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

October 30, 2001

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

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION - NRC INTEGRATED INSPECTION REPORT 50-528/01-05; 50-529/01-05; 50-530/01-05

Dear Mr. Overbeck:

On October 6, 2001, the NRC completed an inspection at your Palo Verde Nuclear Generating Station, Units 1, 2, and 3, facility. The enclosed report documents the inspection findings, which were discussed on October 5, 2001, with you and other members of your staff.

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

Since September 11, 2001, the Palo Verde Nuclear Generating Station has assumed a heightened level of security based on a series of threat advisories issued by the NRC. Although the NRC is not aware of any specific threat against nuclear facilities, the heightened level of security was recommended for all nuclear power plants and is being maintained due to the uncertainty about the possibility of additional terrorist attacks. The steps recommended by the NRC include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with local law enforcement and military authorities, and limited access of personnel and vehicles to the site.

The NRC continues to interact with the Intelligence Community and to communicate information to the Palo Verde Nuclear Generating Station. In addition, the NRC has monitored maintenance and other activities which could relate to the site's security posture.

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response 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/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/

Linda Joy Smith, Chief
Project Branch D
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Dockets: 50-528
50-529
50-530
Licenses: NPF-41
NPF-51
NPF-74

Enclosure:
NRC Inspection Report
50-528/01-05; 50-529/01-05; 50-530/01-05

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JMKeeton	MSPeck	NLSalgado	GGWarnick	JHMoorman
Verbal-LJSmith	***E-LJSmith***	***T-JHMoorman (LJS)***	***T-JHMoorman (LJS)***	***T-LJSmith***
10/29/01	10/29/01	10/30/01	10/30/01	10/30/01

RI:DRS/PSB	C:DRP/D		
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10/29/01	10/30/01		

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets:	05000528 05000529 05000530
Licenses:	NPF-41, NPF-51, NPF-74
Report No:	2001-05
Licensee:	Arizona Public Service Company
Facility:	Palo Verde Nuclear Generating Station, Units 1, 2, and 3
Location:	5951 S. Wintersburg Road Tonopah, Arizona
Dates:	July 8, 2001 through October 6, 2001
Inspectors:	J. H. Moorman, III, Senior Resident Inspector, Reactor Projects Branch D N. L. Salgado, Resident Inspector, Reactor Projects Branch D G. G. Warnick, Resident Inspector, Reactor Projects Branch D J. M. Keeton, Resident Inspector, Waterford, Reactor Projects Branch E M. S. Peck, Resident Inspector, Columbia Generating Station, Reactor Projects Branch E J. B. Nicholas, Ph.D., Senior Health Physicist, Plant Support Branch
Approved By:	L. J. Smith, Chief Project Branch D Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000528/2001-05, IR 05000529/2001-05, IR 05000530/2001-05, Arizona Public Service Company, Palo Verde Nuclear Generating Station; Units 1, 2, and 3, on 07/08 through 10/06/01, routine integrated report. No findings identified.

The report covered a 12-week period of resident inspection and in-office followup of an occupational radiation safety performance indicator issue by a regional senior health physicist inspector. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using IMC 609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/index.html.

A. Inspector Identified Findings

No findings of significance were identified.

B. Licensee Identified Violations

One violation of very low significance, which was identified by the licensee, has been reviewed by the inspectors. Corrective actions taken or planned by the licensee appear reasonable. This violation is listed in Section 4OA7 of this report.

Report Details

Summary of Plant Status

Unit 1 operated at essentially 100 percent power for the duration of this inspection period.

Unit 2 began this inspection period at essentially 100 percent power. On July 13, 2001, the Unit 2 reactor tripped on a valid local power density/departure from nucleate boiling trip signal after main steam isolation valves in three of four main steam lines closed. Valve closure occurred because of a failure in the main steam isolation system logic cabinet. The unit was restarted on July 15 and operated at essentially 100 percent power until September 22, when power was reduced to 60 percent to facilitate repairs on main feedwater Pump B. On September 23, power was restored to 100 percent, and operated at that power for the duration of this inspection period.

