UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-8064

January 14, 2000

Gregg R. Overbeck, Senior Vice
President, Nuclear
Arizona Public Service Company
P.O. Box 52034
Phoenix, Arizona 85072-2034

SUBJECT: NRC PROBLEM IDENTIFICATION INSPECTION REPORT NO. 50-528/99-18; 50-529/99-18; 50-530/99-18

Dear Mr. Overbeck:

This refers to the inspection conducted on November 29 through December 3, 1999, at the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, facilities. In-office inspection of certain records requested by the inspectors was also performed in the weeks preceding the onsite portion of the inspection. The results of this inspection were discussed with your staff telephonically on January 14, 2000. The purpose of the inspection was to review your facility's corrective action program, using the guidance provided in NRC Inspection Procedure 40500. The enclosed report presents the results of this inspection.

On the basis of the sample reviewed, your corrective action program was generally implemented with an appropriate threshold for identifying, classifying, and prioritizing adverse conditions. The corrective action program was found acceptable and your staff was considered aggressive and self-critical in identifying and resolving adverse conditions.

Based on the results of this inspection, the NRC has determined one Severity Level IV violation of NRC requirements occurred related to a failure to comply with procedures. The violation is being treated as a noncited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. The noncited violation is described in the subject inspection report. If you contest the violation or severity level of the noncited violation, 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 Palo Verde Nuclear Generating Station.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room (PDR).

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

Sincerely,

original signed by

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

Docket Nos.: 50-528; 50-529; 50-530
License Nos.: NPF-41; NPF-51; NPF-74

Enclosure:
NRC Inspection Report No.
50-528/99-18; 50-529/99-18; 50-530/99-18

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.:	50-528; 50-529; 50-530
License Nos.:	NPF-41; NPF-51; NPF-74
Report No.:	50-528/99-18; 50-529/99-18; 50-530/99-18
Licensee:	Arizona Public Service Company
Facility:	Palo Verde Nuclear Generating Station, Units 1, 2, and 3
Location:	5951 S. Wintersburg Road Tonopah, Arizona
Dates:	November 29 through December 3, 1999
Inspectors:	Thomas O. McKernon, Senior Reactor Engineer, Operations Branch Howard F. Bundy, Senior Reactor Engineer, Operations Branch Gary W. Johnston, Senior Reactor Engineer, Operations Branch Nancy Salgado, Resident Inspector, Project Branch D
Approved By:	John L. Pellet, Chief, Operations Branch Division of Reactor Safety

ATTACHMENT: Supplemental Information

EXECUTIVE SUMMARY

Palo Verde Nuclear Generating Station, Units 1, 2, and 3
NRC Inspection Report No. 50-528/99-18; 50-529/99-18; 50-530/99-18

Three regional inspectors and a resident inspector performed a routine core inspection of the corrective action program implementation at the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, from November 29 through December 3, 1999. The inspectors used NRC Inspection Procedure 40500 to evaluate the licensee's effectiveness in identifying, evaluating, resolving, and preventing problems that could affect safe plant operations.

The licensee maintained a low threshold for initiating corrective action documents. Management and craft personnel shared a common understanding about program expectations, capabilities, and goals.

Operations

- The team concluded that the licensee had an acceptable corrective action program with several good attributes and characteristics. The licensee's staff was aggressive and highly self-critical in identifying adverse problems and implementing action plans for correction and to preclude recurrence. The licensee's corrective action processes provided adequate guidance for identifying, classifying, and prioritizing adverse conditions. Licensee personnel were willing to initiate condition reports/disposition requests for any adverse or questionable conditions (Section O7.1).

- The licensee's failure to follow the procedure governing design engineering routing design modifications to the nuclear training department for training impact reviews was a Severity Level IV violation. This violation is being treated as a noncited violation (50-528;-529;-530/9918-01), consistent with Section VII.B.1 of the NRC Enforcement Policy (Section O7.1).

Report Details

Summary of Plant Status

All three Palo Verde units operated at approximately full power during the entire inspection period.

I. Operations

O7 Quality Assurance in Operations

O7.1 Condition Reporting Process and Corrective Actions

a. Inspection Scope (40500)

The inspectors reviewed the licensee's programs 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 repetitive problems, and (7) resolution of noncited violations.

The inspectors reviewed plant documents, interviewed management and working level personnel, and attended licensee meetings. The inspectors reviewed, in varying detail, condition reports, listed in the attachment to this inspection report, to ascertain the effectiveness of the licensee actions in resolving and preventing issues that degraded the quality of safe plant operations. The team selected areas in part on the basis of the risk significance of the system or components. Systems included the high pressure safety injection system, emergency feedwater system, emergency diesel generator system, and the essential chilled water system. The inspectors also reviewed condition reports for the disposition and evaluation of operability issues, as well as, the adequacy of the root cause analysis.

The inspectors reviewed the corrective action program interface with other lower-tier programs, such as procedure revisions and maintenance action items, that could result in corrective action. The inspectors monitored the performance of the licensee's condition report/disposition request (CRDR) review committee. The inspectors reviewed quality assurance audits, self assessments, and licensee response to NRC and industry generic communications. The inspectors also reviewed a sample of licensee event reports, listed in the attachment of this report, for compliance with 10 CFR 50.73 and for the effectiveness of licensee personnel in identifying, resolving, and preventing the occurrence of problems that affected safe plant operations.

b. Observations and Findings

b.1 Threshold of Reporting

The team noted that there were two processes for identifying, evaluating, and correcting conditions adverse to quality: (1) through a (CRDR); or (2) through a work request.

Procedure 90DP-0IP10, "Condition Reporting," Revision 8, provided instructions for initiating a CRDR for: (1) nonhardware conditions with the potential to adversely affect the safe operation of the plant; (2) hardware and nonhardware conditions with the potential to significantly impact safe operation of the plant; and (3) requests for technical evaluations.

The team noted that all CRDRs were required to be screened by the strategic assessment group to determine if enough information was available for the CRDR review committee to evaluate the CRDRs. A CRDR review committee, which was staffed by personnel from operations, maintenance, engineering, plant support, nuclear assurance, and regulatory affairs, met daily during normal work days. The CRDR review committee classified the type of CRDRs and assigned ownership, corrective action evaluations, and maintenance functional failure determinations to the appropriate organizations. The licensee classified CRDRs as significant, potentially significant, adverse, or for review based on the following guidance:

- Significant - The highest classification for conditions such as, severe or unusual plant transients, safety system malfunctions, or improper operation, and others.

- Potentially Significant - An interim classification used when additional information was needed to determine CRDR classification. Requested information was required within 14 days.

- Adverse - A condition which adversely affected the safe operation of the plant.

- Review - The least significant condition not considered to be an adverse condition to quality, but one that should be reviewed and dispositioned during the conduct of day-to-day work activities.

The team observed one CRDR review committee meeting and noted that the members were well-prepared. The discussions were open and appropriately focused on problem resolution and plant safety. Condition report/disposition review committee members had extensive working experience in their areas of expertise. This contributed to critical and thorough reviews and accurate classification of the CRDRs.

For initiating work to repair degraded or nonconforming hardware conditions, Procedure 90DP-0IP10 required a work request to be written in accordance with Procedure 30DP-9WP01, “Work Identification.” Procedure 30DP-9WP02, “Work Document Development and Control,” Revision 23, specified guidance for processing work requests into work orders. Procedure 30DP-9WP02 provided guidance in

determining if operability, dispositioning issues to other responsible departments (i.e., referred to as transportability), or root cause evaluations were warranted. If the work request involved a transportability issue or required a root cause evaluation, the procedure required a CRDR be initiated.

During the inspection, the team reviewed over 200 CRDRs of approximately 3,000 CRDRs generated during the past year and found those reviewed to be properly categorized for significance, processed in a timely manner, and where appropriate, required root cause analyses had been performed. The team found that corrective actions for the reviewed CRDRs were appropriate. For example, CRDR 390081 was written on May 10, 1999, to identify an essential air handling unit temperature control valve that failed to stroke during a preventive maintenance work order test. The shift manager declared the system inoperable, placed the component in quarantine status to preserve evidence for a possible event root cause failure analysis, and recommended the item be reviewed as a maintenance rule functional failure. Additional actions were taken to place the other train in service and perform an operability surveillance test on the other train diesel. Another example included an audit CRDR (99Q055) written on February 24, 1999, which identified a 10 CFR 50.59 evaluation performed by unqualified personnel. As corrective action to this CRDR, the licensee reperformed the evaluation, trained and qualified the involved individuals, revised subject procedures to add clearer guidance, and reviewed other work for which the individuals were involved. The inspectors concluded that in both of the above cases the licensee performed the appropriate corrective actions and implemented measures to preclude recurrence.

b.2 Priority of Resolution

The inspectors reviewed over 200 CRDRs, deficiency work orders, self assessments, and departmental audits. For the documents sampled, the licensee's staff effectively identified, characterized the adverse conditions, and included an assessment of the risk significance pertaining to continued safe operation of the plants. The licensee appropriately elevated problems through review levels and management (e.g., CRDR review committee) for resolution. The CRDR review committee classified problem significance and priorities were assessed and assigned, and where necessary root-cause analyses were performed by the assigned evaluator. The CRDR review committee dispositioned CRDRs for operability determinations and for reportability concerns. The licensee trended corrective actions to ascertain whether the problems had been resolved or whether repeat occurrences warranted expansion of the corrective action scope and possible review of root-causes.

