



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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May 19, 2006

John S. Keenan
Senior Vice President - Generation
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SUBJECT: DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2 - NRC
SUPPLEMENTAL INSPECTION REPORT 05000275/2006010; 05000323/2006010

Dear Mr. Rueger:

On April 6, 2006, the US Nuclear Regulatory Commission (NRC) completed a supplemental inspection at your Diablo Canyon Nuclear Power Plant, Units 1 and 2. The enclosed report documents the results of the inspection, which were discussed on April 6, 2006, with Ms. D. Jacobs and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspector reviewed selected procedures and records and interviewed selected personnel.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Anthony T. Gody, Chief
Operations Branch
Division of Reactor Safety

Dockets: 50-275; 50-323
Licenses: DPR-80; DPR-82

Pacific Gas and Electric Company

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Enclosure:

Inspection Report 05000275/2006010; 05000323/2006010
w/Attachment Supplemental Information

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets: 50-275; 50-323
Licenses: DPR-80; DPR-82
Report No.: 05000275/2006010; 05000323/2006010
Licensee: Pacific Gas and Electric Company
Facility: Diablo Canyon Nuclear Power Plant, Units 1 and 2
Location: 7 1/2 miles NW of Avila Beach
Avila Beach, California
Dates: April 3-6, 2006
Inspector: T. Stetka, Senior Operations Engineer
Approved By: A. Gody, Chief
Operations Branch
Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000275/2006010; 05000323/2006010; Diablo Canyon Nuclear Power Plant, Units 1 and 2: Supplemental inspection report.

The announced inspection was performed by a senior operations engineer over a 4-day period. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self Revealing Findings

Cornerstone: Emergency Preparedness

The U.S. Nuclear Regulatory Commission (NRC) performed this supplemental inspection to assess the licensee's evaluation associated with the failure to provide complete and accurate performance indicator data to the NRC. This performance issue was previously characterized as having low to moderate risk significance ("white") in NRC Inspection Report 05000275, 05000323/2006005. During this supplemental inspection, performed in accordance with Inspection Procedure 95001, the inspector determined that the licensee conducted comprehensive evaluations of the missed performance indicator data and the failure to submit complete and accurate performance indicator information to the NRC. The licensee's evaluations identified the primary root cause of the performance issue to be inconsistent standards, procedures, and policies which hindered implementation of the emergency plan, limited and inequitable emergency planning training, and the use of inexperienced emergency planning personnel. To determine the scope of the performance indicator issue, the licensee had a panel of subject matter experts review programs to identify similar error precursors. These experts identified programs that met the criteria. These programs were entered into the licensee's corrective action program and required that self-assessments be performed. The licensee also issued action reports to other performance indicator monitors to determine if other performance indicators were not meeting station goals or have a high potential or risk of not meeting them. In addition, procedures were revised to clarify procedure details. Given the licensee's acceptable performance in addressing the performance indicator data monitoring and accuracy, the white finding associated with this issue will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program." Implementation of the licensee's corrective actions will be reviewed during a future inspection. (Section 4OA1)

B. Licensee-Identified Violations.

None

REPORT DETAILS

4. Other Activities

4OA1. Root Cause Evaluation Review (95001)

The inspector assessed the licensee's evaluation associated with the reduction of a Performance Indicator (PI) from a "Green" to a "White" and the failure to provide complete and accurate PI data to the NRC. This performance issue was related to the emergency preparedness cornerstone in the reactor safety strategic performance area. The failure to provide complete and accurate PI data was previously characterized as a noncited violation in NRC Inspection Report 05000275, 323/2005-05. To address these issues, the licensee performed two root cause evaluations. The first evaluation, documented in Nonconformance Report N0002199, focused on the missed PI data and the second evaluation, documented in Nonconformance Report N0002200, focused on the failure to submit complete and accurate PI information to the NRC. The inspector used the guidance in NRC Inspection Procedure 95001, "Inspection For One Or Two White Inputs In A Strategic Performance Area," to assess the licensee's evaluation.

.01 Problem Identification

- a. *Determine that the evaluation identifies who (i.e. licensee, self-revealing, or NRC), and under what conditions the issue was identified.*

During an onsite review of PI submittals for the period of October 1, 2004, through September 30, 2005, an NRC inspector identified that two emergency notification forms were incorrectly completed. Subsequent to these NRC findings, the licensee identified a third example of incorrect emergency notification form completion. The PI for the "Drill and Exercise Performance" had been previously reported as "Green" and at the industry average of 96 percent until the second quarter of 2005. At the end of this second quarter, the PI was reported to have decreased to 90.8 percent. After correction of the second quarter data, the licensee reported the PI had decreased to less than 90 percent.

