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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop O-P1-17
Washington, DC 20555-0001

Donald C. Cook Nuclear Plant Units 1 and 2
REQUEST TO APPLY LEAK BEFORE BREAK (LBB)
METHODOLOGY TO THE PRESSURIZER SURGE LINE
REQUEST FOR ADDITONAL INFORMATION

Reference:

1. Letter from M. W. Rencheck (I&M) to U. S. Nuclear Regulatory Commission (NRC) Document Control Desk, "Donald C. Cook Nuclear Plant Units 1 and 2, Request to Apply Leak Before Break (LBB) Methodology to the Pressurizer Surge Line," C0800-04, dated August 22, 2000.

2. Letter from M. P. