UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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May 12, 2000

EA-00-107

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SUBJECT: NRC INSPECTION REPORT NO. 50-275/00-08; 50-323/00-08

Dear Mr. Rueger:

This refers to the inspection conducted on February 7 to 11, 2000, at the Diablo Canyon Nuclear Power Plant, Units 1 and 2, facilities. The enclosed report presents the results of this inspection.

We considered your corrective action program to be effective at identifying, resolving, and preventing issues that degraded the quality of plant operations. We noted that site personnel and management clearly understood the importance of this program. However, your staff's use of your lower level event trend record system was inconsistent.

Based on the results of this inspection, the NRC has determined that two Severity Level IV violations of NRC requirements occurred. These violations are being treated as Non-Cited Violations, consistent with Section VII.B.1.a of the Enforcement Policy. These Non-Cited Violations are described in the subject inspection report. If you contest the violation or severity level of these Non-Cited Violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011, the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Diablo Canyon Nuclear Power Plant, Units 1 and 2, facilities.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, enclosure, and your response, if requested, will be placed in the NRC Public Document Room.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/***RA***/

John L. Pellet, Chief
Operations Branch
Division of Reactor Safety

Docket Nos.: 50-275; 50-323
License Nos.: DPR-80; DPR-82

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NRC Inspection Report No.
50-275/00-08; 50-323/00-08

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.:	50-275; 50-323
License Nos.:	DPR-80; DPR-82
Report No.:	50-275/00-08; 50-323/00-08
Licensee:	Pacific Gas and Electric Company
Facility:	Diablo Canyon Nuclear Power Plant, Units 1 and 2
Location:	7 ½ miles NW of Avila Beach Avila Beach, California
Dates:	February 7 to 11, 2000
Inspectors:	G. W. Johnston, Senior Operations Engineer, Operations Branch P. C. Gage, Senior Operations Engineer, Operations Branch R. E. Lantz, Operations Engineer, Operations Branch D. L. Proulx, Senior Resident Inspector, Projects Branch E
Approved By:	J. L. Pellet, Chief, Operations Branch Division of Reactor Safety

ATTACHMENT: Supplemental Information

EXECUTIVE SUMMARY

Diablo Canyon Nuclear Power Plant, Units 1 and 2
NRC Inspection Report No. 50-275/00-08; 50-323/00-08

The inspectors performed a routine core inspection of the corrective action program implementation at the Diablo Canyon Nuclear Power Plant. An inoffice inspection was conducted from January 31 to February 4, 2000, which was followed by an onsite inspection that was conducted from February 7 to 11, 2000. The inspection was conducted in accordance with the guidance provided by NRC Inspection Procedure 40500.

Operations

- Overall, the corrective action program was effective for the identification, resolution, and prevention of problems that could degrade the quality of plant operations. The threshold for reporting problems was low. The licensee's conservative practices toward problem identification and review were effective. The setting of priorities for problem determinations, problem assignment, operability and reportability determinations, and estimated completion dates were appropriate. Self assessments were thorough, intrusive, and occasionally critical. The subsequent corrective actions identified by the audits were either already corrected or properly tracked for resolution. Program trending methods were appropriate for determining trends and identifying adverse trends. Noncited violations were properly entered into the corrective action program and were being resolved in a timely and technically adequate manner (Section O7.1).

- A violation of Technical Specification 6.8.1.a with four examples was identified for failure to document issues on action requests. Two examples were identified for occasions where personnel failed to initiate action requests for performing work on the wrong unit or train. Two other examples were identified where personnel failed to initiate action requests for failure to properly post high radiation areas. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy. This item was placed in the corrective action program as Action Requests A0502588 and A0503543 (Section O7.2)

Maintenance

- A violation of 10 CFR 50.65(a)(2) was identified for a failure of preventive maintenance to preclude the failure of the diesel generator to start. The failure to prevent the Emergency Diesel Generator 1-1's third-failed start on February 27, 1999, demonstrated that preventive maintenance was not effective in controlling performance. This Severity Level IV violation was being treated as a Non-Cited Violation, consistent with Section VII.B.1.a of the NRC enforcement policy. This violation was in the licensee’s corrective action program as Action Request A0504677 (Section M7).

Engineering

- In the reviewed sampling of action requests associated with the auxiliary feedwater system, with one exception, the licensee identified the apparent causes of the issues, determined corrective actions, and repaired the items. The licensee inappropriately rejected an auxiliary feedwater system valve timing failure as a duplicate upon a repeat failure of the valve. The licensee added this failure to an action request that evaluated a previous failure, which could mask repeat failures and trending information Following notification of this issue, the licensee initiated event trending records for each of the individual valve failures, for trending purposes (Section E7.1).

Plant Support

- The corrective action programs in the radiation protection and emergency preparedness organizations were being properly implemented (Sections R7 and P7).

I. Operations

Summary of Plant Status

Both units of the Diablo Canyon Nuclear Power Plant operated at approximately full power during the entire inspection period.

O2 Operational Status of Facilities and Equipment

O2.1 Operator Work-arounds

a. Inspection Scope (40500)

The inspectors reviewed licensee management of equipment deficiencies leading to operator work-arounds or burdens to determine if the licensee was effectively managing this program.

b. Observations and Findings

The licensee tracked two types of items for their effect on operator performance, an operator work-around, and an operator burden. An operator work-around was defined by the licensee as any equipment deficiency, which potentially complicated an operator response to a plant transient. An operator burden was defined as any equipment deficiency, which caused routine compensatory measures to be taken by the operator, such that the daily workload of the operator was increased. The licensee considered operator work-arounds more urgent than operator-burdens.

The inspectors noted that the licensee tracked five items as operator work-arounds. The inspectors noted that although each of these five items could affect response to transients, the inspectors considered that these items were relatively minor in nature and would not significantly hamper operator response. In addition, six items were tracked as operator burdens. Similarly, these items did not individually, or in total, significantly affect the workload of the operators.

Upon review of the licensee's management of operator work-arounds and burdens, the inspectors noted that a total of 41 of these deficiencies had been resolved during the previous 2 years, with the number and severity of items consistently declining. The inspectors concluded that the licensee was effectively managing operator work-arounds and burdens.

In addition, the inspectors reviewed each of the open action requests for the auxiliary feedwater system (a risk significant system). The inspectors concurred with the licensee's evaluation that none of these open action requests was an operator work-around or burden.

c. Conclusions

The licensee effectively managed the operator work-around and burden programs. Past operator work-arounds and burdens have been aggressively resolved, such that the number and significance of these items have declined over the past year.

O7 Quality Assurance in Operations

O7.1 Corrective Action Program

a. Inspection Scope (40500)

This inspection consisted of a review of the licensee's programs that were intended to identify and correct problems discovered at the facility. The review focused on the following seven specific areas: (1) the identification and reporting threshold for adverse conditions, (2) the setting of problem resolution priorities that were commensurate with operability and safety determinations, (3) program monitoring used by the licensee to assure continued program effectiveness, (4) program measurement or trending of adverse conditions, (5) the understanding of the program by all levels of station personnel, (6) the ability to identify and resolve repeat problems, and (7) resolution of Non-Cited Violations.

In addition to these seven areas, the corrective action program's ability to identify and resolve issues were determined by selecting four areas for review. These four areas consisted of the auxiliary feedwater system, the emergency diesel generators, the emergency response organization, and the radiation protection program. These systems and programs were selected based upon their system risk importance ranking, a review of the licensee's documented system status, the requirements of NRC Inspection Procedure 40500, and past NRC review activity.

b. Observations and Findings

The licensee’s corrective action program was implemented by the following procedures:

- Administrative Procedure OM7.ID1, “Problem Identification and Resolution - Action Requests,” Revision 11.
- Administrative Procedure OM7.ID2, “Quality Evaluations,” Revision 8.
- Administrative Procedure OM7.ID3, “Nonconformance Report (NCR) and Technical Review Group (TRG),” Revision 7.
- Administrative Procedure OM7.ID4, “Cause Analysis,” Revision 2.
- Administrative Procedure OM7.ID5, “Issues Needing Validation to Determine Impact on Operability (INVDIO),” Revision 1.

