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10CFR50.73

LR-N16-0241

JAN 09 2017

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

Hope Creek Generating Station Unit 1
Renewed Facility Operating License No. NPF-57
Docket No. 50-354

Subject: Licensee Event Report 2016-006-00, Mode Change Without B
Channel Level Instrumentation Operable

In accordance with the requirements of 10 CFR 50.73(a)(2)(i)(B), PSEG Nuclear LLC is submitting the enclosed Licensee Event Report (LER) Number 2016-006-00, "Mode Change Without B Channel Level Instrumentation Operable."

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,

A handwritten signature in black ink, appearing to read "E. Casulli".

Edward T. Casulli
Plant Manager
Hope Creek Generating Station

ttm

Attachment: Licensee Event Report 2016-006-00

cc: Mr. Daniel Dorman, Regional Administrator – Region I, NRC
Ms. Carleen Parker, 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)



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 estimates to the FOIA, Privacy and Information Collections Branch (T-5 F53), 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: Hope Creek Generating Station
2. DOCKET NUMBER: 05000354
3. PAGE: 1 OF 3

4. TITLE: Mode Change Without B Channel Reactor Level Instrumentation Operable

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
11	9	2016	2016	- 008	- 00	1	9	2017		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)			
2 - Startup	<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"/> 50.38(c)(1)(I)(A)	<input type="checkbox"/> 50.73(a)(2)(IV)(A)	<input type="checkbox"/> 50.73(a)(2)(X)
10. POWER LEVEL <1%	<input type="checkbox"/> 20.2203(a)(2)(II)	<input type="checkbox"/> 50.38(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"/> 50.38(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"/> 50.48(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)(VI)	<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: Thomas MacEwen, Principal Nuclear Engineer
TELEPHONE NUMBER (Include Area Code): 856-339-1097

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED: YES (If yes, complete 15. EXPECTED SUBMISSION DATE)
15. EXPECTED SUBMISSION DATE: MONTH 2, DAY 22, YEAR 2017

ABSTRACT (Limit to 1400 spaces, i.e., approximately 16 single-spaced typewritten lines)

On November 9, 2016, at 0420 with the Hope Creek reactor in Operational Condition 2, Startup, the B channel reactor level instrumentation was found to be inoperable. The inoperable instrumentation was discovered as reactor level was being lowered into the normal band in preparation for plant startup. Hope Creek had made a mode change from Operational Condition 4, Cold Shutdown, to Operation Condition 2, Startup, on November 9, 2016, at 0317, approximately 1 hour prior to discovering the inoperable instrumentation.

The B Channel reactor level instrumentation is required to be operable in order to enter Operational Condition 2 to support the B division of the Reactor Protection System (RPS), the Emergency Core Cooling Systems (ECCS), and the Primary Containment Isolation System (PCIS). The cause was determined to be an improperly filled reference leg for the B channel reactor level instrumentation. This report is being made under 10 CFR 50.73(a)(2)(I)(B), as a condition which was prohibited by the plant's Technical Specifications.



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

(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 FOIA, Privacy and Information Collections Branch (T-5 F53), 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, NE08-10202, (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. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Hope Creek Generating Station	05000-354	2016	- 006	- 00

NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

General Electric – Boiling Water Reactor (BWR/4)
 Reactor Protection System – EIS Identifier {JC/LI}*
 ESF Actuation System – EIS Identifier {JE/LI}*
 Containment Isolation Control System - EIS Identifier {JM/ LI}*

*Energy Industry Identification System {EIS} codes and component function identifier codes appear as {SS/CCC}

IDENTIFICATION OF OCCURRENCE

Event Date: November 9, 2016
 Discovery Date: November 9, 2016

CONDITIONS PRIOR TO OCCURRENCE

When the inoperable instrumentation was discovered, Hope Creek was in Operational Condition (OPCON) 2, Startup, with the reactor sub-critical, and a reactor startup in progress. No other structures, systems or components that could have contributed to the event were inoperable at the time of the event.

