

1901 Chouteau Avenue  
Post Office Box 149  
St. Louis, Missouri 63166  
314-554-2650



October 22, 1996

Donald F. Schnell  
Senior Vice President  
Nuclear

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

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

9610310075 961022  
PDR ADOCK 05000483  
P PDR

AD29 1/1

U.S. Nuclear Regulatory Commission

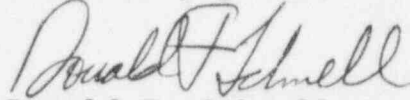
ULNRC-03477

Page 2

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,

A handwritten signature in dark ink, appearing to read "Donald F. Schnell". The signature is fluid and cursive, with the first name "Donald" and last name "Schnell" clearly distinguishable.

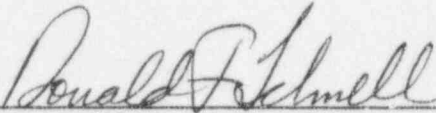
Donald F. Schnell

JMC/jdg

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

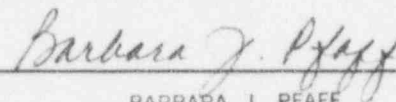
Donald F. Schnell, of lawful age, being first duly sworn upon oath says that he is Senior Vice President-Nuclear and an officer of Union Electric Company; that he has read the foregoing document and knows the content thereof; that he has executed the same for and on behalf of said company with full power 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  
Senior Vice President  
Nuclear

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



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

cc: M. H. Fletcher  
Professional Nuclear Consulting, Inc.  
19041 Raines Drive  
Derwood, MD 20855-2432

L. Joe Callan  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region IV  
611 Ryan Plaza Drive  
Suite 400  
Arlington, TX 76011-8064

Senior Resident Inspector  
Callaway Resident Office  
U.S. Nuclear Regulatory Commission  
8201 NRC Road  
Steedman, MO 65077

Kristine M. Thomas (2)  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
1 White Flint, North, Mail Stop 13E16  
11555 Rockville Pike  
Rockville, MD 20852-2738

Manager, Electric Department  
Missouri Public Service Commission  
P.O. Box 360  
Jefferson City, MO 65102