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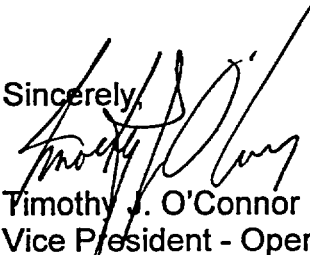
U. S. Nuclear Regulatory Commission  
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LER 272/02-006-00  
SALEM GENERATING STATION - UNIT 1  
FACILITY OPERATING LICENSE NO. DPR-70  
DOCKET NO. 50-272

Gentlemen:

This LER entitled "As Found Values for Main Steam Safety Valve and Pressurizer Safety Valve Lift Setpoints Exceed Technical Specification Allowable Limits" is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(i)(B). The attached LER contains no commitments.

Sincerely,



Timothy J. O'Connor  
Vice President - Operations

Attachment

/MGM

C Distribution  
LER File 3.7

IE 22

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**LICENSEE EVENT REPORT (LER)**

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

<b>1. FACILITY NAME</b> SALEM GENERATING STATION UNIT 1	<b>2. DOCKET NUMBER</b> 05000272	<b>3. PAGE</b> 1 of 4
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**4. TITLE**  
As Found Values for Main Steam Safety Valve and Pressurizer Safety Valve Lift Setpoints Exceed Technical Specification Allowable Limits

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	15	2002	2002	006	00	12	12	02	FACILITY NAME	DOCKET NUMBER
										05000
										05000

<b>9. OPERATING MODE</b> 6	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § - (Check all that apply)</b>									
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>10. POWER LEVEL</b> 0%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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**12. LICENSEE CONTACT FOR THIS LER**

<b>NAME</b> Michael G. Mosier, Senior Licensing Engineer	<b>TELEPHONE NUMBER (Include Area Code)</b> 856-339-5434
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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	SB	RV	C710	Y	B	AB	RV	C710	Y

<b>14. SUPPLEMENTAL REPORT EXPECTED</b>				<b>15. EXPECTED SUBMISSION DATE</b>		
YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO		MONTH	DAY	YEAR

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

During 1R15, with Salem Unit 1 in Mode 6 (Refueling) one Main Steam Safety Valve (MSSV) {SB/RV} and one Pressurizer Safety Valve (PSV) {AB/RV} that were tested in accordance with the requirements of the Technical Specifications (TS) and the ASME Operational and Maintenance (OM) – 1 Code failed.

On October 15, 2002, one of the five MSSVs failed to meet the TS required acceptance criteria, as established in TS Table 3.7-1. The MSSV testing scope was expanded (in accordance with ASME OM-1) to two additional valves. Both MSSVs tested satisfactorily. The apparent cause of the MSSV failing to meet the TS acceptance criteria was attributed to the valve spindle rubbing the spindle guide during lift due to misalignment. Corrective action taken was to repair the valve, retest to ± 1% as required by the TS, and reinstall.

On October 16, 2002, one PSV failed to meet TS 4.4.2 acceptance criteria. The PSV testing scope was expanded (in accordance with ASME OM-1) to two additional valves. Both PSVs tested satisfactorily. The apparent cause of the failure is that this was an original assembly valve and some parts may not have been lapped in place. Corrective action taken was to replace with the spare valve, tested to ± 1% as required by the TS.

This event is reportable in accordance with 10CFR50.73(a)(2)(i)(B), Operation or Condition Prohibited by Technical Specifications.

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SALEM GENERATING STATION UNIT 1	05000272	2002	0	0	6	00	2	of 4

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

**PLANT AND SYSTEM IDENTIFICATION**

Westinghouse – Pressurized Water Reactor  
Main Steam/Safety Valves {SB/RV}\*  
Pressurizer/Safety Valves {AB/RV}\*

\*Energy Industry Identification System (EIIIS) codes and component function identifier codes appear as {SS/CC}

**CONDITIONS PRIOR TO OCCURRENCE**

The plant was in the shutdown condition for refueling outage 1R15. No structures, systems, or components were inoperable at the time of discovery that contributed to the event.

**DESCRIPTION OF OCCURRENCE**

On October 15, 2002 with Unit 1 in Mode 6 (Refueling) one of five Main Steam Safety Valves (MSSV) {SB/RV} that were tested failed the as-found actuation pressure surveillance test, required by ASME OM-1987, Part 1, *Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices*. The Technical Specification (TS) acceptance band for the as-found actuation pressure is  $\pm 3\%$  of the nameplate setpoint pressure. The as-found actuation pressure for MSSV 12MS11{SB/RV} was above the upper limit of plus 3% of the nameplate setpoint. Also, on October 16, 2002 the as found actuation pressure for Pressurizer Safety Valve (PSV) 1PR3 {AB/RV} was below the lower limit of minus 3% of the nameplate setpoint.