- Administrative Procedure OM7.ID7, “Integrated Problem Response Team,” Revision 0C.

- Administrative Procedure OM7.ID8, “Operability Evaluation,” Revision 6.

- Administrative Procedure OM7.ID10, “Quality Trend Analysis Program,” Revision 6.

- Administrative Procedure OM7.ID11, “10 CFR 21 Reportability Review Process,” Revision 2.

- Administrative Procedure OM7.ID12, “Operability Determination,” Revision 2A.

Each of the above procedures contained elements of the corrective action program. The overall governing procedure was OM7.ID1.

(1) **Threshold of Reporting**

Reviews by the licensee of action requests evidenced a consistent level of threshold determination. The injectors observed the prioritization and review activities of the action request review team (ARRT). During two meetings of the ARRT, the inspectors observed the team reviewing approximately 30 action requests. Those that required some form of corrective actions were prioritized and were also assigned event trend records (ETRs). In these meetings, the inspectors observed that each issue was reviewed for proper categorization and the nature of the issue was established within the corrective action system.

The action requests reviewed by the ARRT in the observed meetings contained sufficient information to allow the ARRT to adequately assess the nature of the concern. From these observations, the inspectors determined that the licensee had effectively communicated the appropriate level for reporting at the action request level, when the concern was a condition adverse to safety. However, there were exceptions to the required threshold of reporting. The inspectors identified four lower level event trend records that met the requirements of Procedure OM7.ID1 “Problem Identification and Resolution - Action Requests,” for initiation of an action request as discussed in Section O7.2.b1. The consequences of these occurrences were low, as independently determined by the inspectors and the licensee. The licensee indicated that this was of sufficient concern to warrant requiring the ARRT to review ETRs to determine if the identified issue should be addressed by an action request. This was added to Action Request A0502588 for resolution.

Procedure OM7.ID10, “Quality Trend Analysis Program,” governed the initiation and processing of event trend records. Each action request constituting a condition adverse to quality generated an ETR. Further, ETRs were initiated for concerns that were self-correcting or near misses. The trend information generated by the ETRs provided plant organizations with precursor and adverse

event trends that established a threshold for initiating corrective action through an action request. The inspectors determined that the trend analysis used by Nuclear Quality Services was not systematic and would not ensure that lower level issues justifying corrective action were consistently identified. Further, heavy reliance was placed on plant organizations and the ARRT to determine the significance of trends. Guidance on what constituted an adverse trend was lacking, in that, there was no defined level or number of events that would trigger an analysis. Licensee management agreed with the inspectors' observations, stating that it would pursue enhancements of the trending process. Section O7.2 of this report provides additional detail. Despite the programmatic observation, the inspectors did not identify any adverse trends that were not previously identified by the licensee except for a recent negative trend in risk assessments, as described in Section O7.2.

(2) **Priority of Resolution**

The licensee's priority setting for action requests was delineated in Procedure OM7.ID1, “Problem Identification and Resolution - Action Requests,” Revision 11. The inspectors examined the prioritization of the action requests reviewed during this inspection to determine the effectiveness of the licensee’s prioritization. The review of the prioritization process was to determine the effectiveness of the licensee in identifying the appropriate level of organization response to an action request.

The inspectors reviewed the ARRT daily review packages for February 8 and 9, 2000, to assess the scope of the ARRT’s review of action requests. There were two noteworthy action requests that demonstrated the effectiveness of the ARRT review process. Action Request A0502153 involved impaired fire barriers identified by members of the balance-of-plant fire protection and project staff, who had expressed their concerns to the employee concerns program. From a request by the staff members, 25 fire barriers were re-inspected, from which 14 barriers were determined to be impaired. A previous action request (A0488093) determined that 21 of the 25 did not warrant reinspection. Based on this information, the ARRT decided that this action request warranted a quality evaluation to determine the reason for the previous different action request determination. The barriers involved were covered by a roving firewatch. The inspector viewed this as an appropriate action based on the circumstances. Another action request (A0502219) involved a loss of all main control room annunciator windows during the performance of a load balancing procedure. This failure did not result in the failure of the annunciator printer or the CRT monitor, thus, there was no loss of annunciator function, and the annunciators were restored in 18 minutes. The ARRT assigned this a priority for resolution by May 6, 2000. The inspector noted this was a repeat of a prior event and the prioritization was in accordance with the licensee’s program. This prioritization was viewed by the inspectors as appropriate

The inspectors found the ARRT prioritization to be thorough and timely to address immediate concerns. When needed, operations personnel implemented the appropriate compensatory measures and entered the proper technical specification limiting condition for operation. Any required immediate actions were conservative, and no improper operability or reportability determinations were identified by the inspectors. The licensee's activity determinations, assignment, prioritization, operability and reportability determinations, generic implications, and estimated completion dates were found to be appropriate.

The inspectors noted that Appendix 7.2 of Procedure OM7.ID1, Step 2.6, stated, in part, that ". . . each organization should determine those types of nonproblems which should be captured on an ETR." The inspectors determined through interviews with department managers that only one department had provided written guidance beyond that supplied in facility procedures. Each of the other departments had provided some verbally communicated expectations to lower level functional managers or leads. The inspectors determined a lack of written guidance, although allowed by facility procedures, presented a challenge to consistent application and understanding of management expectations for generation of ETRs and, therefore, potentially adversely affected the corrective action program's ability to identify adverse trends in a timely manner. One of the effects of this lack of specific guidance was reflected in the issues discussed in Section O7.2 of this report, where licensee staff understanding of the threshold of reporting between event trend records and action requests was not clear. The licensee's staff did not recognize the threshold difference between ETRs and action requests, as discussed in Section O7.2, where high radiation area postings (two examples) and work was performed on the wrong unit or component (two examples). These examples provided indication that the licensee's guidance regarding the threshold between ETRs and action requests was not wholly effective.

(3) **Effectiveness of Program**

The inspectors reviewed the following selected audits to ascertain the licensee's effectiveness at self-identification and correction of problems. Specifically, the inspectors reviewed these assessments to determine if the licensee's oversight processes adequately monitored the implementation of the corrective action program and if the quality assurance processes were intrusive.

Quality Performance Assessment Report (QPAR) Third Period 1999, October 1, 1999.

Emergency Response Program, Emergency Preparedness Audit 991310019, December 2, 1999.

1999 NQS Biennial Audit/Self Assessment Report 993430026, December 10, 1999.

Year 2000 Corrective Action Program and Implementation Audit
Report 003670781, February 5, 2000.

Each of the reviewed assessments contained scope information, observations, and recommended corrective actions.

The inspectors reviewed the third period, July 1 to September 30, 1999, QPAR to determine scope, observations, and assessment conclusions. The inspectors noted that the licensee placed overall facility performance as satisfactory. The inspectors found the QPAR format terse and provided only overall assessments, trends, and issues. No recommendations for corrective action were made, as this report was largely a summary of assessments done through the period. The inspectors found the assessments to be consistent with their perceptions of licensee performance.

The “Emergency Response Program, Emergency Preparedness Audit” for 1999 was reviewed by the inspectors. The report noted progress in implementation of emergency response organization changes and in quarterly dose assessment training, resulting in improved performance. The inspectors noted that the corrective actions of previous assessments were being effectively implemented and monitored by the emergency response organization. Assessments and recommendations made in the audit generally had depth.

The nuclear quality services self-assessment review was extensive with no major recommendations. The inspectors noted that the corrective actions and recommendations of previous assessments were being effectively implemented. The inspectors determined that assessments and recommendations made in the report generally had appropriate depth.

The “Year 2000 Corrective Action Program & Implementation Audit Report” noted that the differences in the content and quality of the self-assessment reports included areas for improvement and recommendations, but did not provide assessment details. The inspectors noted through observation and from reviews of assessments that the reports did evidence these problems. The report suggested that some site organizations, particularly engineering, needed to be more aggressive in performing self assessments. The inspectors noted that observation was based on the number of action requests initiated by engineering services addressing issues internal to the organization. The assessors’ view was that engineering services should be proactive in generating action requests and ETRs, addressing rather than responding to action requests generated by other plant organizations. This was borne out by the inspectors review of the monthly nuclear production group quality problem reports, which showed that operations and maintenance services, the two highest initiators of ETRs, consistently generated more self-identified ETRs than engineering services. The inspectors determined that the assessments represent informed reviews of plant activities and did identify substantive followup corrective actions when warranted.

