



UNION ELECTRIC COMPANY

1901 Gratiot Street, St. Louis

Donald F. Schnell
Vice President

May 14, 1985

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Denton:

ULNRC-1095

CALLAWAY PLANT
DOCKET NUMBER 50-483
LICENSE NUMBER NPF-30
WIDE RANGE GAS MONITOR
ACCIDENT IODINE SAMPLING

Ref: USNRC Region III Inspection Report No. 50-483/84-35, dated
August 23, 1984

The above referenced inspection report contains an open item identified by the NRC Region III Emergency Preparedness and Radiological Protection Branch which requires clarification by Union Electric Company and your concurrence.

The inspection report raises the issue of the inability to determine the empirical iodine line loss correction factor for the unit vent wide range gas monitor iodine sampler. This inspection report makes specific reference to NUREG-0737 Item II.F.1, Attachment 2.

The Callaway Plant FSAR commits Union Electric to NUREG-0737 and Regulatory Guide 1.97 Rev. 2, December 1980. Our review of these documents revealed no specific or implied requirement for such empirical determination.

The empirical determination of the line loss correction factor for iodine relating to the post accident source terms (i.e. degraded core in the NUREG-0737 context) is not technically feasible at this time. Neither the industry nor the NRC have progressed far enough in the on-going research into degraded core source term behavior to quantitatively specify iodine chemical and physical characteristics in sufficient detail for this purpose.

This research has been directed at providing sufficient technical knowledge to quantitatively model the relatively insensitive, large interactions relevant to large fission product distribution and behavior as a function of time. To our

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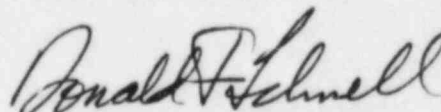
knowledge no work has been published that is applicable to the more sensitive area of small scale interactions on short time frames associated with sampling. For example, the detailed chemical species associated with iodine alone are a matter of speculation as hard data. The effects of the physical and chemical characteristics of the various iodine species, quantitatively, on line losses for sample lines with large length to diameter ratios has not been investigated. As a result of this, it is not feasible to establish iodine chemical and physical characteristics for empirical determinations that have any firm basis in existing technical knowledge.

Similarly, it is not feasible to establish iodine chemical and physical characteristics for either analytical evaluations or cross calibration with the reading from the wide range gas monitor. In the latter case, one might assume that the degraded core research could allow the noble gas release to be correlated with the iodine released for any given scenario. However, this argument is not valid when the full spectrum of the scenario is considered.

Therefore, Union Electric proposes to not perform any empirical determination of line loss correction factors for post accident iodine sampling from the unit vent wide range gas monitor. Union Electric will continue to operate and maintain the sampling system in accordance with the applicable technical specification requirements.

If you have any questions regarding this response or if additional information is required, please let me know.

Very truly yours,



Donald F. Schnell

BFH/msc

Enclosures

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 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
Vice President
Nuclear

SUBSCRIBED and sworn to before me this 14th day of May, 1985.

Barbara J. Pfaff
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NOTARY PUBLIC, STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 22, 1989
ST. LOUIS COUNTY.

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