Entergy

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Peter J. Miner
Manager, Regulatory Assurance

Letter Number 2.18.049

September 12, 2018

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

SUBJECT: Licensee Event Report 2018-005-00, Condition Prohibited by Technical Specifications Involving Standby Gas Treatment System Pneumatic Leakage Rate

Pilgrim Nuclear Power Station
Docket No. 50-293
Renewed License No. DPR-35

Dear Sir or Madam:

The enclosed Licensee Event Report 2018-005-00, Condition Prohibited by Technical Specifications Involving Standby Gas Treatment System Pneumatic Leakage Rate, is submitted in accordance with Title 10 Code of Federal Regulations 50.73.

If you have any questions or require additional information, please contact me at (508) 830-7127.

There are no regulatory commitments contained in this letter.

Sincerely,

PJM/rm

Attachment 1: Licensee Event Report 2018-005-00, Condition Prohibited by Technical Specifications Involving Standby Gas Treatment System Pneumatic Leakage Rate

IE22
NRR

cc: Mr. David C. Lew
Regional Administrator, Region I
U. S. Nuclear Regulatory Commission
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406-2713

Mr. John Lamb, Senior Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Stop 0-8C2A
Washington, DC 20555

NRC Senior Resident Inspector
Pilgrim Nuclear Power Station

Attachment 1

Letter Number 2.18.049

Licensee Event Report 2018-005-00, Condition Prohibited by Technical Specifications Involving Standby Gas Treatment System Pneumatic Leakage Rate

(3 Pages)

8NRC FORM 366 (04-2017) U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB: NO. 3150-0104 EXPIRES: 03/31/2020
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/)	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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by 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	2. DOCKET NUMBER	3. PAGE
Pilgrim Nuclear Power Station	05000-293	1 OF 3

4. TITLE Condition Prohibited by Technical Specifications Involving Standby Gas Treatment System Pneumatic Leakage Rate

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
									N/A	N/A
07	17	2018	2018	- 005	- 00	09	12	2018	FACILITY NAME	DOCKET NUMBER
									N/A	N/A

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
N	☐ 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)
100	☐ 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)*
Mr. Peter J. Miner - Regulatory Assurance Manager	508-830-7127

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	BH			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 July 17, 2018, with the Reactor in the Run Mode at approximately 100 percent power, it was determined through review of current and historical data that pneumatic leakage in the system used to operate dampers caused Train 'B' of the Standby Gas Treatment System (SGTS) to be made inoperable. Subsequent review determined that the condition existed for a period of time longer than allowed by Technical Specifications. This has been determined to be a reportable condition involving the SGTS in accordance with Title 10 Code of Federal Regulations 50.73(a)(2)(i)(B).

A failure modes analysis was used to identify potential pneumatic air leakage paths and specific locations within the SGTS. Field work included leak checks, replacement of solenoid operated valves, repair of a damper actuator, and post-work testing of the system. SGTS Train 'B' was functioning properly but had a reduced mission time based on the as-found pneumatic system leakage rate. SGTS Train 'A' was operable during the period of time SGTS Train 'B' was inoperable.

This event had no impact on the health and/or safety of the public.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Pilgrim Nuclear Power Station	05000- 293	2018	- 005	- 00

NARRATIVE

BACKGROUND

The Pilgrim Nuclear Power Station (PNPS) Standby Gas Treatment System (SGTS) is part of the Secondary Containment System (SCS) and addresses the SGTS air filtration trains, including the ducting, the exhaust fans, the dampers, and the various filtration media. The SCS is designed, in conjunction with other engineered safeguards and nuclear safety systems, to limit the release of radioactive material during normal plant operations within the limits of Title 10 Code of Federal Regulations (CFR) Part 20, Standards for Protection Against Radiation, and to limit the release of radioactive material so that off-site dose from a postulated design basis accident will be below the guideline values in 10 CFR Part 100, Reactor Site Criteria.

Upon receipt of an initiation signal, both SGTS fans start, heaters in both trains energize, and the dampers in both trains are aligned for service. The system can also be started manually from the control room. Each train's suction and discharge dampers are pneumatic; their motive power is supplied from a bank of air accumulators which, in turn, are charged from high pressure air bottles. SGTS Train 'A' isolation dampers fail open on loss of power and/or supply air, while the SGTS Train 'B' dampers fail closed.

EVENT DESCRIPTION

On July 17, 2018, while performing procedure 2.2.50, Standby Gas Treatment, Attachment 5, the leak rate in the pneumatic system was found to be greater than allowed in order to maintain SGTS Train 'B' operable for its 30-day mission time. At 1345 hours, Limiting Condition for Operation (LCO) Action Statement (AS) 3/4.7.B.1.c was entered. The TS requires the inoperable train be made operable within seven days or reactor shutdown shall be initiated and the reactor shall be in cold shutdown within the next 36 hours. The LCO AS was exited on July 24, 2018, at 0628 hours when the condition was corrected. SGTS Train 'B' was functioning properly but had a reduced mission time based on the as-found pneumatic system leakage rate. Subsequent review of historical data indicated that the leak rate in the pneumatic system exceeded the allowable rate on July 2, 2018, at 1315 hours. Therefore, the seven day LCO AS was exceeded on July 9, 2018, at 1315 hours. The inoperability of SGTS Train 'B' for greater than the Allowed Outage Time (AOT) is a condition prohibited by TS.

CAUSE OF THE EVENT

The cause of the event was exceeding the design limit for pneumatic leakage in the system used to operate SGTS dampers and failure to establish methods to ensure degraded leakage rates were identified.

CORRECTIVE ACTIONS

A failure modes analysis was used to identify potential pneumatic air leakage paths and specific locations within the SGTS. Investigation identified two leaking solenoid valves: SV-L-62, SBGT Train 'B' inlet damper and SV-L-67, SBGT Train 'A' inlet damper. Subsequent investigation and field testing identified that damper AO-N-99 was also contributing to the leakage. Field work included leak checks, replacement of solenoid operated

valves, repair of a damper actuator, and post-maintenance testing of the system.

Procedure 2.2.50, Standby Gas Treatment, was revised to record pneumatic system leakage rate upon charging the accumulators to have a real time check of system leakage with direction to initiate appropriate actions if leakage exceeds the allowable rate.

SAFETY CONSEQUENCES

SGTS Train 'B' was functioning properly but had a reduced mission time based on the as-found pneumatic system leakage rate. SGTS Train 'A' isolation dampers fail open on loss of power and/or pneumatic air, while the SGTS Train 'B' dampers fail closed. SGTS Train 'A' was operable at the time, so the SCS function was preserved.

Inoperability of SGTS Train 'B' had no impact on other required plant systems. SGTS does not contribute measurably to either the Core Damage Frequency or Large Early Release Frequency risk.

There were no consequences to the safety of the general public, nuclear safety, industrial safety, or radiological safety due to this event.

REPORTABILITY

One Train of SGTS made inoperable for a period of time greater than the AOT is a reportable condition in accordance with 10 CFR 50.73(a)(2)(i)(B).

PREVIOUS EVENTS

A review of PNPS Licensee Event Reports issued in the past three years was completed. The review focused on LERs that involved SGTS events, and in particular in-service failures. None were identified.

REFERENCES

CR-PNP-2018-05919
CR-PNP-2018-05946
CR-PNP-2018-06103