



A subsidiary of Pinnacle West Capital Corporation

10 CFR 50.73

Palo Verde Nuclear
Generating Station

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102-06291-DCM/FJO
December 06, 2010

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 2010-001-00

Enclosed, please find Licensee Event Report (LER) 50-530/2010-001-00 that has been prepared and submitted pursuant to 10 CFR 50.73. This LER reports a condition prohibited by the Technical Specifications when a pressurizer auxiliary spray valve did not operate locally from the remote shutdown panel.

In accordance with 10 CFR 50.4, copies of this LER are being forwarded to the Nuclear Regulatory Commission (NRC) Regional Office, NRC Region IV and the Senior Resident Inspector. If you have questions regarding this submittal, please contact Marianne Webb, Section Leader, Regulatory Affairs, at (623) 393-5730.

Arizona Public Service Company makes no commitments in this letter.

Sincerely,

DCM/MNW/FJO/gat

Enclosure

cc:	E. E. Collins Jr.	NRC Region IV Regional Administrator
	J. R. Hall	NRC NRR Senior Project Manager - (electronic / paper)
	L. K. Gibson	NRC NRR Project Manager (electronic / paper)
	J. H. Bashore	NRC Senior Resident Inspector (acting) for PVNGS

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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: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@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

Remote Shutdown Panel Pressurizer Auxiliary Spray Valve - Condition Prohibited by Technical Specifications

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
10	07	2010	2010	- 001 -	00	12	6	2010	FACILITY NAME	DOCKET NUMBER
									FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE

6

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)☐ 20.2201(b)☐ 20.2203(a)(3)(i)☐ 50.73(a)(2)(i)(C)☐ 50.73(a)(2)(vii)☐ 20.2201(d)☐ 20.2203(a)(3)(ii)☐ 50.73(a)(2)(ii)(A)☐ 50.73(a)(2)(viii)(A)☐ 20.2203(a)(1)☐ 20.2203(a)(4)☐ 50.73(a)(2)(ii)(B)☐ 50.73(a)(2)(viii)(B)☐ 20.2203(a)(2)(i)☐ 50.36(c)(1)(i)(A)☐ 50.73(a)(2)(iii)☐ 50.73(a)(2)(ix)(A)**10. POWER LEVEL**

0

☐ 20.2203(a)(2)(ii)☐ 50.36(c)(1)(ii)(A)☐ 50.73(a)(2)(iv)(A)☐ 50.73(a)(2)(x)☐ 20.2203(a)(2)(iii)☐ 50.36(c)(2)☐ 50.73(a)(2)(v)(A)☐ 73.71(a)(4)☐ 20.2203(a)(2)(iv)☐ 50.46(a)(3)(ii)☐ 50.73(a)(2)(v)(B)☐ 73.71(a)(5)☐ 20.2203(a)(2)(v)☐ 50.73(a)(2)(ii)(A)☐ 50.73(a)(2)(v)(C)☐ OTHER☐ 20.2203(a)(2)(vi)☒ 50.73(a)(2)(i)(B)☐ 50.73(a)(2)(v)(D)Specify in Abstract below
or in NRC Form 366A**12. LICENSEE CONTACT FOR THIS LER**

FACILITY NAME

Marianne Webb, Section Leader, Regulatory Affairs

TELEPHONE NUMBER (Include Area Code)

623-393-5730

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
A	CA	VALVE	T020	Y					

14. SUPPLEMENTAL REPORT EXPECTED☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE)☒ NO**15. EXPECTED SUBMISSION DATE**

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On October 7, 2010, at approximately 1745 Mountain Standard Time (MST), while performing surveillance test 40ST-9ZZ20, Appendix Q, "Remote Shutdown Disconnect Switch and Control Circuit Operability," the pressurizer auxiliary spray valve, 3JCHBH0203, failed to open from the remote shutdown panel (RSP) while the local/remote disconnect switch was in the local position. At the time of discovery, Unit 3 was in Mode 6 and the applicable Technical Specification (TS) Limited Condition for Operation (LCO) 3.3.11, Remote Shutdown System, did not apply.

The inability to operate the pressurizer auxiliary spray valve from the RSP was due to a missing wire that was not installed during valve replacement in the previous Unit 3 refueling outage (May 2009). Investigation determined an inadequate design validation test failed to identify the missing wire. The missing wire was installed as an immediate corrective action, restoring the design configuration of the valve. The valve was tested to verify operation from the RSP, with the local/remote disconnect switch in the local position, with satisfactory results.

In the past three years, PVNGS reported one event where post maintenance testing was considered to be inadequate (LER 50-529/2007-004-00). Corrective actions from the previous event would not have prevented this event.

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All times are Mountain Standard Time and approximate unless otherwise indicated.

1. REPORTING REQUIREMENT(S):

This LER is being submitted pursuant to 10 CFR 50.73 (a)(2)(i)(B) as a condition prohibited by Technical Specification (TS) 3.3.11, "Remote Shutdown System," which requires the remote shutdown controls and instrumentation to be Operable in Modes 1, 2, and 3. Specifically, on October 7, 2010, Palo Verde Nuclear Generating Station (PVNGS) discovered that the pressurizer auxiliary spray (Pzr Aux Spray) valve, 3JCHBHV0203, would not operate from the remote shutdown panel (RSP) while the local/remote disconnect switch was in the local position. This condition had existed since the last Unit 3 refueling outage (May 2009).

