UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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October 20, 2003

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

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION - NRC INTEGRATED INSPECTION REPORT 05000528/2003004, 05000529/2003004, and 05000530/2003004

Dear Mr. Overbeck:

On September 20, 2003, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Palo Verde Nuclear Generating Station, Units 1, 2, and 3, facility. The enclosed integrated report documents the inspection findings, which were discussed on September 24, 2003, with Mr. Mauldin and other members of your staff.

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

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

Sincerely,

/RA/

Linda Joy Smith, Chief
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Dockets: 50-528
50-529
50-530

Licenses: NPF-41
NPF-51
NPF-74

Enclosure:
NRC Inspection Report 50-528/03-04, 50-529/03-04, and 50-530/03-04
w/Attachment: Supplemental Information

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ADAMS: √ Yes ☐ No Initials: __LJS__ **DMB (IE35)**
√ Publicly Available ☐ Non-Publicly Available ☐ Sensitive √ Non-Sensitive

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RIV:RI:DRP/D	RI:DRP/D	SRI:DRP/D	ASPE:DRP/D
GGWarnick	JFMelfi	NLSalgado	JLTaylor
T-LJS	**T-LJS**	**T-LJS**	**T-LJS**
10/20/03	10/20/03	10/20/03	10/20/03

C:DRP/D			
LJSmith			
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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets:	50-528, 50-529, 50-530
Licenses:	NPF-41, NPF-51, NPF-74
Report:	50-528/03-04, 50-529/03-04, and 50-530/03-04
Licensee:	Arizona Public Service Company
Facility:	Palo Verde Nuclear Generating Station, Units 1, 2, and 3
Location:	5951 S. Wintersburg Tonopah, Arizona
Dates:	June 22 through September 20, 2003
Inspectors:	N. Salgado, Senior Resident Inspector J. Melfi, Resident Inspector D. Proulx, Diablo Canyon Senior Resident Inspector G. Warnick, Resident Inspector
Approved By:	Linda Joy Smith, Chief, Project Branch D Division of Reactor Projects

Enclosure

CONTENTS

SUMMARY OF FINDINGS

IR 05000528/2003004, 05000529/2003004, 05000530/2003004; 6/22/03 - 9/20/03; Palo Verde Nuclear Generating Station, Units 1, 2, and 3; Integrated Resident and Regional Report.

This report covered a 3-month period of inspection by resident inspectors. No findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

Enclosure

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at essentially full power until August 7, 2003, when a planned power reduction to 40 percent to identify and repair a condenser tube leak was initiated. The unit was shutdown on August 9, 2003, to establish plant conditions to facilitate the repairs. Unit 1 returned to full power on August 12, 2003, and remained at essentially full power for the duration of the period.

Unit 2 operated at essentially full power until July 29, 2003, when a manual trip occurred due to a pressurizer spray valve failing open. Following repairs to the spray valve, the unit was returned to essentially full power on August 3, 2003, and remained there for the duration of the period.

Unit 3 began the period at 90 percent power, still escalating to full power following the condenser tube leak repairs, achieving full power on June 22, 2003. Unit 3 operated at essentially full power until July 28, 2003, when the unit automatically tripped due to a grid disturbance. Following the trip, the unit cooled down to replace the seal package on reactor coolant Pump 2A. After repairs were completed, the unit was returned to essentially full power on August 6, 2003, and remained there for the duration of the period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity [REACTOR-R]

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed Section 2 of the Updated Final Safety Analysis Report, toured the facility, and reviewed the storm water pollution protection plan to determine if the licensee had taken adequate precautions for the susceptibility of the site to heavy rains. The inspectors toured the berms and culverts surrounding the site as well and the plant elevations to ensure that adequate protections against heavy rains had been provided.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Partial Walkdown

The inspectors completed a partial system walkdown of the systems listed below to verify proper alignment. The inspection included a review of the applicable plant procedures, plant drawings, outstanding modifications, work orders, and condition report/disposition requests (CRDRs). The inspectors verified the following: all valves were properly aligned; there was no leakage that could affect operability; electrical

power was available as required; major system components were properly labeled; lubricated, and cooled; and hangers and supports were correctly installed and functional.

