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

August 30, 2000

Gregg R. Overbeck, Senior Vice
President, Nuclear
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SUBJECT: PALO VERDE NUCLEAR GENERATING STATION'S NRC SUPPLEMENTAL INSPECTION REPORT NO. 50-528/00-12; 50-529/00-12; 50-530/00-12

Dear Mr. Overbeck:

On August 28, 2000, the NRC completed a supplemental inspection at the Palo Verde Nuclear Generating Station, Unit 3, facility. The enclosed report presents the results of that inspection. The results were also discussed with you and other members of your staff in an exit meeting on August 25, 2000.

This inspection was an examination of activities conducted under your license as they relate to your handling of a change in performance as indicated by the high pressure safety injection unavailability performance indicator for Unit 3.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

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

Sincerely,

/RA/

P. Harrell, Chief
Project Branch D
Division of Reactor Projects

Docket Nos.: 50-528
50-529
50-530

License Nos.: NPF-41
NPF-51
NPF-74

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NRC Inspection Report No.
50-528/00-12
50-529/00-12
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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	50-528 50-529 50-530
License No.:	NPF-41 NPF-51 NPF-74
Report No.:	50-528/00-12 50-529/00-12 50-530/00-12
Licensee:	Arizona Public Service Company
Facility:	Palo Verde Nuclear Generating Station
Location:	5951 S. Wintersburg Road Tonopah, Arizona
Dates:	July 28 through August 26, 2000
Inspector:	J. H. Moorman, III, Senior Resident Inspector
Approved By:	P. H. Harrell, Chief, Project Branch D

ATTACHMENTS:

Attachment 1: Supplemental Information

Attachment 2: NRC's Revised Reactor Oversight Process

SUMMARY OF FINDINGS

Palo Verde Nuclear Generating Station
NRC Inspection Report No. 50-528/00-12; 50-529/00-12; 50-530/00-12

IR 05000528-00-12, IR 05000529-00-12, IR 05000530-00-12, on 7/28-8/26/2000; Palo Verde Nuclear Generating Station; Units 1, 2, and 3. Special inspection to review a white high pressure safety injection system performance unavailability indicator.

Cornerstone: Mitigating Systems

This supplemental inspection was performed by the NRC to address a change in performance indicated by the high pressure safety injection system performance unavailability indicator. This change was primarily due to the inoperability of high pressure safety injection system Train B Valve 3JSIBUV636, between January 6 and March 28, 2000. This performance issue was self-revealing during the performance of Surveillance Procedure 73ST-9XI14, "Train B HPSI Injection and Miscellaneous SI Valves - Inservice Test." The valve failed during the surveillance test as a result of oxidation on electrical contacts. The licensee identified the root cause as the lack of a preventive maintenance task for inspecting electrical contacts in control circuits.

Due to the licensee's acceptable performance in addressing this issue, white performance associated with the unavailability of high pressure safety injection system Train B will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program."

Report Details

01 Inspection Scope

This supplemental inspection was performed by the NRC to address a change in performance indicated by the Unit 3 high pressure safety injection system unavailability performance indicator. The change was primarily due to the inoperability of the high pressure safety injection system Train B between January 6 and March 28, 2000. This issue is related to the mitigating systems cornerstone.

02 Evaluation of Inspection Requirements

02.01 Problem Identification

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

High pressure safety injection Train B Valve 3JSIBUV0636 failed to open when the control board hand switch was taken to OPEN during the routine performance of surveillance Procedure 73ST-9XI14, "Train B HPSI Injection and Miscellaneous SI Valves - Inservice Test."

b. Determine by the evaluation documents how long the issue existed and prior opportunities for identification.

The licensee determined that the valve became inoperable at some point in time between January 6 and March 28, 2000. The licencee reviewed work orders documenting work on auxiliary contacts over a 15-year period and determined that there were no failures that would have provided a prior opportunity to identify this issue.

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

The licensee determined that this issue had a risk achievement worth of 1.21 for a single high pressure safety injection valve. A risk achievement worth of less than 2 is considered to be of low risk significance. The inspector concurred with the licensee's evaluation. There was no violation of regulatory requirements associated with this issue.

02.02 Root Cause and Extent of Condition Evaluation

a. Determine that the problem was evaluated using systematic methods to identify root causes and contributing causes.

