Charles D. Frizzle President Edison Drive Augusta, Maine 04336 (207) 622-4868

April 9, 1993 MN-93-40 CDF-93-59

aine Vankee

RELIABLE ELECTRICITY FOR MAINE SINCE 1972

UNITED STATES NUCLEAR REGULATORY COMMISSION Attention: Document Control Desk Washington, DC 20555

References:

- (a) License No. DPR-36 (Docket No. 50-309)
- (b) MYAPCo Letter to USNRC dated July 22, 1992 (MN-92-75)
  - (c) MYAPCo Letter to USNRC dated September 30, 1992 (MN-92-96)
  - (d) USNRC Letter dated October 29, 1992 Maine Yankee Atomic Power Station, Closure of NRC Bulletin 92-01, "Failure of Thermo-Lag 330 Fire Barrier System"
  - (e) USNRC Letter dated December 17, 1992 Generic Letter 92-08, "Thermo-Lag 330-1 Fire Barriers"

Subject: NRC Generic Letter 92-08: Thermo-Lag 330-1 Fire Barriers

Gentlemen:

NRC Generic Letter 92-08, Reference (e), requested licensees to confirm (1) that the Thermo-Lag 330-1 barrier systems have been qualified by representative fire endurance tests, (2) that the ampacity derating factors have been derived by valid tests, and (3) that these qualified barriers have been installed with appropriate procedures and quality controls to ensure that they comply with the NRC's requirements.

The status of the actions requested by Reference (e) at Maine Yankee, consistent with the presentation of the Reporting Requirements are as follows:

## NRC Reporting Requirement No. 1:

State whether Thermo-Lag 330-1 barriers are relied upon (a) to meet 10CFR50.48, to achieve physical independence of electrical systems, (b) to meet a condition of a plant's operating license, or (c) to satisfy a licensing commitment. If applicable, state that Thermo-Lag 330-1 is not used at the facility. This generic letter applies to all 1-hour and all 3-hour Thermo-Lag 330-1 materials and barrier systems assembled by any assembly method such as by assembling preformed panels and conduit shapes, as well as spray, trowel and brush-on applications.

#### Maine Yankee Response:

Table 1 of Reference (b) provided a listing of the Thermo-Lag fire barriers installed at Maine Yankee. All of the barriers were installed to meet 10CFR50.48, to achieve physical independence of electrical systems. Barrier No. 6 was subsequently determined to not be required. A copy of Table 1 is attached for reference.

190013

L:\93mn\9340

**Maine Yankee** 

UNITED STATES NUCLEAR REGULATORY COMMISSION Attention: Document Control Desk MN-93-40 Page 2

## NRC Reporting Requirement No. 2:

If Thermo-Lag 330-1 barriers are used at the facility,

(a) State whether or not the licensee has qualified the Thermo-Lag 330-1 fire barriers by conducting fire endurance tests in accordance with the NRC's requirements and guidance or licensing commitments.

## Maine Yankee Response:

Maine Yankee did not perform fire endurance tests to qualify its Thermo-Lag 330-1 fire barriers. Rather, we relied on the fire endurance tests conducted by TSI, Inc. which, per TSI, Inc., had been approved by the American Nuclear Insurers (ANI) and the NRC for use in nuclear plants.

(b) State (1) whether or not the fire barrier configurations installed in the plant represent the materials, workmanship, methods of assembly, dimensions, and configurations of the qualification test assembly configurations; and (2) whether or not the licensee has evaluated any deviations from the tested configurations.

### Maine Yankee Response:

(1) As stated in our response to (a) above, specific Maine Yankee testing was not performed. TSI, Inc. certified in writing that the configurations installed at Maine Yankee were covered by the generic testing performed for TSI, Inc. The materials, workmanship, and methods of assembly used at Maine Yankee were in accordance with TSI, Inc. instructions. Maine Yankee personnel were trained and qualified to install Thermo-Lag materials by TSI, Inc.

(2) Maine Yankee has not evaluated any deviations from tested configurations.

(c) State (1) whether or not the as-built Thermo-Lag 330-1 barrier configurations are consistent with the barrier configurations used during the ampacity derating tests relied upon by the licensee for the ampacity derating factors used for all raceways protected by Thermo-Lag 330-1 (for fire protection of safe shutdown capability or to achieve physical independence of electrical systems) and (2) whether or not the ampacity derating test results relied upon by the licensee are correct and applicable to the plant design. **Maine Yankee** 

UNITED STATES NUCLEAR REGULATORY COMMISSION Attention: Document Control Desk MN-93-40 Page 3

# Maine Yankee Response:

(1) Fire Barrier No. 2 in the Primary Auxiliary Building (Elevation 11 feet) is the only configuration for which ampacity derating is a design consideration. The cable derating was determined using code requirements and cable manufacturer guidelines for the expected temperature in the enclosure. An enclosure specific calculation was performed to determine the temperature rise within the enclosure using a thermal conductance of 1.2 BTU/hr-ft<sup>2</sup> -  $\circ$ F/in. obtained from the TSI, Inc's Thermo-Lag 330-1 catalog. This calculation is on file at Yankee Atomic Electric Company.

