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Document Control Branch (Document Control Desk)

SUBJECT: Responds to questions re Reg Guide 1.97 accident monitoring instrumentation, per commitment during discussions w/NRC during insp performed on 920224-28.

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September 16, 1993

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Regulatory Guide 1.97 Accident Monitoring Instrumentation

- References:
- 1) Letter from C. A. Schrock (WPSC) to Document Control Desk (NRC) dated July 1, 1992
 - 2) Letter from A. G. Hansen (NRC) to C. A. Schrock (WPSC) dated June 9, 1992
 - 3) Letter from C. A. Schrock (WPSC) to Document Control Desk (NRC) dated October 30, 1992

Reference 1 notified the Nuclear Regulatory Commission (NRC) of Wisconsin Public Service Corporation's (WPSC) commitments to the recommendations of NRC Regulatory Guide (RG) 1.97, Revision 3, with exceptions and deviations as described therein. Reference 2 provided WPSC with the results of the NRC RG 1.97 inspection performed the week of February 24-28, 1992, at the Kewaunee Nuclear Power Plant (KNPP). Based on discussions between WPSC and NRC staff during the inspection period, WPSC committed to provide test results for the CD-4000 isolator used in the containment hydrogen analyzer panel by October 31, 1992. Reference 3 provided the NRC with an updated schedule for retesting the isolator in question. As mentioned in Reference 3, test equipment problems at another utility were the cause of the extension. Subsequent to the utility test, the manufacturer Coinsip (now called CEGELEC) agreed to perform additional testing; therefore, an additional extension was requested to obtain the necessary test data. During subsequent telephone conversations, the NRC requested that WPSC respond to three questions regarding the isolator testing. This letter responds to those questions.

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NRC Question Number 1

Was the CEGELEC test similar to the installed configuration at KNPP?

WPSC Response

The test set-up for the CEGELEC test (the hydrogen monitor manufacturer) was similar to the installed configuration at KNPP. This test consisted of maximum credible fault voltages (+152 VDC, -152 VDC, and 132 VAC) applied to the 4-20 mADC output (non-1E side) of the CD-4000 module while monitoring the 0-1 VDC input (1E side) for voltage spikes. The power supply to the isolator was isolated during the test set-up by means of routing the power through three large transformers in series. This isolation was verified by the fact that there was no disturbance detected in the 120 VAC when power was shorted during component testing. The reason for isolating the power was to assure pure test conditions in order to preclude false indications. Similarly, the power for the CD-4000 isolator at KNPP is fed from the 120 VAC instrument bus which is fed from KNPP's safeguard power. This power is converted from 480 VAC to 120 VAC through a transformer that has fuse protection on the 120 VAC side. This fuse protection was provided by CEGELEC as stated in WPSC's response to question 3. Therefore, the CEGELEC test set-up was representative of the installed configuration at KNPP.

NRC Question Number 2

What were the differences between the two tests that WPSC performed (i.e., the first test with another utility and the second test with CEGELEC)?

WPSC Response

The difference between the first test that WPSC performed (in conjunction with another utility) and the second test that CEGELEC performed for WPSC is that the power supply to the isolator may have not been properly isolated during the first test. In the second test, proper isolation of the power supply was verified by CEGELEC. During a review of the test data from the first test, CEGELEC concluded that the voltage spikes found could have been caused by improper power supply isolation.

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NRC Question Number 3

Is the 120 volt power supply to this isolator isolated at KNPP? If so, how?

WPSC Response

Yes, the power supply to this isolator is isolated. As discussed in WPSC's response to Question 1, fuses are located on the 120 VAC side of the 480/120 volt transformer that supplies power to the hydrogen monitoring panel. These fuses are 1 amp, standard blow fuses. These fuses were provided to WPSC from CEGELEC as part of the original design of the Containment Hydrogen Monitoring System.

If you have any further questions regarding this issue, please feel free to contact me or a member of my staff.

Sincerely,



C. A. Schrock
Manager - Nuclear Engineering

DJW/cjt

cc - US NRC Region III
US NRC Senior Resident Inspector

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