



A subsidiary of Pinnacle West Capital Corporation

Palo Verde Nuclear  
Generating Station

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102-05744-DCM/DCE  
September 11, 2007

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Units 1, 2, and 3  
Docket Nos. STN 50-528, 50-529 and 50-530  
License No. NPF 41, NPF 51 and NPF 74  
Licensee Event Report 2007-003-00**

Attached, please find Licensee Event Report (LER) 50-528/2007-003-00 which reports operation in a condition prohibited by Technical Specifications due to an inadequate procedure for Surveillance Testing.

In accordance with 10 CFR 50.4, copies of this LER are being forwarded to the NRC Regional Office, NRC Region IV and the Senior Resident Inspector. If you have questions regarding this submittal, please contact Ray E. Buzard, Section Leader, Regulatory Affairs, at (623) 393-5317.

Arizona Public Service Company makes no commitments in this letter.

Sincerely,

DCM/DCE/gat

Attachment

cc: E. E. Collins Jr. NRC Region IV Regional Administrator  
M. T. Markley NRC NRR Project Manager - (send electronic and paper)  
G. G. Warnick NRC Senior Resident Inspector for PVNGS

A member of the **STARS** (Strategic Teaming and Resource Sharing) Alliance  
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NRR

**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

<b>1. FACILITY NAME</b> Palo Verde Nuclear Generating Station (PVNGS) Unit 1	<b>2. DOCKET NUMBER</b> 05000528	<b>3. PAGE</b> 1 OF 5
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**4. TITLE**  
Inadequate Surveillance Test Procedure resulting in Failure to meet TS Requirements

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
07	13	2007	2007	- 003 -	00	09	11	2007	PVNGS Unit 2	05000529
									FACILITY NAME	DOCKET NUMBER
									PVNGS Unit 3	05000530

<b>9. OPERATING MODE</b>  3 / 1 / 1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§:</b> (Check all that apply)									
<b>10. POWER LEVEL</b>  0 / 100 / 100	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)						
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)						
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)						
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)						
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)						
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER							
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A							

**12. LICENSEE CONTACT FOR THIS LER**

FACILITY NAME Ray E. Buzard, Section Leader, Regulatory Affairs - Compliance	TELEPHONE NUMBER (Include Area Code) (623) 393-5317
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	<b>15. EXPECTED SUBMISSION DATE</b> MONTH:      DAY:      YEAR:
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**ABSTRACT** (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On July 13, 2007, with Unit 1 in Operating MODE 3, and Units 2 and 3 both in Operating MODE 1 at approximately 100 percent rated thermal power, during performance of a Component Design Basis Review (CDBR), station personnel determined that Surveillance Test Procedure (STP), 40ST-9AF07, "Auxiliary Feedwater Pump AFA-P01 Monthly Valve Alignment," did not adequately meet its intent to satisfy Technical Specifications (TS) Surveillance Requirement (SR) 3.7.5.1 for position verification of the steam admission bypass valves to Auxiliary Feedwater Pump AFA-P01. Specifically, the STP did not provide adequate verification of the position of valves SGA-UV-134A and SGA-UV-138A.

The STP was revised to include the affected valve position verification and was subsequently successfully performed. The root cause investigation is in progress.

LER 50-528/2004-011 reported a failure to adequately meet a TS SR due to a failure to include required steps in an STP. The actions taken as a result of that event would not have prevented this event from occurring.

## LICENSEE EVENT REPORT (LER)

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		2007	-- 003	-- 00	

## 17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

Note: All times listed in this event report are approximate and Mountain Standard Time (MST) unless otherwise indicated.

## 1. REPORTING REQUIREMENT(S):

This LER (50-528/2007-003-00) is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) to report operation in a condition prohibited by Technical Specifications (TS). Specifically, Surveillance Test Procedure (STP), 40ST-9AF07, "Auxiliary Feedwater Pump AFA-P01 Monthly Valve Alignment," did not adequately meet its intent to satisfy TS Surveillance Requirement (SR) 3.7.5.1 for position verification of the steam admission bypass valves to Auxiliary Feedwater (AFW) Pump AFA-P01.