(2) The conductance value used in the calculation was confirmed in a documented telecon between Maine Yankee and TSI, Inc. on 01/13/89. Maine Yankee, however, does not have any test result information supporting the correctness of the information provided by TSI, Inc.

## NRC Reporting Requirement No. 3:

With respect to any answer to items 2(a), 2(b), or 2(c) above in the negative, (a) describe all corrective actions needed and include a schedule by which such actions shall be completed and (b) describe all compensatory measures taken in accordance with the technical specifications or administrative controls. When corrective actions have been completed, confirm in writing their completion.

### Maine Yankee Response:

As described in Reference (c), Maine Yankee plans to eliminate the need for all 1 and 3 hour rated Thermo-Lag fire barriers by cable re-routing, use of standard masonry fire barriers, or use of materials with the appropriate Underwriters Laboratory fire endurance rating. The plant modifications required to eliminate the Thermo-Lag material are scheduled to be completed, to the extent possible, in 1994. Any work requiring plant shutdown will be completed during the 1995 refueling outage. The compensatory measures which were found acceptable in Reference (d) will remain in place until the necessary plant modifications are completed. Maine Yankee will confirm in writing once the modifications to eliminate the need for Thermo-Lag fire barriers have been completed.

#### NRC Reporting Requirement No. 4:

List all Thermo-Lag 330-1 barriers for which answers to item 2 cannot be provided in the response due within 120 days from the date of this generic letter, and include a schedule by which such answers shall be provided.

### Maine Yankee Response:

Answers are provided for all barriers in item 2 above.

**Maine Yankee** 

UNITED STATES NUCLEAR REGULATORY COMMISSION Attention: Document Control Desk MN-93-40 Page 4

We trust this information is satisfactory. Please contact us should you have any questions in this matter.

Very truly yours, Topl Charles D. Frízzle

Charles D. Frizzle President and Chief Executive Officer

Attachment

CDF/jag

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

# STATE OF MAINE

Then personally appeared before me, Charles D. Frizzle, who being duly sworn did state that he is President and Chief Executive Officer of Maine Yankee Atomic Power Company, that he is duly authorized to execute and file the foregoing response in the name and on behalf of Maine Yankee Atomic Power Company, and that the statements therein are true to the best of his knowledge and behief.

abara anna

Notary Public BARBARA J. PADAVANA NOTARY PUBLIC, MAINE MY COMMISSION EXPIRES JUNE 20, 1998

# TABLE 1

NO.	AREA	CABLES	PURPOSE	RATING	PATH	CONFIGURATION	FIRE PROT.
1	MCC, EL 21 A.	Cables for HCV-251 HCV-261 HCV-271 HCV-1001 TV-1102	Valves for RCP seal water isolation, decay heat release, and steam driven aux. feed pump control	I hour	Two conduits from valve house through MCC ef 21 to lower level PAB	Preformed condu <sup>*</sup> sections (2 <sup>*</sup> ) and junction boxes	Automatic CO2 and Smoke Detection
2	PAB, EL 11 ft.	Cables for Charging/ HPSI pumps	Charging pump P-14A, 14B, 14C power cables	3 hour	PAB lower level el 11: Cables from el 21 exit into ducibank junction box at -el 11+	Unistrut reinforced enclosure	Smoke Detection
3	PAB, EL 11 ft.	Cables for HCV-251 HCV-261 HCV-271 HCV-1001 TV-1102	Valves for RCP seal water isolation, decay heat release, and steam driven aux. feed pump control	3 hour	PAB tunnel (el 11)- two conduits from MCC el 21 go through tunnel, turn up into alternate shutdown panel	Preformed conduit sections (3*) and unistrut reinforced enclosure	HELB Temperature Monitoring
4	CONTAINMENT, EL -2 ñ.	NI-1 Neutron flux inst. cable	Neutron monitoring	Radiant shield	Containment from ICi sump to crane wall perso ation	Preformed conduit sections (1*)	Smoke Detection
5	PAB HPSI VALVE ROOM, EL 21 ft	P-7 Cable	Aux charging pump -alternate power cables	3 hour	PAB HPSI Valve room, el 21 cables enter room from outside and travel vertically down to lower level PAB	Unistrut reinforced enclosure	HELB Temperature Monitoring
6	MCC, EL 21 and MCC, EL 33.4 R	Cables for LT-1214 LT-1224	Steam gen. Loop 1 level indication Steam gen. Loop 2 level indication	1 hour	Enters floor of lower MCC et 21, and exits ceiling of upper MCC room, el 33.4 into South Penetration Room.	Preformed conduit sections (1" and 5")	Automatic CO2 and Sp 3- Detection

The following is a listing of the applications of Thermal Science, Inc. (TSI) Thermo-Lag materials used at Maine Yankee:

-