(4) **Program Measurement**

The licensee's Nuclear Quality Services trended a number of criteria to provide a measure of the effectiveness of the corrective action program. Some criteria measured by the licensee were the assessment of overall plant performance, the open corrective actions, and the number of action requests per month. The objective of this system was to identify areas for additional management attention and to monitor system and equipment performance. A monthly nuclear production group quality problem report monitored several performance indicators, including estimated due dates and average time outstanding for open action requests. The January 7, 2000, report showed that A-type action requests (action requests that involved issues related to conditions adverse to quality) were averaging 109 days to close and quality evaluations requiring 142 days. Nonconformance reports, however, were taking an average of 230 days for closure. The report also tracked percentage of due dates as current. The January 7, 2000, report indicated 92 percent were not late, or were completed prior to the due date, against a goal of 85 percent. The inspectors reviewed the licensee's trending methods and found them to be appropriate for determining trends in closure of corrective actions and identifying adverse trends related to open corrective actions.

The quarterly performance assessment report provided trend information for each site organization. Other trending information covered human and regulatory performances. The inspectors noted during the review of the third period QPAR that the human performance error rate was described as consistent with the previous quarter. This was noted by the inspectors as consistent in terms of the overall human performance error rate on a site wide basis. The report went on to describe a concentration of errors that occurred during the first 3 weeks of September that were in the areas of work control, equipment alignment, and clearances. The errors were classified by the licensee as skill-based and due to inattention. Some of these are discussed in Section O7.2 of this report. The inspectors concurred with the licensee’s assessment, noting that the September numbers represented a significant trend warranting the assessment observation.

The QPAR also provided trend information related to event trend records. Notably, observations were made in the third period QPAR for chemistry and environmental operations, where the assessment notes that the department was not generating many ETRs. Comments regarding trends involving low ETR generation rate were also made for engineering services and radiation protection. The inspectors noted that this was an ongoing concern of the licensee. This supports inconsistent licensee staff program understanding and management guidance regarding ETRs.

(5) **Program Understanding**

The inspectors interviewed five licensed operators, four chemistry and radiation protection technicians, three engineers, and four managers to assess their knowledge and usage of the corrective action program. The inspectors discussed program expectations with the managers. The inspectors asked questions pertaining to definitions, procedures, and guidelines, which were generally answered consistently among the interviewees and in agreement with facility administrative procedures. Inconsistent responses were made by the interviewees with regard to the event trend record system. One individual was unfamiliar with ETRs and other individuals expressed understanding that varied from the guidance in Appendix 7.2 of Procedure OM7.ID1. When asked by the inspectors whether corrective action documentation would be required in a hypothetical case of a broken local emergency diesel generator start switch, the individuals consistently indicated that this case would require an action request. However, when the issue involved ambiguity, such as nonsafety-related lighting panel problems, it resulted in a variety of answers from an action request to an ETR, or to no corrective action document required. The expected response for this instance was that the event would have required an ETR to be generated. A lack of guidance, as noted above, contributed to this, as each staff member was not familiar with organizational guidance or expectations.

There was a large variance on actual use of the plant information management system (PIMS) to enter problem data into the corrective action system. Eight individuals stated that they rarely, or had not, generated ETRs, and five said that they wrote action requests very infrequently, as well. One interviewee stated that he was unfamiliar with the PIMS, and left the process of inputting information to others or his supervisor. Several other interviewees stated that the reason they were hesitant was a lack of comfort with the process of inputting information into PIMS. One individual stated that his immediate supervisor usually entered any concerns he raised that warranted an action request or ETR.

The inspectors determined that familiarity with PIMS was a factor in the willingness to use the system. The individuals stated that the PIMS interface was not user friendly and required familiarity with the process. The inspectors asked for a demonstration of the PIMS data recovery and entry process by a knowledgeable staff member. During the demonstration, the inspectors noted that the staff member experienced problems retrieving information requested by the inspectors. The inspectors noted that the system utilized a data entry process that was not tolerant of errors and required good knowledge of query codes. The inspectors determined that the individuals who stated they had problems using the system used the PIMS infrequently in their work. In particular, nonsupervisory chemistry and radiation protection personnel and operations personnel had infrequent contact and expressed reservations about the use of the PIMS for generating action requests or ETRs. However, all interviewees stated that they would raise a safety concern regardless of their PIMS familiarity.

None of the interviewees identified what they considered a long-standing safety problem at Diablo Canyon Nuclear Power Plant. Each interviewee stated, when asked by an inspector, that safety problems at the facility were being identified and prioritized appropriately for timely resolution. They also stated that they had no hesitancy in raising safety concerns to supervision or management.

(6) **Repeat Problems**

Three areas of repeat problems were noted by the inspectors. These included repeated occurrences of voiding in emergency core cooling system piping, missed surveillances for offsite power sources, and valve liner failures for safety-related pumps. The issues were well understood at the time and did not appear to the inspectors to present continuing concerns.

The emergency core cooling system voiding issue (Nonconformance Report N0002076) involved inadequate filling and venting of plant systems following outages. This concern was discussed in NRC Inspection Reports 50-275; -323/99-07 and 99-18. NRC Inspection Report 50-275; -323/99-07 was a special inspection conducted to address several gas voiding events in emergency core cooling system piping dating to April 26, 1994. NRC Inspection Report 50-275; -323/99-18 contained a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, for a failure to provide effective corrective action to prevent recurrence. The licensee's actions did not ensure that filling and venting operations prevented gas voids in emergency core cooling system piping during system realignments following a refueling outage. The licensee was continuing to monitor and address implementation of the corrective actions, which included training, emphasis on procedure adherence, and other human performance enhancements.

The missed surveillances (Quality Evaluation Q012134, Nonconformance Reports N002099, N002093, N002100, N002096) were identified as human performance related, where operations personnel failed to recognize the need to implement 1 hour surveillance requirements for occasions when diesel generators were out-of-service. A Non-Cited Violation of Technical Specification 3.8.1.1 was identified for two examples of operators failing to perform conditional surveillance requirements. One example was from July 1999 and one from July 1997. In both cases, after electrical equipment was taken out-of-service, operators determined that the conditional surveillance was required, but failed to complete the surveillance in the time allowed. A violation of Technical Specification 3.1.1.1 was identified for operators failing to complete Conditional Surveillance 4.1.1.1a. On July 13, 1999, operators declared the rod control system inoperable. Technical Specification 3.1.1.1 required that an adequate shutdown margin be verified within 1 hour. This action was not completed until July 15, 1999.

The valve liner issues (Action Request 0500671 and Nonconformance Report 0002110) involved slow implementation of corrective actions on valves utilizing elastomeric coatings on the interior of the valve. This was a recently identified issue as of January 11, 2000. As a result, the licensee was still developing the issue, as noted by the inspectors. The situation was significant, in that, the licensee also initiated a Nonconformance Report N0002110. Previous events that were potential precursors included: Residual Heat Removal Pump PP 2-2 having reduced seal flow in 1993 and Auxiliary Salt Water Pump PP 1-1 inoperable in 1997. Auxiliary Feedwater Pump PP 1-1 low flow, which occurred January 11, 2000, was the initiator of Action Request 0500671 and Nonconformance Report 0002110. Each of these occurrences had elements of valve liner problems. The licensee stated that the issue involved a failure to consider the previous occurrences as a potential generic cause with the valve liners.

The inspectors determined that the causes for the repeat problems were not directly related between the three areas and over a prolonged period and, therefore, no overriding concern existed. Previous Non-Cited Violations were identified for the first two issues. The potential generic elastomeric coating issue was under technical review in the corrective action program by the licensee at the end of the inspection. As noted in Sections M7.1 and E7.1 of this report, the licensee's past practice of incorporating repeat component failures into a single action request masked identification of some component level repeat problems.