The actual test results of the failed valves are:

Valve Id	As found (psig)	TS Setpoint (psig)	Acceptable band (psig)	% Difference
12MS11	1178	1125	1091.25 – 1158.75	+ 4.71
1PR3	2398	2485	2410.45 – 2559.55	- 3.50

Because the actual lift set point of the 12MS11 and 1PR3 were not within 3% of set point, expanded testing scope was performed in accordance with the In-Service Test (IST) program. Two MSSVs and two PSVs were tested and met the Technical Specification required acceptance criteria.

**CAUSE OF OCCURRENCE**

The apparent cause of the MSSV failing to meet the Technical Specification acceptance criteria was attributed to the valve spindle rubbing the spindle guide during lift due to misalignment. The apparent

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**CAUSE OF OCCURRENCE (Cont'd)**

cause of the misaligned valve internals is inappropriate handling. Although changes have been made for the handling of these valves, such as storage/shipping position, the removal and installation procedure will be enhanced to provide additional handling precautions.

The apparent cause of the PSV failing to meet the Technical Specification acceptance criteria is that this was an original assembly valve and some parts, such as the spring, spring caps and spindle mating surfaces, may not have been lapped in place during manufacture. During valve disassembly, all internal parts were inspected for dimensional acceptance and damage. All internal parts were satisfactory. The only work performed was the lapping of the mating surfaces of the spring, spring caps and spindle. The as-left test was satisfactory. Although the offsite test procedure provides specific direction to inspect these mating surfaces, there is no instruction to lap them during reassembly. The offsite repair procedure will be revised to perform the lapping of these parts if the valve is required to be disassembled.

**PRIOR SIMILAR OCCURRENCES**

A review of 2000 and 2001 LERs for Salem identified two occurrences where MSSVs exceeded the Technical Specification acceptance of  $\pm 1\%$ ; however, these occurrences would have met the current acceptance criteria of  $\pm 3\%$ . Hope Creek LERs were not reviewed since the valves are two stage and any corrective action would not have been applicable.

Corrective actions associated with these LERs would not have prevented this event, since both previous failures were due to seat leakage.

**SAFETY CONSEQUENCES AND IMPLICATIONS**

Regarding MSSVs, the UFSAR Chapter 15 events that tend to most challenge the allowable peak main steam system design pressure criterion are as follows: Loss of External Electrical Load and/or Turbine Trip (UFSAR Section 15.2.7), Loss of Normal Feedwater (UFSAR Section 15.2.8), and Loss of Power to the Station Auxiliaries (UFSAR Section 15.2.9). The calculated results for each of these three events were reviewed, and it was found that in all instances, the fifth safety was not actuated at all in protection against the over-pressurization of the main steam system. Even though this valve did not open in these events, all acceptance criteria were met. Thus, the one out of tolerance MSSV has no affect on the calculated results for the above listed MSS limiting transients.

With respect to PSVs, they are typically credited in the UFSAR Chapter 15 safety analyses for their pressure relief benefits, and these valves are modeled at the setpoint plus 3% tolerance. Thus, having one of these valves out of tolerance in the negative direction would be a direct benefit to all analyses that credit these valves for protection. However, one UFSAR Chapter 15 safety analysis,

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Spurious Operation of the Safety Injection System at Power, assumes that the valve could have opened at 2398 psig, thus, increasing the potential of liquid relief through the pressurizer safety valves. The calculated results for this transient were reviewed. The lower lift pressure of the one out-of-tolerance PSV has no affect on the calculated results, since it will not open given a spurious operation of the safety injection system. Therefore, the calculated results for UFSAR Section 15.2.14 remain bounding.

Based upon this analysis, there were no safety consequences or implications involved as a result of these valves exceeding the allowable tolerance. Therefore, the public health and safety was not affected.

A review of this condition determined that a Safety System Functional Failure (SSFF) has not occurred as defined in Nuclear Energy Institute (NEI) 99-02.

**CORRECTIVE ACTIONS:**

**MSSV**

1. Expanded scope of MSSV testing to include an additional 2 MSSVs from another header in accordance with the IST Program. The two additional valves tested satisfactorily.
2. Valve was disassembled, inspected, repaired, retested satisfactorily and reinstalled.
3. The removal and installation procedure will be enhanced to provide additional handling precautions.

**PSV**

1. Expanded scope of PSV testing to include an additional 2 PSVs in accordance with the IST Program. The two additional valves tested satisfactorily.
2. Valve was disassembled, inspected, reassembled, and retested satisfactorily.
3. Review the test performance of this style valve from its initial installation to present to determine if any downward trend in set point exists.
4. The offsite repair procedure will be revised to perform the lapping of the spring, spring caps and spindle mating surfaces if the valve is required to be disassembled.

**COMMITMENTS**

The corrective actions cited in this LER are voluntary enhancements and do not constitute commitments.