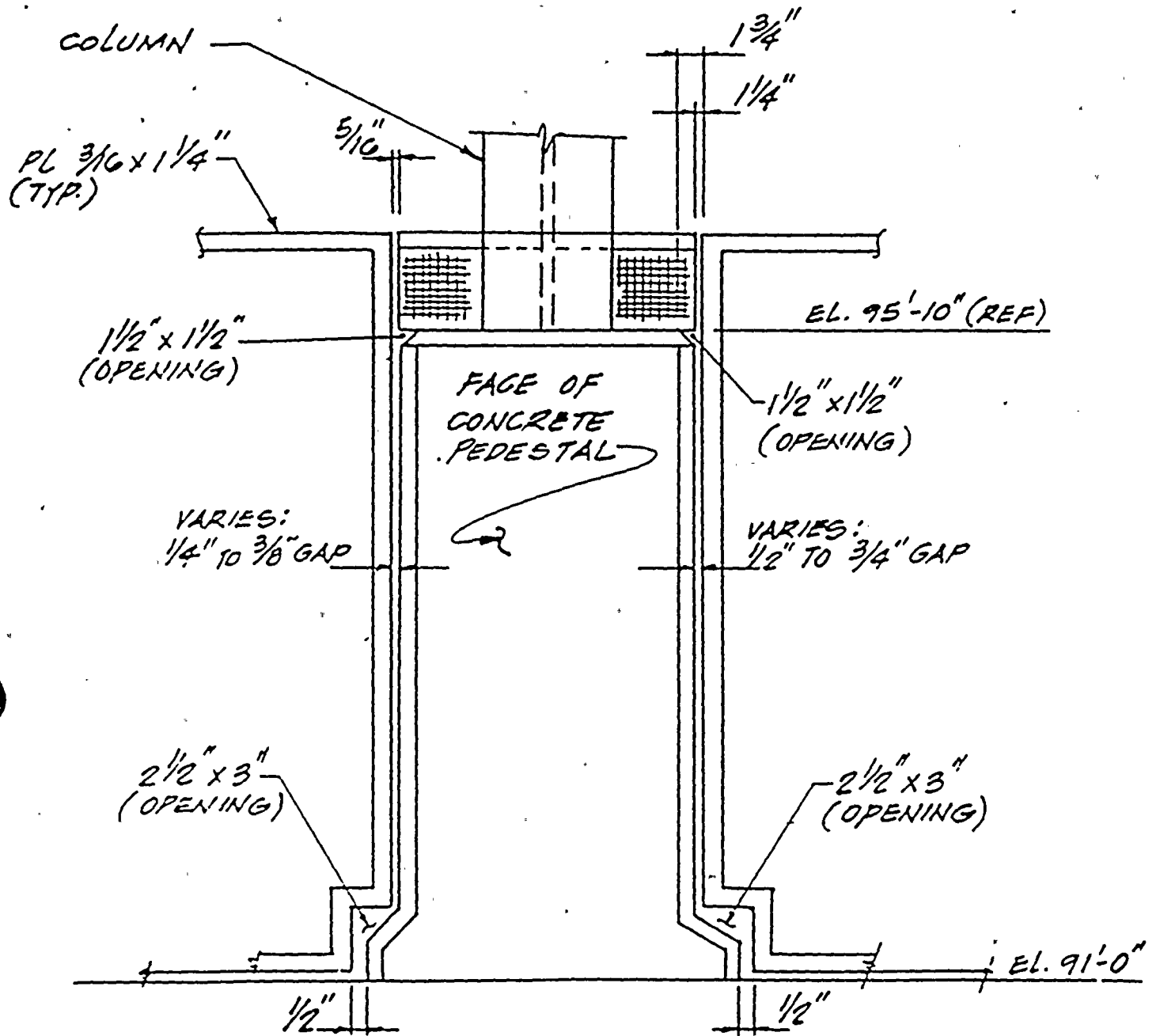


FIGURE 3



CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. Design Change Notice (DCN) DC1-EC-43762 was issued to repair the deficiencies of the Unit 1 sump, including the gaps in the upper grating assembly screen. The DCN identified the repairs necessary to assure that the sump is configured to meet design and functional requirements. This DCN has been closed out. A similar DCN was issued for as-building and repair of Unit 2 sump deficiencies, if any, during the current Unit 2 third refueling outage. The FSAR Update will be revised to reflect the Unit 1 and 2 as-built sump configurations.
2. Nuclear Engineer Manual Procedures 3.5, "Drawing Preparation and Approval," 3.6 ON, "Operating Nuclear Power Plant Design Changes," and 3.7, "As-built Documents," have been revised on numerous occasions since the origination of the sump configuration problems. These procedures ensure that sufficient detail is provided for design changes to eliminate incorrect interpretation. As a result of the sump configuration problems, these procedures, as well as the drafting procedures, were reviewed and determined to be adequate to preclude configuration problems similar to the sump screen gaps.
3. Surveillance Test Procedure (STP) M-45A, "Containment Inspection Prior to Establishing Containment Integrity," was revised to assure special attention be given to sump cleanliness. The revised procedure includes inspection of the sump screens for gaps, structural distress, and corrosion, as well as inspections of the sump and RHR suction lines for debris. The revised procedure was used for the recent Unit 1 refueling post-outage containment inspection.
4. PG&E has several ongoing programs to review plant systems that will significantly improve the probability that problems, such as the sump configuration problems, will be identified in a timely manner. These programs are:
 - a. System Engineer Program: The plant System Engineers, in conjunction with their counterparts in Nuclear Engineering and Construction Services (NECS), perform quarterly walkdowns of the systems for which they are responsible.
 - b. Safety System Functional Audit and Review (SSFAR) and Safety System Outage Modification Inspection (SSOMI) Programs: These programs provide for independent, detailed reviews of plant systems, including the design bases and the as-built configuration.