(7) **Notice of Violation Followup**

The licensee had a total of 30 Non-Cited Violations and 2 cited Level IV violations from previous NRC inspections during 1999. The inspectors reviewed five of these violations, that were not previously reviewed by the NRC, to determine if the violations were entered into the corrective action program and if they were resolved or being resolved in a timely manner. The five examples involved several areas of licensee activity. Action Requests A0485075 and A0484540, involving fire protection issues of procedural compliance from NRC Inspection Report 50-275;323/99-06, were open pending updating of documentation. The inspectors concluded that the proposed closure would be timely. Action Request A0478728 describes a situation where the licensee failed to test Diesel Engine Generator 1-1 within 1 week, as specified in Action Request A0467444. The issue was documented in NRC Inspection Report 50-275; 0-323/99-10 as an issue of not meeting a requirement specified in an action request. The licensee’s actions with regard to this action request were timely and responsive. Action Request A0491213 described the licensee’s failure to properly install the fuse holder for local operation of a diesel engine generator output breaker, as documented in NRC Inspection Report 50-275;323/99-18. This Non-Cited Violation was promptly entered into the corrective action system at the time of the event on February 20, 1999. The actions of the licensee in this instance were timely, and the review was thorough. From the review, the inspectors determined that actions were generally timely and effective.

The licensee had recently implemented a process to document all Non-Cited Violations as, at least, a quality evaluation. This practice, implemented by the licensee prior to the end of the inspection, will require increased causal analysis to be brought to the resolution of Non-Cited Violations. The inspectors determined that this new practice was an enhancement that should assist in reducing repeat problems.

c. Conclusions

Overall, the corrective action program was effective for the identification, resolution, and prevention of problems that could degrade the quality of plant operations. The threshold for reporting problems was low. The licensee's conservative practices toward problem identification and review were effective. The setting of priorities for problem determinations, problem assignment, operability and reportability determinations, and estimated completion dates were appropriate. Self assessments were thorough, intrusive, and occasionally critical. The subsequent corrective actions identified by the audits were either already corrected or properly tracked for resolution. Program trending methods were appropriate for determining trends and identifying adverse trends. Noncited violations were properly entered into the corrective action program and were being resolved in a timely and technically adequate manner.

O7.2 Event Trending Record Reviews

a. Inspection Scope (40500)

The inspectors reviewed 20 ETRs to determine if the licensee had an appropriate threshold for placing conditions adverse to quality into the corrective action system, and was promptly recognizing adverse trends. The intent of this review was to determine if event trend records were entered into the system that would have met the criteria for an action request.

b. Observations and Findings

b1. Incorrect Thresholds

Event trend records were the licensee’s method of trending repeat human performance issues from the corrective action program and identifying low-level performance issues. Further, event trend records were generated for all action requests. Licensee procedures required initiating event trend records for low-level performance problems identified during normal licensee in-process controls or reviews. These items did not specifically require corrective action if below the threshold for an action request. Action requests were the licensee’s documentation system for identifying and correcting conditions adverse to quality, as required in 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action.”

The inspectors reviewed two ETRs that were not generated as the result of an action request. The licensee initially considered these items to be low level issues not requiring corrective action, but determined the events needed to be captured as ETRs for trending purposes. However, these two ETRs documented more than minor human performance errors, such that several barriers failed or NRC requirements were violated, as described below.

The inspectors noted that Event Trend Record V0021723 discussed an event in which an operator performed a surveillance on the wrong unit. On January 15, 2000, in performance of Procedure STP M-6A, “Routine Surveillance Testing of the Control Room Ventilation System,” Revision 29A, operators performed the test on Unit 2 Bus H, instead of Unit 1 Bus H. Because of the multiple barriers required to be bypassed (e.g., tailboards, color-coding, self- and peer-checking) in order to perform work or testing on the wrong operating unit, the inspectors noted that this item was more than minor. Event Trend Record V0021723 also stated in the body of the description that fatigue was a factor in the operator's error. The inspectors determined that these missed barriers and contributing factors required corrective action because of the significance of the number of the licensee's imposed work practice barriers that were bypassed. Following inspector discussions with the licensee on this event, the licensee agreed with the inspectors' observations and initiated an action request to enter this item into the corrective action program as Action Request A0502588.

Similarly, Event Trend Record V0021293 discussed an event on November 23, 1999, in which the wrong train sample pump was de-energized for a radiation monitor. The sample pump for Radiation Monitor RM-13 was de-energized inadvertently by a technician during Radiation Monitor RM-11 maintenance. This error of commission resulted in Radiation Monitor RM-13 being made inoperable inadvertently for a short period of time. Although Radiation Monitor RM-13 was returned to service well within the allowed outage time, several barriers were bypassed, resulting in this event. Event Trend Record V0021293 also discussed that a contributing factor in the error was scheduler pressures to quickly complete the job, and several similar jobs during that shift. These items were determined by the inspectors to have required investigation and corrective action to address. Therefore, because corrective action was deemed to be required, the licensee’s determination that the error of commission was minor was inappropriate. Following inspector discussions with the licensee on this event, the licensee agreed and initiated an action request to enter this item into the corrective action program as Action Request A0502588.

The inspectors noted that similar events (or less significant events) in which work or testing was performed on the wrong unit or train not only required action requests, but were elevated to the next level of significance in the licensee’s corrective action program (quality evaluation). For example, Action Request A0498916 was initiated for an event in which the motor-operated valve actuator limit switch cover was removed for a valve on the wrong unit. Although no leads were lifted or any other intrusive work performed, licensee management considered this event significant enough to be elevated to a quality evaluation. In addition, events in which work was performed on the wrong unit or train were treated as significant human performance errors in the licensee’s internal performance plans.

Technical Specification 6.8.1.a requires procedures to be implemented for those items recommended in Regulatory Guide 1.33, Appendix A. Appendix A of Regulatory Guide 1.33 lists “Administrative Procedures.” Procedure OM7.ID1, “Problem Identification and Resolution - Action Requests,” Revision 12, partially implemented this requirement. Procedure OM7.ID1, Section 1.4.1, required action requests to be initiated for procedure adherence problems, except as exempted in Section 2.9. Section 2.9 did not exempt performance of work or testing on the wrong operating unit or train. Therefore, the failure to initiate action requests for Event Trend Records V0021293 and V0021723 in which work or testing was performed on the wrong operating unit or train was a violation of Technical Specification 6.8.1.a. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy. This item was placed in the corrective action program in Action Request A0502588 (50-275; -323/0008-01, Examples 1and 2).

High Radiation Area Controls

Event Trend Record V00213116, generated on November 29, 1999, discussed two instances of unposted high radiation areas. In a locked storage area, a barrel reading 120 mr/hr at 12 inches was found in the radwaste building outside of a high radiation area. Additionally, in the same area, a bag containing radioactive material that had radiation levels of 120 mr/hr at 12 inches was also found to not have the proper high radiation area posting. The door to this area was locked, so the radiation protection technician that discovered the unposted area initiated an event trend record, believing that the two unposted high radiation areas were a low level problem.

However, Procedure OM7.ID1, Appendix 7.2, Section 1.6.2, required an action request to be initiated for all regulatory, license, or permit violations. 10 CFR 20.1902(b) required each high radiation area to be conspicuously posted. Therefore, the failure to initiate action requests for two unposted high radiation areas constituted failure to follow Procedure OM7.ID1. Following inspector discussions with the licensee on this event, the licensee initiated an action request to enter this item into the corrective action program.