For issues that had not been resolved to the satisfaction of interested individuals by the CRDR process, the licensee's differing professional opinion (DPO) process was available. When a DPO was received, the department leader delivered it to the strategic analysis group for tracking and presentation at the senior management daily plant morning meeting. The senior managers assigned actions to resolve the issue within 30 days. The inspectors reviewed the DPO tracking log and noted that there were no DPOs with responses outstanding and only three DPOs had outstanding actions. The inspectors noted that for DPO 98-04, "Safety Violations During Erection of Scaffolding Around Energized Transformers," extensive actions had been satisfactorily completed.

b.3 Effectiveness of Program

Offsite Safety Review Committee

The inspectors reviewed the activities of the Offsite Safety Review Committee (OSRC) related to corrective action identification and resolution. The inspectors reviewed audit findings and interviewed senior management members on the OSRC. The OSRC maintained an oversight function on the activities related to measurement of corrective action program performance through periodic audits. The OSRC maintained a 3-year schedule of audits and periodically reviewed it to determine scope and priorities. The audits focused on significant issues.

The former OSRC chairman stated that the committee considered two areas as requiring close attention: commitment management and software quality assurance. While these areas were of highest priority, the OSRC also included other areas; e.g., the post-accident sampling system, and long-standing problems in maintaining training and qualifications of personnel. The OSRC also maintained a list of topics that identified potentially risk sensitive areas to maintain vigilance by plant staff; one example was the review of calculations. Overall, the inspectors found that the OSRC maintained a clear focus on safety significant issues and ensured that corrective actions were being implemented to address the most significant areas.

In addition to interviews, the inspectors reviewed OSRC meeting minutes. The team noted a report made by the plant support subcommittee that identified four plant modifications, which had not been reviewed within the required 2 years for plant-specific simulator impact. The licensee initiated CRDR 9-8-0108 after a review of plant modifications in the training change and simulator configuration management systems. The review identified 33 of 526 modifications that had an impact on the simulator. The review further indicated that 20 of the 33 modifications had been installed on the simulator. The inspectors noted that 4 modifications were not reviewed for training impact within the 2-year limitation of ANSI/ANS- 3.5-1985, “Nuclear Power Plant Simulators for Use in Operator Training.”

The inspectors reviewed the four design modification work orders (DMWOs) in question and concluded none had a significant impact on operator training. The licensee had delayed installation of these modifications on the simulator due to a lack of staff expertise. However, the inspectors noted that the modifications had been installed as of the date of this inspection.

The inspectors determined that the licensee’s impact review process broke down between the routing from design engineering of the DMWOs to the training single point of contact in the nuclear training department. At the time of this inspection, the licensee had not identified the root cause of the breakdown; whether the DMWOs were not routinely being sent to the nuclear training department single point of contact, or that the single point of contact was not adequately reviewing the DMWOs for inclusion into the simulator configuration management system. No recoverable records existed that would indicate clearly where the breakdown occurred. The licensee took corrective actions to require that all of the DMWOs sent to the single point of contact were entered

into the configuration management system. Further, the DMWO database was monitored by the simulator group supervisor to assure that all DMWOs were reviewed for impact on the simulator.

Criterion V of 10 CFR Part 50, Appendix B, requires, in part, that activities affecting quality shall be prescribed by procedures appropriate to the circumstances and shall be accomplished in accordance with these instructions. Procedure 81DP-0EE10, "Plant Modifications," governed the process of reviews conducted for design modifications. Section 3.2.2.6 required the originator (project team leader) to "determine and document the modification impacts in the DMWO and notify the affected departments of required actions." Procedure 81-DP0CC26, "Impact Process," Revision 4, governed the processing of impact reviews and required the originator to identify to whom to send the DMWO for impact review. A review of 526 plant modifications indicated that at least 20 DMWOs had not been routed to the nuclear training department for impact reviews when the reviews were required in the DMWO. The repeated failure to follow the procedure governing design engineering routing design modifications to the nuclear training division for training impact was a Severity Level IV violation of 10 CFR Part 50, Appendix B, Criterion V. This violation is being treated as a noncited violation (50-528; -529; -530/9918-01) in accordance with Section VII.B.I of the NRC Enforcement Policy. This issue is being tracked in the licensee's system as CRDR 9-8-0108.

Essential Chilled Water System

A review of 10 CRDRs from the past year associated with the essential chilled water system indicated a significant portion involved human performance issues. These issues included inadequate system knowledge, procedure adherence, work control, and inadequate procedures. The CRDRs for the essential chilled water system identified different organizations and classifications of personnel in these human performance concerns. For example, CRDR 46182 written March 31, 1999, involved technicians' errors during testing of the Essential A chiller. The licensee identified this error as a human performance problem. The technicians had lifted an electrical lead that was common also to the high refrigerant discharge module, which caused the unexpected trip of the chiller. The inspectors determined that no pattern existed that could be ascribed to single or multiple failures or that indicated inadequate corrective actions. No repetitive similar events occurred, which indicated that corrective actions were effective in preventing recurrence.