## 2. DESCRIPTION OF STRUCTURE(S), SYSTEM(S) AND COMPONENT(S):

System Description:

The Auxiliary Feedwater system (EIS Code: BA) provides an independent means of supplying feedwater to the steam generators (S/Gs) during normal shutdown, startup, and emergency or accident conditions. Additionally, the AFW system functions to maintain water inventory for reactor decay heat removal during those phases of plant operation when the main Feedwater (FW) system (EIS Code: SJ) is unavailable. The AFW system is comprised of two separate, yet similar systems: essential and non-essential. The essential system is designed to withstand, and remain operable, during and after a safe shutdown earthquake (SSE), and is powered from the class electrical distribution system. It consists of one motor driven pump (AFB-P01), one turbine driven pump (AFA-P01), and their associated valves, controls, and instrumentation. The motor driven pump (AFB-P01) was unaffected by the condition identified in this LER. The non-essential system is composed of a motor driven pump (AFN-P01), which is class powered, but portions of its associated valves, controls, and instrumentation are powered from the non-class electrical distribution system. The non-essential system is not designed for seismic considerations. The non-essential motor driven pump (AFN-P01) was also unaffected by the condition identified in this LER.

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Valve Description:

The main steam (MS) (EISS Code: SB) main supply valves (SGA-UV-134 and SGA-UV-138) for Auxiliary Feedwater (AFW) Pump AFA-P01 are 125 VDC motor operated, 6 inch gate valves. Each is interlocked with a 1 inch, solenoid operated bypass valve (SGA-UV-134A and SGA-UV-138A). The bypass valves are remotely and automatically actuated valves without local manual actuators. Each main supply valve can be controlled from the main control room panel B06 and from the remote shutdown panel by a two position (open/close) spring return-to-neutral handswitch. When the handswitch is positioned to open, the bypass valve solenoid is energized to open the bypass valve first, allowing the turbine to gain sufficient speed to cause the governor oil pressure to increase. After a short time-delay, the main supply valve opens, admitting full steam flow to the pump turbine and the turbine speed ramp generator increases turbine speed. When the handswitch is positioned to close, there is no time delay, as in the opening sequence, so the main supply and the bypass valves both immediately begin to close. Operation of the bypass solenoid valves is tested, including the valve position indication, in accordance with in-service testing program requirements.

3. INITIAL PLANT CONDITIONS:

On July 13, 2007, Palo Verde Unit 1 was in Operating Mode 3 (Hot Standby), and Units 2 & 3 were both in Operating MODE 1 (Power Operations), at approximately 100 percent power. The Unit 1 AFA-P01 had been declared inoperable for performance of testing not related to this event, but remained available and functional. The Units 2 and 3 AFW Pumps (AFA-P01) were operable, but not in service at the time of identification of this condition. For all 3 Units, valves SGA-UV-134, SGA-UV-134A, SGA-UV-138, and SGA-UV-138A were in the closed position, as verified subsequent to identification of the condition.

4. EVENT DESCRIPTION:

On July 13, 2007, during performance of a Component Design Basis Review (CDBR), station personnel determined that Surveillance Test Procedure (STP), 40ST-9AF07, "Auxiliary Feedwater Pump AFA-P01 Monthly Valve Alignment," did not adequately meet its intent to satisfy TS SR 3.7.5.1 for position verification of the steam admission bypass valves to AFW Pump AFA-P01. Specifically, the STP did not provide adequate verification of the position of bypass valves SGA-UV-134A and SGA-UV-138A. The STP did, however, provide for verification of position of the main steam supply valves. This condition has existed since the implementation of the Improved Technical Specifications (ITS) at Palo Verde Nuclear Generating Station (PVNGS) on August 13, 1998. Prior to implementation of the ITS, surveillance requirements did not require position verification for these valves.

