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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV

Walnut Creek Field Office
1450 Maria Lane
Walnut Creek, California 94596-5368

July 22, 1994

Dockets: 50-275
50-323

Licenses: DPR-80
DPR-82

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President and General Manager
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SUBJECT: RESPONSE TO NRC INSPECTION REPORT 50-275/94-11 AND 50/323/94-11

Thank you for your letter of June 20, 1994, in response to our letter and Notice of Violation, dated May 19, 1994. We have reviewed your reply and find it responsive to the concerns raised in our Notice of Violation. We will review the implementation of your corrective actions during a future inspection to determine that full compliance has been achieved and will be maintained.

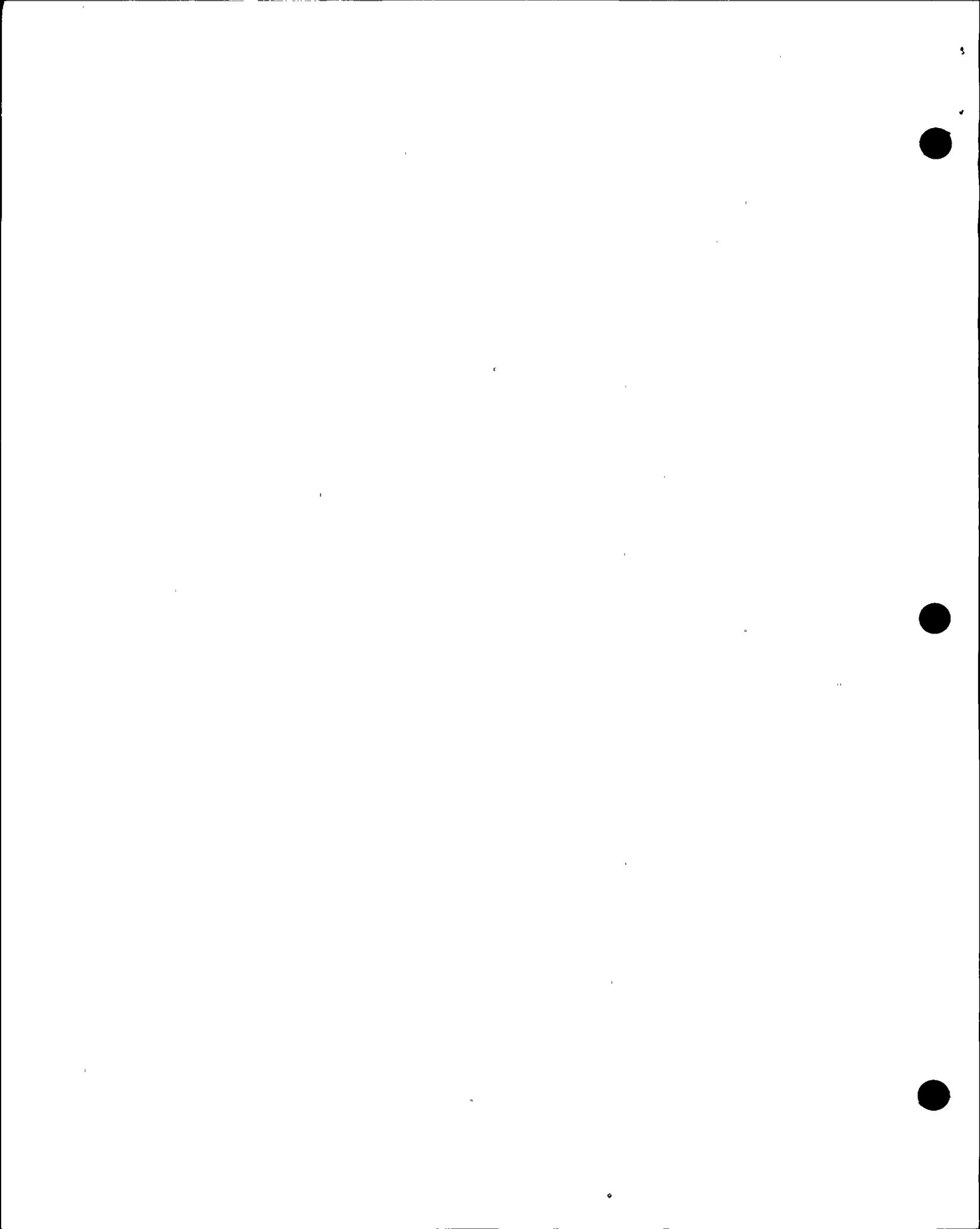
Sincerely,

Kenneth E. Perkins, Jr.
Director

cc:
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July 22, 1994

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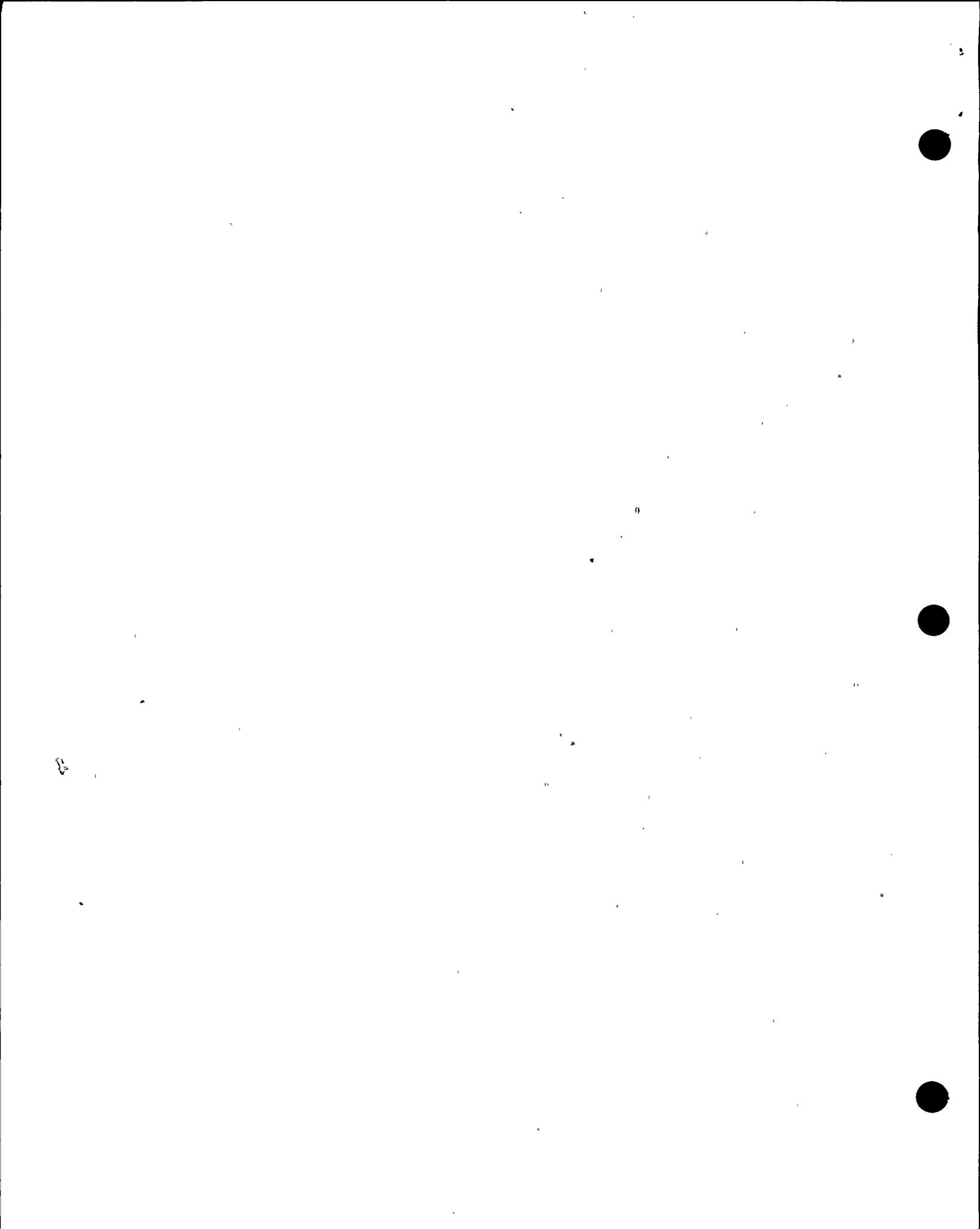
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Pacific Gas and Electric Company