The inspectors noted that of the 20 deficiency maintenance work orders and corrective maintenance work orders reviewed, none revealed any issues that met the threshold requirements for a CRDR. The licensee generated the associated work orders principally for routine maintenance activities, with some in support of CRDR corrective actions.

Auxiliary Feed Water Pump AFN-P01

The inspectors reviewed five CRDRs associated with Pump AFN-P01 from the past year. The CRDRs indicated that no substantive issues existed and the system was well maintained. For example, CRDR 190164 written August 3, 1999, documented a missing nut on the discharge line deadweight support for Unit 1 Pump AFN-P01. The subsequent review conducted by design engineering determined that the missing nut did not affect the load carrying bolt, which remained capable of carrying the design load. The other CRDRs involved administrative issues and incorrect data collection. A review of deficiency maintenance and corrective maintenance work orders associated with Pump AFN-P01 revealed no issues that met the threshold requirements for a CRDR. The work orders were principally for routine maintenance activities.

High Pressure Safety Injection System Check valves

The inspectors reviewed CRDRs generated by the licensee and associated status of corrective actions related to high pressure safety injection system issues as documented in NRC Inspection Report 50-528;-529; -530/98-14. The inspectors verified that corrective actions had been fully and effectively taken to preclude problem recurrence. However, the inspectors could not identify why the corrective action process missed the opportunity to identify and correct the deficient conditions discussed in the aforementioned NRC inspection report. The inspectors agreed with earlier inspection findings that no sufficient testing quantitive acceptance criteria existed at the time to initiate the corrective action process.

Emergency Diesel Generators

The inspectors reviewed CRDRs associated with the emergency diesel generators. The inspectors observed that the licensee appropriately classified, prioritized, and dispositioned the CRDRs. The licensee verified the effectiveness of corrective actions through reviews of subsequent component CRDRs and periodic departmental self assessments. The inspectors reviewed followup documentation and verified that corrective actions had been fully and effectively taken to preclude problem recurrence. For example, CRDR 190097 was written on May 27, 1999, as a result of a Unit 1 “B” emergency diesel generator trip during a 5-minute cooldown run. The diesel tripped on “lube oil low pressure turbo” and “jacket water high temperature” annunciators. The problem was referred to the instrument and controls shop for troubleshooting. The shop determined that tubing associated with the jacket water high temperature trip system was leaking. The leak was repaired and the diesel retested satisfactorily. The diesel was not declared inoperable since the trip was a nonemergency mode trip and the diesel would have responded to emergency start signals. Additionally, the condition was evaluated and not considered a maintenance rule functional failure.

Maintenance Rule Implementation

The inspectors reviewed 20 CRDRs, which required dispositioning for maintenance rule functional failure determinations. The team determined that the functional failure determinations were appropriately assessed. For example, CRDR 99Q113 written May 18, 1999, identified inconsistencies in scoping of the licensee's offsite power system with industry guidelines and the design and licensing basis. The licensee dispostioned and completed actions in a timely manner. The licensee corrected the problem condition and dispositioned the CRDR for document revisions and technical specification changes. When necessary, the licensee routed CRDRs for operability concerns to operations and reportability concerns to the nuclear regulatory affairs department.

b.4 Program Measurement

Self Assessments

The licensee used various methods of trending processes to measure and monitor facility programs, CRDR activity, and effectiveness of corrective actions. The nuclear assurance division compiled and issued trended data on a monthly basis with some of the data compared to established criteria to provide a measure of the corrective action program. The licensee's trended data reports included information on the number of initiated CRDRs, closed CRDRs, CRDRs greater than 180-days old, and the newest and oldest CRDRs. Other data was compiled and compared to ascertain and identify the more significant emergent issues during the past quarter. The facility used varied metrics to monitor the effectiveness of corrective actions. One such measure was the nuclear assurance division's top 10 issues list. The licensee placed emergent issues on the list and color coded them red. Responsible departments developed action plans with success criteria and objectives. The color code status changed when objectives were met. When the area's color code remained green for three consecutive months the licensee reviewed the issue for removal from the top 10 list. The inspectors also observed that the trended data reports included information on the number of initiated CRDRs, closed CRDRs, CRDR greater than 180-days old, and the newest and oldest CRDRs.

The licensee used multi-disciplined integrated self assessments by nuclear assurance and scheduled audits by the nuclear assurance division, and departmental self assessments to determine the health of facility programs. Periodically, the licensee performed followup audits to measure the effectiveness of past corrective actions and determine whether broader and more comprehensive corrective actions were necessary. The inspectors reviewed several audits and self assessments listed in the attachment of this report. The inspectors observed that the audits and self- assessment objectives were clearly stated. The licensee used a mix of talent and disciplines

dependent upon the scope and level of oversight requested. For example, the integrated self assessments typically contained a broad mix of talent and used industry peers as part of the assessment team. Based on the audits and self- assessment findings, the inspectors concluded that the self assessment process was self critical, identified significant concerns for trending and resolution, and identified areas requiring broader corrective actions to resolve issues.

Condition Report/Disposition Request Action Review Board

The licensee recently inaugurated a CRDR action review board to review significant adverse CRDRs. The inspectors attended a meeting that reviewed CRDR 2-9-0202 and the root cause analysis for the failure of the Control Element Assembly Calculator 2 on Unit 2. The briefing by the root cause investigator noted the operating experience with the control element assembly calculator design, the root cause of the failure, and the determination of potential transportability. The discussion was informative and the action review board approved the corrective actions with the exception of replacement of the control element assembly calculators in each unit. It was noted by the corrective action review board chairman that the facility was committed to replacing the control element assembly calculators in the future, but the replacement was not a corrective action, as defined by the program. The replacement of the items in all three units was considered an improvement. As a result, the licensee removed the item from the identified corrective actions.

Plant Review Board

The inspectors discussed the plant review board activities with the board chairperson. The discussion centered on corrective actions and the input of the plant review board to the offsite review committee with regard to plant performance. The plant review board met monthly, or as required to review plant events. From these meetings, the plant review board assessed plant events and developed corrective actions to address immediate concerns. Corrective actions not previously identified were incorporated into existing CRDRs, placed into the work order process, or placed into deferred corrective action process in which items were scheduled for correction during the future planned outage. Long-term corrective actions were referred to the appropriate organizations for resolution. The inspectors determined that the plant review board served as a key player in developing corrective actions to events.

b.5 Program Understanding

Interviews with a dozen licensee personnel (i.e., craft personnel, first line supervisors and upper management) and reviews of recent audit results showed a good understanding by station personnel of the corrective action program and that personnel were willing to initiate CRDRs for adverse conditions.

The inspectors interviewed a number of key plant personnel (all levels) and reviewed background information supporting adverse condition reporting and resolution. The team also reviewed audit results pertaining to nuclear assurance reviews of station personnel corrective action program understanding. The auditors interviewed 44 front-

line direct employees and 20 contract personnel in conjunction with this audit and concluded that all would raise safety concerns. Most of the interviewees raised safety issues through their front line management, which was the preferred method. In all instances, the staff was knowledgeable of the corrective action program, the different classifications for conditioning reporting, and associated levels of responsibilities for dispositioning CRDRs. The staff also knew under which conditions control room notification and review of CRDRs was required. The team considered the licensee's staff knowledgeable of the processes and willing to initiate action on issues that they believed were not resolved fully through the employee concerns program or DPO process.

b.6 Repetitive Problems

The inspectors observed that the nuclear assurance division performed frequent data searches for similar adverse conditions. The licensee published quarterly emerging issues trend reports, which highlighted the issues to management. The background documentation indicated an aggressiveness by the licensee to resolve repetitive problems. In many instances, the licensee reevaluated the root cause of the problems to ascertain whether the scope of the corrective actions should be expanded. In many cases, the licensee implemented followup audits to assess the effectiveness of corrective actions to preclude recurrence of problems. While some singular repeat problem occurrences may have been of minor concern, the licensee elevated such issues in importance and exposure to higher management attention (e.g., training and qualification issues placed on the top 10 list). Additionally, the licensee reviewed problems for generic impacts to the plants, across system boundaries, and across departmental boundaries. In cases of process errors, the licensee performed data base searches to verify whether prior repeat similar errors occurred and whether evaluation of process changes was needed.

b.7 Notice Of Violation/Noncited Violation Followup

NRC inspections identified a total of 28 noncited violations in the period from October 1998 through December 1999. The inspectors reviewed the noncited violations listed in the attachment to determine if the violations were entered into the corrective action program and if they were resolved or being resolved in a timely manner commensurate with their significance.

The inspectors determined that the noncited violations were entered into the corrective action program and that the identified corrective actions adequately addressed the violations.

The inspectors identified that in most cases the provided packages for the CRDRs lacked some information and objective evidence that actions were completed. Upon request the licensee was able to provide sufficient documentation to verify actions were complete. As a result, the licensee initiated CRDR 111461 on November 19, 1999, to address these types of documentation quality issues and implemented the following as corrective actions to preclude recurrence:

- Revised and incorporated clarification and documentation.
- Develop and publish performance indicators for CRDR documentation quality.
- Increased sampling of the adverse CRDR population and CRDRs owned by Nuclear Assurance.
- More leader emphasis on review of CRDRs and feedback to the responsible individual.
- Refresher training for the quality assurance program and the corrective action process.

