FPL Energy
Seabrook Station

FPL Energy Seabrook Station
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MAY 16 2005

Docket No. 50-443
SBK-L-05099

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

Seabrook Station
Licensee Event Report (LER) 2005-003-00 for
Plant Shutdown Due to Inoperable Reactor Trip Breaker

Enclosed is Licensee Event Report (LER) 2005-003-00. This LER reports an event that occurred at Seabrook Station on March 22, 2005. This event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(A).

Should you require further information regarding this matter, please contact Mr. James M. Peschel, Regulatory Programs Manager (603) 773-7194.

Very truly yours,

FPL ENERGY SEABROOK, LLC

Mark E. Warner
Site Vice President

cc: S. J. Collins, NRC Region I Administrator
V. Nerses, NRC Project Manager, Project Directorate I-2
G. T. Dentel, NRC Senior Resident Inspector

IE22

ENCLOSURE TO SBK-L-05099

NRC FORM 366 (5-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 06/30/2007

Estimated burden per response to comply with this mandatory collection request: 50 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.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
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4. TITLE
Plant Shutdown Due to Inoperable Reactor Trip Breaker

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
									N/A	05000
3	22	2005	2005	- 003 -	00	05	16	2005	FACILITY NAME: N/A	DOCKET NUMBER: 05000

9. OPERATING MODE
1

10. POWER LEVEL
100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: *(Check all that apply)*

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☒ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☐ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
James M. Peschel, Regulatory Programs Manager	603-773-7194

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	JC	17	N/A	Y					

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On March 22, 2005 at 1022 during operation in Mode 1 at 100% power, Seabrook Station entered the action statement of Technical Specification (TS) 3.3.1, Reactor Trip System Instrumentation, for an inoperable train A reactor trip breaker. While performing routine surveillance testing on the solid state protection system, the reactor trip breaker unexpectedly tripped open and subsequently failed to close upon initiation of a close signal. As a result, the station entered action 9 of TS Table 3.3-1, which requires the unit to be in Hot Standby within the next 6 hours. A plant shutdown commenced at 1102. The NRC was notified of the initiation of this TS-required shutdown in a four-hour report (event #41513) in accordance with 10CFR50.72(b)(2)(i). The plant entered Mode 3 at 1547 on March 22, 2005. The apparent cause of this event was a malfunctioning switch associated with the Auto Shunt Trip Test pushbutton. The reactor trip breaker was restored to operable status at 0101 on March 23, 2005. No adverse consequences resulted from this event.

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* (17)

I. Description of Event

On March 22, 2005 at 1022 during operation in Mode 1 at 100% power, Seabrook Station entered the action statement of Technical Specification (TS) 3.3.1, Reactor Trip System Instrumentation, for an inoperable train A reactor trip breaker (RTA) [JE, 52]. While performing a routine actuation logic surveillance test on the solid state protection system (SSPS) [JE], the reactor trip breaker unexpectedly tripped open and subsequently failed to close upon initiation of a close signal. As a result, the station entered action 9 of TS Table 3.3-1, which requires the unit to be in Hot Standby within the next 6 hours. A plant shutdown commenced at 1102. The NRC was notified of the initiation of this TS-required shutdown in a four-hour report (event # 41513) in accordance with 10CFR50.72(b)(2)(i). The plant entered Mode 3 at 1547 on March 22, 2005. The reactor trip breaker was restored to operable status at 0101 on March 23, 2005.

II. Cause of Event

The apparent cause of this event was a malfunctioning switch [JC, 17] associated with the Auto Shunt Trip Test pushbutton (Grayhill Inc., part number 7-26RED). This feature is used to test the shunt trip device on the reactor trip breakers. Industry experience has shown that these switches become unreliable due to sub-component wear and time in service and should be replaced periodically. The failure of the switch caused actuation of the shunt trip coil, providing a trip open signal to RTA, and prevented closure of the breaker.

The station became aware of the switch reliability issue in 2002 and developed a preventative maintenance activity to replace the switches on a 6th refueling outage interval. In 2004, a switch with a new design became available, and replacement of the switches was scheduled for the refueling outage that was scheduled to commence on April 1, 2005. Prior to this event, the switches neither performed erratically nor experienced any failures. A review of the extent of condition identified that the switch unreliability concern also existed with the Auto Shunt Trip Block pushbutton associated with the reactor trip breakers.

III. Analysis of Event

This event met the reporting criteria of 10CFR50.72(b)(2)(i) and 50.73(a)(2)(i)(A) for initiation and completion of a plant shutdown required by the TS. This event is of regulatory significance because the condition was sufficiently serious to warrant a plant shutdown. Nonetheless, no consequences resulted from the event and, therefore, this occurrence had no adverse impact on the plant or on the health and safety of the public. No inoperable structures, systems, or components other than RTA contributed to the event.

The malfunction of the reactor trip breaker was classified as a Maintenance Rule Functional Failure. However, this condition did not result in a loss of safety function since the redundant train of the reactor protection system, including the reactor trip and bypass breakers, remained operable during the event.

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* (17)

IV. Corrective Action

The interim corrective action consisted of implementing a temporary modification that installed a jumper around the Auto Shunt Trip Test pushbutton. Replacement of the train A and train B switches for the Auto Shunt Trip Test and Auto Shunt Trip Block devices was completed in the April 2005 refueling outage.

V. Additional Information

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

VI. Similar Events

The station has had no previous occurrences of malfunctions of the switches in the reactor trip breaker Auto Shunt Trip Test device.