



April 26, 2016

10 CFR 50.73

Docket No. 50-443

SBK-L-16062

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

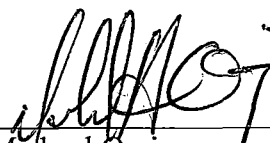
Seabrook Station  
Licensee Event Report (LER) 2016-002-00  
Emergency Feedwater System Actuation on Steam Generator Low-Low Level

Enclosed is Licensee Event Report (LER) 2016-002-00. This LER reports an event that occurred at Seabrook Station on March 2, 2016. This event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(iv)(A).

Should you require further information regarding this matter, please contact me at (603) 773-7512.

Sincerely,

NextEra Energy Seabrook, LLC

  
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Michael Ossing  
Licensing Manager

cc: D. Dorman, NRC Region I Administrator  
R. Gladney, NRC Project Manager  
P. Cataldo, NRC Senior Resident Inspector

IE22  
NRR

Enclosure to SBK-L-16062



**LICENSEE EVENT REPORT (LER)**

(See Page 2 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 FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet 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.

<b>1. FACILITY NAME</b> Seabrook Station	<b>2. DOCKET NUMBER</b> 05000          443	<b>3. PAGE</b> 1 OF 3
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**4. TITLE**  
 Emergency Feedwater System Actuation on Steam Generator Low-Low Level

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	02	2016	2016	002	00	04	26	2016		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)**

<b>3</b>	<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"/> 50.36(c)(1)(i)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)

<b>000</b>	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(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"/> 50.36(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"/> 50.46(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 type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<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**

<b>LICENSEE CONTACT</b> Michael Ossing, Licensing Manager	<b>TELEPHONE NUMBER (Include Area Code)</b> (603) 773-7512
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**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

<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	<b>15. EXPECTED SUBMISSION DATE</b>	MONTH	DAY	YEAR
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**ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)**

On March 2, 2016 at 1312 hours, during a plant cooldown, a valid actuation of the emergency feedwater system (EFW) occurred when B steam generator levels reduced to 20%. The lowering level was a result of the unanticipated tripping of the start up feed pump on low condensate storage tank level while it was the feed source to the steam generators. The start up feed pump was restarted and feed flow had been restored when the actuation took place. No adverse consequences resulted from this event.

The cause of the event is the on-shift operating crew was processing multiple procedure sections in parallel resulting in steps being performed out of sequence. Corrective action is to develop and deliver a case study outlining the event and clearly establishing operations leadership positions on procedure use.

NRC FORM 366A  
(11-2015)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104

EXPIRES: 10/31/2018



## LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

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 internet e-mail to [infocollects.Resource@nrc.gov](mailto: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. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Seabrook Station	05000- 443	2016	002	00

### NARRATIVE

#### Description of the Event

On March 2, 2016 at 1312 hours, during a plant cooldown, a valid actuation of the emergency feedwater [BA] system occurred when B steam generator levels [AB, SG] reduced to 20%. The lowering level was a result of the unanticipated tripping of the start up feed pump (SUFPP) on low condensate storage tank (CST) level while it was the feed source to the steam generators (SG). The SUFPP was restarted and feed flow had been restored when the actuation took place.

At the time of the event, the plant was in mode 3 and commencing cooldown at approximately 557 degrees F. The plant had been stable following a reactor trip due to a turbine trip that occurred approximately 10 hours earlier at 0253 with the SUFPP supplying SG inventory from the CST through the normal feedwater header. Decay heat removal was accomplished via SG steam flow to the condenser steam dump system. During the process of swapping the SUFPP suction from the CST to the hotwell condensate cleaning filters, a low suction pressure occurred at the SUFPP resulting in a pump trip. During restoration of the SUFPP, a low-low SG water level signal occurred and the turbine-driven and motor-driven EFW pumps automatically started at 1312 resulting in restoration and stabilization of SG inventory. Subsequently, the SUFPP was again used as the preferred feedwater source for SG inventory and decay heat removal.

This event resulted in a valid actuation of the EFW system and met the reporting criteria of 10 CFR 50.72(b)(3)(iv)(A). An eight hour report was made to the NRC at approximately 1813 on March 2, 2016 (event number 51765). This event is of regulatory significance because it resulted in actuation of a system provided to mitigate the consequences of an accident. No adverse consequences resulted from this event and this incident had no adverse impact on the health and safety of the public or the plant and its personnel. This event did not involve a safety system functional failure. No inoperable structures, systems or components contributed to this event.

#### Cause of the Event

An analysis of this event found the cause to be the on-shift operating crew was processing multiple procedure sections in parallel resulting in steps being performed out of sequence.

#### Analysis of the Event

The EFW System provides the capability to remove heat from the Reactor Coolant System during emergency conditions when the Main Feedwater System is not available. The system components, instrumentation, and power supplies are sized and designed with sufficient redundancy to maintain the system's safety-related functions under all credible accident conditions. The combination of one turbine-driven pump and one motor-driven pump provides a diversity of power sources to assure delivery of feedwater under emergency conditions. The Emergency Feedwater System will be actuated automatically on loss of offsite power, low-low level in any of the steam generators, safety injection signals or an ATWS mitigation system actuation signal.

During this event the EFW system responded as designed and functioned successfully when the low SG water level occurred. In addition, the EFW pumps take suction from the lower elevation of the CST and are not subject to the same suction limitation as the SUFPP, which normally has its suction aligned to the upper elevation of the CST. The reactor decay heat was relatively low given more than 10 hours decay time since reactor shut down. The CST water level at the time of the low suction pressure trip was approximately 227,800 gallons. The minimum required volume is 212,000 gallons; therefore there was significant water inventory available in the CST to supply the EFW pumps if needed for long term decay heat removal. Although the trip of the SUFPP was unexpected, the reason for the trip was quickly diagnosed and understood such that the function of the SUFPP was actually recovered (suction was re-aligned and the pump started) prior to the low-low SG level signal occurring. The SUFPP was out of service for a total time of 24 minutes and the EFW pumps operated for seven minutes. Thus, both EFW pumps remained automatically functional/available and the SUFPP remained manually functional/available via recovery.

## LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
Seabrook Station	05000- <div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto; text-align: center;">443</div>	YEAR	SEQUENTIAL NUMBER	REV NO.
		2016	002	00

### Corrective Actions

1. Develop and deliver a case study outlining this event and clearly establishing operations leadership position on Major Plant Evolution (MPE) procedure use.
2. Incorporate case study review as a recurring activity with a minimum periodicity of 2 years.

### Similar Events

LER 2009-001, Reactor Protection System Actuation on Steam Generator Low Water Level, reported the actuation of the reactor protection system resulting from low water levels in steam generators A and C. The root cause for this event was attributed to the Operations Department's liberal expectations and standards for implementation of certain procedures that direct major plant evolutions, which led to the operating crew's failure to assess potential risks associated with performing a plant cooldown without placing the residual heat removal (RHR) system in service.

### Additional Information

The Energy Industry Identification System (EIIS) codes are included in this LER in the following format: [EIIS system identifier, EIIS component identifier].