Operating Experience Review

Procedure 65DP-0QQ01, "Industry Operating Experience Review," Revision 2, provided for screening and evaluation of industry operating experience information and actions to incorporate lessons learned from the industry into plant design, programs, or operating practices. The inspectors reviewed the industry operating experience database and associated screens of low impact documents and verified that no issues were screened out inappropriately. The licensee evaluated information categorized as high impact or potential high impact through the CRDR process.

The inspectors reviewed 12 industry operating experience CRDRs. The team determined that 3 CRDR evaluations were not completed within the 90-day expectation described in Procedure 65DP-0QQ01, Step 3.3.8. The licensee was aware of this issue because the industry operating experience coordinator trended completion timeliness for industry operating experience evaluations. Current trending indicated that most evaluations were completed within the expectations of Procedure 65DP-0QQ01.

c. Conclusions

c.1 The program provided acceptable thresholds to assure that events were identified, reported, screened for significance and maintenance rule program functional failures, evaluated for disposition, lower level events screened, and priorities and ownership assigned.

c.2 The program ensured that problems were appropriately prioritized for resolution commensurate with safety. The CRDR review committee reviewed CRDRs on a daily basis and classified the issues as significant, adverse, review, or potentially significant, and dispositioned the CRDRs.

c.3 The offsite review committee, plant review board, action review board, and nuclear assurance division effectively addressed plant and organizational performance, and assessed the adequacy of corrective actions. One noncited violation was identified for procedural noncompliances related to impact reviews of design modifications on training and simulator configuration.

c.4 The licensee also used varied corrective action program metrics to measure and monitor the program. Trend reports published monthly and quarterly, along with status of more important issues kept managers current as to emerging problems and the staff's progress in resolving adverse conditions.

c.5 All personnel interviewed by the inspectors demonstrated a clear understanding of the functions of the various components of the corrective action program.

c.6 The corrective action program identified repetitive problems to assure appropriate reviews were performed and actions taken to preclude recurrence.

c.7 The licensee placed appropriate priority on resolving noncited violations.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors discussed the progress of the inspection on a daily basis and presented the inspection results to members of licensee management at the conclusion of the onsite inspection on December 2, 1999, and telephonically on January 14, 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

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M. Winsor, Nuclear Engineering Director

NRC

J. Moorman, Senior Resident Inspector

INSPECTION PROCEDURES USED

IP 40500	Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

50-528; -529; -530/9918-01	NCV	Failure to follow procedure (Section 07.b.3)

DOCUMENTS REVIEWED

Procedures Reviewed

65DP-0QQ01, “Industry Operating Experience Review,” Revision 2
90DP-0IP06, Reactor Trip Investigation, Revision 6
Procedure 30DP-0WM15, Fix It Now (FIN) Multi-Discipline Team, Revision 0
Procedure 40DP-9OP15, Operator Work Arounds and Discrepancy Tracking, Revision 11
Procedure 82DP-0PP01, Out of Tolerance Program Controls, Revision 4
Procedure 73IG-9SE003, System Walkdown, Revision 0
Procedure 90DP-0IP-10, Condition Reporting, Revision 8
Procedure 81DP-0DC13, Deficiency Work Order, Revision 11
90DP-0IP10, Condition Reporting, Revision 8
90DP-0IP09, Differing Professional Opinions, Revision 4
Procedure 12DP-0MC29, Warehouse Discrepancy Notice, Revision 9
Procedure 30DP-9MP01, Conduct of Maintenance, Revision 27
PG-120, PVNGS Self Assessment, Revision 0
Procedure 73DP-0ZZ03, Revision 10, System and Maintenance Engineering

CRDRs

CRDR 111461, “CRDR Documentation Quality Issues,” November 19, 1999

CRDR 9-9-Q113, “Offisite Power Supply Maintenance Rule Scoping Issues,” May 18, 1999

CRDR 9-8-0108, “Simulator Design Modification Work Orders Not Reviewed for training Impact,” February 18, 1999

CRDR 9-9-Q055, “10 CFR 50.59 Evaluations Performed by Unqualified Personnel,” February 24, 1999

CRDR 46182, “Technicians Lifted Wrong lead During Troubleshooting,” May 31, 1999

CRDR 190097, “Unit 1 EDG B Trip During Cooldown Run,” May 27-1999

CRDR 190164, “Missing Nut on Unit 1 AFN-P01 Discharge Line Deadweight Support,” August 3, 1999

CRDR 390081, “Unit 3 Essential Air Handling Unit Temperature Control Valve Failed to Stroke,” May 10, 1999

CRDR 290202, “Unit 2 Control element Assembly Calculator Failure,” February 14, 1999

Other CRDRs reviewed:

CRDR 04802	CRDR 104802	CRDR 9-8Q-358	CRDR 2-8-0198
CRDR 11436	CRDR 104822	CRDR 9-8-Q359	CRDR 2-8-0281
CRDR 34477	CRDR 105082	CRDR 9-9-Q008	CRDR 2-8-0286
CRDR 34545	CRDR 105185	CRDR 9-9-Q025	CRDR 2-8-0286
CRDR 34549	CRDR 105204	CRDR 9-9-Q032	CRDR 2-8-0286
CRDR 34627	CRDR 105342	CRDR 9-9-Q048	CRDR 2-9-0019
CRDR 34662	CRDR 105802	CRDR 9-9-Q055	CRDR 2-9-0019
CRDR 34684	CRDR 105883	CRDR 9-9-Q107	CRDR 2-9-0019
CRDR 34914	CRDR 106404	CRDR 9-9-Q107	CRDR 2-9-0048
CRDR 34927	CRDR 109932	CRDR 9-9-Q129	CRDR 2-9-0061
CRDR 34927	CRDR 110824	CRDR 9-9-Q141	CRDR 2-9-0093
CRDR 34945	CRDR 110828	CRDR 9-9-Q166	CRDR 2-9-0102
CRDR 35486	CRDR 110837	CRDR 9-9-Q171	CRDR 2-9-0102
CRDR 36148	CRDR 110860	CRDR 9-9-Q181	CRDR 2-9-0102
CRDR 36367	CRDR 111428	CRDR 9-9-Q185	CRDR 2-9-0154
CRDR 36453	CRDR 111443	CRDR 9-9-Q189	CRDR 2-9-0175
CRDR 36791	CRDR 111445	CRDR 9-9-Q190	CRDR 2-9-0202
CRDR 36881	CRDR 111461	CRDR 9-9-Q190	CRDR 3-8-0116
CRDR 36901	CRDR 111531	CRDR 9-9-Q200	CRDR 3-8-0116
CRDR 36901	CRDR 111533	CRDR 9-9-Q204	CRDR 3-8-0311
CRDR 46064	CRDR 111578	CRDR 9-9-Q204	CRDR 3-8-0337
CRDR 46167	CRDR 111584	CRDR 9-9-Q223	CRDR 3-8-0396
CRDR 46210	CRDR 111590	CRDR 9-9-Q245	CRDR 3-9-0017
CRDR 53878	CRDR 111596	CRDR 1-4-0049	CRDR 3-9-0026
CRDR 53979	CRDR 111598	CRDR 1-6-0236	CRDR 3-9-0026
CRDR 54220	CRDR 111599	CRDR 1-8-0044	CRDR 3-9-0065
CRDR 62172	CRDR 111601	CRDR 1-8-0044	CRDR 9-0-0591
CRDR 62228	CRDR 111609	CRDR 1-8-0397	CRDR 9-8-0893
CRDR 95665	CRDR 111610	CRDR 1-8-0501	CRDR 9-8-0893
CRDR 95698	CRDR 111675	CRDR 1-8-0522	CRDR 9-8-0931
CRDR 95712	CRDR 290115	CRDR 1-9-0006	CRDR 9-8-0931
CRDR 95818	CRDR 9-6-Q244	CRDR 1-9-0012	CRDR 9-8-0931
CRDR 95971	CRDR 9-8-Q047	CRDR 1-9-0019	CRDR 9-8-0966
CRDR 96350	CRDR 9-8-Q047	CRDR 1-9-0026	CRDR 9-8-0966
CRDR 98122	CRDR 9-8-Q063	CRDR 1-9-0030	CRDR 9-8-1055
CRDR 99702	CRDR 9-8-Q125	CRDR 1-9-0030	CRDR 9-8-1180
CRDR 99862	CRDR 9-8-Q148	CRDR 1-9-0062	CRDR 9-8-1212
CRDR 100062	CRDR 9-8-Q217	CRDR 1-9-0062	CRDR 9-8-1672
CRDR 100282	CRDR 9-8-Q217	CRDR 1-9-0062	CRDR 9-8-1697
CRDR 100306	CRDR 9-8-Q217	CRDR 1-9-0125	CRDR 9-8-1783
CRDR 100828	CRDR 9-8-Q239	CRDR 2-0-0102	CRDR 9-8-1856
CRDR 100886	CRDR 9-8-Q255	CRDR 2-7-0383	CRDR 9-8-1856
CRDR 101627	CRDR 9-8-Q265	CRDR 2-7-0383	CRDR 9-8-1856
CRDR 101883	CRDR 9-8-348	CRDR 2-7-0383	CRDR 9-8-1856
CRDR 102443	CRDR 9-8-Q352	CRDR 2-8-0080	CRDR 9-8-1866
CRDR 102702	CRDR 9-8-Q356	CRDR 2-8-0080	CRDR 9-9-0014