- b. *Determine that the evaluation documents how long the issue existed, and prior opportunities for identification.*

The licensee had a prior opportunity to correct this issue in April 2005. The licensee's emergency planning staff revised Procedure EP-001, "Emergency Preparedness Performance Indicators," and other emergency plan implementing procedures to be consistent with revisions to Nuclear Energy Institute 99-02, Revision 3, "Regulatory Assessment Performance Indicator Guideline." One aspect of these revisions was to assign the communicator role to the shift managers. These changes were implemented just before the licensed operator requalification examinations were to be conducted. Since the shift managers were not aware of the requirements, when they were tested on these requirements, they made a number of errors in completing the emergency notification forms. These errors caused the notification opportunities to not be met. This caused a drop in the PI levels to 90.8 percent, which moved the performance indicator

close to the "White" threshold. The licensee decided that due to the different criteria between requalification examinations and emergency planning scenarios, that they would discontinue conduct of the emergency planning evaluations during the biennial examinations.

Since these missed opportunities caused a decline in the PIs, the licensee performed an evaluation to determine the apparent cause for the decline. The apparent cause evaluation concluded that the use of licensed operator requalification examination scenarios, which are typically complex and time compressed are not appropriate for evaluation of the emergency planning PI. The apparent cause evaluation recommended the following corrective actions:

- Drill and exercise performance evaluations should not be conducted during operator requalification examinations.
- All licensed operators should be given classroom instruction on classification and notification with emphasis on timeliness and accuracy.
- Opportunities should be provided to shift managers to evaluate classifications and notifications as job performance measures.

Since the PIs continued to decline following implementation of these corrective actions, facility management directed that a root cause evaluations be performed. The root cause evaluations determined that the training conducted as the result of the apparent cause evaluation, was ineffective because the corrective actions did not cover the accurate completion of the emergency notification forms nor did it cover the effect that an improperly completed emergency notification form had on the PIs. The analysis also noted that since the training was inadequate, the job performance measure's administered to the shift managers resulted in additional errors and a subsequent further decline in the PIs.

During the routine emergency planning program inspection on October 20, 2005, the NRC identified that two additional emergency notification forms contained incorrect data. The corrected data resulted in the PI for drill and exercise performance for the second quarter of 2005 to go from a "Green" to a "White."

As stated earlier, Procedure EP-001 was revised to be consistent with the revised Nuclear Energy Institute 99-02, Revision 3. The procedure acceptance review concluded that the procedure had sufficient detail, however, this judgement was based on the assumption that the personnel that would use this procedure would be experienced. Because of a relatively high personnel turnover in the emergency planning department and the lack of a formal training program, these personnel needed procedure guidance details that were not included in the procedure.

- c. *Determine that the evaluation documents the plant-specific risk consequences (as applicable) and compliance concerns associated with the issue.*

The licensee's evaluation acknowledged that the erroneous PI report and the resulting violation of 10 CFR 50.9 constituted a compliance issue, in that, Procedure EP-001 was not followed. The evaluation also acknowledged that while there was no safety significance to this issue, the errors in PI data reporting that caused a PI to cross the Green-to-White threshold had the potential for impacting the NRC's ability to perform its regulatory function, which was in this case to perform this supplemental inspection. The licensee's root cause evaluations developed procedure flow charts, a simple table that compared various emergency planning procedures with performance criterion, and a "Performance Indicator Risk Assessment" matrix. The chart, table, and matrix demonstrated that the process defined by Procedure EP-001 had the highest risk for error. The inspector also noted, however, that while the licensee properly classified the risk consequences of the use of Procedure EP-001, they did not address the risk consequences of improper classification and notification of events that could have been caused by the less than effective emergency planning training that was in-place at the time. Proper classification and notification are essential to assure that the public and state and local governments are properly and accurately informed. The inspector concluded that even though these risk consequences were not addressed, the licensee effectively evaluated other risk consequences and compliance concerns associated with the issue and that the corrective actions would mitigate any further risk consequences.

.02 Root Cause, Extent of Condition, and Extent of Cause Evaluation

- a. *Determine that the problem was evaluated using a systematic method(s) to identify root cause(s) and contributing cause(s).*

The licensee used Procedures OM7.ID3, "Root Cause Investigations - Root Cause Team," and OM7.ID4, "Root Cause Analysis and Apparent Cause Analysis," to evaluate these issues. These procedures included such analysis tools as root cause analysis, root cause investigations, apparent cause evaluations, fault tree analysis, and management oversight and risk tree analysis techniques. The inspector evaluated the root cause evaluations reports against the requirements of the licensee's procedures and determined that the root cause evaluations followed the administrative procedure requirements.

- b. *Determine that the root cause evaluation was conducted to a level of detail commensurate with the significance of the problem.*

Overall, the inspector concluded that the root cause evaluation identified and assessed the potential contributors to the decrease in performance in sufficient detail to identify appropriate corrective actions.

The licensee identified three root causes and four contributing causes for the decrease in performance:

Root Causes

- The standards, procedures, and policies that govern operations, learning services, and emergency planning are inconsistent and lack details, which hinders implementation of the emergency plan.
- Operations emergency plan training is not a part of the operator's accredited training. Training instructors have limited training in emergency planning and have no guidance in the level of training operators need to receive. In addition, not all crews receive the same amount of emergency planning training.
- Inexperienced emergency planning personnel were assigned as PI owners with little or no turnover. Furthermore, the main controlling procedure for PIs, EP-001, was inadequate for use by inexperienced personnel.

Contributing Causes

- Changes made to the operator training program for job performance measure implementation, assignment of the shift manager as the communicator, or the completion of the emergency notification form had no formal controls. This lack of control caused changes to be made without considering the effect that such changes would have on other organizations. In addition, because of the use of an eight quarter rolling average for the PIs (as adopted by the industry), step changes resulting in poor performance in one or two quarters could be masked causing inaccurate PI reporting.
 - Communication between the operations department, learning services department, and emergency planning departments was lacking. As a result, there was confusion regarding which department was responsible for the emergency planning aspect of operator training.
 - Management oversight and monitoring of emergency planning and NRC PIs was lacking, in that, this oversight failed to detect a decline in emergency planning working conditions and the decline in the NRC PIs.
 - Standards and expectations regarding the implementation of the NRC PI data submittal process was not emphasized causing inconsistent implementation of industry guidance.
- c. *Determine that the root cause evaluation included consideration of prior occurrences of the problem and knowledge of prior operating experience.*

The inspector concluded that the evaluation effectively included consideration of prior occurrences of the problem and a review of prior operating experience. The evaluation effectively assessed the licensee's failure in recent months to address symptoms and evidences of personnel, procedural, and communications weaknesses apparent in the licensee's own operating experience and it's failure to adequately address declining PIs.

- d. *Determine that the root cause evaluation addresses the extent of condition and the extent of cause of the problem.*

The NRC defines Extent of Cause as “the extent to which the root causes of an identified problem have impacted other plant processes, equipment, or human performance.” The licensee’s evaluation considered the potential impact that these root-causes could have on human performance or other program standards or training. To address this issue, the licensee had a panel of subject matter experts review approximately 100 programs to identify similar error precursors. The panel identified six programs that met the criterion. These six programs were entered into the licensee’s corrective action program and required that self-assessments be conducted that focused on the causes identified by these root cause analyses.

The NRC defines Extent of Condition as “the extent to which the actual condition exists with other plant processes, equipment, or human performance.” To address this issue, the licensee issued action reports to other PI monitors. These action reports addressed the question of what other PIs are not meeting station goals or have a high potential or risk of not meeting them. The licensee’s corrective actions in response to these action reports will provide assurance of accurate data submittals when changes of personnel occur.

The inspector concluded that the extent of condition and extent of cause reviews were adequate.

.03 Corrective Actions

- a. *Determine that appropriate corrective action(s) are specified for each root/contributing cause or that there is an evaluation that no actions are necessary.*

The root cause evaluations clearly indicated which corrective actions were identified to address each root cause. The inspector determined that the corrective actions associated with the root cause evaluations were appropriate for the root causes identified.

- b. *Determine that the corrective actions have been prioritized with consideration of the risk significance and regulatory compliance.*

The inspector concluded that the corrective actions were reasonably prioritized. The licensee completed all of the interim corrective actions and subsequent corrective actions are on-track for completion. The licensee’s efforts toward raising the “White” PI back above the 90 percent threshold and back to a “Green” PI was showing results as the PI was already back within the “Green” range.

