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DUKE POWER

July 27, 1992

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D. C. 20555

Subject: McGuire Nuclear Station, Units 1 and 2  
Docket Nos. 50-369 and 50-370  
NRC Bulletin No. 92-01  
Failure of Thermo-Lag 330 Fire Barrier System to  
Maintain Cabling in Wide Cable Trays and Small  
Conduits Free From Fire Damage

Dear Sir;

By letter dated June 24, 1992, NRC Bulletin 92-01 was issued. Attached, please find the response for McGuire Nuclear Station. There is limited use of the Thermo-Lag 330 fire barrier system protecting safe shutdown equipment at McGuire. The attached response discusses the actions that we have taken as a result of this bulletin.

Please contact Paul Guill at (704) 875-4002, if you have any questions regarding this issue.

I declare under penalties of perjury that the statements set forth herein are true and correct to the best of my knowledge.

Very truly yours,

Ted C. McMeekin

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NUMBER OF RECORDS CHECKED

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xc: S. D. Ebnetter  
Regional Administrator, Region II

P. K. Van Doorn  
Senior Resident Inspector, McGuire

T. A. Reed, Project Manager  
ONRR

# ATTACHMENT

DUKE POWER COMPANY  
MCGUIRE NUCLEAR STATION  
RESPONSE TO NRC BULLETIN 92-01

## NRC REQUESTED ACTION 1.

For those plants that use either 1- or 3- hour pre-formed Thermo-Lag 330 panels and conduit shapes, identify the areas of the plant which have Thermo-Lag 330 fire barrier material installed and determine the plant areas which use this material for protecting either small diameter conduit or wide trays (widths greater than 14 inches) that provide safe shutdown capability.

## DUKE'S RESPONSE TO REQUESTED ACTION 1.

Thermo-Lag 330 panels are utilized in three areas at McGuire Nuclear Station. They are the Auxiliary Building Unit 1 Pipe Chase, Unit 1 B Train Switchgear Room (elevation 733+0) and the Unit 2 Motor Driven Auxiliary Feedwater Pump Room (elevation 716+0). All applications are 3 hour fire rated and serve to protect cables/components that provide safe shutdown capability. There are no applications on wide cable trays (> 14 inches) or small conduits (< 4 inches).

## NRC REQUESTED ACTION 2.

In those plant areas in which Thermo-Lag fire barriers are used to protect wide cable trays, small conduits, or both, the licensee should implement, in accordance with plant procedures, the appropriate compensatory measures, such as fire watches, consistent with those which would be implemented by either the plant Technical Specifications or the operating license for an inoperable fire barrier.

#### DUKE'S RESPONSE TO NRC REQUESTED ACTION 2.

On June 25, 1992 NRC Bulletin 92-01 was received and an initial assessment was performed. Based on information contained within the bulletin and the configuration, as well as the installation of the barriers at McGuire, the initial engineering assessment was that the fire barriers with Thermo-Lag 330 were operable and capable of fulfilling their safety function. Accordingly no compensatory measures were implemented at that time. A more detailed evaluation of the barriers in question was initiated, to verify the appropriateness of the initial engineering evaluation. Further, the 3 fire barriers in question were inspected to evaluate material condition and installation procedure conformance. The barriers were found in good condition and in conformance with installation procedures. The following paragraphs document the results of the more detailed evaluation of the barriers.

From earlier reports, the primary emphasis was on problems with installation of the material. NRC Bulletin 92-01 continues this line of thought by describing failure with an assembly on wide trays due to material sagging. This resulted in separation of joints in the material and an inability of the material to successfully meet testing acceptance standards.

In the Pipe Chase a Feedwater Pump Room, motor operators are wrapped with Thermo Lag 330. Stainless steel wire on 6 inch spacing is used to secure the panels. The spacing is assured on both initial installations and reinstallations by a station procedure, which specifies a 6 inch center spacing for the wire banding. From information provided and discussed in the above paragraph, it was concluded that the panels are adequately secured and failure would not occur as described in the tests noted in the Bulletin. Further, additional testing performed by Thermal Science, Inc. and witnessed by Office of Nuclear Reactor Regulation (ONRR), on a 36 inch cable tray configuration with the wire banding on 8 inch centers successfully passed the 1 hour exposure test. Therefore, for this application, these barriers were considered operable.

In the Auxiliary Building Pipe Chase, Unit 1 the combustible fire loading is minimal. A fire of proportions to the ASTM E119 test fire would not be expected in this area due to the lack of combustible materials. Also, using the NRC approved Five methodology, a fire loading evaluation was performed for this area using 5 gallons of heptane as a combustible material. Heptane was chosen for its combustible intensity since other materials did not exist in the area in question. Results of the evaluation indicated the fire would not threaten the safe shutdown related components located above the floor.

In the Unit 2 Auxiliary Feedwater Pump Room, valves are also enclosed with 3 hour fire rated Thermo-Lag 330 panels. These 3 hour panels were substituted for a required 1 hour fire rated material. The panels were installed in accordance with station procedures, which require a 6 inch wire band spacing. The NRC has suggested measures to compensate for material deficiency which includes automatic sprinklers. Automatic sprinklers exist in this area and, therefore, this installation is not considered to be threatened by a fire.

In the remaining area, Train B Switchgear Room for Unit 1, the cable trays are less than 14 inches wide. Testing to date has shown this configuration to be acceptable.

In summary, the limited areas at McGuire Nuclear Station in which the Thermo-Lag 330 material is used as a fire barrier are considered operable. In addition, procedures restrict introducing combustible loading to a level where the equipment being protected by Thermo-lag 330 would not be impacted should a fire occur.

#### NRC REQUESTED ACTION 3.

Each licensee, within 30 days of receiving this bulletin, is required to provide a written notification stating whether it has or does not have Thermo-Lag 330 fire barrier systems installed in its facilities. Each licensee who has installed Thermo-Lag 330 fire barriers is required to inform the NRC, in writing, whether it has taken the above actions and is required to describe the measures being taken to ensure or restore fire barrier operability.

#### D'KE'S RESPONSE TO NRC REQUESTED ACTION 3.

As discussed in response to NRC requested Action 1, McGuire Nuclear Station has limited application of the Thermo-Lag 330 fire barrier systems protecting safe shutdown equipment. The response to NRC requested Action 2 describes the actions that have been taken as a result of this bulletin. Briefly, the information and the concern associated with the bulletin were reviewed. Based on the engineering evaluation performed, the fire barriers in question are considered to be operable. As such, no additional actions would need to be taken to ensure or restore fire barrier operability since the barriers are considered to be operable.

Notwithstanding the above, additional actions to ensure the continued operability of the Thermo-Lag 330 fire barriers are being developed through an industry program being coordinated through NUMARC. This program will include establishment of a test database, development of generic guidance for applicability of tests, development of generic installation guidance and consideration and coordination of additional testing as appropriate. The results of these efforts when completed, will be applied to the Thermo-Lag installations at McGuire Nuclear Station.