



June 2, 2014

10 CFR 50.73

Docket No. 50-443

SBK-L-14098

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

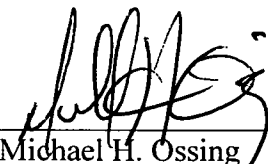
Seabrook Station
Licensee Event Report (LER) 2014-002
Reactor Coolant Pump Undervoltage Time Delay Relays Exceed Acceptance

Enclosed is Licensee Event Report (LER) 2014-002. This LER reports a condition that was discovered at Seabrook Station on April 6, 2014. This event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(B), 50.73(a)(2)(v)(A) and 50.73(a)(2)(vii).

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

Sincerely,

NextEra Energy Seabrook, LLC



Michael H. Ossing
Licensing Manager

cc: W. Dean, NRC Region I Administrator
J. G. Lamb, NRC Project Manager
P. Cataldo, NRC Senior Resident Inspector

IE22
NRR



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.

1. FACILITY NAME Seabrook Station	2. DOCKET NUMBER 05000443	3. PAGE 1 OF 3
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4. TITLE
Reactor Coolant Pump Undervoltage Time Delay Relays Exceed Acceptance Criteria

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
04	06	2014	2014	- 002	- 00	06	02	2014		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)**

6	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input checked="" type="checkbox"/> 50.73(a)(2)(vii)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
10. POWER LEVEL 000	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<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)(C)	<input type="checkbox"/> OTHER
	<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)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT Michael Ossing, Licensing Manager	TELEPHONE NUMBER (Include Area Code) 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

14. SUPPLEMENTAL REPORT EXPECTED <input checked="" type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE MONTH: 6 DAY: 30 YEAR: 2014
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On April 6, 2014, while the plant was in refueling outage sixteen, it was determined during surveillance testing that three of four reactor coolant pump (RCP) undervoltage (UV) reactor trip channels exceeded the Technical Specification (TS) channel response time acceptance criteria of 1.5 seconds for the RCP UV reactor trip function. The condition for the RCP UV time delay relays exceeding tolerance was experienced on all four channels; however, only three of the four channels did not meet their TS required response times. Since this condition involved multiple similar components, there is evidence indicating that this condition may have arisen over time and three channels of RCP UV were inoperable concurrently. This resulted in the plant operating in a condition prohibited by the TS.

A root cause evaluation team has been formed but has not yet completed its evaluation to determine the cause of the exceedances. This LER will be supplemented with cause and corrective actions when determined. Corrective actions already taken include the replacement of one relay and adjustment of all relays to acceptable response times.



**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, 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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NARRATIVE

Description of Event

On April 6, 2014, while the plant was in refueling outage sixteen (OR16), it was determined during surveillance testing that three of four reactor coolant pump (RCP) [AB, P] undervoltage (UV) reactor trip channels exceeded the Technical Specification (TS) channel response time acceptance criteria of 1.5 seconds for the RCP UV reactor trip function. The channel response time was exceeded because the RCP UV time delay relays (62V) [AB 27] exceeded their maximum allowable response time. The condition for the RCP UV time delay relays exceeding tolerance was experienced on all four channels; however, only three of the four channels did not meet their TS required response times. Since this condition involved multiple similar components, there is evidence indicating that this condition may have arisen over time and three channels of RCP UV were inoperable. This resulted in the plant operating in a condition prohibited by the TS from September 20, 2012 (last calibration date for 1-RC-P-1-C relay) to April 1, 2014.

Cause of Event

The cause of the event is currently being evaluated. This LER will be supplemented when the cause and corrective actions are determined.

Analysis of the Event

An out of tolerance condition was experienced on all four RCP 62V relays during OR16. The out of tolerance condition was identified during surveillance testing and resulted in three of four RCP UV trip channels exceeding their allowable response time.

Surveillance requirement (SR) 4.3.1.2 requires verification of the response time of each reactor trip function listed in TS Table 3.3-1, Reactor Trip System Instrumentation, every 18 months. The response time for the RCP UV reactor trip channel is ≤ 1.5 seconds. During the 18 month surveillance testing of the RCP 62V relays, three of the four RCP UV relays exceeded their maximum allowable response time, resulting in the undervoltage reactor trip channels exceeding the limit of ≤ 1.5 seconds.

TS 3.3.1, Reactor Trip System Instrumentation, requires four channels of RCP UV instrumentation in Mode 1 and provides an action for the case that one RCP channel is inoperable. For this condition, however, three channels of RCP UV were inoperable due to failure to meet the time response requirement of SR 4.3.1.2. Because no action addresses more than one channel inoperable, TS 3.0.3, which requires a timely plant shutdown, would be applicable to this condition. Plant operation with three RCP UV channels inoperable exceeded the shutdown times specified in TS 3.0.3; therefore, the condition resulted in an operation or condition prohibited by the TS. This condition existed from the time the relays were last calibrated in refueling outage fifteen (September 20, 2012) until the plant entered refueling outage sixteen (April 1, 2014).

This condition is being reported as a Safety System Functional Failure under 10 CFR 50.73(a)(2)(v)(A) as the condition involved the failure of a reactor trip function credited for shutdown of the reactor and mitigation of consequences of an accident.

This condition is also being reported under 10 CFR 50.73(a)(2)(vii)(A) as it involved the failure of an RCP UV reactor trip function credited for shutdown of the reactor and mitigation of consequences of an accident and caused multiple channels to become inoperable. During OR16 surveillance testing, all four RCP UV time delay relays exceeded their response time acceptance criteria. As a result three of the four channels exceeded their TS channel response time for the RCP UV trip function.



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NARRATIVE

Although determined to be a Safety System Functional Failure, the millisecond delays in reactor trip signal on RCP UV is not risk significant because the RCP UV trip signal is one of several redundant and diverse reactor trip signals in the reactor protection system. The RCP UV trip, along with the RCP underfrequency trip, serve as a backup to the low reactor coolant system (RCS) [AB] flow trip, which provides protection for a partial loss of RCS flow. The three trips also provide protection for a complete loss of RCS flow. The observed behavior in each UV trip circuit included a slight extension (0.0067, 0.0289 and 0.1165 second) in the total circuit actuation time, not a failure of the circuit to actuate. Although the actuation time exceeded the TS response time limit, the additional actuation time is very small and would have negligible impact on plant risk. In addition, the RCP underfrequency trip, the RCS low flow trip, and manual trip provided redundant reactor trip capability during this event. The Station intends to not count this event as an SSFF in the 2nd Quarter 2014 indicator as the condition would not have caused the reactor to fail to trip.

Corrective Actions

The following corrective actions were completed

- 1-RC-P-1-B undervoltage relay was replaced with a new relay and adjusted to the required response time.
- 1-RC-P-1-C and 1-RC-P-1-D undervoltage relays were adjusted to the required response times.

Similar Events

LER 2012-001 and 2012-002 reported inadequate testing of response times. The reports documented that surveillance testing had not verified the response time of emergency feedwater relays (LER 2012-001) and reactor trip breaker shunt trip circuits (LER 2012-002). These events resulted from ineffective methods utilized in the mid 1980's to verify that surveillance test procedures ensured compliance with the TS.

Additional Information

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