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U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

LER 272/01-003-00
SALEM GENERATING STATION - UNIT 1
FACILITY OPERATING LICENSE NO. DPR-70
DOCKET NO. 50-272

This Licensee Event Report, "As Found Value for Main Steam Safety Valve Lift Setpoint Exceeds Technical Specification Allowable Limits", is being submitted pursuant to the requirements of the Code of Federal Regulations 10CFR50.73(a)(2)(i)(B).

The attached LER contains no commitments.

Sincerely,

D. F. Garchow
Vice President - Operations

Attachment

/HGB

C Distribution
LER File 3.7

IE22

NRC FORM 366 (1-2001) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 6-30-2001

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 bjs1@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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
SALEM UNIT 1	05000272	1 OF 4

TITLE (4)

As Found Value for Main Steam Safety Valve Lift Setpoint Exceeds Technical Specification Allowable Limits

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER 05000
04	13	01	01	– 003	– 00	06	12	01	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	6
POWER LEVEL (10)	0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)

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) ■	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)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Howard G. Berrick	(856) 339-1862

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

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

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

On April 13, 2001, with Unit 1 in Mode 6 (Refueling) one of five Main Steam Safety Valves (MSSV) that was tested in accordance with the requirements of Technical Specifications and the ASME Operational and Maintenance (OM)-1 Code failed. The valve failed to meet the Technical Specification required acceptance criteria, as established in Technical Specification Table 3.7-1. The MSSV testing scope was expanded (in accordance with ASME OM-1) to two additional valves. Both additional MSSVs tested satisfactorily.

The apparent cause of the MSSV 11MS11 failing to meet the acceptance criteria was attributed to excessive seat leakage. From a process point of view, there were no processes or program deviations that contributed to this event. A setpoint variance of greater than ± 1.0% but less than ± 3.0% is not unusual for these valves, as described in AEOD/S92-02, *Safety and Safety / Relief Valve Reliability*. Corrective action taken was to replace the failed valve with a refurbished valve and retest to ensure compliance with the ± 1% Technical Specification.

A license change request to increase the setpoint tolerance from ± 1% to ± 3% has been submitted to the NRC. This event is reportable in accordance with 10CFR 50.73 (a)(2)(i)(B), *Operation or Condition Prohibited by Technical Specifications.*

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
SALEM UNIT 1	05000272	01	- 003 -	00	2 OF 4

NARRATIVE *(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}*

* Energy Industry Identification System (EIIS) codes and component function identifier codes appear in the text as {SS/CCC}.

IDENTIFICATION OF OCCURRENCE

Event Date: April 13, 2001

CONDITIONS PRIOR TO OCCURRENCE

Mode 6 – Refueling

DESCRIPTION OF OCCURRENCE

On April 13, 2001, with Unit 1 in Mode 5 (Refueling) one of five Main Steam Safety Valves (MSSV) {SB/RV} that was 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 ± 1% of the nameplate setpoint pressure. The as-found actuation pressure for MSSV 11MS11{SB/RV} was below the lower limit of minus 1% of the nameplate setpoint.

The actual test results of the failed valve is:

Valve Id	As found (psig)	TS Setpoint (psig)	Acceptable band (psig)	% Difference (psig)
11MS11	1111	1125	1113.8 – 1136.3	1.3%

Because the actual lift set point of the 11MS11 was not within 1% of set point, expanded testing scope was performed in accordance with the In-Service Test (IST) program. Two additional MSSV's were tested and met the Technical Specification required acceptance criteria. A review of this event determined that a Safety System Functional Failure (SSFF), as defined in NEI 99-02, did not occur. No structures, systems or components were inoperable at the time of this event that contributed to this event.

CAUSE OF OCCURRENCE

The apparent cause of the valves failing to meet the Technical Specification acceptance criteria was attributed to excessive seat leakage. The MSSV leakage is a result of steam cutting between the disc and nozzle seating area. Steam cutting can occur when system pressure reaches greater than 90% of set pressure, which typically occurs during a unit start-up. At this point, system pressure is sufficient to allow the relief valve(s) to simmer. If this simmering condition is allowed to exist for an extended period (e.g., during a unit start-up), the steam flow has the potential to erode small grooves into the seating surface. These small grooves create a permanent leak path by which steam continues to erode the disc and nozzle. This condition was confirmed when the valve was tested at the vendors test facility.

From a process point of view, there were no program or process deviations that contributed to this event. As described in AEOD/S92-02, *Safety and Safety / Relief Valve Reliability*, a set-point variance (drift) of greater than ±1.0% but less than ±3.0% is not unusual for these valves.

PRIOR SIMILAR OCCURRENCES

A review of 1999 and 2000 LERs for both Salem and Hope Creek identified 3 similar occurrences.

LER 311/99-001-00 issued April 23, 1999, identified several valve failures. The apparent cause of this event was attributed to set point variance (drift). Setpoint variance, as discussed in the AEOD/S92-02, is a result of aging. Aging is the effect seen by a component that remained unexercised for an extended period of time at extreme temperatures. Lubrication dries out due to high temperature, and due to component design, there is no lubricity provided by system fluid. Therefore, a ± 1.0% tolerance may be too restrictive for this application. These failures were also within the ± 3.0% tolerance.

LER 311/00-004-00 issued November 30, 2000, identified two MSSV that failed to meet the Technical Specification acceptance criteria of ± 1.0%. The apparent cause of this event was attributed to excessive seat leakage as indicated by steam cutting of valve disc and nozzle. Again, as discussed in the AEOD/S92-02, a set-point variance of greater than 1.0% but less than ± 3.0% is not unusual for these valves.

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
SALEM UNIT 1	05000272	01	- 003 -	00	4 OF 4

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

PRIOR SIMILAR OCCURRENCES (cont'd)

LER 354/00-003 issued on June 6, 2000, identified one safety relief valve that exceeded its Technical Specification acceptance criteria by 3.1%. The apparent cause of this event was attributed to friction on the sliding surfaces resulting from poorly controlled vendor's maintenance. These practices were addressed via a NUPIC audit.

Corrective actions associated with the Salem LER would have not precluded this event, since they did not involve the failure of a process or program. The safety relief valve associated with the Hope Creek LER was a two-stage power operated valve, therefore the corrective actions would not have been appropriate for this event.

SAFETY CONSEQUENCES AND IMPLICATIONS

There were no safety consequences associated with this event. The Salem licensing basis UFSAR Chapter 15 accident analyses were re-analyzed in support of a Fuel Upgrade/Margin Recovery Program (FUMRP), the Unit 1 Steam Generators Replacement Project, and NSAL 98-007 *"Analysis of Pressurizer Heaters"*. These analyses support a ±3% tolerance that bounds the as found condition of the valve and provides the justification for a license change request submitted on September 26, 2000.

Based on the above, the valve would have performed its intended safety function although the set point was found to be outside the Technical Specification tolerances, and the health and safety of the public and plant personnel were not affected.

CORRECTIVE ACTIONS

1. The MSSV has been refurbished to assure seat tightness to 95% of Setpoint pressure and tested to ensure compliance with the ±1% Technical Specification tolerance. NOTE: Valves are tested offsite every 72 months to ensure seat leakage criterion as well as compliance with the Technical Specification Setpoint tolerance is satisfied.

2. A license change request to increase the Technical Specification set-point tolerance from ±1% to ±3% was submitted to the NRC on September 26, 2000.

3. Two additional valves were tested in accordance with the IST program. The two additional valves tested were within the ±1% Technical Specification set-point tolerance.

COMMITMENTS

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