

# Maine Yankee

RELIABLE ELECTRICITY SINCE 1972

329 BATH ROAD • BRUNSWICK, MAINE 04011 • (207) 798-4100

November 18, 1996

MN-96-171

JRH-96-259

## UNITED STATES NUCLEAR REGULATORY COMMISSION

Attention: Document Control Desk

Washington, D. C. 20555

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

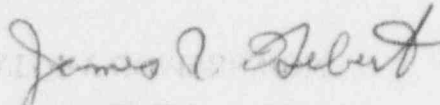
Subject: Maine Yankee Licensee Event Report 96-033, Entry into Tech. Spec. 3.0.A  
for Both Pressurizer Proportional Heater Banks Inoperable

Gentlemen:

Please find enclosed Maine Yankee Licensee Event Report 96-033 . This report is submitted in accordance with 10 CFR 50.73(2)(a)(i).

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

Very truly yours,



James R. Hebert, Manager  
Licensing & Engineering Support Department

mwf

Enclosure

c: Mr. Hubert Miller  
Mr. J. T. Yerokun  
Mr. D. H. Dorman  
Mr. Patrick J. Dostie  
Mr. Uldis Vanags

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## LICENSEE EVENT REPORT (LER)

(See reverse for required number of  
digits/characters for each block)ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION  
COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO  
THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING  
BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33),  
U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE  
PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET,  
WASHINGTON, DC 20503.

FACILITY NAME (1)

Maine Yankee Atomic Power Company

DOCKET NUMBER (2)

50-309

PAGE (3)

1 OF 3

TITLE (4)

Entry into Tech Spec 3.0.A for both Pressurizer Proportional Heater Banks Inoperable

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 NAME	DOCKET NUMBER
10	18	96	96	-- 033	-- 00	11	18	96	FACILITY NAME	DOCKET NUMBER
OPERATING MODE (9)		7	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)							
POWER LEVEL (10)		90%	20.2201(b)		20.2203(a)(2)(v)		<input checked="" type="checkbox"/>		50.73(a)(2)(ii)	50.73(a)(2)(viii)
			20.2203(a)(1)		20.2203(a)(3)(i)				50.73(a)(2)(iii)	50.73(a)(2)(x)
			20.2203(a)(2)(i)		20.2203(a)(3)(ii)				50.73(a)(2)(iii)	73.71
			20.2203(a)(2)(ii)		20.2203(a)(4)				50.73(a)(2)(iv)	OTHER
			20.2203(a)(2)(iii)		50.36(c)(1)				50.73(a)(2)(v)	Specify in Abstract below
			20.2203(a)(2)(iv)		50.36(c)(2)				50.73(a)(2)(vii)	or in NRC Form 366A

## LICENSEE CONTACT FOR THIS LER (12)

NAME

Robert E. Maloney, Senior Shift Technical Advisor

TELEPHONE NUMBER (Include Area Code)

(207) 882-5844

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

## SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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## ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On 10/18/96, Maine Yankee was operating at 90% power, with both banks of pressurizer proportional heaters and one bank of back-up heaters in service, when operators noted a gradual decreasing trend in pressurizer pressure over a seventy-five (75) minute period.

A plot of pressurizer pressure and pressurizer heater total kilowatt (KW) load versus time showed that a sudden drop in total heater KW load had occurred coincident with the start of a drop in pressurizer pressure.

Subsequent troubleshooting confirmed that both proportional heater banks had suffered blown heater output fuses; rendering the heaters incapable of providing their full rated output. Both proportional heaters were declared inoperable. With no operable proportional heaters, a Technical Specification (TS) Limiting Condition for Operation was not met; and TS 3.0.A was entered.

The operability of one proportional heater bank was restored within one (1) hour; and a TS required shutdown was not required.

The root cause of the fuse failures has not been positively identified.

Near term action to ensure continued proportional heater operability is to perform a weekly surveillance to verify full rated heater output capability. The long term corrective action to preclude a recurrence is to replace the controllers for both proportional heater banks with new controllers, instrumented with continuous, visual indication of actual heater KW output; which will provide a means to verify heater operability with the heater in service. Installation of the new controllers is planned for February, 1997.