Unit 3 began this inspection period at essentially 100 percent power. On July 13, 2001, licensee management directed unit operators to reduce power to 97 percent due to equipment concerns with main turbine vibrations and main transformer gas buildup. The unit remained at 97 percent power until August 17, when a forced shutdown occurred due to an inoperable containment. Excessive leakage was identified through the fuel transfer tube quick operating closure device and the unit was shutdown as required by Technical Specifications (see Section 1R14.2). The unit was restarted on August 19, and operated at 97 percent power until September 29, when the unit was shut down for the ninth refueling outage. The unit was in Mode 6 at the end of this inspection period.

1. REACTOR SAFETY
   Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather (71111.01)

a. Inspection Scope

On August 7, 2001, the operators in Unit 1 entered Procedure 40AO-9ZZ21, “Acts of Nature,” Revision 13, in response to gusting winds greater than 50 mph indicated at the 200 hundred foot level of the onsite meteorological tower. The National Weather Service confirmed that no severe weather warnings had been issued for the area and that the wind gusts were out flow from a thunderstorm in the area with no long-term significance. The inspectors reviewed the Technical Specifications, plant logs, and operating procedures to verify operator actions had been appropriate.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment - Routine Inspection (71111.04)

.1 Partial Walkdown Inspections

a. Inspection Scope

The inspectors completed a partial walkdown of the systems listed below when the redundant train in the system was out of service. This inspection included a review, as necessary, of the applicable plant procedures, plant drawings, outstanding modifications, work orders and condition report/disposition requests (CRDR). The inspectors verified the following: major flowpath 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 19, 2001 - Essential Spray Pond System Train A (Unit 1)
- August 10, 2001 - Low Pressure Safety Injection (LPSI) System Train B (Unit 3)
- August 29, 2001 - Diesel Generator, Essential Cooing Water System, Essential Spray Pond System Train B (Unit 3)
- August 30, 2001 - High Pressure Safety Injection System Train B (Unit 2)

.2 Complete Walkdown of the Low Pressure Safety Injection and Containment Spray Systems

a. Inspection Scope

On July 20, 2001, the inspectors completed walkdowns of the Unit 1, 2, and 3 LPSI and containment spray (CS) systems. The inspectors verified the system was capable of performing required safety functions, that the licensee properly performed mechanical and electrical system alignments and system valves did not exhibit leakage that would adversely impact function. The inspectors also checked major system components for correct labeling and lubrication, that hangers and supports were correctly installed and functional and essential support systems were operational.

The inspectors reviewed the following documents to determine correct system alignment:

- Unit 3 LPSI System Alignment Verification (Procedure 40ST-9SI13, "Low Pressure Safety Injection System Alignment Verification," Revision 2, performed June 24 and July 8, 2001)
- Unit 3 CS Valve Verification (Procedure 40ST-9SI04, "Low Pressure Safety Injection System Alignment Verification," Revision 1, performed July 8, 2001)
- Unit 3 Recovery from Shutdown Cooling to Normal Operating Lineup - Auxiliary

Building and Containment Building Safety Injection Valve Verification List (Procedure 40OP-9SI02, "Recovery from Shutdown Cooling to Normal Operating Lineup," Revision 30, performed April 26, 2000)

- Unit 3, Appendix H, Safety Injection Instrument Valve Alignment List (Procedure 40OP-9SI02, "Recovery from Shutdown Cooling to Normal Operating Lineup," Revision 30, performed April 26, 2000)
- Unit 3 Appendix C - Train Safety Injection Electrical Verification List (Procedure 40OP-9SI02, "Recovery from Shutdown Cooling to Normal Operating Lineup," Revision 30, performed April 28, 2000)
- Unit 3 Locked Valve Monthly Surveillance (Procedure 40ST-9ZZ01, "Locked Valve Monthly Surveillance," Revision 5, performed June 24, 2001)
- Unit 3 SI Train Emergency Core Cooling System Throttle Valves - Inservice Test (Procedure 73ST-3XI11, "Safety Injection Train A ECCS Throttle Valves Inservice Test," Revision 13, performed May 16, 2001)
- Drawings 03-M-SIP-001 and -002, Safety Injection and Shutdown Cooling, Revision 20
- Drawings 03-E-PBA-001 and -002, Single Line Diagram, 4.16kV Class 1E Power System Switchgear 3E-PBB-SO4, Revisions 5 and 7

The inspectors also reviewed selected LPSI and CS CRDRs, outstanding Unit 3 Corrective Maintenance Requests, the System Health Report (first Quarter, 2001) and outstanding design issues. The licensee did not have any current temporary modifications on either of the two systems. The inspectors also reviewed the licensee's response to NRC Bulletin 88-04: Potential Safety-Related Pump Loss, 161-01159-EEVB/BJA, July 8, 1988.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors conducted tours of the areas listed below that are important to reactor safety and referenced in the Prefire 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.

