



LR-N16-0216

10 CFR 50.73

**NOV 16 2016**

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

Salem Nuclear Generating Station Unit 1  
Renewed Facility Operating License No. DPR-70  
NRC Docket No. 50-272

SUBJECT: LER 272/2015-002-002  
Condition Prohibited by Technical Specification for One  
Channel of Steam Generator Level Indication Inoperable

REFERENCES: PSEG Letter LR-N15-0056, dated April 10, 2015  
Licensee Event Report 272/2015-002-000

PSEG Letter LR-N15-0138, dated July 06, 2015  
Licensee Event Report 272/2015-002-001

This Licensee Event Report (LER), "Condition Prohibited by Technical Specification for One Channel of Steam Generator Level Indication Inoperable," is being submitted pursuant to the requirements of the Code of Federal Regulations 10CFR50.73(a)(2)(i)(B), "Any operation which was prohibited by the plant's Technical Specifications." The attached LER supplement is being submitted to add information obtained during the vendor analysis of the associated transmitter and to update other information in the LER.

Should you have any questions or comments regarding the submittal, please contact Mr. Michael Phillips of Regulatory Affairs at 856-339-1873.

There are no regulatory commitments contained in this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "F. Kenneth Grover", written over a horizontal line.

F. Kenneth Grover  
Salem Plant Manager

map

Enclosure – LER 272/2015-002-002

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cc     D. Dorman, Administrator – Region 1  
       C. Parker, Licensing Project Manager – Salem  
       P. Finney, USNRC Senior Resident Inspector – Salem  
       P. Mulligan, Manager, IV, Bureau of Nuclear Engineering  
       T. Cachaza, Salem Commitment Coordinator  
       L. Marabella, Corporate Commitment Coordinator

**LICENSEE EVENT REPORT (LER)**(See Page 2 for required number of  
digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@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 3

**4. TITLE**

Condition Prohibited by Technical Specification for One Channel of Steam Generator Level Indication Inoperable

**5. EVENT DATE**

MONTH	DAY	YEAR
02	12	2015

**6. LER NUMBER**

YEAR	SEQUENTIAL NUMBER	REV NO.
2015	002	002

**7. REPORT DATE**

MONTH	DAY	YEAR
11	16	2016

**8. OTHER FACILITIES INVOLVED**

FACILITY NAME	DOCKET NUMBER
	05000
FACILITY NAME	DOCKET NUMBER
	05000

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

1

<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)

**10. POWER LEVEL**

100%

<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
<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)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER	Specify in Abstract below or in NRC Form 366A

**12. LICENSEE CONTACT FOR THIS LER****LICENSEE CONTACT**

Michael Phillips, Senior Regulatory Compliance Engineer

**TELEPHONE NUMBER (Include Area Code)**

856-339-1873

**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
B	JE	LT	R369	Y					

**14. SUPPLEMENTAL REPORT EXPECTED**☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE)☒ NO**15. EXPECTED SUBMISSION DATE**

MONTH	DAY	YEAR

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

On August 5, 2014, control room operators identified one steam generator (SG) protection level channel indicator as drifting high and approaching its 3 percent level deviation limit. Subsequent troubleshooting performed on October 10, 2014 identified the level transmitter as inoperable due to exceeding its Technical Specification (TS) calibration acceptance criteria. A past functionality evaluation was completed on February 12, 2015. This evaluation determined that the best estimate for when the transmitter would have exceeded its TS calibration acceptance criteria was August 19, 2013.

The cause of the SG protection level channel drifting was due to premature failure of its level transmitter due to a manufacturing defect. Vendor testing confirmed that a center diaphragm oil leak was the cause of the transmitter output drift.

This report is made in accordance with 10CFR50.73(a)(2)(i)(B), Any operation or condition which was prohibited by the plant's Technical Specifications.

**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [Infocollects.Resource@nrc.gov](mailto:Infocollects.Resource@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	2. DOCKET	6. LER NUMBER			3. PAGE
Salem Generating Station – Unit 1	05000272	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		2015	- 002	- 002	

**NARRATIVE****PLANT AND SYSTEM IDENTIFICATION**

Westinghouse-Pressurized Water Reactor {PWR/4}

Steam Generator Level Transmitter {JE/LT}

**IDENTIFICATION OF OCCURRENCE**

Event Date: 02/12/2015

Discovery Date: 02/12/2015

**CONDITIONS PRIOR TO OCCURRENCE**

Salem Unit 1 was in Operation Mode 1, operating at approximately 100% power. No additional structures, systems, or components were inoperable at the time of discovery that contributed to this event.

**DESCRIPTION OF OCCURRENCE**

On April 11, 2013, a new level transmitter was installed for 11 SG, Channel 2, 1LT519 as part of a planned 10 year replacement program.

On August 5, 2014, control room operators identified 1LT519 indication as drifting high and approaching the 3 percent level deviation limit but not exceeding the TS level channel limit.

On October 10, 2014, at 1014, troubleshooting of 1LT519 identified the transmitter as high outside its TS calibration acceptance criteria. The transmitter was calibrated and returned to service.

On February 12, 2015, a past functionality evaluation was completed for 1LT519. The evaluation, based on drift trending, concluded that the best estimate for when 1LT519 would have exceeded its TS calibration acceptance criteria was on August 19, 2013, approximately 130 days after its installation on April 11, 2013.

The subsequent surveillance test performed on February 26, 2015 met its TS acceptance criteria. 1LT519 was subsequently replaced on March 27, 2015.

Salem Unit 1 TS 3.3-1, Action 6 requires that startup or power operation may continue with an inoperable SG level channel provided it is placed in a tripped condition within 6 hours. 1LT519 would have exceeded its TS acceptance criteria on August 19, 2013 and was not placed in a tripped condition within 6 hours as required by TS.

This event is reported in accordance with 10CFR50.73(a)(2)(i)(B), "Any operation or condition which was prohibited by the plant's Technical Specifications..."

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**NARRATIVE****CAUSE OF EVENT**

The cause of the SG protection level channel drifting was due to premature failure of its level transmitter due to a manufacturing defect. Vendor testing confirmed that a center diaphragm oil leak was the cause of the transmitter output drift. The completion of the past functionality review was delayed and not completed until February 12, 2015 due to lack of timeliness guidance in the past functionality evaluation process.

**SAFETY CONSEQUENCES AND IMPLICATIONS**

The safety significance of this event is minimal. This event did not result in any offsite release of radioactivity or increase of offsite dose rates, and there were no personnel injuries or damage to any other safety-related equipment. The remaining two 11SG level protection channels were functional and their SG LO-LO Level protective trip functions remained capable of generating a reactor trip signal during the time in which 1LT519 was inoperable.

**SAFETY SYSTEM FUNCTIONAL FAILURE**

A review of this event determined that a Safety System Functional Failure (SSFF) as defined in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, did not occur. This event did not prevent the ability of a system to fulfill its safety function to either shutdown the reactor, remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident.

**PREVIOUS EVENTS**

A review of previous events for the past three years identified no other similar events.

**CORRECTIVE ACTIONS**

- 1LT519 was replaced and returned to service.
- Failure analysis was performed on the failed 1LT519 level transmitter.
- Guidance has been added to the engineering technical evaluation procedure for past operability and functionality reviews to ensure reporting requirements are properly supported.

**COMMITMENTS**

This LER contains no regulatory commitments.