The licensee classified the valve failure as an adverse maintenance rule functional failure and performed an equipment root cause of failure as required by Procedure 70DP-0EE01, "Equipment Root Cause of Failure Analysis." The inspector determined that the systematic method specified in this procedure was followed to identify the root and contributing cause of the issue.

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

The licensee's root cause evaluation was thorough in identifying the root and contributing causes. The lack of a preventive maintenance program for inspecting the electrical contacts in control circuits was identified as the root cause. A circuit/contact design that has no provision for self-cleaning was identified as a contributing cause.

c. Determine that the root cause evaluation included a consideration of prior occurrences of the problem and knowledge of prior operating experience.

The licensee's evaluation included a search of the work order data base to determine if similar problems had previously been identified with oxidized contacts. From 1985 to the present, there were a total of 22 work orders that addressed auxiliary contacts. The inspector reviewed a summary of each work order and determined that there were no prior opportunities to identify this issue.

d. Determine that the root cause evaluation included consideration of potential common causes and extent of condition of the problem.

The licensee's evaluation considered the potential for common cause and extent of condition in regard to Class 1E and non-Class 1E auxilliary contacts in motor starter circuits that do not open under load. The licensee has implemented adequate corrective action to address extent of condition.

02.03 Corrective Actions

a. Determine that appropriate corrective actions are specified for each root/contributing cause or that there is an evaluation that no actions are necessary.

The licensee took immediate corrective action to remove the oxidation from the auxiliary contacts and restore valve operability. The long-term corrective action for the root cause is to establish a new preventive maintenance task. This task will inspect all control circuit contacts that do no open under load and are located in motor control centers, whose failure has the ability to prevent both manual and automatic actuation of equipment that directly affects NRC performance indicators and Maintenance Rule equipment. Other corrective actions were assigned to define the scope of the problem and to conduct a followup assessment of the affected auxiliary contacts. The inspector considered these corrective actions to be adequate to prevent recurrence of the problem.

The inspector reviewed Condition Report Action Item 119774 that tracked the action to inspect all control circuit contacts that do no open under load and are located in motor control centers. Although the body of the root cause evaluation report stated that all control circuit contacts that could affect NRC performance indicators and the Maintenance Rule would be inspected, the actual wording of Condition Report Action Item 119774 stated that the scope would include only those control circuits that directly affected NRC performance indicators. The licensee stated that this was an oversight and Condition Report Action Item 119774 would be corrected.

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

The licensee's immediate corrective action repaired the oxidized contacts and restored high pressure safety injection system Train B to operability within the Technical Specification allowed outage time. The long-term corrective actions were scheduled to begin on September 30, 2000. The inspector considered these corrective actions to be appropriately prioritized.

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

The licensee has the corrective actions scheduled for completion according to the risk significance of the equipment or problem. The inspectors verified that the corrective actions have been entered into the condition report action item tracking system.

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

The licensee is monitoring the high pressure safety injection system under the maintenance rule program to ensure that further problems receive appropriate management attention.

4 OTHER ACTIVITIES

4OA6 Meetings

.1 Exit Meeting Summary

On August 25, 2000, the inspector conducted a meeting with Mr. Gregg Overbeck and other members of plant management and presented the inspection results. The plant management acknowledged the findings presented. Plant management also informed the inspector that no proprietary material was examined during the inspection.

ATTACHMENT 1

PARTIAL LIST OF PERSONS CONTACTED

LIST OF DOCUMENTS REVIEWED

Procedures:
70DP-0EE01, "Equipment Root Cause of Failure Analysis," Revision 9
73ST-9XI14, "Train B HPSI Injection and Miscellaneous SI Valves - Inservice Test," Revision 11
90DP-0IP10, "Condition Reporting," Revision 9

Condition Report/Disposition Request
116858, Adverse Maintenance Rule Functional Failure Evaluation for the Failure of 3JSIBUV0636, approved July 3, 2000

Other Documents:
Root Cause Investigation Manual for Significant CRDRs, Revision 0

ATTACHMENT 2

NRC'S REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
•Initiating Events	•Occupational	•Physical Protection
•Mitigating Systems	•Public	
•Barrier Integrity		
•Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC used two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the significance determination process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, or RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance.

The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http:\\www.nrc.gov\NRR\OVERSIGHT\index.html.