



Donald F. Schnell
Senior Vice President
Nuclear

December 4, 1992

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

Gentlemen:

ULNRC-2734

CALLAWAY PLANT
DOCKET NUMBER 50-483
ADDITIONAL INFORMATION REGARDING
REVISION TO TECHNICAL SPECIFICATION TABLE 4.3-1,
"REACTOR TRIP SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS"

- Ref: 1. Union Electric letter to U.S. Nuclear
Regulatory Commission, ULNRC-2718,
November 3, 1992
- Att: 1. Calibration of Source Range
Instrumentation Using the Plateau Curve
and Integral Bias Curve Methods

In Reference 1, Union Electric Company submitted the subject application for amendment to Facility Operating License Number NPF-30 for the Callaway Plant. This amendment application requests a revision to Technical Specification Table 4.3-1, Note 5, to reflect that integral bias curves, rather than detector plateau curves, are used to calibrate the source range instrumentation. It is a more inclusive calibration than the plateau curve and provides the same information, i.e., the high voltage operating point.

Union Electric herewith submits additional information regarding the calibration of source range instrumentation using the plateau curve and integral bias curve methods (Attachment 1).

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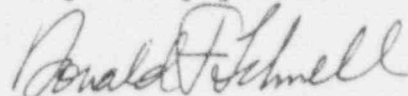
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U.S. Nuclear Regulatory Commission

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If you have any questions regarding this matter, please contact us.

Very truly yours,

A handwritten signature in dark ink, appearing to read "Donald F. Schnell". The signature is written in a cursive style with a large, stylized "D" and "S".

Donald F. Schnell

GAC/plh

Attachment

Calibration of Source Range Instrumentation Using
the Plateau Curve and Integral Bias Curve Methods

At the Callaway Plant, the implementation of the Boron Dilution Mitigation System added a low-noise preamplifier ("preamp") to the source range detector channel of the Nuclear Instrumentation System ("NIS") during the original design. The low-noise preamplifiers provided for the Callaway Plant NIS do not provide a means of determining the detector voltage setting using the traditional high voltage plateau curves. Because the preamp is a voltage sensitive design, the detector plateau curve no longer retains the typical "knee" of the curve and the plateau length.

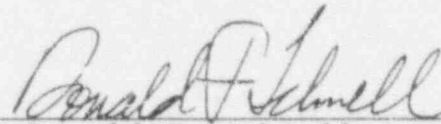
The calibration of the source range NIS is currently performed by using an integral bias curve rather than a plateau curve. The integral bias curve sets up the high voltage as well as the preamp gains and discriminator bias. It is a more inclusive calibration than the plateau curve and provides the same information, i.e., the high voltage operating point.

Using the integral bias curve method, the operating bias point is determined from a graph of the curve of count rate versus discriminator bias. The operating point for the discriminator is determined by adding margin against possible noise pulses to the value where the curve departs from the best fit straight line. The detector high voltage is adjusted if the discriminator operating bias point is not where it is required to be.

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

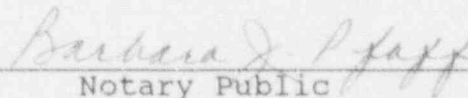
Donald F. Schnell, of lawful age, being first duly sworn upon oath says that he is Senior Vice President-Nuclear and an officer of Union Electric Company; that he has read the foregoing document and knows the content thereof; that he has executed the same for and on behalf of said company with full power 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 4th day
of December, 1992.



Notary Public
BARBARA J. PFAFF
NOTARY PUBLIC, STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 22, 1993
ST. LOUIS COUNTY

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