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Upon discovery of the condition, at 17:23 hours, the Shift Manager was notified, along with the Procedure Group Supervisor. TS SR 3.0.3 was entered for all 3 units at approximately 19:41 hours, thereby permitting time to correct the identified deficiency prior to implementation of the Limiting Condition for Operation (LCO) Action. A Temporary Approved Procedure Action (TAPA) for the STP was written and subsequently approved by the Unit 1 Shift Manager, incorporating valve position indication verification steps for SGA-UV-134A and SGA-UV-138A. At approximately 22:55 hours, approximately 5 hours and 32 minutes after identification of this condition, the STP was successfully completed, and the units exited TS SR 3.0.3.

5. ASSESSMENT OF SAFETY CONSEQUENCES:

The affected valves are solenoid operated bypass valves and are controlled by the same hand switch as the motor operated main steam supply valves. The bypass valves have no local manual actuators and cannot be operated locally. Position indication for the solenoid valves is provided directly above the position indication for the main steam supply valves and any disparity in position indication between the main steam supply valves and their associated bypass valves would be easily recognizable. Additionally, STP 73ST-9AF02, "AFA-P01 – Inservice Test", is performed quarterly to confirm stroke time of the affected valves (as identified by the position indication lights on panel B06) and demonstrates the sequence of valve operation. Therefore, it is reasonable to conclude that the affected solenoid valves were in the correct position as required.

The event did not result in any challenges to the fission product barriers or result in the release of radioactive materials. Therefore, there were no adverse safety consequences or implications as a result of this event and the event did not adversely affect the safe operation of the plant or health and safety of the public.

The event did not result in a transient more severe than those analyzed in the updated Final Safety Evaluation Report Chapters 6 and 15. The event did not have any nuclear safety consequences or personnel safety impact.

The condition would not have prevented the fulfillment of any safety function of structures or systems as defined by 10 CFR 50.73(a)(2)(v).

6. CAUSE OF THE EVENT:

The direct cause of the event was an inadequate STP in that the verification of the position of the solenoid valves was not included in the STP. Before the implementation of the ITS, the requirement for surveillance in 40ST-9AF07, Rev. 1, was to "Ensure that each valve (manual, power operated, or automatic) in the flow path from the CST (Condensate Storage Tank) to the S/G's that is not locked, sealed, or otherwise secured in position, is in

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its correct position." This requirement did not include the valves in the steam path. Upon implementation of the ITS, 40ST-9AF07, Rev. 2 was issued on August 8, 1998, and included the objective that "Each manual, power operated, and automatic valve in the Essential Auxiliary Feedwater Pump AFA-P01 water and steam flowpaths that are not locked, sealed, or otherwise secured in position is in the correct position (ITS SR3.7.5.1)." This stated objective was to satisfy the TS SR, but rather than including steps to individually verify the position of each valve, the STP provided for verification of the position indication as shown on the hand switch that actuates the steam admission valves and referenced only the main steam supply valves.

A root cause investigation for this condition is underway.

## 7. CORRECTIVE ACTIONS:

The following immediate corrective actions were implemented for all three units:

1. A Temporary Approved Procedure Action (TAPA) was written for 40ST-9AF07 and approved by the Unit 1 Shift Manager on July 13, 2007.
2. 40ST-9AF07 was then successfully completed for all three units and TS SR 3.0.3 was exited shortly after completion of the required surveillance.

Subsequently, STP 40ST-9AF07 was revised (Rev. 3) to include the SGA-UV-134A and SGA-UV-138A required surveillances. If additional corrective actions are identified to prevent recurrence, as a result of the root cause analysis, they will be implemented in accordance with the APS corrective action program. If information is subsequently developed that would significantly affect a reader's understanding or perception of this event, a supplement to this LER will be submitted.

## 8. PREVIOUS SIMILAR EVENTS:

LER 50-528/2004-011 reported a failure to adequately meet TS SR 3.6.3.3 to verify manual Containment Isolation Valves (CIVs) are closed, because the applicable STP did not include eight manual test and drain valve connections, on the High and Low Pressure Safety Injection Systems, located between the inboard and outboard CIVs. The extent of condition investigation for that event included a review of all manual CIVs to ensure that they were included appropriately in STPs for position verification.

Since the AFW steam admission bypass valves are automatic, they were not included in the extent of condition assessment for the above LER. Therefore, the corrective actions taken as a result of the previous event would not have prevented this event from occurring.