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PSEG
Nuclear LLC

JUN 19 2015

LR-N15-0115

10 CFR 50.73

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

LER 272/2015-004-00
Salem Nuclear Generating Station Unit 1
Renewed Facility Operating License No. DPR-75
NRC Docket No. 50-311

SUBJECT: Condition Prohibited by Technical Specification for One Channel of Overtemperature Delta-T Inoperable

The Licensee Event Report, "Condition Prohibited by Technical Specification for One Channel of Overtemperature Delta-T Inoperable" is being submitted pursuant to 10 CFR 50.73 (a)(2)(i)(B), "Any operation or condition which was prohibited by the plant's Technical Specifications…"

The attached LER contains no commitments. Should you have any questions or comments regarding the submittal, please contact David Lafleur of Salem Regulatory Assurance at 856-339-1754.

Sincerely,

John F. Perry
Site Vice President – Salem

Attachments (1)

cc Mr. D. Dorman, Administrator – Region 1, NRC
Ms. C. Parker, Licensing Project Manager – Salem, NRC
Mr. P. Finney, USNRC Senior Resident Inspector, Salem (X24)
Mr. P. Mulligan, Manager IV, NJBNE
Mr. T. Cachaza, Salem Commitment Tracking Coordinator
Mr. L. Marabella, Corporate Commitment Tracking Coordinator
Mr. D. Lafleur, Salem Regulatory Assurance

NRC FORM 366 (01-2014) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 01/31/2017

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.

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

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4. TITLE Condition Prohibited by Technical Specification for One Channel of Overtemperature Delta-T Inoperable

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 05000
04	21	2015	2015	- 004	- 000	06	19	2015	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	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
10. POWER LEVEL	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
100%	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
	☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMER *(Include Area Code)*
David Lafleur, Senior Compliance Engineer, Salem Regulatory Assurance	856-339-1754

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
A									

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

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

Salem Unit 1 exceeded its Technical Specification (TS) allowed outage time for one channel of Overtemperature Delta-T (OT Delta-T) due to inadequate post-maintenance testing following replacement of a Power Range Nuclear Instrument (PR NI) upper detector current meter.

Corrective actions include an extent of condition review of other PR NI system post-maintenance testing and review of the post- maintenance testing procedure to identify deficiencies.

This report is made in accordance with 10 CFR 50.73 (a)(2)(i)(B), "Any operation or condition which was prohibited by the plant's Technical Specifications…"

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NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

Westinghouse - Pressurized Water Reactor {PWR/4}

Protection System, Meter {JC/MTR}

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

IDENTIFICATION OF OCCURRENCE

Event Date: April 21, 2015

Discovery Date: April 22, 2015

CONDITIONS PRIOR TO OCCURRENCE

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

DESCRIPTION OF OCCURRENCE

On April 21, 2015, at 1001, Salem Instrument and Controls (I&C) replaced the upper detector current meter on PR NI Channel 1N44 {JC/MTR}. The post-maintenance test and operations retest was completed at 1500 and the channel was declared operable.

On April 22, 2015 at 1337, operations personnel identified that the Axial Flux Recorder indication had made a step change from -1.8 percent to -3.0 percent indication but remained within acceptance limits, following replacement of the PR NI 1N44 upper detector current meter on April 21, 2015.

On April 23, 2015 at 0108, operations entered TS 3.3.1.1, Actions 2 and 6 for current adjustment of the 1N44 PR NI. I&C noted the as-found voltage at the input to the isolator that feeds the AFD recorder, the OT Delta-T channel, and the Delta Flux indicator was below the expected value. This would have caused the output of the isolator to be out of its acceptable range. The PR NI 1N44 channel detector adjustment was completed satisfactorily and the channel was declared operable at 0435.

Subsequent engineering analysis determined that the overall effect of the as-found voltage offset indicated that Channel 4 OT Delta-T had been inoperable since replacement of the upper detector current meter on April 21, 2015.

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Channel 4 of OT Delta-T was determined to have been inoperable for approximately 39 hours, exceeding its TS 3.3.1.1, Action 2 and 6 allowed outage time of 6 hours to place the channel in a tripped condition. A review determined there were no other NI PR channels taken out of service during the time of this event.

This report is made in accordance with 10 CFR 50.73 (a)(2)(i)(B), "Any operation or condition which was prohibited by the plant's Technical Specifications…"

CAUSE OF EVENT

The cause of Channel 4 OT Delta-T inoperability was due to replacement of the PR NI Channel 1N44 upper detector current meter. The post-maintenance test and operations retesting done was not adequate to ensure the systems associated with PR NI Channel 1N44 were restored to operability. The inadequate post-maintenance and retesting activities were the result of a work planner knowledge deficiency.

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. Existing plant conditions during this event did not challenge the OT Delta-T trip setpoint and the remaining three channels of OT Delta-T remained operable and capable of generating an OT Delta-T trip signal for all appropriate plant conditions.

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 OCCURRENCES

A review of Salem Unit 1 and 2 LERs for the previous three years identified one similar event:

LER 311/2015-001, Condition Prohibited by Technical Specification for One Channel of Overtemperature Delta-T Inoperable, dated March 19, 2015, describes a Salem Unit 2 event in which inoperability of Channel 4 of OT Delta-T was caused by a failed voltage isolator from PR NI Channel 2N44.

CORRECTIVE ACTIONS

1. An extent of condition review was performed on both Salem unit 1 and 2 to determine if other

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PR NI system post-maintenance testing would be similarly compromised. One corrective maintenance activity was found on PR NI 1N42 and was corrected to include the additional guidance needed in the post-maintenance testing and retesting.

2. The post-maintenance testing procedure will be reviewed to identify possible deficiencies for post-maintenance test planning.

3. The Planning Curriculum Review Committee will determine if formal training on this event will be required.

4. Operations will create a crew learning plan to ensure operations understands all downstream NI modules which could be affected by PR NI maintenance activities to ensure that post-maintenance retesting activities clearly address the impact of the maintenance performed.

5. Results of the work group evaluation completed for this event was communicated to work planners.

COMMITMENTS

This LER contains no regulatory commitments.