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

July 31, 2000

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

SUBJECT: NRC PALO VERDE NUCLEAR GENERATING STATION INSPECTION
REPORT NO. 50-528/00-07; 50-529/00-07; 50-530/00-07

Dear Mr. Overbeck:

This refers to the inspection conducted from May 21 through July 8, 2000, at the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, facility. The enclosed report presents the results of this inspection. The results of this inspection were discussed on July 7, 2000, with you and members of your staff.

This inspection was an examination of activities conducted under your licenses as they relate to safety, compliance with the Commission's rules and regulations, and with the conditions of your licenses. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel.

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. H. 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

Enclosure:
NRC Inspection Report No.
50-528/00-07; 50-529/00-07; 50-530/00-07

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Only inspection reports to the following:
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NRR Event Tracking System **(IPAS)**
PV Site Secretary **(TLB4)**
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DOCUMENT NAME: R:_PV\2000\PV2000-07RP-JHM.wpd

RIV:RI:DRP/D	RI:DRP/D	SRI:DRP/D	BC:DRP/D
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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.:	50-528/00-07 50-529/00-07 50-530/00-07
Licensee:	Arizona Public Service Company
Facility:	Palo Verde Nuclear Generating Station, Units 1, 2, and 3
Location:	5951 S. Wintersburg Road Tonopah, Arizona
Dates:	May 21 through July 8, 2000
Inspectors:	J. H. Moorman, III, Senior Resident Inspector D. E. Corporandy, Resident Inspector N. L. Salgado, Resident Inspector G. G. Warnick, Resident Inspector, Region II
Approved By:	P. Harrell, Chief, Project Branch D, Division of Reactor Projects

Attachment 1: Supplemental Information

Attachment 2: NRC's Revised Reactor Oversight Process

SUMMARY OF FINDINGS

Palo Verde Nuclear Power Station
NRC Inspection Report 50-528/00-07; 50-529/00-07; 50-530/00-07

The report covers a 6-week period of resident inspection. In the Reactor Safety area, the cornerstones inspected included Initiating Events, Mitigating Systems, and Barrier Integrity.

There were no inspection findings identified in these areas.

Report Details

Summary of Plant Status

On May 21, 2000, Unit 1 experienced a failure in the main generator excitation system, which resulted in a turbine trip and reactor power cutback from 100 to 65 percent power. Reactor power was further reduced to 10 percent on the same day. Power was returned to 100 percent on May 22, 2000, and remained there for the duration of this inspection period.

Units 2 and 3 operated at essentially 100 percent power for the duration of this inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignments - Routine Inspection

.1 Partial Walkdown Inspections

a. Inspection Scope

The inspectors performed equipment alignment verifications for portions of the following systems:

- Auxiliary Feedwater Trains B and N (Unit 1)
- Low Pressure Safety Injection Train A (Unit 2)
- Essential Cooling Water Train A (Unit 3)

b. Issues and Findings

There were no findings identified during this inspection.

.2 Complete Walkdown of the Unit 1 Auxiliary Feedwater System

a. Inspection Scope

The inspectors performed a walkdown of the seismically qualified portion of the Unit 1 auxiliary feedwater system to verify correct system alignment. Underground piping and the portion of the system inside of the containment were excluded from the walkdown. Plant procedures, drawings, and design documents, including those for temporary modifications, were used to confirm system lineup. Also included were valve and electrical breaker positions, as well as the proper installation of pipe supports. In addition, system components were observed to assess material condition.

b. Issues and Findings

There were no findings identified during this inspection.