- July 17, 2003, auxiliary feedwater system Train A (Unit 2) during an auxiliary feedwater system Train B outage.

- July 30, 2003, shutdown cooling system Train B (Unit 3). The plant was in reduced inventory due to scheduled reactor coolant pump repairs.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

On June 30, 2003, the inspectors performed a complete system walkdown of accessible ports of the control room ventilation system on Units 1, 2, and 3. This walkdown was performed during the period when the Unit 3 Train B was taken out of service for scheduled maintenance. During this walkdown, the inspectors verified correct valve alignment, electric power availability, and no adverse material condition of system components. Positions of valves and electrical power breakers were compared to drawings. Operating fans were examined to ensure that any noticeable vibration was not excessive. The inspectors also observed the material condition of supports and foundations for system ducting.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Routine Inspection

a. Inspection Scope

The inspectors conducted tours of the seven areas listed below that are important to reactor safety and referenced in the Pre-Fire Strategies Manual to evaluate conditions related to licensee control of transient combustibles and ignition sources; the material condition, operational status, and operational lineup of fire protection systems, equipment and features; and the fire barriers used to prevent fire damage from propagation of potential fires.

- July 2, 2003, auxiliary building, 88-foot, 70-foot, 52-foot, and 40-foot elevations (Unit 3)
- July 10, 2003, auxiliary building, 88-foot, 70-foot, 52-foot, and 40-foot elevations (Unit 1)
- July 11, 2003, main steam support structure (Unit 1)
- July 16 and 17, 2003, auxiliary building, 88-foot, 70-foot, 52-foot, and 40-foot elevations (Unit 2)
- September 4, 2003, control building, 140-foot elevation (Unit 3)
- September 9, 2003, control building, 140-foot elevation (Unit 1)
- September 12, 2003, control building, 140-foot elevation (Unit 2)

b. Findings

No findings of significance were identified.

.2 Fire Drill - Emergency Diesel Generator Train A Room (Unit 1)

a. Inspection Scope

On July 31, 2003, the inspectors observed the 3rd quarter fire drill to evaluate the readiness of the licensee's personnel to prevent and fight fires. The inspectors reviewed the strategies and information in the Pre-Fire Strategies Manual, Revision 13, to verify that it accurately described the fire protection design features, fire area boundaries, and combustible loading for the lower cable spreading room. The inspectors observed the fire team enter the fire area and utilize the pre-fire plan strategies. The inspectors observed the equipment brought to the scene to evaluate whether sufficient equipment was available for the simulated fire. The inspectors observed firefighting directions and radio communications between the fire commander, fire department personnel, and the control room. Also, the inspectors reviewed the post-drill critique to evaluate whether the drill acceptance criteria was satisfied.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed Section 2.4 of the Updated Final Safety Analysis Report and toured the facility to determine if the licensee had taken adequate precautions against external flooding. The inspectors concentrated on the ability of the safety-related buildings to withstand the weight of the water during a design basis rainstorm. The inspectors performed a walkdown of the auxiliary building roofs of Units 1, 2, and 3 to determine if the roof drains were clear and free of debris to ensure that the design basis loads for the roof tops would not be exceeded.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

Requalification Activities Review by Resident Staff

a. Inspection Scope

On September 3, 2003, the inspectors observed operations crew performance during evaluated simulator Scenario SES-0-09-D06, "Inadvertent AFAS, SGTL w/o HPSI (MVAC-1)," dated July 25, 2003. The inspectors evaluated the simulator scenario, the crew performance, and the evaluator critique session conducted following the completion of the simulator scenario. The inspectors verified that the scenario was in conformance with NUREG 1021, "Operator Licensing Examiner Standards"; ES-604, "Dynamic Simulator Requalification Examination"; and management expectations.

b. Findings

No findings of significance were identified.

1R12 Maintenance Implementation

.1 Routine Maintenance Effectiveness Inspection

a. Inspection Scope

The inspectors verified the licensee’s appropriate handling of structure, system, and component performance or condition problems during review of the following equipment failures. Additionally, the inspectors evaluated the following equipment failures to verify that licensee personnel properly implemented the requirements of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants":

- Evaluation of excore nuclear instrument failures described in CRDR 2600710 (Units 1, 2, and 3)

b. Findings

No findings of significance were identified.

2. Evaluation of Unit 2 Pressurizer Spray Valve Maintenance

a. Inspection Scope

The inspectors reviewed maintenance performed on Valve RCE-V-100F per Work Order 2622839. Valve RCE-V-100F failed open on July 29, 2003, which led to a reactor coolant system pressure decrease, a manual trip of the reactor, and an automatic safety injection signal being initiated. The inspectors also reviewed the maintenance rule functional failure determination for compliance with the requirements of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants."

b. Findings

An unresolved item (URI) is being opened to evaluate the root cause of the failure of Unit 2 reactor coolant system spray Valve RCE-V-100F. This item is identified as URI 05000529/2003003-01, "Unit 2 Pressurizer Spray Valve Failure."

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

Throughout this inspection period, the inspectors reviewed daily and weekly work schedules to determine when risk significant activities were scheduled. The inspectors reviewed risk evaluations and overall plant configuration control for selected activities to verify compliance with 10 CFR 50.65 (a)(4) and licensee Procedure 30DP-9MT03, "Assessment and Management of Risk When Performing Maintenance in Modes 1 - 4," Revision 8. The inspectors discussed emergent work issues with work control personnel and reviewed the potential risk impact of these activities to verify that the work was adequately planned, controlled, and executed. The six specific activities reviewed were associated with planned and emergent maintenance on:

- July 9, 2003, scheduled online outage for emergency diesel generator, essential spray pond, essential chilled water, essential cooling water, and containment spray Train A (Unit 3)

- July 14, 2003, failure of feedwater isolation Valve 3JSGA-V-174 during inservice testing as described in CRDR 2620446 (Unit 3)

- July 14-15, 2003, design modification to install instrumentation on auxiliary feedwater Valves AFBHV30 and AFBHV31 (Unit 2)

- July 30, 2003, evaluation of last unit online actions due to reactor trips on Units 3 and 2 (Unit 1)

- July 31, 2003, reactor coolant Pump 2A seal replacement using the stop seal as the reactor coolant system maintenance boundary per Work Order 2623460 (Unit 3)

- August 22, 2003, reactor coolant system leak investigation due to elevated containment airborne activity (Unit 3)

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions

a. Inspection Scope

The inspectors observed the following nonroutine evolutions to verify that they were conducted in accordance with licensee procedures and Technical Specification requirements:

- On July 25, 2003, the inspectors reviewed the licensee's response to a reactor coolant system leakage increase of approximately 5 gpm. The licensee identified the leak source to be packing on pressurizer spray Valve RCE-PV-100F. The licensee entered containment, isolated the valve, and leakage numbers returned to expected values (Unit 2).

- On July 29, 2003, the inspectors reviewed and observed performance and response during portions of a manual reactor trip on Unit 2 due to reduced reactor coolant system pressure when a pressurizer spray valve opened and failed to close on operator demand. Containment isolation and safety injection actuation signals were received following the manual reactor trip by design (Unit 2).

- On July 31, 2003, the inspectors observed the subsequent reactor startup after the July 29, 2003, manual reactor trip (Unit 2).

- On August 14, 2003, the inspectors reviewed and observed site response to loss of power in northeast. The units remained stable and unaffected (Units 1, 2, and 3).

- On September 2, 2003, the inspectors reviewed and observed the operators response to an isolation of letdown. The isolation of letdown was due to a failed Temperature Instrument TI-233, the instrument that provides the signal to modulate cooling water flow to the letdown heat exchanger. The operators placed the controller in manual and adjusted cooling flow letdown heat exchanger and placed letdown back in service (Unit 2).

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

1. Routine Operability Reviews

a. Inspection Scope

The inspectors evaluated the operability determinations listed below for technical adequacy and assessed the impact of the condition on continued plant operation. Additionally, the inspectors reviewed Technical Specification entries, CRDRs, and equipment issues to verify that operability of plant structures, systems, and components were maintained or that Technical Specification actions were properly entered.

- August 5, 2003, emergency core cooling system actuation and injection of water into the reactor coolant system and the associated evaluation of the circumstances of the actuation and the total accumulated actuation cycles per Technical Requirements Manual Requirement T3.5.202 (Unit 2)

- August 7, 2003, evaluation of the feedwater venturi/ultrasonic flow meter comparison ratio change documented in CRDR 2625712 (Unit 2)

- August 20, 2003, 4160V Breaker 3EPBAS03P found racked out but not seismically secured, potentially leaving the 'A' switchgear in a non-seismically qualified condition, documented in CRDR 2629368 (Unit 3)

- August 27, 2003, Operability Determination 263 regarding postaccident equipment qualifications of fuel handling building radiation Monitors RU-145 and RU-146 (Units 1, 2, and 3)

b. Findings

No findings of significance were identified.

2. Cracked Control Room Switches

a. Inspection Scope

The inspectors evaluated Operability Determination 265, Revision 0, and Revision 1, regarding cracked safety-related switches (Units 1, 2, and 3) and CRDR 2590170 for technical adequacy and assessed the impact of the condition on continued plant operation. The inspectors reviewed equipment issues to verify that operability of plant structures, systems, and components were maintained.

b. Findings

These operability determinations documented a problem with cracked control room switches and evaluated the amount of cracks that a switch could have and still remain operable. The licensee identified 1,867 quality or quality related switches that were potentially cracked. The inspectors concluded that the operability determinations were reasonable and the licensee's risk analysis to determine inspection priorities was appropriate, therefore, no immediate safety concern exists. A URI is being identified pending completion of control room switch inspections and the final root cause determination. This item is identified as URI 05000528/2003004-02; 05000539/2003004-02; and 05000530/2003004-02, "Root Cause and Safety Significance for Cracked Control Room Switches."

1R16 Operator Work-Arounds

a. Inspection Scope

The inspectors conducted interviews with operators, operator workaround program managers, and quality assurance personnel. The inspectors reviewed Units 1, 2, and 3 control room deficiency and operator challenges tracking lists to determine the number of operator workarounds that existed and to assess the cumulative effect of the workarounds.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing

a. Inspection Scope

The inspectors observed and/or evaluated the results from the following postmaintenance tests to determine whether the test adequately confirmed equipment operability. The inspectors also verified that postmaintenance tests satisfied the requirements of Procedure 30DP-9WP04, "Postmaintenance Testing Development," Revision 13.

- July 1, 2003, retest following replacement of the fuel control valve for the gas turbine generator per Procedure 55OP-0GT02, "Gas Turbine Generator 2 Operating Instructions," Revision 35, per Work Order 2615341

- July 15, 2003, retest following corrective maintenance performed on the main steam and feedwater isolation system per Work Order 2620427 (Unit 3)

- July 22, 2003, static diagnostic test of Valves AFBHV30 and AFBHV31 per Procedure 32MT-9ZZ56, "MOV Testing and Setup Using MOVATS 3500 System," Revision 24 (Unit 2)

- July 29, 2003, work of auxiliary feedwater Valve 1JAFXHV033 per Work Order 2596130 (Unit 1)

- July 29, 2003, retest following corrective maintenance performed on pressurizer spray Valve RCE-PV-100F per Work Order 2622839 (Unit 2)

- August 4, 2003, performance of pressurizer spray Valve RCE-PV-100F functional stroke per Procedure 40OP-9ZZ05, "Power Operations," Appendix T, Revision 83A (Unit 2)

- August 18, 2003, troubleshooting to determine failure of solenoid Valves 1PSGUV-136A and/or 1PSGUV-1136B per Work Order 2627054 (Unit 1)

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities

1. Unit 3 Short Notice Outage

a. Inspection Scope

During the short notice outage required to repair reactor coolant Pump 2A seal package, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below. Documents reviewed during the inspection are listed in the attachment.