- August 9, 2001 - Auxiliary building 100-foot and 120-foot levels (Unit 1)

- August 15, 2001 - Diesel generator building (Unit 2)
- August 18, 2001 - Main steam support structure 80-foot elevation (Unit 2)
- September 7, 2001 - Main steam support structure (Unit 1)
- September 7, 2001 - Turbine building 100-foot elevation, Fire Zone TB-1 (Unit 2)
- September 26, 2001 - Control building 120-foot elevation (Unit 2)

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

On August 15, 2001, the inspectors observed the conduct of two evaluated simulator scenarios for a shift crew during annual requalification examinations. The inspectors evaluated the simulator scenarios, the crew performance, and the evaluator critique sessions conducted following the completion of the simulator scenarios. The inspectors verified that the examinations were 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 Rule Implementation (71111.12)

a. Inspection Scope

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":

- Main Steam Safety Valves 2JSGEPSV554, 560, and 561 setpoint deviations as reported in CRDR 2406676, July 17, 2001 (Unit 2)

- Essential Spray Pond Pump Motor 1MSPBP01 insulation resistance degradation as reported in CRDR 2407009, July 18, 2001 (Unit 1)

- Main Steam Isolation Valve 180 control card failure as reported in CRDR 2405824, July 13, 2001 (Unit 2)

- Instrument air system Maintenance Rule functional failures reported in CRDRs 2317329, 2411638, and 2406426 (Units 1, 2, and 3)

- Abnormal voltage/frequency swings on emergency diesel generator Train A reported in CRDR 2410347, July 31, 2001 (Unit 3)

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation (71111.13)

a. Inspection Scope

Throughout the inspection period, the inspectors reviewed daily and weekly work schedules to determine when risk-significant activities were scheduled. The inspectors reviewed selected activities regarding risk evaluations and overall plant configuration control to verify compliance with Procedure 30DP-9MT03, “Assessment and Management of Risk When Performing Maintenance in Modes 1 - 4,” Revision 3. 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 inspectors verified that plant configurations allowed by the Plant Configuration Risk Indicator Matrix (PCRIM) were consistent with actual plant conditions during maintenance. The specific activities reviewed were associated with planned and emergent maintenance on:

- July 31, 2001 - Troubleshoot abnormal voltage/frequency swings on emergency diesel generator Train A that occurred during monthly surveillance test per WO 2410350 (Unit 3)

- August 5, 2001 - Troubleshoot and repair failed solenoid on Valve SGA-UV-134A that occurred during scheduled performance of Procedure 73ST-9AF02, "AFA-P01 - Inservice Test," Revision 18 per Work Order 2411549 (Unit 3)

- July 18, 2001 - Troubleshooting and risk evaluation associated with degradation of insulation on electrical power cable to Pump 1MSPBP01 per CRDR 2407009 (Unit 1)

- August 30, 2001 - Scheduled maintenance on high pressure safety injection Pump A and Valve 2JSIAUV637 per Work Orders 2363392 and 2372153 (Unit 2)

- August 31 through September 3 - Scheduled switchyard east bus outage risk evaluation in restricted use PCRIM 9-2 (Units 1, 2, and 3)

- August 29 - Scheduled online outage for emergency diesel generator, essential spray pond, essential chilled water, essential cooling water, and containment spray Train A (Unit 3)

- September 4 - Scheduled online outage for LPSI Train A (Unit 2)

- September 13, 2001 - Scheduled online outage for emergency diesel generator, essential spray pond, essential chilled water, essential cooling water, and containment spray Train A (Unit 2)

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14)

.1 Reactor Trip From Full Power Due to Failure in Main Steam Isolation System Logic Cabinet (Unit 2)

a. Inspection Scope

At 8:21 a.m. (MST) on July 13, 2001, the Unit 2 reactor tripped from full power on a valid local power density/departure from nucleate boiling trip signal after main steam isolation valves in three of four main steam lines closed. Valve closure occurred because of a failure in the main steam isolation system logic cabinet. The inspectors responded to the control room and observed operator response to the trip. The inspectors also reviewed the unit logs, sequence-of-events printouts and other data taken from the trip to determine if operator response was in accordance with applicable procedures.

