

Commonwealth Edison Company
Byron Generating Station
4450 North German Church Road
Byron, IL 61010-9794
Tel 815-234-5441

March 29, 1995

ComEd

LTR: BYRON 95-5033
FILE: 1.10.0101

U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Document Control Desk

SUBJECT: Byron Station Units 1 and 2

Byron Station Response: "Request for Additional Information Regarding Generic Letter 92-08, "Thermo-Lag Fire Barriers" Pursuant to 10CFR50.54(f)"

REFERENCES: NRC Dockets 50-454 and 50-455

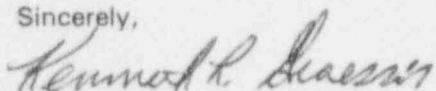
- 1) USNRC Generic Letter 92-08, "Thermo-Lag Fire Barriers"
- 2) USNRC Letter to D. L. Farrar dated December 29, 1994, "Followup to the Request for Additional Information Regarding Generic Letter 92-08, Issued Pursuant to 10CFR50.54(f), Byron Nuclear Power Station"

The purpose of this letter is to provide Byron Station response to the Nuclear Regulatory Commission's Requests for Additional Information pursuant to 10CFR50.54(f) dated December 29, 1994 for those nuclear plants relying on Thermo-Lag 330-01 as Fire Protection Barriers.

This submittal provides information about the planned disposition of Thermo-Lag at Byron Station. Existing Thermo-Lag will be abandoned-in-place and no credit will be taken for it as a fire barrier. Byron Station is reevaluating previously selected barrier solutions. Rerouting of cables is being reconsidered as a solution in many instances. Byron will provide a final listing of the solutions being applied to each cable and any schedule revisions in September, 1995, as was previously stated in the ComEd response dated December 16, 1994.

To the best of my knowledge and belief, the statements contained in this document are true and correct. In some respects these statements are not based on my personal knowledge, but on information furnished by other ComEd employees, contractor employees, and/or consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

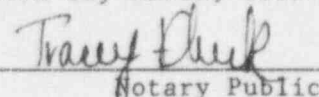
Sincerely,



Kenneth L. Graesser
Site Vice President
Byron Nuclear Power Station

STATE OF ILLINOIS)
)
COUNTY OF OGLE)

Subscribed & sworn to before me
this 29th day March, 1995.


Notary Public

cc: J. Martin, Regional Administrator-RIII
R. Capra, Director of Directorate III-2, NRR
G. Dick, Project Manager, Byron, NRR
H. Peterson, Senior Resident Inspector (Byron)

h:\byr\tr\95-5033.wpf

040086

A Unicom Company

9504040017 950329
PDR ADOCK 05000454
P PDR



AD29

Byron Station Response to the "NRC Request for Additional
Information regarding Generic Letter 92-08,
'Thermo-Lag 330-1 Fire Barriers',
Pursuant to 10CFR50.54(f) "

1. *Thermo-Lag Materials*

- a. *Describe the specific tests and analyses that will be performed to verify that the Thermo-Lag fire barrier materials that are currently installed at Byron Station (Byron), or that will be installed in the future, are representative of the materials that were used to address the technical issues associated with Thermo-Lag barriers and to construct the fire endurance and ampacity derating test specimens. The tests and analyses shall address the material properties and attributes that were determined or controlled by TSI during the manufacturing process and the quality assurance program. The tests and analyses shall also address the material properties and attributes that contribute to conclusions that the Thermo-lag materials and barriers conform to NRC regulations. These include:*
 - (1) *chemical composition*
 - (2) *material thickness*
 - (3) *material weight and density*
 - (4) *the presence of voids, cracks, and delaminations*
 - (5) *fire endurance capabilities*
 - (6) *combustibility*
 - (7) *flame spread rating*
 - (8) *ampacity derating*
 - (9) *mechanical properties such as tensile strength, compressive strength, shear strength, and flexural strength.*
- b. *Describe the methodology that will be used to determine the sample size and demonstrate that the sample size will be large enough to ensure that the information and data obtained will be sufficient to assess the total population of in-plant Thermo-Lag barriers and the materials that will be installed in the future. In determining the sample size, consider the time of installation and manufacture of the various in-plant materials and barrier installations. Give the number and types (e.g., panels, conduit preshapes, trowel-grade material, stress skin) of samples that will be tested or analyzed.*
- c. *Submit the schedule for verifying the Thermo-Lag materials*
- d. *After the analysis and tests have been completed, submit a written*

supplemental report that confirms that this effort has been completed and provide the results of the tests and analyses. Describe any changes to previously submitted plans or schedules that result from the tests or analyses.