- Licensee configuration management, including maintenance of defense-in-depth commensurate with the shutdown risk for key safety functions and compliance with the applicable Technical Specification when taking equipment out of service

- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication and an accounting for instrument error

- Controls over the status and configuration of electrical systems to ensure that Technical Specification and outage safety plan requirements were met, and controls over switchyard activities
- Monitoring of decay heat removal processes
- Reactor water inventory controls including flow paths, configurations, alternative means for inventory addition, and controls to prevent inventory loss
- Startup and ascension to full power operation

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed the performance of and/or reviewed the documentation for the following surveillance tests. Applicable test data was reviewed to verify whether the associated risk significant structures, systems, and components met Technical Specifications, Updated Final Safety Analysis Report, and licensee procedure requirements. Also, the inspectors verified that the testing effectively demonstrated that the systems were operationally ready and capable of performing their intended safety function and that identified problems were entered into the corrective action program for resolution.

- July 2, 2003, Procedure 73ST-9SP01-3, "Essential Spray Pond Pumps - Inservice Test," Revision 17 (Unit 3)
- July 3, 2003, Procedure 74ST-9SQ15, "RU-43 and RU-144 Quarterly Functional Test Procedure," Revision 4 (Unit 2)
- July 8-10, 2003, Procedure 36ST-9SE01, "Excore Safety Linear Channel Log Calibration," Revision 30 (Unit 1)
- July 24, 2003, Procedure 36ST-9SE03, "Excore Safety Linear Channel Quarterly Calibration," Revision 39 (Unit 2)
- September 8, 2003, Procedure 73ST-9XI16-1, "Economizer FWIVs - Inservice Test," Revision 17 (Unit 1)

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness [EP]

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed portions of the announced emergency preparedness drill conducted on August 13, 2003, to evaluate emergency response organization performance by focusing on the risk-significant activities of classification, notification, and protective action recommendations. The inspectors also assessed personnel recognition of abnormal plant conditions, the transfer of emergency responsibilities between facilities, communications, and the overall implementation of the emergency plan. The drill was conducted using the Unit 1 simulator and all onsite response facilities (emergency operations facility, technical support center, and the operations support center) were activated.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors verified the accuracy of the performance indicator data reported and used the performance indicator definitions and guidance contained in NEI 99-2, "Regulatory Assessment Indicator Guideline," Revision 2, to verify the basis in reporting for each data element.

Mitigating Systems Cornerstone

Safety System Functional Failures (Units 1, 2, and 3)

The inspectors reviewed licensee event reports for all three units from August 2002, to July 2003, to verify the accuracy and completeness of data associated with the safety system functional failures performance indicator.

Auxiliary Feedwater System Unavailability (Units 1, 2, and 3)

The inspectors reviewed unit logs and maintenance rule unavailability tracking database and Technical Specification component condition records from July 2002, through June 2003, to verify the accuracy and completeness of the unavailability data used to calculate the auxiliary feedwater system unavailability for all three units.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution

1. Review of Spent Fuel Pool Inventory Control Adverse Trend

a. Inspection Scope

The inspectors selected two corrective action documents for detailed review, significant CRDR root cause investigation Report 2599869, "Operator Imbedded Distractions in Fuel Pool Cleanup System"; and Report 2451670, "Continuing Negative Trend in Inventory Issues." The reports were reviewed to ensure that the full extent of the issues were identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized. The inspectors evaluated the reports against the requirements of the licensee's corrective action program as delineated in Procedure 90DP-0IP10, "Condition Reporting," Revision 16, and 10 CFR Part 50, Appendix B.

b. Findings

There were no findings identified associated with the two reviewed samples, however, the inspectors observed that the root cause analysis associated with CRDR 2599869 did not identify the cause of a spent fuel pool inventory decrease that occurred on April 24, 2003. Consequently, corrective actions to preclude repetition were not identified as required by 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." Procedure 90DP-0OI10, Section 3.9, requires that Nuclear Assurance Department (NAD) review all significant CRDRs and concur with the evaluation results. Additionally, NAD is required to verify the adequacy of the evaluation and corrective actions taken or proposed. Section 3.9 also requires that the review and concurrence is performed after the CRDR evaluation has been completed. The licensee had not obtained NAD's concurrence for CRDR 2599869 at the close of this inspection period. An interim corrective action was implemented to station an operator locally at the spent fuel pool during all water transfer operations. This action will ensure an inventory decrease is identified early to prevent a safety significant loss of inventory event. A URI is initiated pending NAD's concurrence and final closure of CRDR 2599869 and is identified as URI 05000530/2003004-03, "NAD's Concurrence for Significant CRDR 2599869."

