



A subsidiary of Pinnacle West Capital Corporation

Palo Verde Nuclear
Generating Station

Dwight C. Mims
Vice President
Regulatory Affairs and Plant Improvement

Tel. 623-393-5403
Fax 623-393-6077

Mail Station 7605
P. O. Box 52034
Phoenix, Arizona 85072-2034

102-05840-DCM/DFH
April 07, 2008

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

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 3
Docket No. STN 50-530
License No. NPF 74
Licensee Event Report 2007-001-00

Attached, please find Licensee Event Report (LER) 50-530/2007-001-00 which reports a condition prohibited by technical specifications resulting from blockage of two containment spray system spray nozzles.

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 Russell Stroud, Section Leader, Regulatory Affairs, at (623) 393-5111.

Arizona Public Service Company makes no commitments in this letter.

Sincerely,
D.C. Mims

DCM/TNW/DFH/gat

Attachment

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

JE22
NRR

NRC FORM 366 (9-2007)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2010																																										
<h2 style="margin: 0;">LICENSEE EVENT REPORT (LER)</h2> <p style="margin: 5px 0;">(See reverse for required number of digits/characters for each block)</p>							Estimated burden per response to comply with this mandatory collection request: 80 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.																																								
1. FACILITY NAME Palo Verde Nuclear Generating Station (PVNGS) Unit 3				2. DOCKET NUMBER 05000530		3. PAGE 1 OF 4																																									
4. TITLE Condition Prohibited by Technical Specification Resulting from Containment Spray Nozzle Blockage																																															
5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED																																						
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12. LICENSEE CONTACT FOR THIS LER																																															
FACILITY NAME								TELEPHONE NUMBER (Include Area Code)																																							
Russell A. Stroud, Section Leader, Regulatory Affairs - Compliance								(623) 393-5111																																							
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT																																															
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14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES <i>(If yes, complete 15. EXPECTED SUBMISSION DATE)</i> <input checked="" type="checkbox"/> NO								15. EXPECTED SUBMISSION DATE		MONTH	DAY	YEAR																																			
ABSTRACT <i>(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)</i>																																															
<p>During an extent of condition review for events that could have led to the obstruction of the Containment Spray (CS) system, Arizona Public Service (APS) identified an April 21, 2007, event where nozzles in the Unit 3 CS system may have become obstructed. On December 5, 2007, while performing a Surveillance Test of the Unit 3 CS spray nozzles, APS personnel discovered one obstructed nozzle on each of two separate Containment Spray (CS) train 'A' lines. The evaporation of borated water from a header overflow event caused boric acid residue to accumulate and obstruct the two CS nozzles for a period greater than allowed by Technical Specification 3.6.6 limiting condition for operation. The nozzles were cleaned and restored to service on December 18, 2007.</p> <p>The cause of the CS overflow event was determined to be leakage by the containment spray train 'A' discharge valve seat. The cause of the Unit 3 CS system nozzles blockage was from inadequate consideration of the consequences of overflowing the CS system with borated water.</p> <p>There have been no previous similar events in the past three years that had a similar failure mechanism or that should have prevented this event as a result of previously implemented corrective actions.</p>																																															

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
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		2007 --	001 --	00	

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

1. REPORTING REQUIREMENT(S):

This LER (50-530/2007-001-00) is being submitted pursuant to 10CFR 50.73(a)(2)(i)(B) to report a condition prohibited by Technical Specification (TS) Limiting Condition for Operation (LCO) 3.6.6, Condition B. Specifically, on December 05, 2007, Arizona Public Service Company personnel discovered one obstructed Containment Spray (CS) nozzle on each of two separate CS train 'A' lines. The obstructions existed for a period greater than allowed by Technical Specification (TS) 3.6.6 "Containment Spray System" limiting condition for operation. This condition was initially evaluated as not reportable because there was no loss of safety function; however, on February 6, 2008, APS concluded the condition was reportable as a condition prohibited by TS.

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

The Containment Spray (CS) [EIS: BE] system is an Engineered Safety Feature (ESF) designed to ensure that heat removal can be attained during post accident periods. During a Design Base Accident (DBA), one CS train is required to maintain the containment peak pressure and temperature below the design limits, to remove iodine from the containment atmosphere to maintain concentrations below those assumed in the safety analysis, and to provide hydrogen mixing. To ensure that these requirements are met, assuming the worst case single active failure occurs, two CS trains are required to be operable.

The CS System consists of two separate trains of equal capacity, each capable of meeting the design bases. Each train includes a CS pump, a shutdown cooling heat exchanger, spray headers, nozzles, valves, and piping. Each train is powered from a separate ESF bus. The Refueling Water Tank (RWT) [EIS: BQ] supplies borated water to the CS system during the injection phase of operation.

