PSEG Nuclear LLC
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PSEG
Nuclear LLC

JUN 18 2018

10CFR50.73

LR-N18-0068

United States Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-001

Hope Creek Generating Station
Renewed Facility Operating License No. NPF-57
Docket No. 50-354

Subject: Licensee Event Report 2018-003-00, Feedwater Isolation Valve Leakage Exceeded Technical Specification Limit

In accordance with 10 CFR 50.73(a)(2)(i)(B), PSEG Nuclear LLC is submitting Licensee Event Report (LER) Number 2018-003-00, "Feedwater Isolation Valve Leakage Exceeded Technical Specification Limit."

If you have any questions or require additional information, please contact Mr. Thomas MacEwen at (856) 339-1097.

There are no regulatory commitments contained in this letter.

Sincerely,

John F. Garecht (acting plant Manager)

for Edward T. Casulli
Plant Manager
Hope Creek Generating Station

ttm

Attachment: Licensee Event Report 2018-003-00

cc: Mr. Daniel Dorman, Regional Administrator – Region I, NRC
Mr. Jim Kim, Project Manager - US NRC
Mr. Justin Hawkins, NRC Senior Resident Inspector – Hope Creek (X24)
Mr. Patrick Mulligan, Manager IV, NJBNE
Mr. Thomas MacEwen, Hope Creek Commitment Tracking Coordinator (H02)
Mr. Lee Marabella, Corporate Commitment Tracking Coordinator (N21)

NRC FORM 366 (02-2018) | 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/)

1. Facility Name	2. Docket Number	3. Page
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4. Title

Feedwater Isolation Valve Leakage Exceeded Technical Specification Limit

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	18	2018	2018	-003	-00	06	18	2018	Facility Name	Docket Number
										05000

9. Operating Mode

5

10. Power Level

0

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*

☐ 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)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 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)(ii)
☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(iii)
	☐ 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)
Thomas MacEwen, Principal Nuclear Engineer	856-339-1097

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable To ICES	Cause	System	Component	Manufacturer	Reportable To ICES
X	SJ	ISV	A391	N					

14. Supplemental Report Expected	15. Expected Submission Date	Month	Day	Year
☒ Yes (If yes, complete 15. Expected Submission Date) ☐ No		08	31	2018

Abstract (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

On April 18, 2018, with Hope Creek Generating Station (HCGS) in a planned refueling outage, HCGS performed a required surveillance test of the long term seal of the feedwater lines. The test criteria could not be met due to leakage past feedwater isolation valve H1AE -AE-HVF032B. The valve is sealed with a water seal from the High Pressure Reactor Coolant (HPCI) system, or Reactor Core Isolation Cooling (RCIC) system to form a long-term seal boundary of the feedwater lines. The valve is tested per Technical Specification 4.6.1.2.d to verify a maximum leak rate of 10 gpm at a test pressure of 55.7 psig. During the test, a test pressure of 44 psig was the highest pressure that could be obtained, which does not meet the acceptance criterion.

These conditions are being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by plant Technical Specifications.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Hope Creek Generating Station	05000-354	2018	- 003	- 00

NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

General Electric – Boiling Water Reactor (BWR/4)*
Feedwater System (SJ) – EIIS Identifier {SJ/ISV}
High Pressure Coolant Injection (BJ) – EIIS Identifier {BJ}
Reactor Core Isolation Cooling (BN) – EIIS Identifier {BN}
Secondary Containment (NG) – EIIS Identifier {NG}
*Energy Industry Identification System {EIIS} codes and component function identifier codes appear as {SS/CCC}

IDENTIFICATION OF OCCURRENCE

Event Dates: April 18, 2018
Discovery Dates: April 18, 2018

CONDITIONS PRIOR TO OCCURRENCE

Hope Creek was shut down for Refueling Outage H1R21 in Operational Condition (OPCON) 5 – Refueling Operations.

DESCRIPTION OF OCCURRENCE

On April 18, 2018, with Hope Creek Generating Station (HCGS) in a planned refueling outage, HCGS performed a required surveillance test of the long term seal of the feedwater lines. The test criteria could not be met due to leakage past feedwater system {SJ} isolation valve H1AE -AE-HVF032B. The valve is sealed with a water seal from the High Pressure Coolant Injection (HPCI) {BJ} system, or Reactor Core Isolation Cooling (RCIC) {BN} system, to form a long-term seal boundary of the feedwater lines. The valve is tested with water at a test pressure of 55.7 psig to ensure the seal boundary will prevent bypass leakage. During the test, a test pressure of 44 psig was the highest pressure that could be obtained, which does not meet the acceptance criterion.

The H1AE -AE-HV-F032B is 24 inch anchor darling "Y" type swing check valve with a Limitorque SMB-4 motor operator to assist in maintaining the valve closed.

Technical Specification 4.6.1.2.d limits the total combined leakage rate to 10 gpm, or less, for all the containment isolation valves which form the boundary for the long term seal of the feedwater lines, when tested at 55.7 psig. Based on the cause of the failure, and the maintenance history of the valve, it was concluded that the condition is reportable as a condition prohibited by Technical Specifications under 10 CFR 50.73(a)(2)(i)(B).

CAUSE OF EVENT

An internal inspection was performed on the H1AE -AE-HV-F032B under work order 60138581 in H1R21. The following was identified during this inspection:
-One bore on the hinge arm was larger than the acceptance criteria by an average of 0.004 inches. (2.039 inches vs 2.029 - 2.035 inches)
-The hinge pin was worn and undersized by 0.002 inches. (1.997 inches vs 2.000 +/- 0.001 inches)
-The gap between the hinge arm and disc was smaller by 0.0325 inches (0.030 inches vs 0.0625 inches)

The combination of the wear on the hinge arm bores, the wear on the hinge pin, and the smaller gap between the hinge arm and disc prevented the valve disc from properly seating, which resulted in the high leak rate.

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SAFETY CONSEQUENCES AND IMPLICATIONS

The long term feedwater seal is established following a Loss of Coolant Accident (LOCA) by manually aligning the RCIC and/or HPCI jockey pumps to the feedwater lines between the inboard and outboard containment isolation valves. H1AE -AE-HV-F032B is the outboard containment isolation valve on one of two feedwater supply lines. The purpose of the feedwater seal, as described in the UFSAR, is to establish a water seal of the feedwater penetrations to eliminate bypass leakage. The seal is established following a LOCA, and is to be maintained for a minimum of 30 days.

The purpose of the leak rate testing is to verify that the leakage is within the capability of the system to maintain the seal for the 30 day minimum.

An evaluation is in progress to determine if the as-found leakage would have affected the ability to maintain the feedwater seal for the 30 day minimum. A supplement to this LER will be submitted when the results of the evaluation are available.

PREVIOUS EVENTS

A review of Licensee Event Reports and the corrective action program for the past three years identified no LERs issued for similar conditions.

CORRECTIVE ACTIONS

The F032B check valve was opened and inspected. Corrective maintenance was performed to address the dimensional clearances and deficiencies identified in the Cause of Event section above. A satisfactory leak rate test was performed following the corrective maintenance.

COMMITMENTS

This LER contains no regulatory commitments.