



10CFR50.73

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U.S. Nuclear Regulatory Commission
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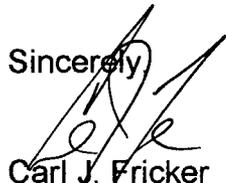
Salem Nuclear Generating Station Unit 1
Facility Operating License No. DPR-70
NRC Docket No. 50-272

Subject: Inoperability of the Auxiliary Feedwater System Due to a Partially Opened Damper

This Licensee Event Report, "Inoperability of the Auxiliary Feedwater System Due to a Partially Opened Damper," is being submitted pursuant to the requirements of the 10CFR50.73(a)(2)(i)(B), 10CFR50.73(a)(2)(v)(B), and 10CFR50.73(a)(2)(ii)(B) Code of Federal Regulations.

If you have any questions concerning this report, please contact E. H. Villar at (856) 339 - 5456.

Sincerely,


Carl J. Fricker
Salem Plant Manager

Attachments (1)

IF22

LICENSEE EVENT REPORT (LER)

Estimated burden per response to comply with this mandatory 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 and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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 Salem Generating Station - Unit 1	2. DOCKET NUMBER 05000272	3. PAGE 1 OF 4
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4. TITLE Inoperability of the Auxiliary Feedwater System Due to a Partially Opened Damper

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
09	28	2006	2006	002	00	11	27	2006	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: <i>(Check all that apply)</i>			
10. POWER LEVEL 100%	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME E. H. Villar, Senior Licensing Engineer	TELEPHONE NUMBER (Include Area Code) 856-339-5456
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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
X	VF	CDMP	J073	Y					

14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On September 28, 2006, Auxiliary Building Ventilation system damper 1ABS20 was discovered to be partially open. This damper is normally closed and opens when the room cooler is in service. The damper is located in the ceiling of the turbine driven Auxiliary Feedwater pump enclosure and exhausts air from the enclosure to the surrounding pump area during room cooler operation. The safety function of the damper is to close in a steamline break inside the enclosure, separating a harsh environment area from a mild environment area. With the damper partially opened and unable to close as designed, the operability of the motor driven Auxiliary Feedwater Pumps could not be established. The failed damper actuator was replaced and the damper was retested satisfactorily. The cause of the failed damper actuator was attributed to a higher than design air pressure supply to the actuator.

This event is reportable in accordance with 10CFR50.73(a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specifications; 10CFR50.73(a)(2)(v)(B), any event or condition that alone could have prevented the fulfillment of a safety function of a system needed to remove residual heat; and 10CFR50.73(a)(2)(ii)(B) an event or condition that resulted in the nuclear power plant, including its principal safety barriers being seriously degraded or in an unanalyzed condition that significantly degrades plant safety.

LICENSEE EVENT REPORT (LER)

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

PLANT AND SYSTEM IDENTIFICATION

Westinghouse – Pressurized Water Reactor (PWR/4)
Auxiliary Building Ventilation System (ABV){VF}*

* Energy Industry Identification System {EIS} codes and component function identifier codes appear as {SS/CCC}

IDENTIFICATION OF OCCURRENCE

Event Date: September 28, 2006

Discovery Date: September 28, 2006

CONDITIONS PRIOR TO OCCURRENCE

Salem Unit 1 was in Operational Mode 1 at 100% reactor power.

No structures, systems or components were inoperable at the time of the discovery that contributed to the event.

DESCRIPTION OF OCCURRENCE

On September 28, 2006, while on a routine walk down of the Auxiliary Building Ventilation (ABV){VF} system by Engineering and Operations personnel, it was discovered that damper 1ABS20 {DMP} was 30% open with the Auxiliary Feedwater pump room cooler out of service. This damper is normally closed and should open only when the room cooler is in service. The pump room cooler was turned on by Operations to cycle the dampers, but 1ABS20 damper did not change its position.

Damper 1ABS20 is a fail closed exhaust damper located in the ceiling of the turbine driven Auxiliary Feedwater pump enclosure. As stated in the Salem Updated Final Safety Analysis Report Section 3.6.5.10, the safety function of the damper is to close in a steamline break inside the enclosure, separating a harsh environment area from a mild environment area. The failed damper actuator (Johnson Controls serial number D-3246-1) was replaced and the 1ABS20 damper was retested satisfactorily. However, with the failed damper actuator installed, and the damper not being able to close as designed, the operability of the two motor driven Auxiliary Feedwater pumps could not be established. Technical Specification 3.7.1.2 requires that immediate actions be taken to restore the Auxiliary Feedwater System to operable.

This event is reportable in accordance with 10CFR50.73(a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specifications; 10CFR50.73(a)(2)(v)(B), any event or condition that alone could have prevented the fulfillment of a safety function of a system needed to remove residual heat; and 10CFR50.73(a)(2)(ii)(B) an event or condition that resulted in the nuclear power plant, including its principal safety barriers being seriously degraded or in an unanalyzed condition that significantly degrades plant safety.

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

PREVIOUS OCCURRENCES

A review of LERs at Salem Station dating back to 2001 did not identify any previous events.

CAUSE OF OCCURRENCE

The failed damper actuator was sent to a laboratory for analysis. The results of the analysis indicated that the damper rubber diaphragm was severely distorted and mechanical damage was observed on the internal surfaces of the actuator. The distortion of the diaphragm was caused by the air supply regulator providing higher pressure to the actuator than design. This caused the piston rod to become misaligned and the spring separator plate to bind and rub with the internal surface of the cylinder.

SAFETY CONSEQUENCES AND IMPLICATIONS

There was no actual safety consequences associated with this event.

Postulated break locations have been identified, sleeved and restrained to limit pipe break mass flow rates and preclude pipe whip damage to vital equipment, thus reducing the probability of this break. The main steam feedwater line to the turbine driven Auxiliary Feedwater pump enclosure has been sleeved. With the 1ABS20 damper 70% closed, steam induced failure of the Auxiliary Feedwater pump motors may not be precluded. If the steamline to the turbine driven Auxiliary Feedwater pump were to break and with the consequential failure of the 11 and 12 motor driven Auxiliary Feedwater pumps, Emergency Operating Procedures are in place to provide guidance to the control room personnel on diverse methods to place the unit in a safe condition following the event without the ability to supply cooling water to the steam generators. Licensed operators have been trained in these procedures. As such, the ability to safely shutdown the plant is not impacted.

A review of this event determined that a Safety System Functional Failure (SSFF) as defined in NEI 99-02, Regulatory Assessment Performance Indicator Guidelines, occurred due to a condition that alone could have prevented the fulfillment of a safety function of a system needed to remove residual heat.

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

CORRECTIVE ACTIONS

1. The actuator on damper 1ABS20 was replaced; the regulator set within the proper operating limits and the equipment retested satisfactorily.
2. The Unit 2 damper 2ABS20 was verified working properly.
3. The failed actuator was sent for analysis to determine the cause of failure.
4. A review of damper actuator design, preventive maintenance of the component, and operating procedures will be performed to improve damper reliability.

COMMITMENTS

No commitments are made in this LER.