Technical Specification 6.8.1.a requires procedures to be implemented for those items recommended in Regulatory Guide 1.33, Appendix A. Appendix A of Regulatory Guide 1.33 lists “Administrative Procedures.” Procedure OM7.ID1, “Problem Identification and Resolution - Action Requests,” Revision 12, partially implemented this requirement. Procedure OM7.ID1 required this implementation. Therefore, the failure to initiate action requests for Event Trend Records V00213116 in which two high radiation areas were found unposted constituted a violation of Technical Specification 6.8.1.a. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy. This item was placed in the corrective action program as Action Requests A0502588 and A0503543 (50-275; -323/0008-01, Examples 3 and 4).

b2. Adverse Trends

The inspectors noted that Event Trend Records V0021864, V0021797, V0021782, V0021796, and V0018861 discussed events in which risk assessments prior to maintenance were either not performed or did not address all risk factors. The inspectors considered that since four of these problems occurred during January 2000, a potential adverse trend existed. The inspectors questioned the licensee as to what constituted an adverse trend in its corrective action program. The licensee stated that it had no objective method to determine adverse trends, but depended on the experience of plant workers to recognize when repeat problems or adverse trends existed. The inspectors informed the licensee that several risk assessments were not adequately performed recently. Based on this information, the licensee initiated Action Request A0502615 to review the potential adverse trend for corrective action.

Based on the inspectors' observations with respect to event trend records used for items requiring action requests, and not recognizing adverse trends, the license initiated Action Request A0502588 to review the event trend record process for enhancements to the program.

c. Conclusions

A violation of Technical Specification 6.8.1.a with four examples was identified for failure to document issues on action requests. Two examples were identified for occasions where personnel failed to initiate action requests for performing work on the wrong unit or train. Two other examples were identified where personnel failed to initiate action requests for failure to properly post high radiation areas. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy. This item was placed in the corrective action program as Action Requests A0502588 and A0503543.

The licensee did not have objective criteria to define adverse trends. Consequently, the licensee did not recognize a potential adverse trend from several instances occurred in which risk assessments were incomplete or not performed prior to maintenance.

O7.3 Review of Quality Evaluations

a. Inspection Scope (40500)

The inspectors reviewed a sampling of quality evaluations to determine if the root causes were identified, timely corrective action was taken, and if operability or reportability was properly addressed. The inspectors reviewed the following quality evaluations:

Q0012134	Incorrect Interpretation/Implementation of Equipment Control Guidelines
Q0012157	Insufficient Evidence of Testing of Safety-Related Damper

Q0012158 Missed Postmaintenance Test Invalidated Surveillance

Q0012163 Work Was Performed on Wrong Unit

b. Observations and Findings

Quality evaluations were the licensee's vehicle for documenting and evaluating more significant problems that did not rise to the level of a nonconformance. Quality evaluations required a root-cause analysis and corrective action for items that were not significant conditions adverse to quality, but were more than minor plant problems. Procedure OM7.ID2, "Quality Evaluations," Revision 8, provided direction for personnel to follow the quality evaluation process. The inspectors noted that Procedure OM7.ID1, Appendix 7.2, Section 4, provided the criteria for when a quality evaluation was appropriate. This included balance-of-plant problems resulting in plant trips, significant transients, safety system challenges, equipment damage, or personnel injuries. In addition, if the action request review team determined that the issue warranted cause analysis, a quality evaluation could be initiated. The inspectors noted that 49 of 54 quality evaluations initiated in the period of January 1 to December 31, 1999, were not related to the balance-of-plant criteria. Further, the inspectors noted that the issues index indicated that the licensee had a satisfactory threshold for items that may require a root-cause analysis.

In review of the above listed quality evaluations, the inspectors determined that the licensee performed timely root-cause analysis and adequate corrective actions, indicating for those quality evaluations reviewed, that the quality evaluation system was functioning properly.

However, the inspectors noted that Quality Evaluation Q0012158, "Missed Postmaintenance Test Invalidated Surveillance," contained an evaluation in which the licensee failed to identify time response testing concerns associated with the power range nuclear instruments. Quality Evaluation Q0012158 stated that during the installation of the isolator for Unit 1 power range Nuclear Instrument N44, a postmaintenance test was not performed.

The licensee performed a reportability evaluation for these missed tests. The licensee noted that these isolators provided only a small portion of the overall time response of the applicable reactor protection system channels. A vendor evaluation supported this conclusion. The total allowed time response was 7 seconds, while the isolators responded within 5 milliseconds. The licensee determined that since the isolators contributed such a small amount to the overall time response of the channel, the failure to perform time response testing for the isolators could be treated as a missed postmaintenance test. In addition, the surveillance was subsequently satisfactorily performed, thus, the system was capable of meeting its intended safety function.

c. Conclusions

The inspectors concluded that the licensee had a threshold sufficient for initiating quality evaluations, which required a formal root-cause evaluation. The inspectors noted that the sampling of quality evaluations reviewed indicated that timely evaluations and assignment of corrective actions occurred.

II. Maintenance

M7 Quality Assurance in Maintenance

M7.1 Maintenance Rule

a. Inspection Scope (40500)

This inspection reviewed the licensee's monitoring of the structures, systems, and components that were within the scope of the maintenance rule. This monitoring was reviewed to determine if the corrective actions, goals, and monitoring of structures, systems, and components that were in 10 CFR 50.65(a)(1) were adequate.

b. Observations and Findings

The inspectors reviewed the licensee's maintenance rule implementation and maintenance preventable functional failure determinations, and noted as of February 7, 2000, a backlog of 177 action requests was awaiting a functional failure determination. Due dates were assigned to the responsible system engineer in the action evaluation field of the action request. The overdue status was automatically monitored by the plant information management system, with the overdue action evaluations and action requests being provided in a weekly performance report. The inspectors noted approximately 6 percent (11 of the 177) of the open functional failure actions exceeded the licensee's administrative goal of accomplishing a functional failure determination within 30 days of the action request's initiation date.

With one exception, noted in the fire penetration and foam seal system, the licensee's technical determinations of maintenance preventable functional failures was performed within the guidance of Procedure MA1.ID17, "Maintenance Rule Monitoring Program," Revision 7. The inspectors noted that the fire penetration and foam seal system was assigned a Maintenance Rule Category (a)(1) status, and that a recent concerted review effort identified 41 action requests as part of an extensive effort to identify possibilities for consideration during the in process cause determination and establishment of corresponding corrective actions. The inspectors acknowledged that the relatively low backlog was acceptable and provided opportunities to respond to maintenance-related problems.

The inspectors reviewed the licensee's latest maintenance rule periodic assessment, dated December 9, 1999. The periodic assessment documented numerous recommendations regarding the licensee's implementation process of the maintenance rule. In order to document and track these recommendations, the licensee staff initiated Action Request A0498846.

The inspectors noted that the positive displacement charging pumps for both Unit 1 and 2 were maintained within Category (a)(1) status and required setting goals and establishing a monitoring period to evaluate the corrective actions. The identification of the cause with corresponding corrective actions and goals was in the preliminary process during the time of this inspection and was not evaluated by the inspectors. During the review of the periodic assessment, the inspectors determined that the assessment was performed in a timely manner, took into account, where practical, industry-wide operating experience, and that adjustments were made, where necessary, to ensure that preventing failures of systems, structures, and components through maintenance was appropriately balanced against minimizing unavailability.

The inspectors reviewed the motor-driven auxiliary feedwater pumps and emergency diesel generator fuel transfer system performance and condition monitoring criteria. The systems were appropriately classified as standby risk significant systems regarding maintenance rule applications, with the effected components within their corresponding trains clearly identified on system performance criteria worksheets. The condition or performance criteria consisted of statistical parameters associated with the unavailability of the train's components for maintenance activities. The inspectors observed that the unavailability was monitored by three categories of maintenance events -- duration (hours per event), frequency (events per hour), and the combined unavailability effect of duration and frequency (over a 1 year interval).

The inspectors reviewed 16 action requests associated with the diesel generator systems, which covered various modes of plant operation from January 1, 1998, to June 1, 1999. There were 2 quality evaluations addressing Unit 1 Emergency Diesel Generator 1 voltage timing problems. The inspectors agreed with the licensee's activity assignment and prioritization methodology. The inspectors, however, noted that a maintenance preventable functional failure, which occurred during testing of the Unit 1 Emergency Diesel Generator 1, was not evaluated as required. Subsequently, the failure was not captured within the reliability data base for the emergency diesel generator.

During the monthly test of the Emergency Diesel Generator 1-1 on September 1, 1998, the time for voltage buildup to its required value (4160 +240/-375 volts) exceeded the upper limit (13 seconds) permitted by the surveillance procedure. The inspectors confirmed that the maintenance rule data base appropriately considered the condition as a functional failure. The inspectors observed that the licensee established a reliability

performance measure based on individual diesel generator start and/or load failures. The licensee's standard for determining diesel generator reliability from industry supplied guidance had exceedance values of 2, 3, and 5 start failures per 20, 50, and 100 start demands, respectfully. The inspectors verified that the diesel failure on September 1, 1998, was a second identified failure, but the first in 77 previous tests, which indicated that none of the trigger values for reliability were exceeded.

During troubleshooting efforts, two strip chart recorders were used to monitor the operation of the field flashing circuit. Additionally, three successive tests were performed with satisfactory results, leading to the emergency diesel generator being restored to an operable status. However, on September 18, 1998, Emergency Diesel Generator 1-1 experienced another failure to meet the voltage timing requirement. The strip chart recorders indicated that the field flash relay was slow in opening its contacts, thus, maintaining a lower generator output voltage for a longer period of time. The licensee found signs of arcing across the K3 relay contacts, which when energized during the starting sequence, opened the field flash circuit and permits voltage control to be established by the voltage regulator. The inspectors observed that the switch over to the voltage regulator was appropriate to provide the necessary voltage buildup for a successful emergency diesel generator start.

Subsequent efforts discovered loose wire lugs on the K3 relay. As a precautionary measure, the K3 relay was replaced and bench tested with satisfactory results to confirm that the relay operated as expected, and that the high resistance due to the loose wire lugs was the probable cause of the failure. The inspectors noted that the same relay on the other emergency diesel generators for both units was inspected and found to be sufficiently tight.

The inspectors observed that Technical Specification Table 4.8-1 indicated the normal diesel generator test interval was every 31 days, provided the number of failures in the last 20 valid tests was less than or equal to one, and that the number of failures in the last 100 valid tests was less than or equal to five. Table 4.8-1 referenced NRC Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, with regard to valid testing and failures. Accelerated testing on a 7-day interval was required if the number of failures in the last 20 valid tests exceeded 1 or the number of failures in the last 100 valid tests exceeded 5. Technical Specification Table 4.8-1 required that the accelerated test interval be maintained until 7 consecutive failure free demands were performed and the number of failures in the last 20 valid demands was reduced to one.

The inspectors noted that the second failure condition was documented in the same action request (A0467444) as the one identified previously on September 1, 1998. As a result, its failure condition was never evaluated and not included in the failure data base for tracking emergency diesel generator reliability. Regulatory Guide 1.108, Section C.2.e.(7), stated, in part, that tests performed to verify the correction of a

problem should be considered valid tests and successes or failures, as appropriate. The inspectors determined that since the reliability data was not known to the licensee for the September 18, 1998, failed condition, the licensee subsequently failed to perform the required accelerated testing interval on emergency diesel generator, as required by Technical Specification 4.8-1.

Subsequently, on February 27, 1999, Emergency Diesel Generator 1-1 experienced a third voltage timing failure when the licensee found the K3 relay, replaced in September 1998, to be defective. This was the third failure within the last 12 valid tests, of which only two of those failures were entered in the failure data base. The inspectors noted that the licensee implemented the accelerated test interval for the Emergency Diesel Generator 1-1 following the February 1999 failure and included an additional 10 instrumented starts above those required, as documented in Action Request A0478728. Other corrective actions included replacement of the K3 relay and voltage regulator board, and strip chart recorder monitoring of test starts until at least 20 valid tests were performed since the last failure.

The inspectors noted that the third diesel generator failure (February 1999) exceeded the trigger criteria of 2 within the last 20 valid tests. However, since the data within the diesel reliability program failed to consider the failure of September 18, 1999, the exceedance of the trigger criteria was undetected by the licensee's staff, as a result, the staff failed to evaluate the Emergency Diesel Generator 1-1 for Maintenance Rule Category (a)(1) consideration in Action Request A0478728. 10 CFR 50.65(a)(1) requires that goals shall be established commensurate with safety. 10 CFR 50.65(a)(2) specifies that goals and monitoring in accordance with paragraph (a)(1) of the maintenance rule were not required where it was demonstrated that the performance or condition of a structure, system, or component was being effectively controlled through the performance of appropriate preventive maintenance, such that the structure, system, or component remained capable of performing its intended function. The Emergency Diesel Generator 1-1's third failed start on February 27, 1999, demonstrated that preventive maintenance was not effective in controlling performance. The failure of preventive maintenance to preclude the failure of the diesel generator to start was a violation of 10 CFR 50.65(a)(2). This Severity Level IV violation was being treated as a Non-Cited Violation, consistent with Section VII.B.1.a of the NRC enforcement policy. This violation was in the licensee’s corrective action program as Action Request A0504677 (50-275; -323/0008-02)

c. Conclusions

The corrective actions, goal setting and monitoring of structures, systems, and components included in the maintenance rule were appropriate.

A violation of 10 CFR 50.65(a)(2) was identified for a failure of preventive maintenance to preclude the failure of the diesel generator to start. The Emergency Diesel

Generator 1-1's third-failed start on February 27, 1999, demonstrated that preventive maintenance was not effective in controlling performance. This Severity Level IV violation was being treated as a Non-Cited Violation, consistent with Section VII.B.1.a of the NRC enforcement policy. This violation was in the licensee's corrective action program as Action Request A0504677 (50-275; -323/0008-02)

III. Engineering

E7 Quality Assurance in Engineering Activities

E7.1 Review of Action Requests Associated with the Auxiliary Feedwater (AFW) System

a. Inspection Scope (40500)

The inspectors evaluated the licensee resolution of action requests associated with the auxiliary feedwater system to determine if the issues were adequately dispositioned and no repeat issues existed that indicated inadequate corrective action.

b. Observations and Findings

The inspectors reviewed 9 action requests involving the auxiliary feedwater system to determine if the issues were adequately dispositioned and no repeat issues existed that indicated inadequate corrective action. The inspectors noted that, with one exception, the licensee satisfactorily identified the apparent causes of the issues, determined corrective actions, and repaired the items.

Action Request A0465337 regarding the failure of Valve 2-AFW-LCV-113 on July 23, 1998, was closed by the action request review team on the determination that the event was a duplicate action request. The inspectors questioned the licensee's determination that the failure represented a duplicate action request. The inspectors performed a word search of the licensee's corrective action system and did not identify any other recent action requests that identified the failure of Valve 2-AFW-LCV-113 on July 23, 1998. However, the inspectors did note that Action Request A0460794 identified that this valve had failed on May 8, 1998. The licensee stated that the failure of Valve 2-AFW-LCV-113 on July 23, 1998, was a repeat event and it was added to Action Request A0460794.

The inspectors noted that the failure of Valve 2-AFW-LCV-113 was satisfactorily documented in the corrective action system. However, placing each subsequent failure of a component in the initial action request masked the repeat failure of the valve, losing valuable trending information. In addition, Action Request A0465337 was not a duplicate action request, but a repeat failure. The licensee stated that Action Request A0465337 should not have been closed based on the determination that it was redundant, but closed referencing Action Request A0460794. The licensee continued to track the failures of Valve 2-AFW-LCV-113 on a single action request, but initiated event trend records for each of the individual test failures for trending purposes. The inspectors considered this approach satisfactory.

c. Conclusions

In the sampling of action requests reviewed associated with the auxiliary feedwater system, with one exception, the licensee identified the apparent causes of the issues, determined corrective actions, and repaired the items.

The licensee inappropriately rejected an auxiliary feedwater system valve timing failure as a duplicate upon a repeat failure of the valve. The licensee added this failure to an action request that evaluated a previous failure, which would mask repeat failures and trending information. Following notification of this issue, the licensee initiated event trending records for each of the individual valve failures for trending purposes.