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

The Pressurizer (Pzr) (EIS:AB) provides a point in the reactor coolant system (RCS) (EIS:AB) where liquid and vapor are maintained in equilibrium under saturated conditions for RCS pressure control. Pzr heaters are used to raise RCS pressure and Pzr spray is used to lower RCS pressure. Pzr spray is provided via both a main and auxiliary (Pzr Aux Spray) flow path. Main Pzr spray flow is provided through a main spray valve which uses pressure differential across the core as the driving force for spray flow. Pzr Aux Spray flow is provided through two auxiliary spray valves, 3JCHAHV0205 (A Train) and 3JCHBHV0203 (B Train), and uses charging pumps in the chemical and volume control system (CVCS) (EIS:CA) to provide the driving force for spray flow. These Pzr Aux Spray valves can be operated from the main control room (CR). Pzr Aux Spray valve 3JCHBHV0203 can be remotely operated at the "B" train RSP when the disconnect switch is in the local position.

The RSP provides the CR operator with sufficient instrumentation and controls to place and maintain the unit in a safe shutdown condition from a location other than the control room. A safe shutdown condition is defined as Mode 3. Disconnect switches are provided in the control circuits for specified "B" train components in order to prevent the inadvertent operation of components during a CR fire and provide for operation from the RSP.

The disconnect switches have two positions: local/remote and local. With a disconnect switch in local/remote position, operation of the component is enabled both from the CR and from the local controls on the RSP. With the disconnect switch in the local position, operation of the component is possible only at the local controls on the RSP.

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3. INITIAL PLANT CONDITIONS:

On October 7, 2010, Palo Verde Unit 3 was in Mode 6 (Refueling). There were no structures, systems, or components inoperable at the time of the event that contributed to the event.

4. EVENT DESCRIPTION:

On October 7, 2010, at 1745, Unit 3 Operations personnel were performing surveillance test (ST) 40ST-9ZZ20, "Remote Shutdown Disconnect Switch and Control Circuit Operability," Appendix Q for Pzr Aux Spray valve 3JCHBHV0203. When the valve was tested from the local position, the valve failed to respond. Troubleshooting revealed that a wire in the control circuit was missing in the associated relay cabinet.

An investigation determined that in May, 2009, during the Unit 3 refueling outage, valve 3JCHBHV0203, a Valcor valve, was replaced with a Target Rock valve. This valve modification had previously been installed in Unit 1 and Unit 2 for both the "A" and "B" train Pzr Aux Spray valves. Prior to this modification in Unit 3, a parallel circuit path existed that resulted in the ability to operate the valve from the RSP with or without the missing control circuit wire. After the modification, this parallel path was eliminated.

The investigation revealed inconsistencies between the as-built condition, and control wiring diagrams (CWD) and supplier documents (SDOC). The CWDs and SDOCs illustrated a wire in the auxiliary relay cabinet for valve 3JCHBHV0203 that was not physically installed. Since the CWDs and SDOCs identified a wire installed, the work order (WO) installing the modification did not contain instructions for the installation of the required wire. The investigation concluded the wire most likely had never been installed. Additionally, the subsequent design validation test (DVT) focused on the operation of the valve from the CR circuit (local/remote) and did not test the operation of the valve from the RSP circuit (local). The WO that installed the modification and the DVT that tested the modification did not identify that the wire was not installed per the drawing.

5. ASSESSMENT OF SAFETY CONSEQUENCES:

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

The conditions under which the Pzr Aux Spray valve may be operated from the RSP with the disconnect switch in the local position are during a CR fire event. For CR fire events,

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hot standby (Mode 3) is considered a safe and stable end state in the risk analysis model. For CR fire postulated events, pressure control of the Pzr is maintained by cycling the Pzr heaters from the RSP in accordance with abnormal operating procedure, 40AO-9ZZ19, "Control Room Fire." The use of the Pzr Aux Spray valve is a contingency action if the Pzr heaters cannot be de-energized. Therefore, Pzr Aux Spray valves are not required for the CR fire event and there is no core damage risk associated with the failure of a Pzr Aux Spray valve to operate from the RSP.

The condition would not have prevented the fulfillment of the safety function; and, the condition did not result in a safety system functional failure as defined by 10 CFR 50.73 (a)(2)(v).

6. CAUSE OF THE EVENT:

The cause of the Pzr Aux Spray valve failure to operate from the local position at the RSP was a missing wire in the control circuit in the associated auxiliary relay cabinet. The investigation revealed inconsistencies between the as-built condition, and control wiring diagrams (CWD) and supplier documents (SDOC).

Additionally, an inadequate DVT failed to identify that the valve would not operate from the RSP. The DVT focused on the operation of the valve from the CR circuit (local/remote) and did not test the operation of the valve from the RSP circuit (local).

7. CORRECTIVE ACTIONS:

The missing wire was installed as an immediate corrective action, restoring the design configuration of the valve. The valve was tested to verify operation from the RSP, with the local/remote disconnect switch in the local position, with satisfactory results.

Additionally, action will be taken to enhance procedure 81DP-0EE10, "Design Change Process," to more clearly define the requirements and organizational responsibilities for DVT.

Since the CWDs and SDOCs already reflected the wire in the drawings at the time of discovery, no changes were required to those drawings.

8. PREVIOUS SIMILAR EVENTS:

Previously, PVNGS reported one event where post maintenance testing was considered to be inadequate (LER 50-529/2007-004-00). The corrective actions were specific to conditions identified in LER 50-529/2007-004-00, and would not have prevented this event.