1R05 Fire Protection - Monthly Routine Inspection

a. Inspection Scope

The inspectors performed fire protection walkdowns to assess the material condition of plant fire protection equipment and proper control of transient combustibles. The following risk significant areas were inspected:

- Emergency Diesel Generator Trains A and B (Unit 2)
- Auxiliary Building 40-foot and 51-foot elevations (Unit 3)
- Emergency Diesel Generator Trains A and B 100-foot elevation (Unit 1)
- Auxiliary Building 51-foot, 70-foot, and 100-foot elevations (Unit 1)
- Condensate Storage Pump House and Tunnel (Unit 1)
- Main Steam Support Structure 80-foot elevation (Unit 1)

b. Issues and Findings

There were no findings identified during this inspection.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors reviewed two 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.” Specifically, the review included the failures of two power supplies of the diverse auxiliary feedwater actuation system in Unit 2 and the failure of vital battery Charger PKA-H15 in Unit 1. The inspectors used the maintenance rule field flow chart to determine if the licensee properly dispositioned the failures.

b. Issues and Findings

There were no findings identified during this inspection.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation

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 also reviewed selected activities regarding risk evaluations and overall plant configuration control. The inspectors discussed emergent work issues with work control

personnel and reviewed the potential risk impact to verify that the work was adequately planned, controlled, and executed. The specific activities reviewed were:

- Auxiliary Feedwater Train N (Unit 1)
- High Pressure Safety Injection Pump B (Unit 2)
- Emergency Diesel Generator Train B, Essential Cooling Water Train B and Essential Chilled Water Train B (Unit 3)

b. Issues and Findings

There were no findings identified during this inspection.

1R14 Nonroutine Plant Evolutions

a. Inspection Scope

On May 21, 2000, at 12:09 p.m., Unit 1 was operating at 100 percent power when a turbine trip caused a reactor power cutback signal to reduce reactor power to 65 percent. The control room staff responded to the transient and further reduced power to 10 percent to facilitate compliance with Technical Specifications. The inspectors responded to the site and reviewed control room and unit logs, various parameter plots, and conducted interviews with licensed operators to assess operator response to the reactor power cutback. The licensee determined the cause of the turbine trip to be failed silicon-controlled rectifiers in the main generator excitation system.

b. Issues and Findings

There were no findings identified during this inspection. Based on the inspectors' review of the licensee's actions, no additional NRC involvement was required.

1R15 Operability Evaluation

a. Inspection Scope

The inspectors reviewed the following operability evaluation for technical adequacy and impact on continued plant operation:

- Operability Determination 066, Revision 3, evaluated whether the control room valve position indication must be functional at all times to consider the associated valve operable.

b. Issues and Findings

There were no findings identified during this inspection.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed the following permanent plant modifications to verify that the design bases, licensing bases, and performance capability had not been degraded:

- Deficiency Work Order 763288 installed rupture discs in the backup nitrogen supply header as additional protection to piping and safety-related atomospheric dump valves and modified piping and supports per Engineering Design Changes 98-00897 and 99-00012 (Unit 3)

- Corrective Maintenance Work Orders 932188 (Unit 1), 932189 (Unit 2), and 932190 (Unit 3) reset the minimum trip setpoint value for the variable overpower trip from 10.2 to 9.4 percent (Units 1, 2, and 3)

b. Issues and Findings

There were no findings identified during this inspection.

1R19 Postmaintenance Testing

a. Inspection Scope

The inspectors observed or evaluated the following postmaintenance tests to determine whether the test adequately confirmed equipment operability:

- Work Order 00910108 retest of Inverter 1E-PNB-H12 following replacement of capacitors (Unit 1)

- Work Order 00932907 retest of Train B safety injection throttle valves following valve maintenance (Unit 2)

- Work Order 00916419 retest of low pressure safety injection Train B following maintenance (Unit 2)

b. Issues and Findings

There were no findings identified during this inspection.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed and reviewed Test 73ST-9XI02 “SG #2 Containment Isolation Valves Inservice Test,” Revision 23 (Unit 3).

b. Issues and Findings

There were no findings identified during this inspection.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification (71151)

.1 Initiating Events Cornerstone

a. Inspection Scope

The inspectors reviewed unit logs and plant thermal performance records from January 1999 to July 2000 to verify the accuracy and completeness of data used to calculate and report the following performance indicators:

- Unplanned scrams per 7000 critical hours
- Scrams with loss of normal heat removal
- Unplanned power changes per 7000 critical hours

b. Issues and Findings

There were no findings identified during this inspection.