4OA3 Event Followup

.1 (Closed) Licensee Event Report (LER) 05000530/2003003-00: Technical Specification Violation for Failure to Calibrate Nuclear Instrumentation

On June 14, 2003, with Unit 3 operating in Mode 1 at approximately 40 percent rated thermal power, a Technical Specification violation occurred when required reactor power instrumentation was not calibrated as required by surveillance requirements. The unit had reduced power from approximately 98 percent power on June 13 in response to a condenser in-leakage problem. The Technical Specification surveillance criteria, for when calibration of nuclear power instrumentation is required, changes when power is below 80 percent from +/-2 percent of the heat balance calorimetric to -0.5-10 percent of the heat balance calorimetric. During the first performance of the surveillance following the reduction in power, several channels of nuclear power indication were more than -0.5 percent (but within -2 percent) below the heat balance calorimetric; however, a calibration of these channels was not performed. This Technical Specification violation was placed in the licensee's corrective action program and documented on CRDR 2613688. The condition would not have prevented the fulfillment of any safety function and did not result in a safety system functional failure. Thus, this issue constitutes a violation of minor significance and is not subject to enforcement action in accordance with Section IV of the NRC Enforcement Policy. This LER is closed.

.2 (Closed) LER 05000528, 529, 530/1998003-02: Main Steam Safety Valve As-Found Lift Pressures Outside of Technical Specification Limits

On September 1, 1998, prior to the Unit 3 seventh refueling outage, surveillance testing revealed that as-found lift pressures for four main steam safety valves were greater than Technical Specification limits and three failed to open on the first attempt. The initial LER and Supplement 1 described the details of this event and were both reviewed by inspectors when the LERs were issued. The event reviewed by the inspectors considered the preliminary safety analysis performed by the licensee and was documented in Inspection Report 050528/2000006, 050529/2000006, and 050530/2000006. Presently, the inspectors reviewed the additional information provided in Supplement 2 which included the final Safety Analysis TA-03-C07-98-019, "U3C7 Safety Valve As-Found Setpoint Analysis," Revision 0. The analysis found that the as-found condition of the Unit 3 main steam safety valves would not, under accident conditions, have resulted in peak pressures that would have exceeded the overpressure protection limits for the primary and secondary systems. No new findings were identified in the inspector's review. This finding constituted a violation of minor significance that is not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. The licensee documented the problem in CRDR 3-8-0214. This LER is closed.

.3 Review of Licensee Actions to a Grid Disturbance and Consequent Trip of Unit 3

a. Inspection Scope

Evaluated the grid disturbance that occurred on July 28, 2003, for unit status, performance of mitigating systems, and licensee actions in order to determine the need for a special inspection.

b. Findings

A special inspection will be performed and the observations and findings will be documented in Palo Verde Nuclear Generating Station - NRC Special Inspection Report 05000528/2003011, 05000529/2003011, and 05000530/2003011.

4OA6 Meetings, Including Exit

The resident inspectors presented inspection results to Mr. D. Mauldin, Vice President, Engineering and Support, and other members of the licensee's management staff on September 24, 2003.

The inspectors noted that while proprietary information was reviewed, none would be included in this report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

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S. Burns, Department Leader, System Engineering
R. Buzard, Regulatory Affairs
D. Carnes, Department Leader, Operations
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F. Gower, Site Representative, El Paso Electric
R. Henry, Site Representative, Salt River Project
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D. Leech, Department Leader, Nuclear Assurance Department
D. Marks, Section Leader, Regulatory Affairs
D. Mauldin, Vice President, Engineering and Support
G. Overbeck, Senior Vice President
S. Peace, Consultant, Communications
T. Radtke, Director, Maintenance
G. Reeves, Maintenance Rule Coordinator
D. Smith, Director, Operations
M. Sontag, Department Leader, Nuclear Assurance Department
M. Winsor, Director, Engineering

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000529/2003004-01	URI	Unit 2 Pressurizer Spray Valve Failure (Section 1R12.2)
05000528, 539, 530/2003004-02	URI	Root Cause and Safety Significance for Cracked Control Room Switches (Section 1R15.2)
05000530/2003004-03	URI	Nuclear Assurance Concurrence for Significant CRDR 2599869 (Section 4OA2.1)

Closed

05000530/2003003-00	LER	Technical Specification Violation for Failure to Calibrate Nuclear Instrumentation (Section 4OA3.1)
05000528, 529, 530/1998003-02	LER	Main Steam Safety Valve As-Found Lift Pressures Outside of Technical Specification Limits (Section 4OA3.2)

LIST OF DOCUMENTS REVIEWED

In addition to the documents noted in the inspection report, the following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings:

Section 1R04: Equipment Alignment

Procedure

40OP-9AF01, "Essential Auxiliary Feedwater System," Revision 30
40ST-9AF07, "Auxiliary Feedwater Pump AFA-P01 Monthly Valve Alignment," Revision 2

Plant Drawings

P & I Diagram 01-M-AFP-001, "Auxiliary Feedwater System," Revision 32
03-M-SIP-001, "P&I Diagram, Safety Injection and Shutdown Cooling System," Revision 20
03-M-SIP-002, "P&I Diagram, Safety Injection and Shutdown Cooling System," Revision 21

Work Order

Listing of System HJ

Section 1R05: Fire Protection

CRDR

2634560

Section 1R12: Maintenance Implementation

Procedures

Fisher Instruction Manual, Form 1783, "Type 546, 546S, and 546NS Elector-Pneumatic Transducers," dated December 1997

Fisher Instruction Manual, Form 5054, "3582 Series Valve Positioners, Type 3582i Valve Positioner, and 3583 Series Valve Stem Position Transmitters," dated June 2002

36MT-9RC01, "Pressurizer Pressure Control System Calibration," Revision 16

CRDR

2624427, 2620901, and 2600710

Section 1R14: Personnel Performance During Nonroutine Plant Evolutions

Procedure

40ST-9RC02, "ERFDADS (Preferred) Calculation of RCS Water Inventory," Revision 23

CRDRs

2624427, 2626521, 2628004, and 2628424

Section 1R15: Operability Evaluations

Procedures

40OP-9ZZ05, "Power Operations," Revision 83B
73TI-9MT04, "Plant Data for SGR and LP Turbine Replacement," Revision 3
40DP-9OP05, "Control Room Data Sheet Instructions," Revision 47
D2003-0007, FHA Radiation Dose to RE-145 and 146, dated June 19, 2003

CRDRs

2595871, 2596715, 2600710 2601332, 2625712, 2610524, and 2613918

Work Orders

2595012

Qualification Summary of Equipment, Class 1E Metal Clad Switchgear Units, December 1980.

Section 1R16: Operator Work-Arounds

Procedure

40DP-9OP15, "Operator Challenges And Discrepancy Tracking," Revision 15

Work Order

2630474

Section 1R19: Postmaintenance Testing

Procedures

40DP-9OP02, "Conduct of Shift Operations," Revision 27
40OP-9AG01, "Main Steam," Revision 31
32MT-9ZZ56, "MOV Testing and Setup Using MOVATS 3500 System," Revision 24

CRDRs

2620952 and 2616853

Work Orders

2513723 and 2513722

Section 1R20: Refueling and Outage Activities

Procedures

40OP-9ZZ16, "RCS Drain Operations," Revision 33
40OP-9ZZ20, "Reduced Inventory Operations," Revision 4

Section 1R22: Surveillance Testing

Procedures

72PA-9RX02, "Excore Nuclear Detector Calibration Voltages," Revision 6, Appendix C

CRDR

2622408

Section 4OA1: Performance Indicator Verification

Procedures

NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 2

Logs and Data Entry Forms for Auxiliary Feedwater System from May 2002 - July 2003