



**FPL Energy**  
**Seabrook Station**

**FPL Energy Seabrook Station**  
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DEC 22 2003

Docket No. 50-443

NYN-03098

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

Seabrook Station  
Licensee Event Report (LER) 2003-002-00 for  
Reactor Trip Following the Loss of a Main Feed Pump

Enclosed is Licensee Event Report (LER) 2003-002-00. This LER reports an event that occurred at Seabrook Station on October 31, 2003. 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 Mr. James M. Peschel, Regulatory Programs Manager (603) 773-7194.

Very truly yours,

FPL ENERGY SEABROOK, LLC

Mark E. Warner  
Site Vice President

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

IE22

**ENCLOSURE TO NYN-03098**

Estimated burden per response to comply with this mandatory information 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 Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@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 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)

<b>1. FACILITY NAME</b> Seabrook Station	<b>2. DOCKET NUMBER</b> 0500 - 0443	<b>3. PAGE</b> 1 OF 3
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**4. TITLE**  
Reactor Trip Following The Loss Of a Main Feed Pump

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	31	2003	2003	002 - 00		12	23	2003	N/A	N/A
									FACILITY NAME	DOCKET NUMBER
									N/A	N/A

<b>9. OPERATING MODE</b> 1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR : (Check all that apply)</b>									
<b>10. POWER LEVEL</b> 100	20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)			
	20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)			
	20.2203(a)(1)		50.36(c)(1)(i)(A)		X 50.73(a)(2)(iv)(A)		73.71(a)(4)			
	20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)			
	20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER			
	20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)		Specify in Abstract below or in NRC Form 366A			
	20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)					
	20.2203(a)(2)(v)		50.73(a)(2)(i)(B)		50.73(a)(2)(vii)					
20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)						
20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)						

**12. LICENSEE CONTACT FOR THIS LER**

<b>NAME</b> James M. Peschel, Regulatory Programs Manager	<b>TELEPHONE NUMBER (Include Area Code)</b> (603) 773-7194
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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
X	SJ	SCO	G080	X	N/A	N/A	N/A	N/A	N/A

<b>14. SUPPLEMENTAL REPORT EXPECTED</b>				<b>15. EXPECTED SUBMISSION DATE</b>		
YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO		MONTH	DAY	YEAR
				N/A	N/A	N/A

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

At approximately 1948 hours on October 31, 2003, with the plant operating in Mode 1 at 100% power, Seabrook Station experienced an automatic reactor trip following a transfer of the "A" Main Feed Pump (MFP) from the "Manual" to "Automatic" mode of operation. At the time of the reactor trip, plant personnel were troubleshooting the Emergency DC Lube Oil Pump (DC Pump) for the "A" MFP. In order to assist in the performance of troubleshooting activities, the "A" MFP slave controller was placed in the manual mode of operation. When the slave controller was returned to the automatic mode of operation, the "A" MFP control valves closed and the pump coasted down. Due to the reduced feedwater flow, steam generator levels decreased over an approximately forty-eight second period until an automatic reactor trip occurred when the lo-lo level setpoint (25%) was actuated.

The cause of the reactor trip was a loss of the "A" MFP when its controller was placed in automatic mode of operation from the manual mode of operation. The loss of the "A" MFP was due to a degraded circuit board/component in the "A" MFP MDT-20 Governor Speed Controller. There were no adverse safety consequences as a result of this event. Plant systems responded normally as a result of the reactor trip.

Corrective action was to replace the failed circuit board.

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Seabrook Station	0500-0443	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		2003	- 001	- 01	

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

**I. Description of Event**

At approximately 1948 hours on October 31, 2003, with the plant operating in Mode 1 at 100% power, Seabrook Station experienced an automatic reactor trip following a transfer of the "A" Main Feed Pump (MFP) [SJ] from the "Manual" to "Automatic" mode of operation. At the time of the reactor trip, plant personnel were troubleshooting the Emergency DC Lube Oil Pump (DC Pump) for the "A" MFP. The Emergency DC Lube Pump was experiencing numerous intermittent starts. In order to assist in the performance of troubleshooting activities, the "A" MFP slave controller was placed in the manual mode of operation. When the slave controller was returned to the automatic mode of operation, the "A" MFP control valves closed and the pump coasted down. Due to the reduced feedwater flow, steam generator levels decreased over an approximately forty-eight second period until an automatic trip occurred when the lo-lo level setpoint (25%) was actuated.

Plant systems responded normally as a result of the reactor trip. The Emergency Feedwater (EFW) [BA] system actuated as designed to restore steam generator water levels. All control rods fully inserted. No primary or secondary relief valves lifted. This event was reported to the NRC at 2115 on October 31, 2003 (Event Number 40286) pursuant to the requirements of 10 CFR 50.72(b)(2)(iv)(B) and 10 CFR 50.72(b)(3)(iv)(A). This event is also reportable pursuant to 10 CFR 50.73(a)(2)(iv)(A).

**II. Cause of Event**

The cause of the plant trip was a loss of the "A" MFP when its controller was placed in the automatic mode of operation from the manual mode of operation. The loss of the "A" MFP was due to a degraded circuit board/component in the "A" MFP General Electric MDT-20 Governor Speed Controller. The failed circuit board, in response to a signal change such as what is experienced when switching from manual to auto control, produced an output to drive the "A" MFP control valves closed which is not a normal response.

**III. Analysis of Event**

There were no adverse safety consequences as a result of this event. The Feedwater system is designed to supply feedwater to the steam generators to maintain the proper steam generator levels during steady-state and transient conditions. The feedwater flow from the two variable speed, horizontal, turbine-driven steam generator feedwater pumps combines into a common header that feeds two parallel high pressure heaters. The outlets of the high-pressure heaters combine into a common header. From this common header, an individual feedwater line supplies each steam generator.

The loss of normal feedwater results in a reduction of the capability of the secondary system to remove heat generated in the reactor core. In the event that the Feedwater system becomes unavailable, the Emergency Feedwater (EFW) system is designed to provide the emergency supply of feedwater. The EFW system is actuated automatically on loss of offsite power, lo-lo level in any of the steam generators, safety injection signals, or an Anticipated Transient Without Scram (ATWS) mitigation system actuation signal to remove sufficient heat to prevent over-pressurization of the Reactor Coolant System, and to allow for eventual system cool-down. The loss of normal feedwater is classified as an American Nuclear Society (ANS) Condition II event, a fault of moderate frequency and is a condition analyzed in Chapter 15 of the Seabrook Station Updated Final Safety Analysis Report.

During this event, the loss of the "A" MFP resulted in a reduced feedwater flow, which caused steam generator levels to rapidly decrease to the lo-lo setpoint resulting in a reactor trip. Plant systems responded normally as a result of the reactor trip. The Emergency Feedwater (EFW) system actuated as designed to restore steam generator water levels. All control rods fully inserted and no primary or secondary relief valves lifted.

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FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Seabrook Station	0500-0443	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 3
		2003	- 001	- 01	

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

IV. Corrective Actions

The failed circuit board in the A\* MFP General Electric MDT-20 Governor Speed Controller was replaced.

V. Additional Information

None

VI. Similar Events

This is the first event of this type within the past two years. Previous reactor trips due to lo-lo steam generator levels were described in LERs 90-025-00, 92-017-00, 93-01-00, 97-012-00 and 00-004-00. A review of the causes, failures, and sequence of these events indicates that they are unrelated to this event.