E7.2 Vendor Information and Industry Operating Experience

a. Inspection Scope (40500)

This inspection reviewed the licensee's disposition of action requests associated with vendor information and associated with industry operating experience issues resolved between January and December 1999.

b. Observations and Findings

The inspectors found that shift management, operability, and reportability reviews were conducted in a timely manner. Immediate and long-term corrective actions were generally appropriate. The backlog of open evaluations was low. As of the time of the inspection, it was 14 items, and the average age of an open evaluation was approximately 80 days. From discussions with operating experience evaluation engineers the inspectors determined that outside sources of information, from vendors and other sources, were routinely reviewed and assessed for applicability.

An example of the operations event analysis involvement in the corrective action program was the industry event review done on Nonconformance Report N0002053. The nonconformance report involved containment fan cooler unit cable splice inadequacies. This nonconformance report had an element where a licensee review was conducted of not only past splice concerns at the site, but also industry events or operating experience related to splice failures. The inspectors determined that this demonstrated that the licensee's reviews went beyond site-related concerns and probed possible industry information sources for insights in approaches to corrective actions. The inspectors determined the licensee's review to address corrective actions and generic implications was satisfactory.

c. Conclusions

Control of vendor information and industry operating experience was appropriate. Shift management operability and reportability reviews were conducted in a timely manner. Immediate and long-term corrective actions were generally acceptable.

IV. Plant Support

R7 Quality Assurance in Radiation Protection and Chemistry Controls

a. Inspection Scope (40500)

This inspection involved a review of selected action requests that were written in the radiation protection area. In addition, several months of radiation protection logs, which encompassed a refueling outage, and a selection of notable log entries were reviewed to determine if issues were properly entered into the corrective action program and if the subsequent corrective actions were appropriate.

b. Observations and Findings

The review of 10 action requests indicated that issues were entered into the corrective action program for resolution. The inspectors found that problems identified in these selected action requests were being or had been properly tracked and resolved.

During the review of radiation protection logs, the inspectors selected several personnel contamination events for review. Each event was found to be minor in nature, with most of the contaminations occurring during refueling outages. Few contamination events occurred during the period outside of the outages and did not present an indication of problems in control of contamination. Quality Evaluation 0012164 involved an NRC Non-Cited Violation in NRC Inspection Report 50-275; -323/99-15 regarding two occurrences of failures to meet high radiation area entry requirements. The inspectors reviewed this quality evaluation and determined that the short-term corrective actions by the licensee were timely, the quality evaluation, however, was still open pending further licensee review.

c. Conclusions

The corrective action program in the radiation protection organization was being properly implemented.

P7 Quality Assurance in Emergency Preparedness Activities

a. Inspection Scope (40500)

The inspectors reviewed emergency preparedness corrective action program documents, including a nonconformance report, a quality evaluation, action requests, event trend records, drill and exercise critiques, action items and audits to ensure consistent application of the corrective action program within emergency preparedness.

b. Observations and Findings

The inspectors reviewed Quality Evaluation Q0012065, “Evaluate and Resolve TSC/UDAC Performance.” This evaluation noted that numerous dose projection problems were identified during 1998 emergency response organization drills. Several potential reasons were listed as contributors to the inaccurate dose projections, which included lack of operator understanding of the dose projection software and hardware, and a lack of independent verification of data used for the projections. Nine immediate corrective actions were identified and performed to address the problems from the quality evaluation. The inspectors reviewed these actions and agreed they were responsive to the identified concerns. Subsequent drills and evaluations indicated that the actions were effective. The inspectors verified that the quality evaluation was written and acted upon in accordance with facility procedures.

The inspectors reviewed Nonconformance Report N0002075, which was written to address the quality-related problems identified in Quality Evaluation Q0012065 above. Following technical review group review of the status of completion of immediate corrective actions and the formal cause analysis, three additional action requests were written for long-term corrective action. These action requests supported hardware and software upgrades for dose projections. The inspector noted that the nonconformance report was thorough in addressing each concern listed in the quality evaluation.

The inspectors reviewed the 3 action requests written from the nonconformance report, as well as, 18 other action requests generated either by the emergency planning staff or by other facility staff where the issue related to emergency planning. In each case, the documents were written in accordance with facility procedures and were responsive to the identified problem. The inspectors also reviewed the corrective action documents related to the 1999 emergency response organization drills, and noted that no dose projection problems had been observed. The inspectors determined that the short-term corrective actions for the 1998 emergency response organization drills were effective.

The inspectors reviewed 15 drill critiques for 1998 and 1999 emergency response organization drills and exercises. The purpose of the review was to independently assess that problems identified in the drill critiques were appropriately entered into the corrective action program. Problems discovered during emergency response organization drills were entered into a database of emergency planning action items. The emergency planning manager reviewed each item, and then assigned corrective action and a due date, and could further reclassify the item as needing a formal action request or event trend record written to enter the item into the facility corrective action program. The inspector reviewed approximately 100 action items, and agreed that the significant items were appropriately reclassified as action requests and/or event trend records consistent with facility procedures.

c. Conclusions

The inspectors concluded that the corrective action program in emergency preparedness was being properly implemented.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the onsite inspection on February 11, 2000. The licensee's representatives acknowledged the findings presented.

The inspectors asked the licensee staff and management whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Becker, Manager, Operations Services
C. Belmont, Director, NQS Operations, Corrective Action & Plant Support
D. Christensen, Engineer, Regulatory Services
W. Crockett, Manager, Nuclear Quality Services
R. Gray, Director, Radiation Protection
T. Grebel, Director, Regulatory Services
J. Hinds, Director, Engineering Services, Nuclear Technical Services
D. Miklush, Manager, Engineering Services
D. Oatley, Vice President and Plant Manager
L. Sawyer, Human Performance Coordinator
B. Terrell, Supervisor, Corrective Action
R. Waltos, Manager, Maintenance Services
L. Womack, Vice President, Nuclear Technical Services

INSPECTION PROCEDURE USED

40500	Effectiveness of Licensee Process to Identify, Resolve, and Prevent Problems

ITEMS OPENED AND CLOSED

Opened and Closed

50-275; 323/0008-01	NCV	Failure to initiate action request when required (Section O7.2).
50-275; 323/0008-02	NCV	Failure to perform appropriate preventive maintenance (Section M7.1).

PARTIAL LIST OF DOCUMENTS REVIEWED

PROCEDURES

Administrative Procedure AD7.ID2, “Standard Plant Priority Assignment Scheme,” Revision 4.

Administrative Procedure OM7.ID1, “Problem Identification and Resolution - Action Requests,” Revision 11.

Administrative Procedure OM7.ID2, “Quality Evaluations,” Revision 8.

Administrative Procedure OM7.ID3, “Nonconformance Report (NCR) and Technical Review Group (TRG),” Revision 7.

Administrative Procedure OM7.ID4, “Cause Analysis,” Revision 2.

Administrative Procedure OM7.ID5, “Issues Needing Validation to Determine Impact on Operability (INVDIO),” Revision 1.

Administrative Procedure OM7.ID7, “Integrated Problem Response Team,” Revision 0C.

Administrative Procedure OM7.ID8, “Operability Evaluation,” Revision 6.

Administrative Procedure OM7.ID10, “Quality Trend Analysis Program,” Revision 6.

Administrative Procedure OM7.ID11, “10 CFR 21 Reportability Review Process,” Revision 2.

Administrative Procedure OM7.ID12, “Operability Determination,” Revision 2A.

Administrative Procedure OM10.ID1, “Maintaining Emergency Preparedness,” Revision 0C.

SELF-ASSESSMENTS

Quality Performance Assessment Report (QPAR) Second Period 1999, August 3, 1999.

Emergency Response Program, Emergency Preparedness Audit 991310019, December 2, 1999.

1999 NQS Biennial Audit/Self Assessment Report 993430026, December 10, 1999.

Year 2000 Corrective Action Program & Implementation Audit Report 003670781, February 5, 2000.

Maintenance Rule Periodic Assessment, December 9, 1999.

Radiation Protection Post Outage Self Assessment, April 1, 1999.