Unit 2 was restarted on July 15, 2001. The inspectors observed portions of the startup to determine if plant operations were conducted in accordance with approved procedures and within Technical Specification (TS) limits.

b. Findings

No findings of significance were identified.

.2 Technical Specification Required Shutdown for Inoperable Containment (Unit 3)

a. Inspection Scope

On August 17, 2001, the Unit 3 containment was declared inoperable due to a failed containment barrier. Operators commenced a reactor shutdown as required by TS 3.6.1.B since containment operability could not be restored within one hour. Repairs were completed, while in mode 3, and the unit was restarted on August 19. The inspectors observed portions of the shutdown and startup, and reviewed unit logs, mode change checklists, and other data to determine if the evolutions were conducted in accordance with plant procedures and TS requirements.

The source of leakage into the containment sump was confirmed to be water from the fuel pool transfer canal leaking past the fuel transfer tube quick operating closure device (QOCD). The licensee initiated CRDR 2414777 for root cause investigation. The inspectors interviewed personnel and reviewed CRDR 2414777 to determine whether the QOCD in the as-found condition would have properly isolated the containment penetration during accident conditions.

The inspectors noted that the QOCD had replaced a blank flange that was originally approved by the NRC to isolate this containment barrier. The inspectors reviewed

related design and license basis documents to determine whether the QOCD met the NRC approved license basis as modified pursuant to 10 CFR 50.59.

b. Findings

The inspectors identified an unresolved item regarding the ability of the QOCD to properly isolate containment and the acceptability of the safety evaluation which approved the design modification that replaced the fuel transfer tube closure flange with the QOCD.

The licensee's root cause investigation, CRDR 2414777, was not completed at the close of this inspection. The licensee was considering several possible causes of this failure that ranged from design problems to installation problems. In addition, review of the safety evaluation for the design change from a blank flange to a QOCD to confirm adequate consideration of all applicable failure modes was not complete at the end of the inspection period. This issue remains an unresolved item and will be further reviewed after the licensee's root cause investigation is complete (URI 50-530/01-005-01).

1R15 Operability Evaluations (71111.15)

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 TS entries, CRDRs, and equipment issues to verify that operability of plant structures, systems, and components was maintained or that TS actions were properly entered.

- Compliance with the actions of TS 3.7.2 after the Unit 2 reactor trip on July 13 and mode change on July 14 (Unit 2)

- Operability Determination 2407828, "Degraded 7R Cylinder Compression Observed on Unit 3 Diesel Generator B," identified on July 17, 2001, CRDR 2408073 (Unit 3)

- CRDR 2410347, abnormal voltage/frequency swings on emergency diesel generator Train A during the performance of the monthly surveillance test (Unit 3)

- CRDR 2406617, operability of Unit 3 LPSI system containment isolation Valve V-227 following system leakage through relief Valve STE-PSV-449 (Unit 3)

- Compliance with the actions of TS 3.6.1 following discovery that the QOCD was allowing water to leak from the fuel transfer canal into the containment (Unit 3)

- Operability Determination 2417545, "Is Unit 2 Operable With Elevated Levels of Chromium and Iron In Its Lube Oil?," identified on August 30, 2001, CRDR 2345330 (Unit 2)

- Compliance with TS 3.1.7.D for power dependent insertion limit alarm operability as questioned by the inspectors on August 20, 2001 during the Unit 3 power ascension, CRDR 2415129

- CRDR 2414747, operability of the reactor coolant system with potential loose metallic parts from damaged control element assemblies that were possibly left in the reactor following the 9th refueling outage (Unit 1)

- CRDRs 2403932 and 2416826, compliance with TS 3.6.1, containment operability, during maintenance and/or surveillance testing of containment pressure transmitters (Units 1, 2, and 3)

- Performance of surveillance Procedure 42ST-2ZZ02, "Inoperable Power Sources Action Statement," Revision 23, for scheduled emergency diesel generator maintenance (Unit 2)

- Operability Determination 066, Revision 3, applicability to loss of steam trap isolation Valve 2JSGAUV1134 position indication, CRDR 2425046 (Unit 2)

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

.1 Review of the Cumulative Effects of Operator Workarounds

a. Inspection Scope

The inspectors interviewed operators and reviewed the Control Room Deficiency Log in Units 1, 2, and 3 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 (71111.19)

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 Retest Development,” Revision 12.