 - c. Design Basis Documentation Enhancement Program: DCMs for the plant systems are being enhanced or prepared to provide a detailed design basis for each plant system. Other enhancements to improve the understanding of and access to design bases information include (1) a Design Basis Document Source Reference Guide (DBDSRG), (2) a DCM Writer's Guide, (3) a Plant System Engineer/System Design Engineer matrix to improve design interface and identify system responsibilities, and (4) design bases training in major topical design areas and in use of the DBDSRG.



CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

1. The DCM for containment function, DCM T-16, has been rescheduled for completion in 1990 instead of 1991. The DCM will include a detailed description of the design basis for the containment recirculation sump.
2. PG&E is performing a study of the containment recirculation sump to optimize its design and operation. This study includes consideration of accident conditions as well as inspection, maintenance, ALARA, and operational issues. PG&E has targeted completion of this study for mid-1990 and implementation of any appropriate modifications during the fourth refueling outage for each unit.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Any needed changes or repairs identified during the as-built walkdown of the Unit 2 sump will be completed during the third refueling outage. The FSAR Update, Revision 6 (September 1990) will include updated information on the as-built configuration of the Unit 1 and 2 sumps. The containment function Design Criteria Memorandum T-16 will be completed by December 31, 1990. Appropriate sump modifications resulting from the recirculation sump study are targeted for implementation during the fourth refueling outage for each unit.



STATEMENT OF VIOLATION B.

- B. Diablo Canyon Technical Specification 3.5.2 states in part that:

"Two Emergency Core Cooling System (ECCS) subsystems shall be OPERABLE with each subsystem comprised of: ...e. An OPERABLE flow path capable of taking suction from the Refueling Water Storage Tank on a Safety Injection signal and manually transferring suction to the containment sump during the recirculation phase of operation."