CRDR 9-9-0015
CRDR 9-9-0020
CRDR 9-9-0048
CRDR 9-9-0058
CRDR 9-9-0071
CRDR 9-9-0141
CRDR 9-9-0152
CRDR 9-9-0194
CRDR 9-9-0205
CRDR 9-9-0226
CRDR 9-9-0251
CRDR 9-9-0266
CRDR 9-9-0287
CRDR 9-9-0295
CRDR 9-9-0295
CRDR 9-9-0303
CRDR 9-9-0327
CRDR 9-9-0337
CRDR 9-9-0341
CRDR 9-9-0373
CRDR 9-9-0403
CRDR 9-9-0405
CRDR 9-9-0408
CRDR 9-9-0438
CRDR 9-9-0443
CRDR 9-9-0443
CRDR 9-9-0443
CRDR 9-9-0484
CRDR 9-9-0486
CRDR 9-9-0507
CRDR 9-9-0544
CRDR 9-9-0547
CRDR 9-9-0548
CRDR 9-9-0568
CRDR 9-9-0624
CRDR 9-9-0625
CRDR 9-9-0639
CRDR 9-9-0662
CRDR 9-9-0665
CRDR 9-9-0699
CRDR 9-9-0730
CRDR 9-9-0735
CRDR 9-9-0736
CRDR 9-9-0763
CRDR 9-9-0771
CRDR 9-9-0788
CRDR 9-9-0925
CRDR 2-9-00202

Noncited Violations

50-528,529,530/99-04-02	Failure to correct deficient condition for all turbine-driven AFW pumps governors.
50-528,529,530/99-04-03	Missing/loose bolts on EDG air start headers due to insufficient design basis information in instructions/procedures.
50-528,529,530/99-04-05	Installation of nonsafety-related circuit breakers into MCC cubicles affects two HPSI valves.
50-528,529,530/99-08-01	Drawings not maintained to reflect actual plant configuration.
50-528,529,530/99-12-02	Violation of TS 5.4.1 with two examples of a failure to follow lubrication program procedures.
50-528,529,530/98-10-01	Installation of improper component due to design error.
50-528,529,530/98-10-03	Inadequate design control for replacement of EDG cooling water line flexible joints.

Licensee Event Reports

LER 98-006
LER 97-006
LER 97-005
LER 97-004

Audit Reports

Plant Assessment Team Report, March 25, 1997

Adequacy of CRDR Evaluations - 1999 Significant and Adverse CRDRs, dated October 8, 1999

Corrective Action Effectiveness - 1999 Significant CRDRs, dated October 8, 1999

Corrective Action Verifications - 1998 Significant and Adverse CRDR, dated January 8, 1999

Corrective Action Audit Report 99-016, dated June 19, 1999

Audit Report 98-015, Integrated Issues Resolution Process, dated December 18, 1998

Audit Report 98-014, Maintenance Rule and Corrective Action, dated December 18, 1998

CRDR Initiation Self-Assessment, ID# 443-00473-MJS, dated June 24, 1999

Integrated Self-Assessment, Corrective Action Effectiveness, Actions from Training and Qualifications Audit 98-010, dated June 4, 1999

Integrated Self-Assessment, Corrective Action Effectiveness (CRDR Program), dated January 21, 1999

NAD Audit Report 98-015, Integrated Issues Resolution Process, December 18, 1999

Integrated Self-Assessment, Human Performance, dated July 13, 1999

Environmental Awareness Self Assessment, December 1998

CRDR Evaluation Review Process Self Assessment, January 7, 1999

Corrective Action Program Effective Integrated Self Assessment, January 26, 1999

Work Management Self Assessment, October 14, 1998

NAD Evaluation Report 99-0450, September 22, 1999

Trend Reports

Monthly Trend Report, December 1998
3rd Quarter Trend Report 1998
4th Quarter Trend Report 1998
1st Quarter Trend Report 1999
2nd Quarter Trend Report 1999
3rd Quarter Trend Report 1999

Logs

NAD Open DPO Log, dated November 12, 1999
NAD Closed DPO Log, dated November 30, 1999
Index of Closed DF Type Work Orders
Index of Closed DF Type Work Orders
Index of Open CM Type Work Orders

Index of Closed CM Type Work Orders

Other

The NAD DPO and MITR Report for October 1999

DPO 98-04, Safety Violations During Erection of Scaffolding Around Energized Transformers (Closed), issued July 21, 1998

DPO 99-02, System Engineer Disagreement with Placement of the Unit 1 SA (ESFAS) System into Category (a)(1) Monitoring for Exceeding Performance Criteria Unavailability (Open), issued June 9, 1999