Nonconformance Reports

N0002075, TSC/UDAC Performance, September 14, 1999

QUALITY EVALUATIONS

Q0012071, DG 1-1 voltage timing, October 1, 1998
Q0012109, DG 1-1 slow voltage buildup, March 3, 1999
Q0012134, Incorrect Interpretation/Implementation of Equipment Control Guidelines
Q0012157, Insufficient Evidence of Testing of Safety-Related Damper

Q0012158, Missed Postmaintenance Test Invalidated Surveillance
Q0012163, Work Was Performed on Wrong Unit
Q0012065, Evaluate and Resolve TSC/UDAC Performance, September 14, 1999

ACTION REQUESTS

A0502153, Impaired fire penetration barriers, February 7, 2000
A0502219, Loss of all main annunciators, February 7, 2000
A0485075, Scaffold blocked a fire sprinkler in the area of a CCW pump, May 19, 1999
A0484540, Hourly firewatch tour instead of a continuous firewatch, May 19, 1999
A0465048, DG 1-3 slow start for RPMs, July 18, 1998
A0467444, DG 1-1 voltage timing, August 31, 1998
A0467924, DG 1-1 head replacement, September 9, 1998
A0468391, DG 2-3 dc ground, September 16, 1998
A0469863, DG 2-3 speed, October 13, 1998
A0470326, Maintenance rule goal setting review, October 22, 1998
A0470364, DG 1-3 jacket water level, October 22, 1998
A0470720, DG 1-1 high cylinder differential pressure, October 30, 1998
A0471327, DG 1-2 low crankcase oil level, November 13, 1998
A0472223, DG 2-2 auto start following reactor trip & bus transfer, December 1, 1998
A0473160, DG 2-1 dc control UV alarmed, December 16, 1998
A0478728, DG 1-1 slow voltage buildup, February 27, 1999
A0478825, DG 1-1 low lube oil pressure, March 1, 1999
A0478880, DG 1-1 change testing frequency to 7 days, March 1, 1999
A0484620, DG 2-2 voltage control, May 12, 1999
A0484623, DG 2-2 frequency, May 13, 1999
A0498846, Maintenance rule periodic assessment, December 7, 1999
A0477648, Evaluate SER 4-98 unplanned personnel exposure, February 20, 1999
A0462830, EP respirator program, May 6, 1998
A0464522, Evaluate IEN 98-23, September 7, 1998
A0474805, Evaluate 10CFR21 Amerace DSC type relay 1, April 12, 1999
Ao479535, Evaluate 10CFR21 Agastat E7000 timing relay, March 5, 1999
A0479542, Evaluate Eagle 21 T-hot algorithm fault, March 5, 1999
A0482547, Evaluate 10CFR21 ASCO Hydramotor actuators, May 9, 1999
A0483418, Evaluate issue with top nozzle spring broken hold down bolts, May 22, 1999
A0483421, INPO OE9795, Failure NE Design. Series 129 relay, May 22, 1999
A0485487, Post maintenance testing required on AOVs, April 27, 1999
A0486792, Dose rate evaluation o/s RCA, June 17, 1999
A0478309, Entered RCA without PED and exited without PCM, March 7, 1999
A0482048, Contamination found outside RCA, April 1, 1999
A0482049, RP Self assessment Outage Critique, April 1, 1999
A0479773, Particle contamination found outside RCA, March 7, 1999
A0460794, Valve 2-AFW-LCV-113 Stroke Time Above Action High
A0465337, Valve 2-AFW-LCV-113 Above Action High
A0476270, Valve LCV-113 Failed to 50% in Auto
A0472405, Packing Leak on Valve LCV-115
A0485852, Valve 2-LCV-106 Did Not Close
A0491792. AFW Pump 1-3 Outboard Bearing High Temperature Alarm

A0496634, Valve LCV-115 Drifts in Manual
A0500496, AFW Pump 2-2 Outboard Pump Oiler Needs Oil
A0487811, Oil Change of Valve LCV-111 Not Possible
A0467712, Revise and Resolve TSC/UDAC dose assessment, January 19, 1999
A0467176, OM4.ID4 non-compliance ERO personnel FFD 25/99
A0463574, Revise EP G-1 SAE/GE, June 19, 1998
A0463115, LBIE/FSAR, Emergency Plan, June 11, 1998
A0471276, '98 Exercise weakness - TSC and EOF Staffing, November 12, 1998
A0474703, Revise EP-6 to correct EARs performance, January 13, 1999
A0475027, Enhancement to EARS software needed, January 19, 1999
A0475034, Upgrade EARs workstation, January 19, 1999
A0476182, Overdue 1998 EPLAN review, February 5, 1999
A0486815, Not staffing off site field monitoring teams, June 18, 1999
A0485946, No writers guide exists for EP procedures, June 3, 1999
A0484237, Error in procedure CP M-5, Rev. 11A, May 6, 1999
A0483226, EP MT-47 needs revision, May 20, 1999
A0483205, EP MT-35 Test requirements, May 20, 1999
A0482066, TSC data server reliability, May 2, 1999
A0481044, EARs sever not receiving RMS and MET data, March 18, 1999
A0489748, N0002075 Self Assessment, September 14, 1999
A0491438, Procedural compliance error during STP M-89, October 20, 1999
A0494096, Clearance tag found on wrong valve, January 20, 2000
A0498696, Backup air to PCV-19 found isolated, January 11, 2000
A0491213, DEG 1-2 improper installation of fuse holder, February 20,1999
A0500671, AFW suction valve liner failure, January 11, 2000

EVENT TRENDING RECORDS

V0021873, Incomplete Licensing Basis Impact Evaluation (LBIE) Screen and LBIE

V0021864, Probabilistic Risk Assessment for Diesel Engine Generator 1-3 Inoperable did not Include CR-36

V0021824, Improper Unreviewed Safety Question Determination

V0021802, LBIE QA Program Statement not Complete

V0021797, Probabilistic Risk Assessment not Run when CP-36 was Declared Inoperable

V0021796, Probabilistic Risk Assessment not Run when CP-37 was Declared Inoperable

V0021782, Risk Assessment Checklist Performed After Component Inoperable

V0021723, Procedure STP M-6A 10 Hour Run Initiated on Wrong Unit/Bus/Train

V0021722, Component Cooling Water Bleed and Feed Procedure Unclear on Required Trains

V0021702, Technical Specification Tracking Sheet Taken Active Late

V0021700, Work Order Package Had Numerous Errors

V0021223, Lack of Notification for Compensatory Measures

V0021293, RM-11 Pump Turned Off Inadvertently during RM-13 Maintenance

V0021316, Unposted High Radiation Areas in Radwaste Building Bay 2

V0021319, Turbine Trip during Lube Oil Testing

V0021469, Flammable (Red Storage) Items not Returned to Flammable Materials Locker

V0021513, Drawings not Up-to-Date

V0021591, Use of Unapproved Procedure Revision

V0021633, Failure to Make Notification of Greater than 15 percent Power Change

V0018861, Risk Assessment not Performed per MA1.DC10

V0019669, Error in lineup for chemical addition

V0019925, Valve LWS-0-625 out of position

V0020116, DEG-2-90 found in closed position

V0020737, LI-400 inadvertently isolated

V0021120, Did not perform substeps in STP M-21A

V0021242, AXS-0-182 found closed

MISCELLANEOUS DOCUMENTS

Operations Department Performance Reports, September through December, 1999
1998 Semi-Annual Health Physics Drill Report, May 20, 1998
Delta Team Drill Critique, August 12, 1998
August 19, 1998 EP Drill - Plus/Delta By Facility Critique
Bravo Team Drill Critique, August 26, 1998
Charlie Team Drill Critique, September 02, 1998
1998 ERO Dress Rehearsal Drill Critique, September 30, 1998
ERO Bi Annual Graded Exercise Critique, November 4, 1998
Bravo Evaluated Drill, Drill Report, March 19, 1999
Bravo Training Drill, Drill Report, June 4, 1999
Charlie Team Health Physics Drill, Drill Report, July 16, 1999
Alpha Team Unannounced Off-hours Drill, Drill Report, August 3, 1999
Bravo Team Health Physics Drill, Drill Report, August 6, 1999

Alpha Team Off-hours Activation Drill, Drill Report, September 3, 1999
Charlie Team Full-Scale Drill, Drill Report, December 3, 1999
Delta Team Health Physics Drill, Drill Report, December 10, 1999