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July 22, 1994

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7/22/94	7/22/94			



June 20, 1994

PG&E Letter DCL-94-127



U.S. Nuclear Regulatory Commission
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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 in NRC Inspection
Report Nos. 50-275/94-11 and 50-323/94-11

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Gentlemen:

NRC Inspection Report Nos. 50-275/94-11 and 50-323/94-11, cover letter dated May 19, 1994, indicated that procedural compliance and the associated implementation of management expectations are areas of concern. PG&E recognizes that procedural adherence and reducing human errors are fundamental requirements to maintain excellence in its operation of Diablo Canyon. Reducing human errors and maintaining a high level of procedural adherence requires constant diligence by Diablo Canyon management and employees. PG&E recognizes that implementation of procedural requirements has not met management expectations and errors have occurred.

PG&E is committed to improving its performance and will dedicate the leadership necessary to achieve these expectations. Actions being taken include: 1) assuring management more aggressively emphasizes its expectations regarding error reduction and procedural adherence; 2) lowering the threshold of problems receiving management attention; 3) enhanced emphasis and use of PG&E's personnel accountability program which utilizes constructive feedback; and 4) improved trending to assure the above actions are effective. Detailed descriptions of the actions being taken to reduce human errors and improve procedural adherence are provided in Enclosure 1.



June 20, 1994

In addition, the inspection report also contained a Notice of Violation that cited one Severity Level IV violation regarding failure to properly control the injection of argon gas into the Unit 2 reactor coolant system during the repair of a leak on a Unit 2 safety injection accumulator vent line. PG&E's response to the Notice of Violation is provided in Enclosure 2.

Sincerely,

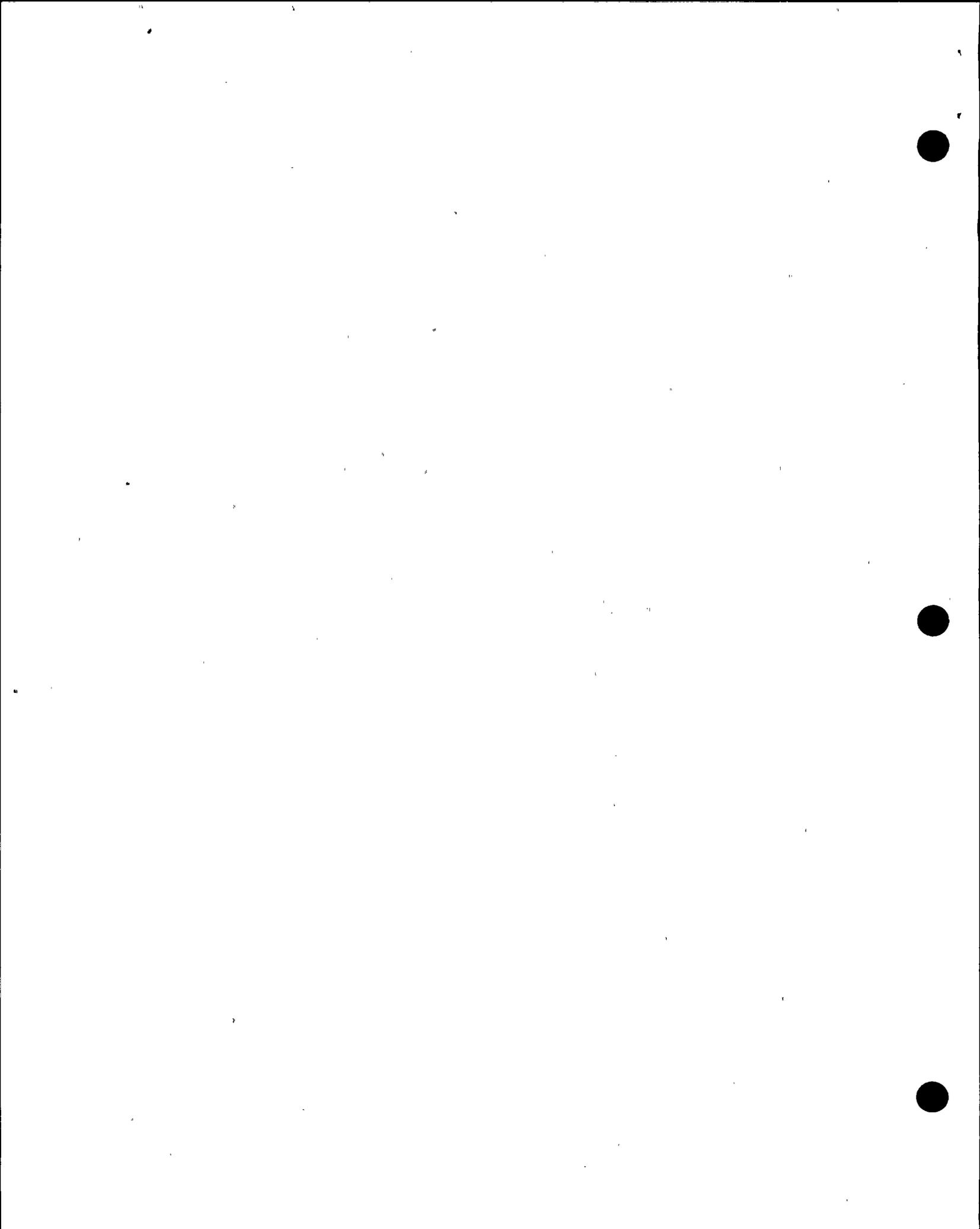


Gregory M. Rueger

cc: L. J. Callan
Mary H. Miller
Kenneth E. Perkins
Sheri R. Peterson
Diablo Distribution

Enclosures

DC2-94-MM-N030
DC0-93-PG-N048



ENCLOSURE 1

**REPLY TO PROCEDURAL COMPLIANCE CONCERNS RAISED IN
NRC INSPECTION REPORT NOS. 50-275/94-11 AND 50-323/94-11**

NRC Inspection Report Nos. 50-275/94-11 and 50-323/94-11 identified concerns regarding the overall area of procedural compliance. As stated in the cover letter:

"The overall area of procedural compliance and the associated implementation of management expectations continues to be an area of our concern. We are concerned that some members of your staff may not be fully sensitive to the need to pay close attention to detail, to follow procedures, and to not proceed in the face of uncertainty. One example involved a work order in which construction work steps were signed off and back-dated to the date the work steps were completed. This was not an immediate safety concern, since the work in the field appeared to have been completed in an appropriate manner. These back-dated sign-offs were not consistent with rigorously controlled safety work. Additional examples are: (1) your refueling crew chose to perform an operation (lowering a different fuel module in location F8) as a test which was not well controlled and coordinated and which was not provided for in your procedure; (2) your operations and maintenance organizations chose to not implement the clearance for repair of the safety injection accumulator vent line, a violation of procedure; and (3) your engineering staff referenced a test performed several days earlier as the basis for returning the reactor cavity manipulator crane to service following relay replacement. We acknowledge the prompt, aggressive actions of both your line and quality organizations to identify and resolve these problems; however, we encourage you to assure that these situations do not develop into a trend of declining performance."

