



Palo Verde Nuclear
Generating Station

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192-01082-WEI/AKK/RAS
January 10, 2001

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 2
Docket No. STN 50-529
License No. NPF-51
Licensee Event Report 2000-008-00**

Attached please find Licensee Event Report (LER) 50-529/2000-008-00 which has been prepared and submitted pursuant to 10 CFR 50.73. This LER reports the findings and corrective actions taken in response to out of tolerance pressurizer safety valves (PSV) which were discovered during post-outage testing.

The as-found lift pressures for two of the four Unit 2 PSVs were outside of the tolerance allowed by Technical Specification Limiting Conditions for Operation 3.4.10 and 3.4.11. The PSVs removed from Unit 2 were as-found lift tested, disassembled, inspected, reassembled and certified at Wyle laboratories.

The actions taken as a result of the out of tolerance PSVs are being controlled in accordance with the PVNGS corrective action program. As such, APS may modify these corrective actions as necessary to improve PSV reliability and performance. The corrective actions described in this LER are not necessary to maintain compliance with regulations and APS makes no commitments in this letter.

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In accordance with 10CFR50.4(b)(1), a copy of this LER is being forwarded to the Regional Administrator, 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.

Sincerely,



WEI/AKK/RAS

Attachment

cc: E. W. Merschoff (all with attachment)
J. H. Moorman
J. N. Donohew
INPO Records Center

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

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

1 REPORTING REQUIREMENT(S):

During surveillance testing of the Unit 2 pressurizer safety valves (PSVs) (EIS: RV, AB) which was completed on December 10, 2000, the as-found lift pressures for two of the four Unit 2 PSVs were found to be outside Technical Specification limits of +3 / -1 percent of design lift pressure.

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

In addition, this LER is being submitted pursuant to 10 CFR 50.73 (a)(2)(vii) because it is reasonable to assume that a single cause or mechanism served as a common input to the multiple PSV out of tolerance condition in a single system designed to mitigate the consequences of an accident.

2 DESCRIPTION OF STRUCTURE(S), SYSTEM(S) OR COMPONENT(S):

The Unit 2 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 the 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 specified 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)).

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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 Wyle Laboratories.

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 2 PSVs were tested at Wyle laboratories on December 9 and 10, 2000. During this period, Unit 2 was in Mode 1 (Power Operation) at approximately 99 percent power.

4 EVENT DESCRIPTION:

On December 10, 2000, set pressure verification testing was completed on the PSVs that had been removed during the Unit 2 ninth refueling outage. The set pressure verification testing conducted at the Wyle Laboratories, revealed that the as-found lift pressures for two of the four Unit 2 PSVs were outside the Technical Specification limits of +3 / -1 percent of design lift pressure.

The as-found lift setting for RCE-PSV-0201, serial number (s/n) BS-08566, was 2425 psig or 1.4 percent below the design lift pressure of 2460 psig. Conversely, the as-found lift pressure for Unit 2 RCE-PSV-202, 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 two Unit 2 PSVs were within the TS limit of +3 / -1 percent of design lift pressure.

5 SAFETY CONSEQUENCES:

An analysis of the safety consequences of the Unit 2 as-found PSV testing results is being conducted in accordance with PVNGS procedures. This analysis will encompass the effects of the two PSVs which were out of tolerance, as well as, the effects of Unit 2

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main steam safety valves (MSSVs)(EIS: RV, SB) which were found to be out of tolerance prior to Unit 2's ninth refueling outage (reference: LER 50-529/2000-002).

The analysis of safety consequences will be used to determine if the primary or secondary design peak pressures would have been exceeded under accident conditions. Based on past PSV as-found setpoints, APS does not anticipate the analysis will produce unbounded results and expects the safety function of the PSVs would have been met and this condition is therefore not reportable under 10CFR50.73(a)(2)(v).

If however, the final safety consequence analysis demonstrates that primary or secondary peak pressures would have been exceeded during accident conditions, or other accident conditions would have been unacceptable as a result of this condition, APS will provide the results of the analysis in a supplement to this LER.

6 CAUSE OF THE EVENT:

An evaluation of the as-found PSV lift testing results is being conducted in accordance with the PVNGS corrective action program. Preliminary findings are that the as-found PSV lifts were the result of setpoint drift. If APS determines that the cause was something other than setpoint drift, a supplement to this LER will be submitted.

The as-found PSV lift settings is indicative of less than optimum performance rather than equipment failure. The as-found setpoints do not appear to have adversely affected the PSV's ability to relieve primary system pressure and ensure pressure remains below design limits. However, the analysis of the safety consequences described above (section 5) will be used to determine if the primary or secondary design peak pressures would have been exceeded under accident conditions due to the out of tolerance PSV / MSSV conditions.

7 CORRECTIVE ACTIONS TO PREVENT RECURRENCE:

All four Unit 2 PSVs were removed and replaced with rebuilt and tested PSVs from APS inventory. The replacement PSVs were installed by November 3, 2000, during the ninth refueling outage.

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By December 13, 2000, the four Unit 2 PSVs removed during the ninth refueling outage were as-found lift tested, disassembled, inspected, reassembled and certified at Wyle Laboratories. No discrepancies were noted during the disassembly and inspection of the PSVs.

To the extent possible, the PSV as-left settings were maintained at the higher end of the allowable setpoint band during the certification process at Wyle Laboratories. This will allow for greater setpoint drift between the as-left setting and the low end of the tolerance.

8 PREVIOUS SIMILAR EVENTS:

Similar out-of-tolerance PSV conditions have been reported in LERs 50-529/99-004 and 50-528/98-004. 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 is evaluating industry operating experience for corrective actions that may improve PSV performance and APS may implement additional actions if they are demonstrated to be effective.