3. INITIAL PLANT CONDITIONS:

On April 21, 2007, Palo Verde Unit 3 was in Mode 5, cold shutdown. There were no major structures, systems, or components inoperable at the start of the event that contributed to the event.

4. EVENT DESCRIPTION:

On September 27, 2007, the NRC 95003 inspection team identified a violation of Technical Specification Surveillance Requirement 3.6.6.6, for the failure to verify that each containment spray nozzle was unobstructed. The NRC identified that the last completed surveillance test conducted on each unit, had revealed that one nozzle in each unit was obstructed and that the nozzles were not retested in accordance with the approved retest requirement.

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

On October 30, 2007, while conducting an extent of condition review, APS engineering personnel [utility, non-licensed] identified that the Unit 3 CS system had been overfilled on April 21, 2007. The CS train 'A' header level had increased from 115.2 feet to 117 feet after Low Pressure Safety Injection (LPSI) [EHS: BP] train 'A' was started for shutdown cooling. The increased level in the CS header indicated that the containment spray train 'A' discharge valve was leaking. The extent of condition review identified that no action had been taken to evaluate if the overfill event resulted in obstruction of any nozzles.

On December 5, 2007, a partial performance of the Containment Spray Nozzle Air Test surveillance test procedure was performed for the Unit 3 CS system. During the surveillance test, engineering personnel discovered two obstructed CS nozzles, one on line 3PSIAL433 and the other on 3PSIAL434. These nozzles and lines are located on the lower elevation of the CS train 'A' header. The obstructions were discovered using low pressure air flow. In accordance with the surveillance testing procedure, the nozzles were cleaned and inspected on December 18, 2007.

5. ASSESSMENT OF SAFETY CONSEQUENCES:

Unit 3 was in Mode 5, cold shutdown, when the two obstructed nozzles were discovered on December 5, 2007. Evaporation of borated water caused the obstruction of the two nozzles while Unit 3 was at power, following the April 21, 2007, overfill event.

Technical Specification (TS) Surveillance Requirement (SR) 3.6.6.6 requires each CS system spray nozzle (total of 620 nozzles) to be unobstructed. Two obstructed nozzles would not have prevented the fulfillment of any safety function and did not result in a safety system functional failure as defined by 10 CFR 50.73(a)(2)(v).

The condition described in this LER did not result in any challenges to fission product barriers or in any offsite releases. Therefore, there were no actual 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 as a result of the blockage of the nozzles.

6. CAUSE OF THE EVENT:

The cause of the April 21, 2007, CS overfill event was evaluated through the corrective action program and determined to be leakage by the containment spray train 'A' discharge valve seat.

The cause of the Unit 3 CS system nozzles blockage was from inadequate consideration of the consequences of overfilling the CS system with borated water.

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

7. CORRECTIVE ACTIONS:

The following corrective actions have been implemented:

- CS train 'A' discharge valve, 3JSIAUV0672 was repaired on December 4, 2007.
- Partial performance of Unit 3 surveillance testing was completed on December 5, 2007, to verify the CS nozzles were unobstructed.
- The two nozzles found during the partial surveillance testing to be obstructed were cleaned, inspected and returned to service on December 18, 2007.
- Personnel responsible for evaluating the U3 overfill event were coached on the effects of the overfill event on December 20, 2007. As part of the coaching, actions were discussed on how to prevent recurrence by draining the system through a flange and flushing the header with demineralized water.
- Procedure 40DP-9OP26, "Operability Determination and Functional Assessment" has been revised to provide guidelines and instructions for evaluating the operability or functionality of structures, systems and components (SSCs) when a degraded or nonconforming condition is identified. The procedure establishes the methods for performing and documenting the operability decision. Every Palo Verde Action Request (PVAR) that describes a potential problem related to SSCs subject to TS will have an Operability Assessment documented. The Work Control and PVAR processes have procedural guidance to direct initiation of PVARs and require the Work Control Senior Reactor Operator to direct PVARs related to TS SSCs to the control room for operability review.

The following additional action is planned:

- Revise procedure 40OP-9SI02, "Recovery from Shutdown Cooling to Normal Operating Lineup," to include activating an Emergency Response Feature Data Acquisition Display System (ERFDADS) high alarm set points on the CS header.
- Engineering will perform a training needs analysis on the issue of overfilling of the Containment Spray headers and potential for evaporation to cause the auxiliary spray nozzles to become clogged. Training will be provided on the ERFDADS modification to prevent recurrence.

Any additional corrective actions taken as a result of this event 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

There have been no previous similar events in the past three years that had a similar failure mechanism or that should have prevented this event as a result of previously implemented corrective actions.