PG&E Response:

PG&E is committed to achieving excellence in its operation of Diablo Canyon. PG&E understands that superior human performance is a fundamental requirement and requires constant diligence by Diablo Canyon management and employees.

As discussed in PG&E Letter DCL-94-026, dated February 4, 1994 (Reply to Notice of Violation in NRC Inspection Report Nos. 50-275/93-32 and 50-323/93-32), PG&E agrees that there are concerns regarding compliance with procedures by plant personnel. As indicated in DCL-94-026, a Continuous Improvement (CI) Team was initiated to identify enhancements that would result in generally improved procedural compliance. The CI Team recommendations to revise Procedures AD2.ID1, "Procedure Use and Adherence," and AD1.ID2, "Review Level "A" Procedure Review, Approval, Revision Control and Training Notification," and to develop the new field guidance procedure (AD1.ID7, "Editorial Corrections and On-The-Spot Changes") were



implemented prior to the start of the Unit 1 sixth refueling outage (1R6).

Following implementation of the above CI Team recommendations, a survey was performed during 1R6 regarding procedural adherence. The response to the survey indicates that most plant workers believe they understand the importance of, and are willing to follow, plant procedures. The survey also indicates that management must continue to emphasize procedural adherence. The results of the survey, combined with additional instances of procedure noncompliance, indicate further actions are warranted.

An overview of actions which PG&E is taking to address these concerns is discussed below.

PG&E is enhancing its human error reduction program to ensure management adequately emphasizes its expectations regarding procedural adherence and to provide the leadership and commitment necessary to achieve these expectations. Enhancements being made to this program include:

1. Reducing human errors and improving procedure adherence will receive increased management emphasis in supervisor's workshop meetings, other communication meetings, and will be re-emphasized prior to the Unit 2 sixth refueling outage.
2. The use of human performance evaluation system case studies will be resumed to assure plant and construction personnel are aware of human errors and procedure adherence problems.
3. The procedure adherence survey results will be discussed with employees to further emphasize management expectations and to solicit ideas for improvement.
4. The following actions are taken for specific procedure adherence problems, such as inattention to detail and proceeding in the face of uncertainty:
 - a. Tailboards are conducted to disseminate details of an event to appropriate personnel.
 - b. Personnel are counseled as appropriate.
 - c. Quality program documentation is initiated.
 - d. Lessons learned are being factored into procedures and training.
5. More detailed department policies will be issued on conduct of operations for tailboards and communications.
6. More detailed departmental policies will be issued on procedure adherence.
7. Guidance will be provided to include procedure adherence in performance evaluations for managers, directors, general foremen, supervisors, and foremen.
8. Trending of procedure adherence and human errors will be performed by the Nuclear



Quality Services Department and reviewed by the plant manager on a quarterly basis with .

9. A procedure adherence session will be included in technical staff update training.

PG&E has reviewed and evaluated each of the four NRC examples of failure to meet management expectations and has taken steps to address them. PG&E believes the actions described below are responsive to the NRC's concerns.

NRC Concern:

The licensee had not clearly conveyed expectations associated with timely sign off and correct dating of work order steps for construction activities associated with the replacement of a vital 120VAC instrument inverter.

PG&E Response:

A review of the completed work packages determined that all required activities had been completed for these work packages, but the corresponding documentation was not completed at the appropriate time. The following is a description of the sequence of events associated with the above concern. The work planner walked down the inverter replacement clearance points and verified that breakers were open and the "man-on-line" administrative control tags were in place. The work planner then hung administrative control work tags (red tags), reported on the clearance, and signed the clearance verification point in the work package, which was turned over to start work. The foreman verified the clearance points prior to the start of work, but did not sign the foreman's verification step in the work package. When questioned by the NRC inspector regarding the lack of proper work verification signatures in the work package, the workers indicated that the work had been performed and properly verified, but the signatures had yet to be completed. The construction workers subsequently signed the work order steps with the date of actual work completion, rather than the date of signing.

The cause of this event was lack of full understanding of management expectations that work steps be signed and dated as soon as work is completed.

Administrative Procedure (AP) C-40S3, "Use of PIMS Work Order Module," and Inter-Departmental Administrative Procedure (IDAP) HR2.ID1, "Signatures and Signature Responsibilities," were reviewed and PG&E determined that no procedural violations occurred; however, these procedures do not clearly identify management expectations regarding work order sign-offs.

A bulletin was issued to all Nuclear Construction Services personnel outlining management expectations for work order sign-offs. The bulletin addressed: (1) expectations regarding signing and dating work order steps as soon as practical following completion; and (2) the potential safety and work control consequences associated with improper completion of sign-offs. The contents of the bulletin were also discussed with maintenance personnel.



The timeliness of completing sign-off steps in work order activities will be clarified in AP C-40S3 and IDAP HR2.ID1 to specifically reflect management expectations.

NRC Concern:

The refueling crew chose to perform an operation (lowering a different fuel module in location F8) as a test which was not well controlled and coordinated and which was not provided for in procedures.

PG&E Response:

PG&E agrees that the refueling crew should have informed the control room of the intended movements of fuel, regardless of the intent to not unlatch the assembly in core location F-8. The control room was aware that a new fuel assembly insertion was in progress and was monitoring the source range count rate but was not clear that the new assembly was to be temporarily inserted in core location F-8. This is not consistent with the management expectation to have the control room staff aware at all times of the extent of all fuel moves. In addition, the refueling crew believed that since the fuel assembly would not be unlatched, placement of the fuel assembly in location F-8 would not violate the intent of the refueling procedure. Although the PG&E procedure did not provide specific guidance for this fuel assembly insertion, the fuel assembly insertion was within the Westinghouse core loading refueling guidelines. This event resulted from incomplete procedural guidance regarding allowed fuel assembly configurations when difficulties are experienced during refueling activities. The OP B-8D, "Refueling," series of procedures are not clear regarding final core location with respect to loading versus unlatching of a fuel assembly.

Core alterations were immediately halted, and the refueling crew was tailboarded regarding management expectations concerning complete and accurate communications during fuel movement.

OP B-8DS1, "Core Unloading Sequence," and OP B-8DS2, "Core Loading Sequence," were revised to include this event as part of the required refueling tailboard prior to all future core offloads and reloads.

The OP B-8D, "Refueling," series of procedures will be revised to clarify the meaning of a fuel assembly's final core location with regard to loading versus unlatching of the fuel assembly. In addition, consideration is being given to locating the dummy fuel assembly in the refueling cavity area, instead of in the spent fuel pool area, during core reload refueling operations. This would allow it to be used in the event that future fuel assembly placement interference is encountered.

NRC Concern:

Operations and maintenance organizations chose to not implement the clearance for repair of



the safety injection accumulator vent line.

PG&E's response to this concern is provided in Enclosure 1.

NRC Concern:

Engineering staff referenced a test performed several days earlier as the basis for returning the reactor cavity manipulator crane to service following relay replacement.

PG&E Response:

The clearance to remove the crane from service for relay replacement conservatively referenced TS 3.9.6, "Manipulator Crane," which has STP M-42, "Load Test - Manipulator Crane and Auxiliary Hoists," as the associated STP. As normal work practice, the implementing organization coordinates with operations to determine the appropriate maintenance verification testing based on the scope of work to be performed. For the manipulator crane relay replacement work activity, the electrical maintenance work planner required an "operability verification test" to be performed after completion of the post-maintenance testing. After replacement of the Unit 1 manipulator crane motor control relays, maintenance personnel had performed required post-maintenance testing of the relay circuitry and motor circuits. In addition, the crane vendor and reactor engineers had informally (i.e., no completion signatures) performed parts of a crane performance test, Surveillance Test Procedure (STP) M-27, "Fuel Handling System Interlock Verification and Functional Test." During implementation of the work package, this step was signed-off by electrical maintenance personnel as complete based on the informal performance of the applicable sections of STP M-27, as coordinated with reactor engineering. Subsequently, after completion of the work package, the reactor engineers were made aware of the "operability verification test" requirement. The reactor engineers explained to operations personnel that STP M-42 was not applicable to the scope of work performed, and the TS tracking reference was removed from the manipulator crane relay replacement clearance.

Management expectations regarding formal documentation of operability and post-maintenance testing requirements for non-TS equipment will be emphasized with the Plant Engineering and Work Planning Staff.



ENCLOSURE 2

REPLY TO NOTICE OF VIOLATION IN
NRC INSPECTION REPORT NOS. 50-275/94-11 AND 50-323/94-11

On May 19, 1994, as part of NRC Inspection Report Nos. 50-275/94-11 and 50-323/94-11, NRC Region IV issued a Notice of Violation citing one Severity Level IV violation for Diablo Canyon Power Plant, Unit 2. The statement of violation and PG&E's response follow.

STATEMENT OF VIOLATION

"During an NRC inspection conducted from March 20 through April 23, 1994, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, the violation is listed below:

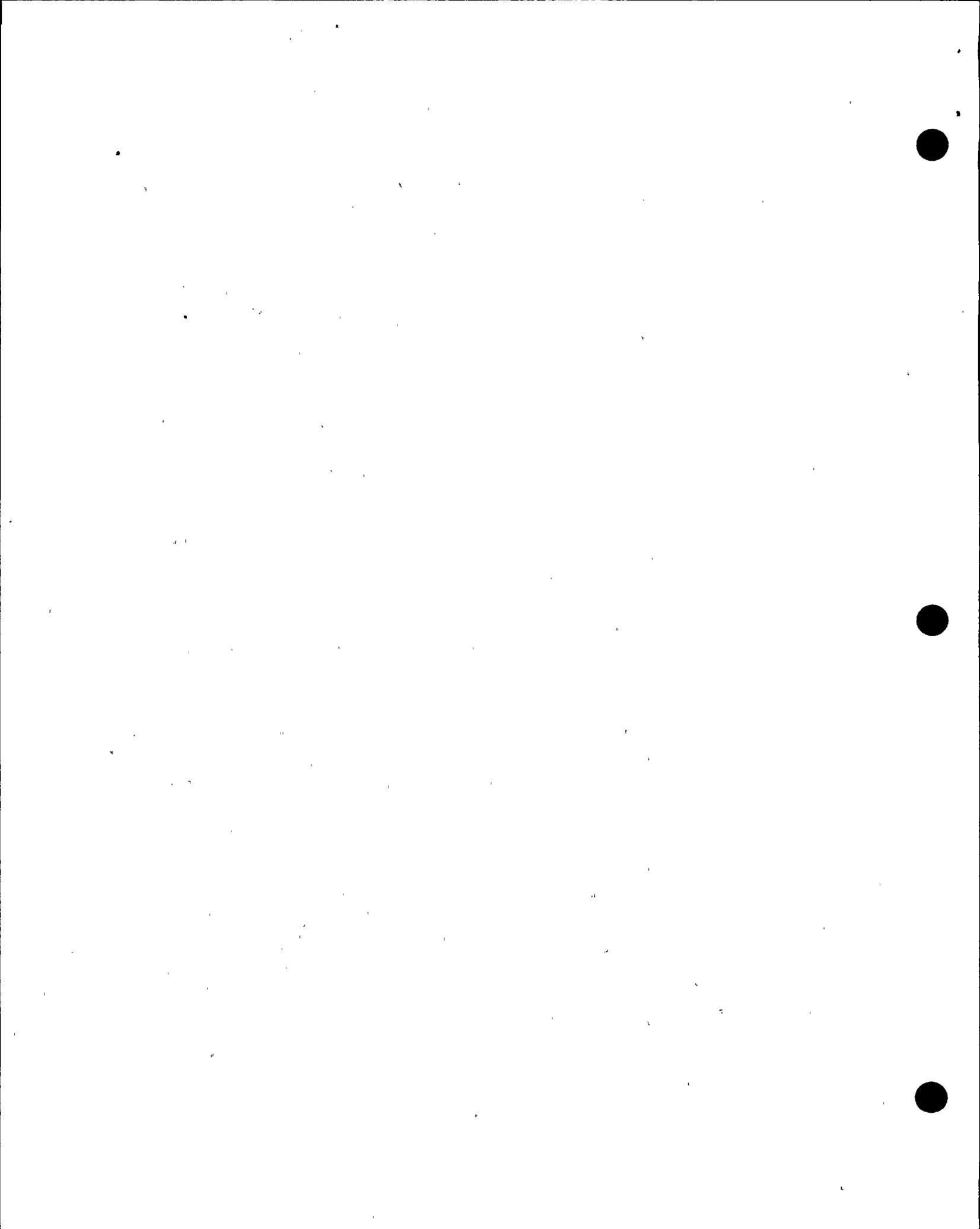
Diablo Canyon Technical Specification 6.8.1 states, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, dated February 1978.