4OA5 Other

.1 Temporary Instruction 2515/144, “Performance Indicator Data Collecting and Reporting Process Review”

a. Inspection Scope

A review of the licensee’s performance indicator data collection and reporting process was conducted to determine if it was consistent with Nuclear Energy Institute NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 0, as endorsed by the NRC. The following documents were reviewed during this inspection:

- 93DP-0LC09 “Collection and Submittal of NRC Performance Indicators,” Revision 0
- 73DP-9PP01 “Thermal Performance Monitoring and Evaluation Process,” Revision 2
- 93DP-0LC10 “Performance Indicator Data Mitigating Systems (SSFF) Cornerstone,” Revision 0
- 40DP-9LC01 “Operations Department Performance Indicators,” Revision 0

- 75RP-0LC01 "Performance Indicator Instruction Guideline Occupational Radiation Safety Cornerstone," Revision 0
- 74DP-0LC02 "Public Radiation Safety Performance Indicator," Revision 0
- 93DP-0LC11 "Performance Indicator Data Physical Protection (Reports) Cornerstone," Revision 0
- 20DP-0SK90 "Performance Indicator Physical Protection (Equipment) Cornerstone," Revision 1
- 74DP-0LC01 "RCS Activity Performance Indicator," Revision 0
- 16DP-0EP19 "Performance Indicator Emergency Preparedness Cornerstone," Revision 0

Interviews were conducted with several of the individuals responsible for data collection and reporting to assess the individuals' understanding of NEI 99-02 and the licensee's reporting process.

b. Issues and Findings

There were no findings identified during this inspection.

4OA6 Meetings

Exit Meeting Summary

On July 7, 2000, the inspectors presented the inspection results to Mr. G. Overbeck, Senior Vice President - Nuclear, and other members of licensee management. The licensee acknowledged the findings presented.

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

ATTACHMENT 1

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Fullmer, Director, Nuclear Assurance
R. Henry, Site Representative, Salt River Project
J. Hesser, Director, Outages
P. Kirker, Unit 3 Department Leader, Operations
A. Krainik, Director, Nuclear Regulatory Affairs
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D. Marks, Section Leader, Nuclear Regulatory Affairs
G. Overbeck, Senior Vice President, Nuclear
M. Shea, Director, Training
D. Smith, Director, Operations
M. Winsor, Director, Nuclear Engineering

LIST OF DOCUMENTS REVIEWED

Procedures

32ST-9ZZ34, "Battery Charger Surveillance Test," Revision 6
40OP-9AF01, "Essential Auxiliary Feedwater System," Revision 24
40OP-9SI02, “Recovery from Shutdown Cooling to Normal Operating Lineup,” Revision 32
43OP-3EW01, “Essential Cooling Water System (EW) Train A,” Revision 20

Other documents

Design Basis Manual - Main Steam, Revision 14

Deficiency Work Order 763279 install rupture discs on the Nitrogen header as additional protection to piping and ADV-179 and ADV-184. Modify piping and supports per Engineering Design Change 98-00894 & 99-00009 (Unit 1)

01-P-AFF-131 M.S.S.S. Isometric Turbine Driven Pump Auxiliary Feedwater System, Revision 6

01-P-AFF-132 M.S.S.S. Isometric Turbine Driven Pump Auxiliary Feedwater System, Revision 5

01-P-AFF-133 M.S.S.S. Isometric Motor Driven Pump Auxiliary Feedwater System, Revision 4

03-M-EWP-001 P & I Diagram - Essential Cooling Water System, Revision 21

Pipe Stress Calculation No. 13-MC-AF-501, "Auxiliary Feedwater System," Revision 8

Pipe Stress Calculation No. 13-MC-AF-502, "Auxiliary Feedwater System," Revision 10

Integrated Self Assessment of the Revised Reactor Oversight Process dated April 19, 2000

Condition Report/Disposition Request 118045 - During performance of 36MT-9SA06, DAFAS in Bay 8 did not go into bypass.

Condition Report/Disposition Request 111812 - During the performance of 36MT-9SA06, the power supply for the high speed logic solver in 1JSAC01 failed.

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 plan, as described in the Action Matrix.

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