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October 22, 1996

Donald F. Schnell
Senior Vice President
Nuclear

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
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Gentlemen:

ULNRC-03477

DOCKET NUMBER 50-483
CALLAWAY PLANT
THERMO-LAG FIRE BARRIER SYSTEMS
Reference: ULNRC-3384, dated 5/31/96

The referenced letter provided Union Electric's updated response to Generic Letter 92-08 ampacity derating issues for the Thermo-Lag Fire Barrier Systems. That response indicated we would develop an ampacity derating analytical model to correct and refine the original derating methodology, and establish ampacity derating factors which bound the analytical model and the Texas Utilities Electric Company (TU Electric) ampacity derating testing for Thermo-Lag wrapped conduits.

Union Electric performed a sample calculation using a 3 conductor #6 AWG cable in a 2" rigid metal conduit. This configuration was selected so that a comparison could be made to the TU Electric ampacity derating testing. A parametric study using the Union Electric method was performed to help define the bounding cable derate factor. Cable mass effective thermal conductivity and conduit emissivity were varied and the results indicated an ampacity derate range from 10.4% to 18.9%. However after reviewing the NRC SER for Ampacity Issues Related to Thermo-Lag Fire Barriers at TU's CPSES Unit 2, it was decided an ampacity derating of 21% would be used for all Thermo-Lag 330-1 wrapped conduits at Callaway Plant. This 21% derate value was endorsed by the NRC for TU Electric's IEEE P848 testing of Thermo-Lag wrapped conduits of various sizes. This value bounds the test protocol uncertainties as detailed in the SER and Union Electric's alternate method. The Thermo-Lag wrapped conduit installations at Callaway Plant are of similar

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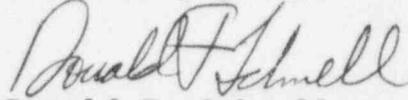
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configurations as those tested for the TU Electric Test Program and the use of the 21% derating factor will still allow adequate ampacity margin for all power cables evaluated such that no additional derating analysis is required.

In conclusion, Union Electric believes the above evaluations provide closure for all ampacity derating issues associated with Thermo-Lag Fire Barrier Systems at Callaway Plant. Should you have any questions or need additional information concerning this matter please contact us.

Very truly yours,



Donald F. Schnell

JMC/jdg

STATE OF MISSOURI)
) S S
CITY OF ST. LOUIS)

Donald F. Schnell, of lawful age, being first duly sworn upon oath says that he is 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
Donald F. Schnell
Senior Vice President
Nuclear

SUBSCRIBED and sworn to before me this twenty-second day of October, 1996.

Barbara J. Pfaff
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NOTARY PUBLIC — STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 22, 1997
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