



Palo Verde Nuclear  
Generating Station

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**10CFR50.73**

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192-01116-GRO/SAB/DJS  
April 25, 2003

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Station P1-37  
Washington, DC 20555-0001

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Unit 1  
Docket No. STN 50-528  
License No. NPF-41  
Licensee Event Report 2003-001-00**

Attached please find Licensee Event Report (LER) 50-528/2003-001-00 that has been prepared and submitted pursuant to 10CFR50.73(a)(2)(i)(B). This LER reports the findings and corrective actions taken in response to a single, out of tolerance (OOT) pressurizer safety valve (PSV) which was discovered during post-outage testing. The as-found lift pressure for one Unit 1 PSV was outside of the tolerance allowed by Technical Specification Limiting Condition for Operation 3.4.10. The PSVs removed from Unit 1 were as-found lift tested, disassembled, inspected, reassembled and certified at NWS Technologies laboratories.

The actions taken as a result of the out of tolerance PSV are being performed in accordance with the PVNGS corrective action program. The corrective actions described in this LER are not necessary to maintain compliance with regulations. As such, APS may modify these corrective actions as necessary to improve PSV reliability and performance.

JE22

In accordance with 10CFR50.73 (d), a copy of this LER is being forwarded to the NRC Regional Office, NRC Region IV and the Resident Inspector. If you have questions regarding this submittal, please contact Daniel G. Marks, Section Leader, Regulatory Affairs, at (623) 393-6492.

Arizona Public Service Company makes no commitments in this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregg H. Quibick". The signature is written in a cursive style with a large, stylized "G" and "Q".

GRO/SAB/DJS/kg

Attachment

cc: E. W. Merschoff  
N. L. Salgado  
J. N. Donohew

(all with attachment)

## LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory information 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 Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [bjr1@nrc.gov](mailto:bjr1@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 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 <b>Palo Verde Nuclear Generating Station Unit 1</b>				2. DOCKET NUMBER <b>05000528</b>				3. PAGE <b>1 OF 5</b>			
4. TITLE <b>Pressurizer Safety Valve As-Found Lift Pressure Outside of Technical Specification Limits</b>											
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
03	05	2003	2003	001	00	04	25	2003	FACILITY NAME		DOCKET NUMBER
											05000
											05000
9. OPERATING MODE		1		11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check all that apply)							
10. POWER LEVEL		98		20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)	
				20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)	
				20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)	
				20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)	
				20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER Specify in Abstract below or in NRC Form 366A	
				20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)			
				20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)			
				20.2203(a)(2)(v)		xx 50.73(a)(2)(i)(B)		50.73(a)(2)(vii)			
				20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)			
				20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)			
12. LICENSEE CONTACT FOR THIS LER											
NAME <b>Daniel G. Marks, Section Leader, Regulatory Affairs</b>						TELEPHONE NUMBER (Include Area Code) <b>623-393-6492</b>					
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		
X	AB	RV	D245	N							
14. SUPPLEMENTAL REPORT EXPECTED						15. EXPECTED SUBMISSION DATE		MONTH	DAY	YEAR	
YES (If yes, complete EXPECTED SUBMISSION DATE)						X	NO				

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

On March 5, 2003, lift pressure verification testing was completed on pressurizer safety valves (PSVs) that had been removed during the Unit 1 tenth refueling outage. The testing revealed that the as-found lift pressure for one Unit 1 PSV was outside the Technical Specification limits of +3, -1 percent of design lift pressure.

The out of tolerance as-found PSV condition appears to be the result of a spring whose physical condition relaxed over time and would no longer meet vendor specifications. The impact of the Unit 1 PSV Out of Tolerance (OOT) was evaluated and it was determined the results based on the as-found conditions were bounded by the peak Reactor Coolant System (RCS) pressure results of the current Loss of Condenser Vacuum (LOCV) analysis of record (AOR) (A-PV2-FE-0160, Rev 2). LOCV is the most limiting event for peak primary pressure that is impacted by the PSV high OOT condition.

Previous similar events have been reported in the last three years.

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

## 1. REPORTING REQUIREMENT(S):

Surveillance testing of the Unit 1 pressurizer safety valves (PSVs) (EIS: RV, AB) was completed on March 5, 2003 and the as-found lift pressure for one of the four Unit 1 PSVs was found to be outside Technical Specification 3.4.10 limit of +3, -1 percent of design lift pressure.

This LER is being submitted because it is reasonable to assume that the out of tolerance (OOT) condition existed prior to discovery and may have exceeded Technical Specification (TS) required action completion times. Therefore, the condition is reportable under 10 CFR 50.73(a)(2)(i)(B).