## LICENSEE EVENT REPORT (LER)

## TEXT CONTINUATION

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		SEQUENTIAL NUMBER 96 -- 033 -- 00	

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

## INITIAL PLANT CONDITIONS:

On 10/18/96, Maine Yankee was operating in Condition 7; at 90% steady state power, with both banks of pressurizer proportional heaters and one bank of pressurizer back-up heaters in service.

## EVENT DESCRIPTION:

At approximately 0500 on 10/18/96, control room operators noted a decreasing trend in pressurizer (PZR) pressure. Over the next 75 minutes, pressurizer pressure gradually dropped from 2230 psig to 2220 psig. At 0630, a standby back-up heater was placed in service and pressurizer pressure quickly recovered to 2228 psig.

A plant computer historical data plot of pressurizer pressure and pressurizer heater total KW load versus time showed that a sudden drop in total heater KW load had occurred at approximately 0445, coincident with the start of a drop in pressurizer pressure, suggesting a heater (EHTR) failure as the likely cause of the decreasing pressurizer pressure trend.

Subsequent troubleshooting confirmed that both banks of proportional heaters had suffered blown power fuses (FU) on one or more of their heater output phases; which reduced the capacity of these heaters to less than that required for their full rated output. Both proportional heaters were declared inoperable at 1216. With no operable bank of proportional heaters, the Technical Specification (TS) Limiting Condition for Operation was not met; and TS 3.0.A was entered at 1216, the time of discovery of this condition. Operators made preparations to commence a plant shutdown within the hour; while immediate action was taken to attempt to identify a cause for the blown fuses.

No apparent cause for the blown fuses was identified. The blown fuses in the B-bank proportional heater were replaced and its full rated output verified. The B-bank heater was declared operable at 1305; at which time TS 3.0.A was exited, without having to actually commence a plant shutdown. (The plant was operated in TS 3.0.A for a total of 49 minutes.) The A-bank heater fuses were replaced and the heater was verified operable at 1420.

## SAFETY SIGNIFICANCE:

The safety significance of this event is minimal. During the forty-nine (49) minute period in which the operability of the proportional heaters was degraded, increased operator attention and occasional manual actuation of the back-up heaters was necessary to control pressurizer pressure. However, no additional operating personnel were required and sufficient back-up heater capacity was always available to maintain reactor coolant system (AB) pressure within the operating band allowed by the plant's TS.

## LICENSEE EVENT REPORT (LER)

## TEXT CONTINUATION

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

## CAUSAL FACTORS:

Despite subsequent testing and performance monitoring of both heaters, the root cause of the fuse failures has not been positively determined.

However, as a near term measure, Maine Yankee instituted a monthly surveillance test to verify the ability of the proportional heaters to provide their full rated output. The first scheduled surveillance, performed on 11/6/96, revealed a blown fuse and failed silicon controlled rectifier (SCR) on the A-bank proportional heater. The fuse and the SCR were replaced. As a result of that failed surveillance, the frequency of the surveillance testing was increased from monthly to weekly. The subsequent weekly surveillances performed on 11/8/96 and 11/14/96 have been satisfactory.

The long term corrective action to preclude a recurrence is to install new controllers for both proportional heater banks. The new controllers will be instrumented to permit direct, visual monitoring of each individual phase of heater KW output; in order to provide a means to continuously verify heater operability with the heater in service.

The new controllers were in the process of being ordered prior to this event. As a result of this event, the delivery of the new heaters is being expedited. The scheduled delivery date is February, 1997; with installation planned to occur immediately following receipt.

## PREVIOUS SIMILAR EVENTS:

A nearly identical event occurred on 6/28/90. However, that event occurred prior to the revised reporting guidance contained in NUREG 1022, which clarified that entry into TS 3.0.A was considered a condition prohibited by TS; and reportable by LER. Consequently, an LER was not submitted for that event.