Technical Specification 1.21, in defining the terms OPERABLE and OPERABILITY, provides in part: "a system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety-related function(s). Implicit in this definition shall be the assumption that all necessary...auxiliary equipment that are required for the system, subsystem, train, component or device to perform its safety-related function(s) are also capable of performing their rated support function(s)."

With more than one ECCS subsystem inoperable, Technical Specification 3.0.3 applies, which states:

"When a Limiting Condition for Operation is not met, except as provided in the associated ACTION requirements, within 1 hour action shall be initiated to place the unit in a MODE in which the specification does not apply by placing it, as applicable, in

- a. At least HOT STANDBY within the next 6 hours,
- b. At least HOT SHUTDOWN with the following 6 hours, and
- c. At least COLD SHUTDOWN within the subsequent 24 hours."

Contrary to the above, two emergency core cooling system subsystems were inoperable for period of about 10 to 12 hours each while Unit 2 was in Mode 1 operation on October 12, 1987 and August 23, 1988 and while Unit 1 was in Mode 1 operation on September 7, 1988, and May 11, 1989. On those dates, the containment recirculation sump was rendered inoperable because the screened access hatch was opened to allow the addition and pumpdown of borated water with hoses for calibration of the sump level detectors. With the sump access hatch open, the screening structure was not fully capable of performing its rated support function. During the stated periods, no action was initiated to reduce the reactor power to enter a lower mode of operation.



ADMISSION/DENIAL AND REASON FOR VIOLATION IF ADMITTED

PG&E acknowledges that the sump access hatch on the Units 1 and 2 upper grating assembly had been opened (for up to 12 hours) at various times during power operation without adequate consideration of the effect on operability of the sump. The primary reason for opening the hatch was for calibration of the sump level narrow-range instrumentation, LT-940 and -941. The calibration was performed using Temporary Procedure (TP) TO-8706, which did not include limitations on the time that the access hatch is permitted to be open or other guidance regarding sump operability considerations during at-power calibration activities. The safety evaluation performed for TP TO-8706 was inadequate since it did not address operability of the sump.

As discussed at the Enforcement Conference and in LER 1-89-014-01, PG&E believes that opening of the sump access hatch on the upper grating assembly did not render the sump inoperable. The evaluation presented in the LER discussed the low likelihood that debris would enter the sump (with the access hatch open) and the risk significance of unavailability of the containment sump during power operation. It was concluded that it was highly unlikely, considering the physical arrangement and location of the sump structure, that debris would enter the sump should a LOCA occur when the access hatch was open. Using extremely conservative assumptions, the risk significance study concluded that the increase in the total core damage frequency was approximately 0.05 percent for each hour that the sump was not available. If more realistic assumptions were used to account for the physical configuration of containment, the remote location of the sump, and the nature of the potential debris, it is judged that the risk would be reduced by at least an order of magnitude.

PG&E concludes that opening of the access hatch in the upper grating assembly during power operation did not render the containment recirculation sump inoperable as stated in the violation. Furthermore, even if the assumption is made that opening the hatch renders the sump inoperable, the risk significance is very low. Therefore, the health and safety of the public were not adversely affected by this event. However, since the safety evaluation for performance of TP TO-8706 did not adequately address sump operability, PG&E has taken the actions described below to ensure critical evaluation prior to future sump access hatch openings during power operation.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. A shift night order was issued requiring management review of any intended at-power openings of the access hatch on the upper grating assembly of the Unit 1 or Unit 2 sump. If management determines that opening the hatch at power is acceptable, concurrence will be sought from the NRC Resident Inspector.
2. Nuclear Plant Administrative Procedure C-19/NPG 4.3, "Safety Evaluation Guidelines," was recently revised and extensive training is being given to plant personnel to increase their sensitivity to the requirements for performing safety evaluations in accordance with 10 CFR 50.59.



CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

Although there is no reason to make "routine" entries into the sumps at power, the primary reason for past entries during Modes 1 through 4 was to perform maintenance on the sump level narrow-range instrumentation. This maintenance was primarily due to capillary air in-leakage and boric acid crystallization on the level transmitters. To reduce the susceptibility of the level instrumentation to these problems and thus improve reliability, design change packages J-41715 and J-42715 are being issued to replace the differential pressure level transmitters in the Units 1 and 2 sumps with RTD thermal differential level indicators. This modification will allow the level instruments to be serviced without sump entry at power. Implementation of design change packages J-41715 and J-42715 is targeted for the fourth refueling outage of each unit.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

PG&E is in full compliance with the Technical Specifications.



STATEMENT OF VIOLATION C.

- C. Technical Specification 4.5.2.c requires in part that a visual inspection be performed of all accessible areas in the containment prior to establishing containment integrity to verify that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restrictions of the pump suctions during a LOCA condition.

Contrary to the above, on May 11, 1989, the licensee performed an inadequate inspection of the Unit 1 containment sump for loose debris which could be transported within the containment sump and cause restrictions of the sump suctions during a LOCA condition. Even though containment integrity had been established, there was debris in the sump from at least the time of the last licensee inspection of May 11, 1989, until October 17, 1989 when the debris was discovered and removed.

ADMISSION/DENIAL AND REASON FOR VIOLATION IF ADMITTED

PG&E acknowledges that inadequate sump inspections were performed. This resulted in failure to detect debris inside the upper grating assembly of the Unit 1 sump. The debris was found by the NRC Resident Inspector relatively early in the Unit 1 third refueling outage before the PG&E System Engineer had performed a planned ECCS walkdown. The engineer had planned to inspect the sump during the first week of the outage, but a primary system valve flange leak resulted in contaminated boric acid crystals on the top and inside of the sump. Thus, the walkdown was delayed pending decontamination of the sump area. At the request of the NRC Resident Inspector, sump decontamination was expedited and acceptable entry conditions were obtained.

The primary reason for debris in the sump was failure to follow STP M-45, "Containment Inspection," for containment inspections following maintenance activities. Also, the procedure was not explicit in defining inspection activities. In addition, plant management did not ensure that foreign material exclusion principles controlled recirculation sump activities.

An extensive evaluation of the effects of the debris on recirculation operability was performed. This evaluation was discussed at the Enforcement Conference and documented in LER 1-89-014-01. PG&E concluded that because of the nature of the debris and the design features of the sump, it is highly unlikely that the debris would have been drawn into the RHR inlet piping, and thus, it would not have impaired operation of the ECCS or the containment spray system.



To further assure the absence of sump debris, proper conduct of inspections, and implementation of acceptable housekeeping and foreign material exclusion principles, PG&E has taken the steps listed below.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

1. The debris found in the Unit 1 sump was removed.
2. PG&E inspected the Unit 1 sump RHR intake piping during the recent third refueling outage. The video probe inspection included the 8982 gate valves, the vertical piping section, and approximately 20 feet into the horizontal piping section of both A and B suction trains. No debris was found.
3. STP M-45A for containment inspections was revised to assure additional attention is given to recirculation sump cleanliness. The revised procedure includes a greater level of detail and inspection criteria and was used for the recent Unit 1 post-outage containment inspection.
4. Preventive maintenance activities have been established to require that foreign material exclusion area covers be installed on the sump suction piping on a recurring basis immediately following entry into Mode 5 during refueling outages.
5. Administrative Procedure (AP) C-10S4, "Foreign Materials Exclusion Area Controls," was revised to assure the application of foreign material exclusion controls to any recirculation sump activities.
6. To reemphasize the importance of and provide guidance for verification signatures, AP A-56, "Signatures and Signature Responsibilities," has been developed and will be issued in the near term.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

PG&E believes that the steps taken are adequate to ensure that the sump will be adequately inspected in accordance with the Technical Specifications.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

With the above completed actions, PG&E is in full compliance with the Technical Specification requirement for sump inspections.