- Work Order 2371881 Performance of Procedure 73ST-3XI12, "Safety Injection

Train B ECCS Throttle Valves - Inservice Test," Revision 14 on July 19, 2001 following maintenance Valve SIB-UV-625 (Unit 3)

- Work Order 2411549 Performance of Procedure 73ST-9XI34, "AFA-P01 Steam Supply Valves - Inservice Test," Revision 1 and 73ST-9AF02, "AFA-P01 - Inservice Test," Revision 18 on August 5 following maintenance on Valve SGA-UV-134A (Unit 3)

- Work Order 2372621 Performance of Procedure 73ST-3XI11, "Safety Injection Train A ECCS Throttle Valves - Inservice Test, Revision 13, on August 10 following maintenance on Valve SIA-HV-306 (Unit 3)

- Work Order 2370220 Performance of Procedure 40ST-9DG01-3, "Diesel Generator A Test," Revision 15, on August 30 following various maintenance activities (Unit 3)

- Work Order 2406055 Performance of Procedure 73ST-9SG01, "MSIVs - Inservice Test," Revision 12, on July 14, 2001, following work on main steam isolation system logic cards per WO 2405777 (Unit 2)

- Work Order 2372851 Performance of Procedure 73ST-9ZZ18, "Main Steam and Pressurizer Safety Valve Set Pressure Verification," Revision 16 (Unit 3)

- Work Order 2406349 Retests associated with the troubleshooting of steam generator Valves SGBUV1135A and SGBUV1135B for operability justification (Unit 1)

- Work Order 2383342 Performance of Procedure 40ST-9DG01, "Diesel Generator A Test," Revision 15, on September 28, 2001, following emergency diesel generator Train A 9R liner replacement per Work Order 2415722 (Unit 2)

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed the performance of and/or reviewed documentation for the following surveillance tests. Applicable test data was reviewed to verify whether they met TS, Updated Final Safety Analysis Report, and licensee procedure requirements.

Also, the inspectors verified that the testing effectively demonstrated that the systems were operationally ready, capable of performing their intended safety functions, and that identified problems were entered into the corrective action program for resolution.

- July 14, 2001 — Procedure 73ST- 9SG01, "MSIVs - Inservice Test," Revision 12 (Unit 2)
- July 19, 2001 — Procedure 73ST-3XI12, "Safety Injection Train B ECCS Throttle Valves," Revision 14 (Unit 3)
- July 12, 2001 — Procedure 73ST-9XI09, "Train A LPSI and HP Check Valves - Inservice Test," Revision 5 (Unit 1)
- August 4, 2001 — Procedure 40ST-9DG01, "Diesel Generator A Test," Revision 18 (Unit 1)
- September 11, 2001 — Procedure 73ST-9EW01-2, "Essential Cooling Water Pumps - Inservice Test," Revision 15 (Unit 2)

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors evaluated Unit 3 Temporary Modification 2352067, "Installation of spare 15 VDC power supply in the main steam and feedwater isolation system cabinets to provide redundancy for the existing power supplies," and associated 10 CFR 50.59 screening. The inspectors reviewed these against the system design-basis documentation and verified that the modification did not adversely affect system operability or availability. Additionally, the inspectors verified that the installation was consistent with applicable modification documents and conducted with adequate configuration control.

b. Findings

No findings of significance were identified.

Emergency Preparedness (EP)

1EP6 Drill Evaluations

a. Inspection Scope

On August 30, 2001, the licensee conducted an emergency preparedness drill. Prior to

the drill, the inspectors reviewed the scenario to determine whether it was of appropriate scope to be included in the performance indicator statistics as intended by the licensee. During the drill, the inspectors observed performance of the operations crew in the simulator, as well as licensee performance in the Technical Support Center. The inspectors observed activities involving event classification, notification, and protective action recommendations. The inspectors' observations were compared with licensee identified findings to determine the adequacy of the licensee's exercise evaluation process.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification (71151)

.1 Residual Heat Removal System and Emergency AC Power Unavailability

a. Inspection Scope

The inspectors verified the accuracy and completeness of licensee reported data associated with the residual heat removal system and emergency AC unavailability performance indicators (PI). The inspector reviewed the following documents during the PI verification:

- PI data summary report for the second quarter of 2000
- PI data summary report for the third quarter of 2000
- PI data summary report for the fourth quarter of 2000
- PI data summary report for the first quarter of 2001
- PI data summary report for the second quarter of 2001
- Safety Injection System Health Reportfor the first quarter of 2001
- PVNGS Maintenance Rule Unavailability Detail Report, July 12, 2001
- NEI 99-02, “Regulatory Assessment Performance Indicator Guidelines,” Revision 1
- Unit 1, 2 and 3 Detail Report for RHR Unavailability, April 2000 - April 2001
- Unit 1, 2 and 3 Detail Report for Emergency Diesel Generator Unavailability, January 2001 - June 2001
- Applicable Unit 1, 2, and 3 Unit Logs

b. Findings

No findings of significance were identified. The performance indicators all remained in the licensee response band (Green).

.2 Safety System Functional Failures

a. Inspection Scope

The inspectors verified the accuracy and completeness of data associated with the safety system unavailability PI. The following procedures and documents were reviewed during the verification:

- PI data summary report for the second quarter of 2000
- PI data summary report for the third quarter of 2000
- PI data summary report for the fourth quarter of 2000
- PI data summary report for the first quarter of 2001
- NEI 99-02, “Regulatory Assessment Performance Indicator Guidelines,” Revision 1
- NUREG-1022, “Event Reporting Guidelines 10 CFR 50.72 and 50.73," Revision 1
- Licensee Event Report (LER) 50-529-2000-006-00, Safety Injection Tank Outlet Check Valve Back-Leakage Causes Degraded Safety Injection Flow
- LER 50-529-2000-005-00, Safety Injection Discharge Check Valve Back Leakage Causes Degraded Safety Injection Flow

b. Findings

No findings of significance were identified. The performance indicator remained in the licensee response band (Green).

.3 Auxiliary Feedwater System Unavailability

a. Inspection Scope

The inspectors reviewed the Maintenance Rule database for the second quarter of 2001 to verify the accuracy and completeness of the unavailability data for the auxiliary feedwater systems for all three units. The inspectors also reviewed the licensee event reports and CRDRs issued during that time frame to verify the accuracy and completeness of the safety system functional failures performance indicator for all three units.

b. Findings

No findings of significance were identified. The performance indicator remained in the licensee response band (Green).

.4 (Closed) Unresolved Item 50-530/0104-01: Occupational Radiation Safety Performance Indicator Issue

An unresolved item was identified during a PI verification inspection concerning the reporting of a performance indicator involving the loss of control of a locked high radiation area event discussed in CRDR 117874, dated May 4, 2000. This event was documented in NRC Inspection Report 50-528, 50-529, 50-530/01-04. The licensee identified a high radiation area near the Unit 3 LPSI Pump B cyclone separator, which read 1200 millirem per hour at 30 centimeters on May 4, 2000, and did not report the event as a performance indicator occurrence in the Occupational Radiation Safety Cornerstone.

The inspector reviewed the NRC and licensee's conclusions regarding the performance indicator occurrence resulting from this event. In a letter dated July 11, 2001, the licensee stated that they would update the Occupational Radiation Safety performance indicator data to include the Unit 3 LPSI pump room event for the second quarter of 2000 (April to June 2000) during the next quarterly update submitted to the NRC no later than July 23, 2001. On July 26, 2001, the inspector confirmed that the licensee amended its reported performance indicator occurrences for the second quarter of 2000. The data change did not affect the color of the performance indicator. Based on the licensee's amended performance indicator report for the second quarter of 2000, Unresolved Item (URI) 50-530/01-004-01 was closed.

4OA6 Exit Meeting Summary

The resident inspector presented the inspection results to Mr. G. Overbeck, Senior Vice President - Nuclear, and other members of the licensee management on October 5, 2001. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee Identified Violations

The following finding of very low significance (Green) was identified by the licensee and is a violation of NRC requirements, which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600 for being dispositioned as a noncited violation (NCV).

If the Palo Verde Nuclear Generating Station contests this 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 U.S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator Region IV; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission,

Washington, DC 20555-0001; and the NRC Resident Inspector at the Palo Verde Nuclear Generating Station.

NCV Number	
50-529/01-005-02	Technical Specification 5.4, “Procedures,” requires that written procedures be implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Section 3.i of this Regulatory Guide includes instructions for operating the main steam system. Procedure 40OP-9SG01, “Main Steam,” Revision 23, provides instructions for critical steam trap blowdown operation. On September 22, 2001, a Unit 2 steam trap isolation valve shut due to loss of control power. Steam trap blowdown was not performed within the time requirements of Procedure 40OP-9SG01, which resulted in the licensee declaring auxiliary feedwater Pump A inoperable for approximately 4 hours. This was identified in the licensee's corrective action program as CRDR 2425046. This finding is only of very low significance because it only affects the mitigation systems cornerstone and all mitigating systems, including auxiliary feedwater Pump A, were functional.

ATTACHMENT

KEY POINTS OF CONTACT

Licensee

S. Bauer, Section Leader, Nuclear Regulatory Affairs
D. Carnes, Unit 1 Department Leader, Operations
B. Ide, Vice President, Nuclear Production
D. Jurn, Section Leader, Operations Support
A. Krainik, Director, Emergency Services Department
D. Marks, Section Leader, Nuclear Regulatory Affairs
D. Mauldin, Vice President, Nuclear Engineering and Support
G. Overbeck, Senior Vice President, Nuclear
T. Radtke, Director, Maintenance
D. Smith, Director, Operations
M. Sontag, Section Leader, Nuclear Assurance
R. Stroud, Senior Consultant, Nuclear Regulatory Affairs
M. Winsor, Director, Nuclear Engineering

NRC

L. Smith, Chief, Project Branch D

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-530/01-005-01	URI	Root Cause Investigation for Containment Operability with Quick Operating Closure Device Leakage (Section 1R14.2)
50-529/01-005-02	NCV	Auxiliary Feedwater Pump Became Inoperable Due to Improper Operation of a Steam Trap (Section 4OA7)

Closed

50-530/01-004-01	URI	Occupational Radiation Safety Performance Indicator Issue
50-529/01-005-01	NCV	Auxiliary Feedwater Pump Became Inoperable Due to Improper Operation of a Steam Trap (Section 4OA7)

DOCUMENTS REVIEWED

The following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings:

LIST OF DOCUMENTS REVIEWED

PROCEDURES

PROCEDURE	TITLE	REVISION
36ST-9SB28	PPS Input Loop Calibrations for Parameter 13, (Hi Cont Press) and Parameter 17, (HH Cont Press)	8
40OP-9DG02	Emergency Diesel Generator B	14
40OP-9SI02	Recovery from Shutdown Cooling to Normal Operating Lineup	39
40OP-9SP01	Essential Spray Pond (SP) Train A	28
40OP-9SP02	Essential Spray Pond (SP) Train B	25
40OP-9ZZ03	Reactor Startup	22
40OP-9ZZ04	Plant Startup Mode 2 to Mode 1	27
40OP-9ZZ05	Power Operations	62
40OP-9ZZ07	Plant Shutdown Mode 1 to Mode 3	13
43OP-3EW02	Essential Cooling Water System (EW) Train B	21
90DP-OIP10	Condition Reporting	11

Drawings

01-M-SPP-001, "Essential Spray Pond System," Revision 34
01-M-SIP-001/002, “Safety Injection and Shutdown Cooling System,” Revision 25
03-M-EWP-001, "Essential Cooling Water System," Revision 11
13-M-SPP-002, "Essential Spray Pond System," Revision 15

Condition Report/Disposition Requests

53933

MISCELLANEOUS

NUMBER	DESCRIPTION	REVISION
	Updated Final Safety Analysis Report	10

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
CRDR	Condition Report/Disposition Request
CS	Containment Spray Systems
LER	Licensee Event Report
LPSI	Low Pressure Safety Injection
NCV	noncited violation
PCRIM	Plant Configuration Risk Indicator Matrix
PI	Performance indicator
QOCD	Quick Operating Closure Device
SDP	significance determination process
TS	Technical Specifications
URI	Unresolved Item
WO	Work Order