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

The PSVs were manufactured by Dresser/Consolidated and are Consolidated 31700 series valves designed for nuclear service and certified under Section III, Class 1, of the ASME code for application in nuclear power systems. The PSVs are crossed bonnet maxiflow, spring loaded, direct acting, model no. 31709NA valves. The function of the PSVs is to limit reactor coolant system (EIS: AB) pressure to less than or equal to the TS 2.1.2 safety limit pressure of 2750 pounds per square inch absolute (psia) for moderate and low frequency events, and to less than 3000 psia for certain very low frequency events.

The PSVs are tested in accordance with TS Surveillance Requirements (SR) 3.4.10.1 and SR 3.4.11.1, the inservice testing program (IST), and the ASME Code. Although testing of these valves is required on a five-year frequency, Arizona Public Service Company (APS) tests the PSVs on a refueling (18-month) basis in accordance with previously determined corrective actions. TS Limiting Conditions for Operation (LCO) require as-found PSV lift settings to be within +3, -1 percent of the design lift pressure of 2475 psia. (2460 pounds per square inch gauge (psig)).

APS replaces PSVs during refueling outages with rebuilt and tested PSVs from APS inventory. PSVs removed during outages are as-found lift tested, disassembled, inspected, reassembled, and certified at NWS Technologies Laboratories.

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

There were no unusual characteristics of the work location (e.g., noise, heat, poor lighting) that contributed to this condition. Other than the PSV degradation described herein, there were no other component or system failures. There were no failures that rendered a train of a safety system inoperable and there were no personnel or procedural errors identified.

## 3. INITIAL PLANT CONDITIONS:

The Unit 1 PSV testing was completed at NWS Technologies Laboratories on March 5, 2003. During this period, Unit 1 was in Mode 1 (Power Operation) at approximately 98 percent power.

There were no major structures, systems, or components that were inoperable at the start of the event that contributed to the event.

## 4. EVENT DESCRIPTION:

On March 5, 2003, set pressure verification testing was completed on the PSVs that had been removed during the Unit 1 tenth refueling outage. The set pressure verification testing conducted at the NWS Technologies Laboratories, revealed that the as-found lift pressure for one of the four PSVs was outside the Technical Specification limits of +3, -1 percent of design lift pressure.

The as-found lift pressure for Unit 1 JRCEPSV0202 (s/n # BS-08592) was 2550 psig or 3.7 percent above the design lift pressure of 2460 psig. The as-found lift settings for the other three PSVs were within the TS limit of +3, -1 percent of design lift pressure.

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

**5. ASSESSMENT OF SAFETY CONSEQUENCES:**

The out of tolerance as-found PSV condition appears to be the result of a worn spring. The impact of the Unit 1 PSV Out of Tolerance was evaluated and it was determined the results based on the as found conditions were bounded by the peak RCS pressure results of the current Loss of Condenser Vacuum (LOCV) analysis of record (AOR) (A-PV2-FE-0160, Rev 2). LOCV is the most limiting event for peak Primary pressure that is impacted by the PSV high OOT condition. The safety function of the PSVs would have been met and this condition is therefore not reportable under 10CFR50.73(a)(2)(v).

**6. CAUSE OF THE EVENT:**

An evaluation of the as-found PSV high OOT condition is being conducted in accordance with the PVNGS corrective action program. The initial findings are that the as-found PSV OOT lift was the result of a spring whose physical condition relaxed over time and would no longer meet vendor specifications. If APS determines that the cause was something other than an out-of-tolerance spring, a supplement to this LER will be submitted.

**7. CORRECTIVE ACTIONS:**

All four PSVs were removed during the tenth refueling outage and replaced with rebuilt and tested PSVs from APS inventory.

The four Unit 1 PSVs removed during the tenth refueling outage were as-found lift tested, disassembled, inspected, reassembled and certified at the NWS Technologies Laboratories. No other discrepancies were noted during the disassembly and inspection of the PSVs. The OOT spring for S/N BS-08592 was replaced with a new spring prior to recertification testing.

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

## 8 PREVIOUS SIMILAR EVENTS:

Similar out-of-tolerance PSV conditions were reported in previously submitted LERs 529/1999-004 and 529/2000-008, where setpoint drift was the cause of the out-of-tolerance conditions. In this instance, the out-of-tolerance condition appears to be the result of spring relaxation. Although previous corrective actions have been effective in reducing the number of out-of-tolerance PSVs, as-found out-of-tolerance conditions periodically occur. APS evaluates industry operating experience for corrective actions that may improve PSV performance and APS may implement additional actions if they are demonstrated to be effective.