- c. *Determine that a schedule has been established for implementing and completing the corrective actions.*

The majority of the corrective actions were completed or are on-track for completion. The inspector reviewed a sampling of the completed corrective actions and concluded that they had been generally implemented in a timely and effective manner, although one

example of failure to follow the corrective action procedure was identified by the inspector. Action 8 from Nonconformance Report N000220, was not completed. Specifically Action 8 was to revise Procedure E-004, "Work Guideline: NRC Performance Indicator, RCS Leakage," by December 31, 2005. The person assigned to make the revision, documented in the nonconformance report that this procedure did not fall under the PI program. As the result of discussions with licensee personnel, the inspector determined that Procedure E-004 should have been revised. The licensee wrote Action Request 0663281 to document this missed error and to enter the issue in the corrective action system.

The inspector determined that no violation of NRC regulations occurred since the actual corrective actions were being carried out in spite of the administrative tracking error, and the failure to follow an administrative procedure was entered into their corrective action system.

- d. *Determine that quantitative or qualitative measures of success have been developed for determining the effectiveness of the corrective actions to prevent recurrence.*

The inspector noted that the plant self-assessment process was not applied to the PI programs. However, following these events and the recommendations of the root cause evaluations, a self-assessment program will be developed and conducted within 1 year of the closure of Nonconformance Reports 2199 and 2200. In addition, comprehensive drills and evaluation exercises will be expanded and conducted as a means to improve the rolling eight quarter PI projections. The inspector concluded that these measures would provide a means to determine the effectiveness of the corrective actions toward preventing a recurrence.

4OA6 Exit Meeting

On April 6, 2006, the inspector presented the inspection results to Ms. D. Jacobs, Vice President, Nuclear Services, and other members of your staff who acknowledged the findings. The inspectors confirmed that proprietary information was not provided or examined during this inspection

Attachment: Supplemental Information

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A. VanBeurden, Performance Improvement Coordinator
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T. Jackson, Senior Resident Inspector

LIST OF DOCUMENTS REVIEWED

Procedures

EP-G3, Emergency Notification of Off-Site Agencies, Revision 44 & 45
EP-001, Emergency Preparedness Performance Indicators, Revision 8
A-27, Emergency Classifications and Notifications, Revision 1
X11.DC1, Collection and Submittal of NRC Performance Indicators, Revision 6
OM15.ID2, Change Management, Revision 1A
O-002, NRC Performance Indicator: RETS/ODCM Radiological Effluent Occurrences, Revision 4A
O-001, NRC Performance Indicators: Reactor Coolant System Specific Activity, Revision 3
E-005, Development of NRC Safety System Unavailability Performance Indicator Data, Revision 2
L-001, NRC Performance Indicators: Initiating Events, Safety System Functional Failures, and Monthly Operating Report, Revision 4
O-003, NRC Performance Indicators: Occupational Exposure Control Effectiveness, Revision 4

E-004, Work Guideline: NRC Performance Indicator, RCS Leakage, Revision 3

S-001, Security Data for NRC Performance Indicators, Revision 2

EP G-1, Emergency Classification and Emergency Plan Activation, Revision 34

OM7.ID4, Root Cause Analysis and Apparent Cause Analysis, Revision 8

OM7.ID3, Root Cause Investigations - Root Cause Team, Revision 16A

Nonconformance Reports (NCRs)

N0002199, ERO Drill /Exercise Performance Not Meeting Station Goals, Revision 00

N0002200, Inaccurate EP Drill/Exercise Performance Indicator Data, Revision 00

Action Requests (ARs)

A0648578, Inaccurate EP Drill Exercise Performance Indicator Data, 10/19/05

A0659877, NCR N0002200 Effectiveness Evaluation, 02/15/06

A0655081, Perform an Effectiveness Evaluation of N2199, 12/13/05

A0662986, Timely EAL [Emergency Action Level] Classifications during Training, 03/31/06

A0655074, SM [Shift Manager] Qualifications Possibly in Question, 12/13/05

A0663281, Miss-Assigned Action 8 NCR N000220 NRC PI Data Submittal, 04/05/06

A0654912, Extent of Cause for N2199: Standards, 01/20/06

A0655100, Extent of Cause for N2199: IST, 12/13/05

A0655092, Extent of Cause for N2199: Environmental Compliance, 12/13/05

A0654938, Extent of Cause for N2199: Appendix R, 12/13/05

A0654957, Extent of Cause for N2199: Maintenance Rule, 12/15/05

A0654914, Extent of Cause for N2199: Training, 01/20/06

Miscellaneous Documents

Plant Performance Improvement Report, February 2006

Emergency Action Level Upgrade Project Status, 4/11/2006

DCPP NEI 99-01, Emergency Action Level Conversion Project Plan, 2/24/05

Continuation of Recovery Plan for 2nd and 3rd Quarter DEP, 10/10/05