

Maine Yankee

RELIABLE ELECTRICITY SINCE 1972

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

April 13, 1994

MN-94-36

JRH-94-82

UNITED STATES NUCLEAR REGULATORY COMMISSION

Attention: Document Control Desk

Washington, DC 20555

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

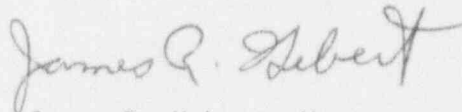
Subject: Maine Yankee Licensee Event Report 94-005-00, Reg. Guide 1.97
Containment Hydrogen Monitoring Instrumentation Outside Design Basis

Gentlemen:

Please find enclosed Maine Yankee Licensee Event Report 94-005-00. This report is submitted in accordance with 10CFR50.73(a)(2)(ii).

Please contact us should you have questions regarding this matter.

Very truly yours,



James R. Hebert, Manager
Licensing & Engineering Support Department

JRH/jag

Enclosure

c: Mr. Thomas T. Martin
Mr. J. T. Yerokun
Mr. E. H. Trottier
Mr. Patrick J. Dostie

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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 INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), 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
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TITLE (4)
Reg Guide 1.97 Containment Hydrogen Monitoring Instrumentation Outside Design Basis

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
03	17	94	94	-- 005 --	00	4	15	94	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9) 7	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
POWER LEVEL (10) 100		<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
		<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.75(a)(2)(vii)	OTHER
		<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
		<input type="checkbox"/> 20.405(a)(1)(iv)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
		<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Ethan B. Brand, Lead Nuclear Safety Engineer	TELEPHONE NUMBER (Include Area Code) (207) 882-6321
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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

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/>	NO					

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)
 On March 17, 1994 while operating at 100% power, Maine Yankee concluded that Containment Hydrogen Monitoring Instrumentation (HMI) required by Reg Guide 1.97 was outside design basis due to a cable separation problem. In the as found condition, a single fault could affect both channels of HMI.

During cable verification conducted in preparation for planned facilities upgrades, cables for post accident containment pressure monitoring instrumentation were found cross routed in A and C cable trays. An analysis of the incorrect configuration was conducted to determine the potential effects of a fault involving either tray. The analysis concluded that the only redundant plant functions which were affected by the cable separation problem was HMI. A fault in either tray would not result in loss of all HMI, however both channels of Main Control Room remote indication could be lost. The safety consequences of either case are minimal since both HMI analyzers are located in plant locations which are accessible during accident conditions.

The cause of the cable separation error is being investigated to determine how the error occurred, and if other cable separation problems exist due to similar causes.

Maine Yankee reconfigured the affected cables to their correct trays on April 5, 1994.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), 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)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
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Maine Yankee Atomic Power Company	50-309	94	-- 005 --	00	2 OF 3

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

On March 17, 1994, while operating at 100% power, Maine Yankee concluded that Containment Hydrogen Monitoring Instrumentation (HMI) required by Reg Guide 1.97 was outside design basis due to lack of cable (CBL1) separation. In the as found condition a single fault could affect both channels of HMI. The HMI is designated as Category I by Reg Guide 1.97. Reg Guide 1.97 requires that Category I instrumentation meet channel redundancy requirements, and further that continuous trend data be available. Maine Yankee Technical Specifications require only one channel of HMI.

To meet the requirements of Reg Guide 1.97 HMI, Maine Yankee is equipped with two Hydrogen Analyzers (AI) which are located outside the Main Control Room (MCR). One analyzer sends a raw signal to the Main Control Room where it is processed and displayed on the Main Control Room HMI recorder (AR); the processed signal is also sent back to the analyzer for local indication. The second analyzer sends a processed signal directly to the Main Control Room HMI recorder as well as providing direct local display. Refer to the attached sketch.

During field cable verification, conducted in preparation for planned facilities upgrades, signal cables for post accident containment pressure monitoring instrumentation were found routed in opposite channel cable trays (A in C, C in A). The cables were labeled correctly for the tray they were in, but incorrectly for function. An analysis of the incorrect configuration was conducted to determine the potential effects of a fault involving either tray.

The analysis concluded that the only redundant plant functions which were adversely affected by the cable separation problem was HMI. (The affected post accident containment pressure monitoring instrumentation, despite the mis-routed signal cables, continued to meet single failure criteria.) A fault in either tray would not result in loss of all HMI, however both channels of Main Control Room remote indication, including the data recorders, could be lost. Due to the signal processing differences, a fault in the A tray could result in a loss of all remote indication and one local indication, while a fault in the C tray could result in a loss of all remote indication, but both local indications would remain available. In either case, at least one local HMI indication remains available at all times. The safety consequences of either case are minimal since both HMI analyzers are located in plant locations which are accessible during accident conditions.

The cause of the cable separation error is being investigated to determine how the error occurred, and if other cable separation problems exist due to similar causes.

Maine Yankee reconfigured the affected cables to their correct trays on April 5, 1994.

LER 91-004 "EMERGENCY FEEDWATER CONTROL WIRING SEPARATION DISCREPANCY" reported a cable separation problem which affected emergency feedwater pump control circuit redundancy.

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)
As Found Cable Configuration:

