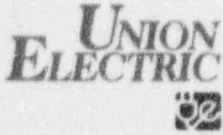


1901 Chouteau Avenue
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314-554-2650

May 31, 1996



U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555-0001

Donald F. Schnell
Senior Vice President
Nuclear

Gentlemen:

ULNRC-03384

DOCKET NUMBER 50-483
CALLAWAY PLANT
THERMO-LAG 330-1 FIRE BARRIERS

Reference: ULNRC-3302, dated December 8, 1995

The referenced letter provided a commitment to complete the Thermo-Lag ampacity derating evaluation by April 30, 1996. As discussed with the NRC staff, problems encountered with the ampacity derating evaluation methodology have forced a delay in the April 30, 1996, completion date. In that discussion, the staff agreed to allow additional time for resolution of this issue.

Attachment 1 provides Union Electric's revised schedule and plans for resolution of the ampacity derating issues along with additional information regarding Generic Letter 92-08, "Thermo-Lag 330-1 Fire Barriers."

Should you have any questions or need additional information concerning this matter please contact us.

Very truly yours,

A handwritten signature in cursive script that reads "Donald F. Schnell".
Donald F. Schnell

070025

JMC/hdh
Attachment

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PDR ADOCK 05000483
F PDR

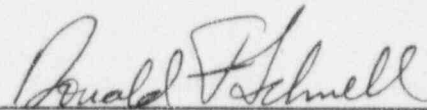
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STATE OF MISSOURI)
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CITY OF ST. LOUIS)

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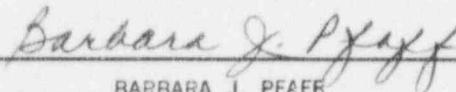
Donald F. Schnell, of lawful age, being first duly sworn upon oath says that he Senior Vice President-Nuclear and an officer of Union Electric Company; that he has read the foregoing document and knows the content thereof; that he has executed the same for and on behalf of said company with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By



Donald F. Schnell
Senior Vice President
Nuclear

SUBSCRIBED and sworn to before me this 31st day
of May, 1996.



BARBARA J. PFAFF
NOTARY PUBLIC - STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 22, 1997
ST. LOUIS COUNTY

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A160.412 (92-08)

**REVISED SCHEDULE AND ADDITIONAL INFORMATION
REGARDING GENERIC LETTER 92-08, "THERMO-LAG 330-1 FIRE
BARRIERS,"**

- References:
1. NRC letter to Union Electric dated 12/21/93
 2. Union Electric letter to NRC (ULNRC-2955) dated 2/10/94
 3. NRC letter to Union Electric dated 9/19/94
 4. Union Electric letter to NRC (ULNRC-3116) dated 12/19/94
 5. NRC letter to Union Electric dated 12/28/94
 6. Union Electric letter to NRC (ULNRC-3229) dated 6/26/95
 7. NEI letter to Administrative Points of Contact dated 10/30/95
 8. Union Electric letter to NRC (ULNRC-3302) dated 12/8/95

INTRODUCTION:

The above references list correspondence between the NRC and Union Electric Co. regarding Generic Letter 92-08, "Thermo-Lag 330-1 Fire Barriers." Provided below are updates to portions of References 4 and 6, including a revision to the methodologies to be used in closing out these issues.

RESOLUTION OF THERMO-LAG INSTALLATIONS:

When Reference 4 was submitted, Union Electric had planned to use an industry-sponsored Electric Power Research Institute (EPRI) methodology as part of our resolution of Thermo-Lag issues. The EPRI methodology was to assist in evaluating adequacy of installed Thermo-Lag. However, based on recent evaluations of the raceways which were wrapped to satisfy safe shutdown requirements, in conjunction with our goal to resolve this issue in our original time schedule, the resolution methodology has changed as described below:

1. With respect to Thermo-Lag installed to meet conditions of the plant's operating license and to satisfy licensing commitments, one of the following will be performed:

- a. An analysis to document that the wrap is not required (i.e., the cables are not needed for safe shutdown);
- b. Modification of the raceway routing, or
- c. Installation of Darmatt KM-1 as replacement material so that we comply with commitments to Appendix R. This includes the radiant energy heat shields used inside containment.

The result of the above is that Thermo-Lag will no longer be relied on to satisfy our commitments to Appendix R. These actions are scheduled to be completed by 12/31/96.

2. With respect to Thermo-Lag installed to achieve physical independence between electrical systems associated with the Class IE power system, we will document that the existing Thermo-Lag satisfies the requirements of IEEE 384-74. These actions are scheduled to be completed by 12/31/96.

CHEMICAL CONSISTENCY WITH OTHER INDUSTRY SAMPLES:

Reference 5 requested that Licensees provide follow-up information regarding Thermo-Lag chemical composition. These issues were addressed in Reference 6 in which we stated that pyrograms for the Callaway Thermo-Lag samples were consistent with other Thermo-Lag samples in the industry testing effort. Based on this, in conjunction with the NRC letter to NEI dated 10/20/95 (Attachment to Reference 7), we consider the materials questions regarding Thermo-Lag resolved. Please note that in Reference 6 the Thermo-Lag "material" and "barrier parameter" issues are no longer applicable since the material will not be used to satisfy Appendix R commitments. Thermo-Lag composition is a factor only in areas where the material is abandoned in-place or is installed on raceways to satisfy the requirements of IEEE 384-74. For these areas, we will apply industry test results for ampacity issues as described below, using industry developed heat release rates for the Thermo-Lag and include it as a combustible in the applicable area, all to assure that the existing Thermo-Lag satisfies the requirements of IEEE 384-74. Ampacity issues are scheduled to be completed as described below, while the other actions are scheduled to be completed by 12/31/96.

UPDATE TO THE AMPACITY DERATING ISSUE:

Reference 8 provided Union Electric's plan and scheduled completion date for resolution of Thermo-Lag fire barrier ampacity derating issues. The plan's original completion date (4/30/96) has been re-forecast for the following reasons:

Union Electric's review of our original A/E's (Bechtel) calculation of ampacity derating for Thermo-Lag wrapped conduits revealed several errors. These errors were associated with modeling cable mass thermal conductivity and heat transfer (i.e. linear versus volumetric heat transfer rate). Discussions with our A/E confirmed these errors.

To resolve these errors, Union Electric is developing an ampacity derating analytical model to correct and refine the original derating methodology. The analytical model results will be compared to recent industry testing performed by TU Electric (as reviewed in NRC's SER for TU Electric CPSES Unit 2 dated 6/14/95). Union Electric will establish ampacity derating factors to bound our analytical model and TU Electric ampacity derating testing for Thermo-Lag wrapped conduits. Power cable ampacity margins will be evaluated for Thermo-Lag wrapped conduits. Our new forecast date for these actions is 8/30/96. Again, please note that these Thermo-Lag ampacity derating factors are for IEEE 384-74 installation configurations, and for Appendix R Thermo-Lag configurations abandoned in-place.

With respect to ampacity derating factors for the replacement material to be used on Appendix R installations, Union Electric will utilize vendor supplied ampacity derating factors for the Darmatt KM-1 material. These derating factors will be based upon IEEE Standard P848 (draft 16) testing results. Power cable ampacity margins will be assessed for Appendix R fire barrier system raceway configurations (conduits and trays). This work is scheduled to be completed by 12/31/96.

We expect to submit results to the NRC by January 31, 1997 documenting resolution of all Thermo-Lag issues.