NRC Form 366 (9-83)

LICENSEE EVENT REPORT (LER)

U.S. Nuclear Regulatory Commission
Approved OMB No. 3150-0104
Expires: 8/31/85

Facility Name(1)	Docket Number(2)	Page(3)
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Title(4)
Plant Trip While Repairing a Feedwater Flow Recorder

Event Date(5)			LER Number(6)			Report Date(7)			Other Facilities Involved(8)	
Month	Day	Year	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)
										0 5 0 0 0
0 7	0 1	8 5	8 5	- 0 0 7	- 0 0					0 5 0 0 0

Operating Mode (9): 7

Power Level (10): 0 9 5

This Report is Submitted Pursuant to the Requirements of 10 CFR § (Check one or more of the following) (11)

20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	Other (Specify in Abstract below and in Text, NRC Form 366A)
20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	Telephone Number
Steven J. LaFlamme, Senior Nuclear Safety Engineer	Area Code 2 0 7 8 8 2 6 3 2 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

Cause	System	Component	Manufacturer	Reportable to NPRDS	Cause	System	Component	Manufacturer	Reportable to NPRDS
X	S J	F R	F 1 2 0	N					

Supplemental Report Expected (14)

		Expected Submission Date(15)	Month	Day	Year
Yes (If yes, complete Expected Submission Date)	X No				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

While at 95% power during coastdown operations at the end of cycle, a steam driven main feedwater pump trip, turbine trip, and reactor trip, occurred while an Instrumentation and Controls Technician was repairing the #3 feed flow/steam flow chart recorder.

The technician disconnected the recorder from the feedwater flow instrumentation loop to perform a calibration after replacing the servo slidewire motor assembly. The feed flow then indicated low compared to the normal steam flow, causing the main feedwater regulation valve to compensate for the mismatch.

The steam driven main feedwater pump tripped while responding to the increased feed flow demand. The feedwater pump trip automatically tripped the main turbine, which then tripped the reactor.

All plant safety systems responded normally following the trip. The standby electric driven main feedwater pump failed to start automatically, but was manually started by the operators.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

The plant was at 95% power on July 1, 1985, during coastdown operations at the end of cycle. A steam driven main feedwater pump (P) trip, turbine (TRB) trip, and reactor (RCT) trip, occurred at 1424 while an Instrumentation and Controls Technician was repairing the #3 feed flow/steam flow chart recorder (FR). The feedwater flow pen on the dual pen recorder had failed high.

The technician removed the Fischer and Porter Company dual pen chart recorder (Model Number 4202BL02BL02) from the Main Control Board (MCBD) by sliding it from its housing and replaced the servo slidewire motor assembly for the feedwater flow pen of the recorder. He then reinstalled the recorder in the Main Control Board and prepared to perform a calibration of the recorder using a generic maintenance procedure. The licensed operator on duty questioned whetner the calibration would affect the actual feedwater flow but the technician responded that it would not. The technician then opened a slide link connection (CON) to disconnect the recorder from the feedwater flow instrumentation loop to perform the calibration.

Opening the feedwater flow instrumentation loop caused the feedwater flow signal to fail low while the steam flow signal remained at its normal value. The Steam Generator Water Level Control System (JB) responded to the mismatch by opening the #3 Main Feedwater Regulating Valve (LCV). The steam driven main feedwater pump tripped either on overspeed or low suction pressure in response to the increased feedwater flow demand. The feedwater pump trip automatically tripped the main turbine, which then automatically tripped the reactor.

All plant safety systems responded normally following the trip. The standby electric driven main feedwater pump (P) failed to start automatically but was manually started by licensed operators at about the time that both motor driven auxiliary feedwater pumps (P) started automatically. The feedwater header pressure switch (PS) which provides the automatic start signal was tested and found to operate properly at the required pressure setpoint. The only other apparent difference between an automatic start signal and a manual start signal is the position of the control switch (HS) on the Main Control Board. The contacts of this control switch will be cleaned during the upcoming refueling shutdown to ensure that they were not responsible for this failure of the automatic start signal.

The root cause of the plant trip was determined to be a cognitive error by the Instrumentation and Controls Technician because he failed to recognize the full effect of his actions.

A generic Instrumentations and Controls corrective maintenance procedure has been prepared for approval. The procedure will provide more guidance to technicians than the generic maintenance procedure which was in use during this event. A basic I&C training program is being developed to familiarize new I&C testers with Maine Yankee specific test equipment and procedures.

An Event Review Board was convened and investigated the event. The Board's investigation included a comparison with an earlier event reported in LER 85-003 because of their similarity. Further corrective action may be specified in the final Board Report.

MAINE YANKEE ATOMIC POWER COMPANY •

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July 31, 1985
MN-85-144 GDW-85-212

Director, Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Document Control Desk

Reference: License No. DPR-36 (Docket 50-309)

Subject: Maine Yankee Licensee Event Report 85-007-00 -- Plant Trip While Repairing a Feedwater Flow Recorder

Gentlemen:

Please find enclosed Maine Yankee Licensee Event Report #85-007-00. This report is submitted in accordance with the requirements of 10 CFR 50.73(a)(2)(iv).

Very truly yours,

MAINE YANKEE ATOMIC POWER COMPANY

G. D. Whittier

G. D. Whittier, Manager
Nuclear Engineering and Licensing

GDW:plb

Enclosure: Two pages

cc: Mr. Edward J. Butcher, Jr.
Dr. Thomas E. Murley
Mr. Cornelius F. Holden

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