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TALEN ENERGY

MAR 0 3 2017

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

10 CFR 50.73

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 50-387/2016-018-01
UNIT 1 LICENSE NO. NPF-14
PLA-7557 **Docket No. 50-387**

Attached is a supplement to Licensee Event Report (LER) 50-387/2016-018. The LER reported an event involving inoperability of Reactor Core Isolation Cooling (RCIC). This event was determined to be reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

There were no actual consequences to the health and safety of the public as a result of this event.

This letter contains no new regulatory commitments.

B. Berryman

Attachment: LER 50-387/2016-018-01

Copy: NRC Region I
Ms. L. H. Micewski, NRC Sr. Resident Inspector
Ms. T. E. Hood, NRC Project Manager
Mr. M. Shields, PA DEP/BRP

NRC FORM 366 (06-2016) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2018

LICENSEE EVENT REPORT (LER)

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

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Susquehanna Steam Electric Station Unit 1	05000387	1 of 3

4. TITLE Inoperability of RCIC Due to an Oil Leak Caused by an Unidentified Gasket Issue

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
04	22	2016	2016	018	01	03	03	2017	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)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
10. POWER LEVEL	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
010	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
	☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
		☐ 50.73(a)(2)(i)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
C. E. Manges, Jr., Senior Engineer - Nuclear Regulatory Affairs	(570) 542-3089

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	BN	Gasket	Dresser	Y					

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)*

On April 22, 2016 at approximately 14:00, a two to three drop per second leak from the Reactor Core Isolation Cooling (RCIC) Turbine Lube Oil Filter, 1F212B, was identified which was subsequently determined to make RCIC inoperable. Unit 1 had entered Mode 1 at approximately 11:25 on April 22, 2016, and RCIC was considered to have been inoperable prior to the transition to Mode 1. As a result, the condition was considered a violation of Technical Specification (TS) 3.0.4 and reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

The cause of the leak was determined to be an unidentified gasket issue. Corrective actions included repair of the oil leak and replacement of both filter elements and all gaskets.

There were no actual consequences to the health and safety of the public as a result of this event.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Susquehanna Steam Electric Station Unit 1	05000-387	2016	- 018	- 01

NARRATIVE

CONDITIONS PRIOR TO EVENT

Unit 1 – Mode 1, approximately 10 percent Rated Thermal Power

Unit 2 – Mode 1, 100 percent Rated Thermal Power

There were no other structures, systems, or components that were inoperable at the start of the event that contributed to the event.

EVENT DESCRIPTION

On April 22, 2016 at approximately 11:25, Unit 1 entered Mode 1.

On April 22, 2016 at approximately 12:09, Technical Specification (TS) 3.5.3 was entered and the RCIC [EIIS System Identifier: BN] Quarterly Flow Surveillance was performed with reactor pressure vessel (RPV) pressure at approximately 930 psig.

On April 22, 2016 at approximately 14:00, a two to three drops per second leak on the 1F212B, RCIC Turbine Lube Oil Filter [EIIS Component Identifier: FLT], was identified.

On April 22, 2016 at approximately 16:01, the main turbine [EIIS System Identifier: TA] was tripped due to a seal oil leak on the collector end of the generator [EIIS System Identifier: TB].

On April 22, 2016 at approximately 20:57, the reactor entered Mode 2.

On April 23, 2016 at approximately 00:46, the reactor entered Mode 3. RPV Pressure was below 150 psig at approximately 03:00.

On April 23, 2016 at approximately 03:55, an operability review concluded that RCIC was inoperable since there was no guarantee that RCIC would meet its mission time with the identified leak.

On April 23, 2016 at approximately 06:54, the reactor entered Mode 4.

On April 30, 2016, both filter elements and all gaskets were replaced. These actions corrected the leak and RCIC was subsequently declared operable.

The leakage identified on April 22, 2016 was considered sufficient to require declaring RCIC inoperable. RCIC was also considered to have been inoperable prior to the transition to Mode 1. As a result, the condition was considered a violation of Technical Specification (TS) 3.0.4 and reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

CAUSE OF EVENT

The two items replaced to correct the leak were the gaskets and the filters. The filters would not cause an oil leak in the system and no deficiencies within the filters were identified. The gaskets were disposed of prior to the evaluation, and were the only difference that could have potentially resulted in the oil leak. Based on this available information, the direct cause of the leak was determined to be an unidentified gasket issue. A manufacturing defect or poor seating caused by pressurization are two of the potential gasket issues that could have caused the leak; however, a definitive apparent cause could not be determined.

ANALYSIS/SAFETY SIGNIFICANCE

Over time, a three drops per second leak would have caused the RCIC system to stop injecting into the vessel. Engineering analysis determined that RCIC would have operated sufficiently long such that the transient analysis in FSAR Section 15.2.7, "Loss of Feedwater Flow" and the safe shutdown function described in FSAR Section 7.4 would have been unaffected.

CORRECTIVE ACTIONS

Key corrective actions include the following:

1. The oil leak was repaired.
2. The Dresser gaskets that were installed at the time of the leak were replaced with ARGO 330 gaskets. The ARGO 330 gaskets are preferred for this application, and Susquehanna plans to use of the ARGO 330 gaskets going forward.

COMPONENT FAILURE INFORMATION

Information on the failed gasket is as follows:

Manufacturer: Dresser

Model #: CUNO Buna-N 1BD

PREVIOUS SIMILAR EVENTS

There were two RCIC oil filter leaks at Susquehanna in 1985; however, the cause of those events was identified to be sharp edges on the filter canister. Corrective action to replace the filter housing and elements has prevented recurrence of this issue.

Internal searches identified no degraded trends associated with Dresser gaskets.