CENTERIOR ENERGY

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United States Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Subject: Fire Protection: Response to Generic Letter 92-08, Thermo-Lag 330-1 Fire Barriers

Gentlemen:

Toledo Edison (TE) received the Nuclear Regulatory Commission's (NRC) Generic Letter 92-08, "Thermo-Lag 330-1 Fire Barriers," on January 6, 1993 (TE Log Number 3916). Generic Letter 92-08 requested additional information to verify that Thermo-Lag 330-1 fire barrier systems manufactured by Thermal Science, Incorporated (TSI) comply with the NRC's requirements. This letter provides TE's response to Generic Letter 92-08 as applicable to the Davis-Besse Nuclear Power Station (DBNPS).

NRC Reporting Requirement

1. State whether Thermo-Lag 330-1 barriers are relied upon (a) to meet 10 CFR 50.48, 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.

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Toledo Edison Response

1. Toledo Edison uses Thermo-Lag 330-1 barriers to meet 10 CFR 50.48 requirements for protection and separation of the safe shutdown capability at DBNPS. A listing of the rooms at DBNPS using Thermo-Lag 330-1 1-hour and 3-hour fire barrier system to protect and separate the safe shutdown capability was provided in TE's response to NRC Bulletin 92-01, Supplement 1, dated September 28, 1992 (Serial Number 2088). This list is also included as Attachment 1 of this letter. Rooms containing radiant energy shields have not been included since they are not 1-hour or 3-hour fire barriers.

NRC Reporting Requirement

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.

   (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.

   (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.

Toledo Edison Response

2(a) Toledo Edison has not performed any independent fire endurance testing of Thermo-Lag 330-1 fire barriers. Documentation and test results provided by TSI were relied upon to establish qualification of the fire barrier materials at the time of installation. Toledo Edison is working with the Nuclear Management And Resources Council (NUMARC) in the development of methodologies and acceptance criteria for fire endurance testing of Thermo-Lag 330-1 fire barriers. It is expected that this generic fire testing will be representative of the Thermo-Lag 330-1 applications at DBNPS. Any application not enveloped by the NUMARC testing will be separately evaluated by TE.

2(b) The individuals who installed Thermo-Lag 330-1 fire barriers at DBNPS were properly trained to perform this task and used installation details and materials which were approved by TSI. Thermo-Lag 330-1 fire barriers at DBNPS were designed and installed to the methodology recommended by TSI at that time. A Quality Assurance audit of the barrier configurations and installation procedures was performed and no significant deviations were identified. Installation applications were reviewed and approved by TSI. Deviations from TSI's tested applications were reviewed by TE in accordance with the provision of Generic Letter 86-10.

In addition, Toledo Edison has recently reviewed the installation procedures used by the Texas Utilities Electric Company during the recent test program conducted at Omega Point Laboratories. In our judgement, the installation procedures used at DBNPS are consistent with those used by Texas Utilities.

2(c) As stated in response to Item 2(b) Thermo-Lag 330-1 barrier installations were performed by trained individuals using design and installation criteria approved by TSI. Thermo-Lag 330-1 barriers were not used for protection of cable trays at DBNPS. Ampacity derating factors for electrical conduits were obtained from TSI test reports. In addition to the TSI test reports, Toledo Edison reviewed an independent test funded by 3M Company and performed by Underwriters Laboratories (UL). The ampacity derating factors supplied by TSI were more conservative than those determined by the UL test and, as such, were used by Toledo Edison. Toledo Edison will continue to monitor the results of the NUMARC ampacity derating testing.

NRC Reporting Requirement

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.

Toledo Edison Response

3. As stated earlier, Toledo Edison is working with NUMARC in the development of methodologies and acceptance criteria for fire endurance testing of Thermo-Lag 330-1 fire barriers. It is expected that this generic fire testing will envelop the Thermo-Lag 330-1 applications at DBNPS. As results of the NUMARC Fire Testing Program and the NUMARC Ampacity Testing Program become available, TE will determine what long term corrective actions may be necessary. Schedules for the fire and ampacity testing programs will be provided to the NRC by NUMARC.

In the interim, Toledo Edison has established hourly fire watch patrols as compensatory measures in the rooms where the Thermo-Lag 330-1 fire barrier system is used as a 1-hour or 3-hour fire barrier for the protection and separation of safe shutdown capability (see Attachment 1). These compensatory actions are consistent with those that would be implemented by DBNPS administrative procedures. These compensatory actions were established on September 1, 1992 in response to NRC Bulletin 92-01, Supplement 1.

NRC Reporting Requirement

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.

Toledo Edison Response

4. There are no additional 1-hour or 3-hour Thermo-Lag 330-1 barriers for which Toledo Edison must provide a response.

Should you have any questions or require additional information, please contact Mr. Robert W. Schrauder, Manager - Nuclear Licensing, at (419) 249-2366.

Very truly yours,

MAT/dlc

Attachment

cc: A. B. Davis, Regional Administrator, NRC Region III
J. B. Hopkins, NRC Senior Project Manager
S. Stasek, DB-1 NRC Senior Resident Inspector
Utility Radiological Safety Board

RESPONSE TO GENERIC LETTER NUMBER 92-08

THERMO-LAG 330-1 FIRE BARRIERS

FOR

DAVIS-BESSE NUCLEAR POWER STATION

UNIT NUMBER 1

Toledo Edison's response to Generic Letter Number 92-08, Thermo-Lag 330-1 Fire Barriers, is hereby submitted under letter Serial Number 2132.

By: _____
D. C. Shelton,
Vice President Nuclear

Sworn and subscribed before me this 16th day of April, 1993.

_____
Notary Public, State of Ohio

EVELYN L. DRESS
NOTARY PUBLIC, STATE OF OHIO
My Commission Expires July 20, 1994

List of Rooms at the Davis-Besse Nuclear Power Station
Using Thermo-Lag 330-1 Fire Barrier System
to Protect and Separate the Safe Shutdown Capability

Room No.	Description	Application
53	Service Water Valve Room	Conduit
105	Emergency Core Cooling System Pump Room 1-1	Conduit Structural steel
110/110A	Corridor	Structural steel
113A*	Hatch Area	Conduit Structural steel
114	Miscellaneous Waste Monitor Tank and Pump Room	Conduit Structural steel
225	Make-up Pump Room	Structural steel
304	Corridor	Structural steel
313	Hatch Area	Conduit
314	No. 4 Mechanical Penetration Room	Conduit
323	High Voltage Switchgear Room B	Conduit
324	Auxiliary Shutdown Panel and Transfer Switch Room	Conduit
325	High Voltage Switchgear Room A	Structural steel
328	Component Cooling Water Heat Exchanger and Pump Room	Conduit
331	Auxiliary Steam Boiler Room	Damper
400	Equipment Hatch Area Passage	Structural steel
401	Fuel Handling Exhaust Unit Room	Structural steel
404	Corridor	Structural steel
427	No. 2 Electrical Penetration Room	Conduit
428	Low Voltage Switchgear Room F-Bus	Structural steel

List of Rooms at the Davis-Besse Nuclear Power Station
Using Thermo-Lag 330-1 Fire Barrier System
to Protect and Separate the Safe Shutdown Capability

Room No.	Description	Application
431	Turbine Area	Damper
504	Control Room Kitchen	Damper
507	Shift Supervisor Office	Damper
509	Control Room Passage	Damper

* Continuation of same conduit from Room 105