2. *Important Barrier Parameters*

- a. *Describe the examinations and inspections that will be performed to obtain the important barrier parameters given in Section II of the RAI of December 1993 for the Thermo-Lag fire barrier configurations installed at Byron.*
- b. *Describe the methodology that will be applied to determine the number and type of representative in-plant fire barrier configurations that will be examined in detail and demonstrate that the sample size is adequate to ensure that the information and data that will be obtained are adequate to assess the total population of in-plant Thermo-Lag barriers. A large enough sample of the total population of configurations should be examined to provide reasonable assurance that the materials and important barrier parameters used to construct the in-plant barriers and any future barrier installations or modifications, are representative of the parameters used to construct the fire endurance test specimens.*
- c. *Submit the schedule for obtaining and verifying all of the important barrier parameters.*
- d. *After the information has been obtained and verified, submit a written supplemental report that confirms that this effort has been completed and provides the results of the examinations and inspections. Verify that the parameters of the in-plant configurations are representative of the parameters of the fire endurance test specimens. Describe any changes to previously submitted plans or schedules that result from the examinations.*

RESPONSE:

In Byron Station's response dated December 16, 1994, a plan and schedule for the resolution of the Thermo-Lag issue at Byron was provided. This plan utilized four of nine available options for restoring required fire protection to electrical cables. These four options included:

1. Reanalyzing the Fire Protection Report Safe Shutdown Analysis;
2. Replacing the installed Thermo-Lag fire barrier with Darmatt KM-1 material;
3. Developing Appendix R Exemption requests where sufficient justification exists;

4. Downgrade an existing 3 hour barrier to a 1 hour rating.

The scope of the plan included cable trays and conduits in all fire zones, except Zone 11.5-0, requiring fire protection per the Byron Safe Shutdown Analysis. Each conduit or tray configuration was individually evaluated to identify the best option based on technical acceptability and economics.

Option 4 (Downgrade) is no longer being pursued at Byron. None of the three remaining selected options involve taking credit for existing or newly-installed Thermo-Lag material as a fire barrier. Options 1 and 3 require documenting technical justification that eliminates the need for fire wrap on the cable trays and conduits. For both options, the existing Thermo-Lag material would be abandoned-in-place. Option 2 involves removal of the existing Thermo-Lag material and replacing it with a Darmatt KM-1 material qualified to meet the 1 or 3 hour fire barrier requirements.

No credit will be taken for the Thermo-Lag material abandoned-in-place as a fire barrier. Only those material properties and barrier parameters important to its abandonment must be assessed. Byron Station considers those material properties to be "combustibility" and "ampacity derating". There are no other barrier parameters of Thermo-Lag pertinent to leaving it abandoned-in-place.

Combustibility of Thermo-Lag material abandoned-in-place has been established through NEI testing. Byron will incorporate the appropriate values of combustibility into the fire hazards analyses for fire zones where the Thermo-Lag material is abandoned. No additional combustibility testing is planned at this time.

Ampacity derating concerns were addressed in the December 16, 1994 submittal and established by the methods described in previous responses. The original Thermo-Lag design for Byron used an analytical method to evaluate ampacity derating. Deratings generated with this method have been shown to be conservative compared to actual ampacity test results. At this time, no additional ampacity testing is planned for the abandoned Thermo-Lag material.

In late 1994, Byron and Braidwood Stations began reevaluating the corrective actions planned for the cable trays and conduit configurations in Fire Zone 11.5-0. The purpose of the reevaluation was to determine the feasibility of rerouting the affected safe-shutdown cables to eliminate the need for fire-rated barriers. Experience from installation of DARMATT in 1994 showed initial cost projections were low. Therefore, the reevaluation (of rerouting versus replacing) was expanded to include all fire zones containing Thermo-Lag. A detailed cost comparison between the cable rerouting and Darmatt installation is in progress. The advantages of cable rerouting, as compared to Darmatt installation, include the elimination of the fire endurance test program and the need to dispose of the existing Thermo-Lag material as radwaste.

The reevaluation project has started and the preliminary estimates show that the cost for cable rerouting is favorable to the revised cost for Darmatt installation. These estimates are currently being refined and work schedules are being developed. Byron will provide a specific listing of the solutions being applied to each cable and any schedule revisions in September 1995, as was stated in the previous ComEd response dated December 16, 1994.