Appendix A of Regulatory Guide 1.33, Revision 2, recommends procedures for performing maintenance that can affect the performance of safety-related equipment be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances.

1. Clearance 00044155 was written by the work planning group to be used during the repair of the leak on the Unit 2 reactor coolant system safety injection inlet to Loop 2-3. The clearance required that Valve SI-2-8809B be closed during the repair of the leak.

Contrary to this requirement, on March 31, 1994, while establishing conditions to perform the repair of the leak, the clearance was not followed in that Valve SI-2-8809B was not shut prior to initiating the repair work. Additionally, an argon purge was connected to the safety injection line without the use of work controls. The combination of these two occurrences resulted in approximately 50 cubic feet of argon being injected into the reactor coolant system, which could have resulted in elevated reactor coolant system radiation levels.

This is a Severity Level IV violation (Supplement 1)."



REASON FOR THE VIOLATION

PG&E agrees with the violation as stated in the inspection report.

Unit 2 was manually shut down to repair a reactor coolant leak that was determined to be from a non-isolable cracked socket weld in a 3/4-inch safety injection accumulator vent line. Normal practice for breaching of the reactor coolant system boundary would use a clearance to isolate the work area to ensure personnel safety and to prevent potential system interactions. Therefore, the work package for repair of the leak was based on the assumption that a clearance would be used. However, Operations Department personnel, based on the leak being non-isolable, decided to not implement a clearance for performance of the work.

In addition, a concern developed regarding the potential for an explosive concentration of hydrogen gas in the reactor coolant system (RCS). To address this concern, a decision was made to use argon as a cover gas. The venturi effect of the residual heat removal (RHR) flow through the interconnecting piping that drew the argon gas into the RCS was not anticipated.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

During restart operations, removal of argon from the reactor coolant system was performed by filling and venting the volume control tank.

A mechanical maintenance bulletin was issued describing the event. The bulletin emphasized that when work is performed without a clearance on an in-service system, extra precautions must be taken to ensure that all aspects of the work process receive proper review for system interactions that can occur.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

A description of the event and lessons learned will be published in an Operations Incident Summary. The summary will emphasize that when work is performed on an in-service system, extra precautions must be taken to ensure that all aspects of the work process are controlled in accordance with procedures and receive proper review for system interactions.

AP C-4S1, "Temporary Modification Control - Plant Jumpers and M&TE," will be revised to include the connection of gas bottles to an in-service system as a temporary modification.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

The Operations Incident Summary will be completed by July 13, 1994, and AP C-4S1 will be revised prior to the start of the Unit 2 sixth refueling outage in September 1994.