DESCRIPTION OF OCCURRENCE

During the twentieth refueling outage (H1R20) at Hope Creek, the reference leg for the B channel reactor vessel level instrumentation was replaced and rerouted using the design change process. The reference leg is normally maintained at a constant height of water by a condensing pot connected to the reactor vessel steam space. Initially, the reference leg needs to be backfilled with water to remove small pockets of air or voids which may be present. On November 9, 2016, the reference leg had not been backfilled following the re-routing of the reference leg tubing, resulting in an incorrect level indication on all B channel level instruments.

Following replacement of the reference leg, the design change package (DCP) did not provide instructions for back-filling the reference leg. Instead, the DCP relied on the maintenance department to backfill the reference leg while returning the affected instruments to service. The maintenance supervisor was not cognizant of the DCP scope, and determined that the step to backfill the reference leg was not required. The B channel instruments were returned to service by maintenance without completing the backfill evolution. As a result, the reference leg for the B channel was not completely filled with water, and level on this channel indicated higher than actual level. The top of the indicating band for Technical Specification required reactor vessel instrumentation is +60 inches, and water level was being maintained in a band of 60 to 65 inches prior to making the mode change. Under this condition, all four channels of Technical Specification required vessel level indication indicated off-scale high, above 60 inches. Vessel level was being monitored using non-Technical Specification required level instrumentation which has a wider indicating range. Under this condition, the incorrect indication on the B channel instrumentation was not observable to the plant operators.

Following the mode change, when vessel level was being lowered into the normal band of 30-39 inches, the A, C and D channels of vessel level instrumentation all tracked together into the indicating range, while the B channel remained off-scale high.

At approximately 0420, control room operators recognized the condition, declared the B channel inoperable and directed maintenance personnel to investigate.

At 0528 a prompt investigation was initiated by the Shift Manager.



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

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Estimated burden per response to comply with this mandatory collection request: 60 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-6 F53), 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.

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Plant Technical Specifications require that all four channels of vessel level instrumentation be operable prior to making the mode change from OP CON 4, Cold Shutdown to OP CON 2, Startup. The B channel level instruments are required for the operability of the B RPS {JC} channel, the B ECCS {JE} channels and B PCIS {JM} channels.

On November 9, 2016 at 1505, the B1 RPS channel and the B Nuclear Steam Supply Shutoff System (NSSS) {JM} were placed in the tripped condition to comply with the 12 hour action for Technical Specification 3.3.1, Reactor Protection System actuation instrumentation, and Technical Specification 3.3.2, Primary Containment Isolation actuation instrumentation.

Maintenance technicians completed the backfill of the B channel reference leg and the B channel was returned to operable on November 9, 2016 at 2228.

CAUSE OF EVENT

The cause of the event is personnel error. A causal evaluation is in progress. A supplement to this LER will be submitted to provide the results of the investigation.

SAFETY CONSEQUENCES AND IMPLICATIONS

There were no adverse safety consequences as a result of this event. The A, C and D channel level instruments were all operable throughout the duration of the event. The RPS system would have responded properly to shut down the reactor with the B channel level instruments inoperable. The A, C and D ECCS subsystems would have responded to an actual low level condition, and would have provided sufficient capability to restore and maintain vessel level. The reactor coolant system pressure remained within the design capability of the low pressure ECCS systems throughout the event. The PCIS system would have successfully isolated primary containment with the B channel level instruments inoperable since the A, C and D channels were operable.

The B channel level instrumentation was restored to operable prior to the mode change to Operational Condition 1, Run, which occurred on November 11, 2016 at 1423.

SAFETY SYSTEM FUNCTIONAL FAILURE

A review of this condition and the associated evaluations 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.

PREVIOUS EVENTS

The cause evaluation will review similarity to previous events. The result of that review will be included in the supplement.

CORRECTIVE ACTIONS

1. The B channel reference leg was backfilled and returned to operable status.
2. The personnel involved in the decision to not perform the backfill were disqualified from performing similar duties.

COMMITMENTS

There are no regulatory commitments contained in this LER.