



April 30, 2010

NRC 2010-0074
10 CFR 50.73

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

Point Beach Nuclear Plant, Unit 1
Docket 50-266
Renewed License No. DPR-24

Licensee Event Report 266/2010-001-00
Engineered Safety Features Steam Line Pressure Dynamics Modules
Discovered Outside of Technical Specification Values

Enclosed is Licensee Event Report (LER) 266/2010-001-00 for Point Beach Nuclear Plant (PBNP), Unit 1. This LER documents engineered safety features steam line pressure dynamic modules that were discovered to be outside of Technical Specifications (TS) values. Pursuant to 10 CFR 50.73(a)(2)(i)(B), the event is reportable as a condition prohibited by TS.

This submittal contains no new or revised regulatory commitments.

If you have questions or require additional information, please contact Mr. James Costedio at 920/755-7427.

Very truly yours,

NextEra Energy Point Beach, LLC

A handwritten signature in black ink, appearing to read "Larry Meyer".

Larry Meyer
Site Vice President

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

NRC FORM 366 (9-2007)	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB: NO. 3150-0104	EXPIRES: 08/31/2010
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)		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 Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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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4. TITLE
 Engineered Safety Features Steam Line Pressure Dynamics Modules Discovered Outside of Technical Specification Values

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
03	03	2010	2010	- 001 -	00	04	30	2010	Point Beach Unit 1	05000266
									FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE 6	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: <i>(Check all that apply)</i>									
10. POWER LEVEL 0%	<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(ix)(A) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 73.71(a)(4) <input type="checkbox"/> 73.71(a)(5) <input type="checkbox"/> OTHER	Specify in Abstract below or in NRC Form 366A					

12. LICENSEE CONTACT FOR THIS LER

NAME Ena Agbedia, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) 920/755-7654
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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 <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE MONTH DAY YEAR ____ ____ ____
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ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On March 3, 2010, procedure 1ICP 04.001E, Reactor Protection and Safeguards Analog Racks Steam Pressure Refueling Calibration, was performed to satisfy Point Beach Nuclear Plant (PBNP) Technical Specification (TS) Table 3.3.2-1 Function 1e, Surveillance Requirement (SR) 3.3.2.8. The testing determined that the as-found values for five out of six Unit 1 engineered safety features (ESF) steam line pressure (SLP) dynamic compensation module lead time constants were slightly below the TS required time constant limit of greater than or equal to 12.0 seconds (the TS requirement is ≥ 12).

The basis calculation for module drift addressed static settings only and did not address dynamic settings. As a result of not addressing the dynamic settings, the tolerances for as-left settings were too restrictive and did not sufficiently account for instrument drift. Corrective actions included performing an on-line calibration check and adjusting the modules to within the allowable as-left tolerances. The Unit 2 SLP module tolerances were confirmed to be within TS-required values. The out of specification lead time constants would not have prevented the associated channels from being able to perform their required safety-related functions in the event of a main steam line break (MSLB) accident. Pursuant to 10 CFR 50.73(a)(2)(i)(B), the event is reportable as a condition prohibited by TS.

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Event Description:

On March 3, 2010, during the Unit 1 Refueling 32 outage (MODE 6) performance of 11CP 04.001E, Reactor Protection and Safeguards Analog Racks Steam Pressure Refueling Calibration, it was discovered that the as-found values for five of the six Unit 1 steam line pressure (SLP) ESF instrument channel dynamic compensation module lead time constants [JE] were outside required Technical Specification (TS) values.

Event Analysis:

TS LCO 3.3.2, ESFAS Instrumentation, Table 3.3.2-1, Function 1.e requires that three channels are required per steam line to be operable to provide safety injection (SI) during MODES 1 and 2, and in MODE 3 when pressurizer pressure is greater than 1800 psig where a secondary side break or stuck open valve could result in rapid depressurization of the steam lines. The function is not required to be operable in MODES 4, 5 or 6.

Steam line pressure-low provides protection against the MSLB, feed line break and inadvertent opening of a steam generator (SG) relief or safety valve. The steam line pressure-low provides a signal for control of the main steam atmospheric steam dump valves. A failure of a steam line pressure channel will not create a control failure that would result in a low steam line pressure SI event.

The lead constant value is required to be greater than or equal to 12 seconds, and the lag value is required to be less than or equal to 2 seconds. The ESFAS steam line pressure instruments monitor main steam line pressure and actuate on a 2-out-of 3 (2/3) steam line pressure-low condition to provide protection against a MSLB, main feedwater line break, or an inadvertent opening of a SG relief or safety valve.

The results of an evaluation determined that the dynamic response for all six of the compensation modules lead time constants had drifted low after being set within 0.021 seconds of their ideal setting. None of the Unit 1 modules exceeded the required TS lag value.

All six channels were found to be within the static calibration as-found tolerances. Therefore, the module outputs were able to reach the allowable field trip setpoint of 530 psig when actual process pressure was 748 psig, providing an actual margin of 413 psig to the safety limit of 335 psig. The downstream bistables would have tripped to produce the steam line pressure low SI actuations that are required prior to reaching the TS-required value of 500 psig within 1.1313 seconds, which would provide a minimum margin of 165 psig to the analyzed safety limit of 335 psig.

Safety Significance:

A rupture of a steam pipe is assumed to include any accident which results in an uncontrolled steam release from a SG. The release can occur due to a break in a pipe line or due to a valve malfunction. The steam release results in an initial increase in steam flow which decreases during the accident as the steam pressure falls. The energy removal from the reactor coolant system causes a reduction of coolant temperature and pressure. With a negative moderator temperature coefficient, the cooldown results in a reduction of core shutdown margin. If the most reactive control rod is assumed stuck in its fully withdrawn position, there is a possibility that the core will become critical and return to power even with the remaining

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control rods inserted. A return to power following a steam pipe rupture is a potential problem only because of the high hot channel factors which may exist when the most reactive rod is assumed stuck in its fully withdrawn position. Assuming the worst case combination of circumstances which could lead to power generation following a steam line break, the core is ultimately shut down by the boric acid in the SI system.

The SI system actuates on 2/3 pressurizer low pressure signals; or 2/3 low pressure signals in any steam line; or 2/3 high containment pressure signals.

Based on the worst case as-found out of tolerance data obtained during the calibration procedure, the variations in the settings of the lead/lag functions in the signal would not have been consequential should an actual event have occurred because all six channels remained capable of providing the TS-required steam line pressure low SI dynamic response within 1.1313 seconds. The module output would reach 530 psig within this time when actual system pressure is 748 psig. This provides a margin of 413 psig to the analyzed safety limit of 335 psig. This is within the required time of 1.5 seconds of the evaluated accident.

All six channels were within TS-required static calibration as-found tolerances. Therefore, the module outputs were able to reach the trip setpoint of 530 psig and their downstream Bistables would have tripped to produce the steam line pressure low SI actuations that are required prior to reaching the TS-required value of 500 psig. This would provide a minimum margin of 165 psig to the analyzed safety limit of 335 psig.

Accordingly, the safety significance of this event is low.

Cause:

While the modules had drifted low over the last operating cycle, Engineering determined that over time the instrument tolerances had been tightened based upon increases in the accuracy of the calibration equipment and methods. The basis calculation for the SLP compensation modules had addressed only the static response settings and not the dynamic settings. Therefore, the apparent cause of the event was that the basis document for the static settings did not permit meaningful trending of calibration and surveillance monitoring data.

Corrective Action:

The following corrective actions were taken:

1. ESFAS SLP channel dynamic compensation modules lead and combined constants were adjusted to within the current allowable as-left tolerances.
2. The Unit 2 ESFAS SLP channel dynamic compensation modules calibration data was reviewed as part of the extent of condition review. It was confirmed that all six identical Unit 2 modules were within required TS values. Therefore, no adjustments were required. At the time of the review, Unit 2 was in MODE 1, operating at 100% power.

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Additional corrective actions to be taken include:

1. A trending and monitoring plan for the compensation modules will be developed and implemented that includes dynamic calibration data.
2. An on-line calibration check of the six Unit 1 compensation modules will be performed to assure that the settings have remained within acceptable tolerances.
3. The data obtained from the trending and monitoring plan will be used to develop a basis document for the static settings that supports the dynamic calibration method, ideal values and tolerances for the compensation modules.
4. Affected calibration procedures will be revised to incorporate new basis values.

Corrective actions have been entered into the site's corrective action program.

Previous Occurrences:

A review of recent LERs identified the following previous conditions that involved lead/lag time constants for steam line pressure outside technical specification Values:

<u>LER Number</u>	<u>Title</u>
266/301/2007-003-00	ESFAS Instrumentation, Lead/Lag Time Constants for Steam Line Pressure outside Technical Specification Values

Failed Components Identified: None.

Additional Information: None.