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DUKE POWER

April 16, 1993

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 Generic Letter 92-08
Thermo-Lag 330-1 Fire Barriers

Dear Sir;

NRC Generic Letter 92-08 was issued December 17, 1992. The generic letter requested that a response be provided within 120 days from the date of the generic letter. Attached, please find the response for McGuire Nuclear Station.

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,

A handwritten signature in cursive script, appearing to read 'T. C. McMeekin'.

T. C. McMeekin

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U. S. Nuclear Regulatory Commission
April 16, 1993
page 2

xc: Mr. S. D. Ebnetter
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U. S. Nuclear Regulatory Commission
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U. S. Nuclear Regulatory Commission
April 16, 1993
page 3

bcc: with attachment

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P. R. Herran
B. H. Hamilton
G. A. Copp (NS)
R. P. Colaianni (NS)
L. T. Burba (NS) [File: MC-815.02 (92-01)]
B. Bradley (NUMARC)
File: 815.02 (92-01)
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ATTACHMENT

DUKE POWER COMPANY
MCGUIRE NUCLEAR STATION
RESPONSE TO NRC GENERIC LETTER 92-08

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

DUKE'S RESPONSE TO REPORTING REQUIREMENT 1

As documented in our response to NRC Bulletin 92-01 and its supplement, Thermo-Lag 330-1 material is utilized in three areas at McGuire Nuclear Station. The details of where this material is installed at McGuire Nuclear Station is provided within our responses to the bulletin and its supplement.

NRC REPORTING REQUIREMENT 2(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.

DUKE'S RESPONSE TO REPORTING REQUIREMENT 2(a)

The fire barriers in question were initially qualified to existing NRC guidance at the time of installation. The NRC requirements for test performance, acceptance and comparison of test configurations with installed configurations evolved over time, and were provided in various documents such as Branch Technical Position (BTP) 9.5-1 and Generic Letter (GL) 86-10.

For McGuire, the initial acceptance of Thermo-Lag 330-1 material was based on the manufacture test results. Subsequent to the initial qualification of the barriers, the NRC specifically declared a large number of the previous tests and their corresponding installations to be indeterminate. This has resulted in the need to retest, re-evaluate and potentially upgrade the barriers. In addition, an effort, supported by the NRC, is underway reevaluating the test and acceptance criteria, and the degree of detail necessary in comparing installed to tested configurations. The barriers will ultimately be qualified in accordance with the new guidance, but for now must be treated as indeterminate although previously believed to be qualified.

Following the issuance of NRC Bulletin 92-01 Supplement 1, the fire barriers that utilize Thermo-Lag 330-1 were declared inoperable as documented in our response dated September 30, 1992. Accordingly, we consider that there are no qualified fire endurance tests, at this time, for the Thermo-Lag 330-1 fire barriers installed at McGuire Nuclear Station.

NRC REPORTING REQUIREMENT 2(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.

DUKE'S RESPONSE TO REPORTING REQUIREMENT 2(b)

In accordance with existing regulations and regulatory guidance documents, certain fire barrier configurations installed in the plant do not represent the materials, workmanship, methods of assembly, dimensions, and configurations of the qualification test assembly configurations. NRC's guidance at the time of the initial barrier qualification did not require consideration of all of the above attributes in comparison of tested to installed configurations. The need for such level of detail has only recently become apparent due to performance of new tests and evaluations of Thermo-Lag.

At the time of initial barrier qualification, deviations from tested configurations were in accordance with GL 86-10. GL 86-10 Item 3.2.2, "Deviations for Tested Configurations", provided the following guidance:

"....where exact replication of a tested configuration cannot be achieved, the field installation should meet all of the following criteria:

1. The continuity of the fire barrier material is maintained.
2. The thickness of the barrier is maintained.
3. The nature of the support assembly is unchanged from the tested configuration.
4. The application or "end use" of the fire barrier is unchanged from the tested configuration. For example, the use of a cable tray barrier to protect a cable tray which differs in configuration from those that were tested would be acceptable. However, the use of a structural steel fire proofing to protect a cable tray assembly may not be acceptable.
5. The configuration has been reviewed by a qualified fire protection engineer and found to provide an equivalent level of protection."

As discussed in this response and in our response to Bulletin 92-01 and its supplement, the fire barriers that are installed at McGuire are treated as if they are inoperable. Accordingly, we consider that the fire barrier configurations installed at McGuire are not represented or supported by a qualified fire endurance test.

NRC REPORTING REQUIREMENT 2(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 test results relied upon by the licensee are correct and applicable to the plant design.

DUKE'S RESPONSE TO REPORTING REQUIREMENT 2(c)

The Ampacity Derating Factor (ADF) that was provided by the vendor was used in our analysis for determining the overall ADF for the cables in question. The methodology that Duke utilizes to determine the overall ADF for cables is sufficiently conservative to address the inaccuracies, inconsistencies, deficiencies, uncertainties, and the possible non-conservatism associated with the ADF supplied by the vendor. Although the ampacity derating tests that were performed by the vendor may be suspect, Duke's program of determining the overall ADF for cables assures that the ADF applied to the cable is conservative. Thus, any errors that may exist with the vendor supplied ADF will not adversely impact the functionality of the cables in question.

Further, Duke understands that the NRC is working with Nuclear Management and Resources Council (NUMARC) regarding the use of IEEE P848 Draft 11 as an appropriate method to determine ADF for generic raceway configurations. In addition, the NUMARC sponsored industry effort on Thermo-Lag upgrades currently underway will include the development of appropriate ADFs. As such, additional efforts to re-assess ADF at this time is of limited benefit.

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 technical specifications or administrative controls. When corrective actions have been completed, confirm in writing their completion.

DUKE'S RESPONSE TO REPORTING REQUIREMENT 3

While fire barriers may have been evaluated and qualified consistent with existing guidance at that time, further actions are now necessary to address fire endurance and ampacity derating of Thermo-Lag barriers. As discussed in our response to NRC Bulletin 92-01, supplement 1, investigations into identifying a suitable substitute material for the Thermo-Lag 330-1 material or determining what enhancements, if any, are needed are in progress. Further, the effort to determine what enhancements that may be needed is the NUMARC sponsored industry program. The industry Thermo-Lag program is intended to provide generic testing and information necessary to perform any enhancements. A schedule for completing these investigations has not been determined. In addition, specific test schedules will be provided to the NRC by NUMARC. As such, a schedule for completing all corrective actions can not be provided at this time.

As requested by the generic letter, a confirmation will be provided in writing when the final resolution of this issue has been implemented at McGuire. Until then, the compensatory measures that are being taken involve hourly fire patrols for the identified three areas. These fire patrols will continue to be performed until implementation of all necessary corrective actions.

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.

DUKE'S RESPONSE TO REPORTING REQUIREMENT 4

Answers to items 2(a), 2(b), and 2(c) are provided in this response.