

Maine Yankee

RELIABLE ELECTRICITY FOR MAINE SINCE 1972

EDISON DRIVE • AUGUSTA, MAINE 04330 • (207) 622-4868

10 CFR 50.73

October 15, 1990
MN-90-105 SEN-90-292

UNITED STATES NUCLEAR REGULATORY COMMISSION
Attention: Document Control Desk
Washington, D. C. 20555

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

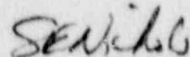
Subject: Maine Yankee Licensee Event Report 90-006-00 - Emergency Feedwater Trip System

Gentlemen:

Please find enclosed Maine Yankee Licensee Event Report 90-006-00. This report is submitted in accordance with the requirements of 10 CFR 50.73(a)(2)(i).

Please contact us should you have any questions regarding this matter.

Very truly yours,



S. E. Nichols
Licensing Section Head

SEN:SJJ

Enclosure

c: Mr. Thomas T. Martin
Mr. E. H. Trottier
Mr. Charles S. Marschall
Mr. Patrick J. Dostie

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LICENSEE EVENT REPORT (LER)

Facility Name(1) Maine Yankee Atomic Power Company	Docket Number(2) 0 15 10 10 10 13 10 19 1 of 12	Page(3)
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Title(4) Emergency Feedwater Trip System											
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	9	13	9	0	0	0	9	11	5	9	

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

Operating Mode (9)	7	20.402(b)	-	20.405(c)	-	50.73(a)(2)(iv)	-	73.71(b)
Power Level (10)	1 0 0	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)	X	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	Ethan Brand	Telephone Number	
		Area Code	2 0 7 8 8 2 6 13 2 1

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

Cause	System	Com-ponent	Manufac-turer	Reportable to NPRDS	Cause	System	Com-ponent	Manufac-turer	Reportable to NPRDS

Supplemental Report Expected (14)

(If yes, complete Expected Submission Date) (15)

Yes No

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

On September 13, 1990, a determination was made that a feed train lineup utilized during Hot Standby Operations may not conform with Technical Specifications. The Feed Train Trip system is required to be operable whenever the Reactor Coolant System boron concentration is less than that required for hot shutdown (Hot Standby and Power Operations). During Hot Standby Operations, plant procedures permit a lineup of the Emergency Feedwater (EFW) pumps through a portion of the main feed system. This lineup permits preheating of the EFW flow to minimize thermal stresses on feedwater piping and steam generator feed rings (refer to the attached figure). The lineup resulted in the Feed Train Trip system being single failure vulnerable below 2% reactor power.

A review of plant documentation revealed that the lineup had been analyzed, and was determined to be safe. However, it was not clear whether the Technical Specification permitted such a lineup. It was decided that a clarification would be made to Technical Specifications regarding system lineup below 2% power.

Immediately after discovering the possible discrepancy, procedures were revised to prohibit aligning EFW flow through the main feedwater system during Hot Standby Operations.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Facility Name(1)	Docket Number(2)	LER Number (6)			Page(3)
		Year	Sequential Number	Revision Number	
Maine Yankee Atomic Power Company	051001319	90	006	00	2 of 2

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

On September 13, 1990, a determination was made that plant procedures allowed a lineup of the steam generator feed water system which may not conform to Technical Specifications.

The feed train trip (FTT) system is required to be operable whenever the Reactor Coolant System (AB) boron concentration is less than that required for Hot Shutdown (Hot Standby and Power Operations). The FTT system is installed to prevent a return to criticality and to prevent excessive containment pressure in the event of a steam line break in containment. The FTT signal is triggered by low steam generator pressure. During operations at power, the FTT system is designed to meet single failure criteria. During Hot Standby Operations, plant procedures permitted a lineup of the Emergency Feedwater (EFW) (BA) pumps through a portion of the main feed system (SJ).

The lineup permitted preheating of the EFW flow to minimize thermal stresses on feedwater piping and feed rings (refer to the attached figure). At power, the single failure criteria for FTT is met for the EFW system by two series valves (to each steam generator), each closed by a redundant signal upon receipt of a FTT signal. The main feedwater lineup relies on a trip of the main feed pumps, as well as closure of the main and bypass feed regulating valves. The lineup of the EFW flow through the main feedwater heater resulted in only one valve which would close upon a FTT signal.

Before 1983, emergency feedwater isolation was accomplished by tripping the EFW pumps and closure of the emergency feedwater regulating valves. In 1983, the EFW pump trip was removed due to NRC concerns, and in its place, a second series valve was installed in the normal EFW lineup. With that modification, the preheating of EFW flow was identified as not satisfying single failure criteria with the new valves, and removal of the EFW pump trip. An analysis was performed which demonstrated that during Hot Standby Operations, single failure criteria was not required for the EFW portion of the FTT system as the maximum unrestricted EFW flow would not result in a return to criticality or in excessive containment pressure during a steam line break. Based on this analysis, plant procedures were approved which allowed preheating of EFW flow during Hot Standby Operations, and Technical Specifications were changed to reflect the modifications to the FTT system. By review of plant records it is apparent that operability of the trip system below 2% power was considered but no Technical Specification changes were made. Maine Yankee could not conclude, therefore, that NRC had previously reviewed the matter and whether they agreed that no Technical Specification changes were necessary.

Upon discovering the apparent discrepancy, procedures were revised to prohibit aligning EFW flow through the main feedwater system during Hot Standby Operations. A clarifying change to Technical Specifications is being processed.

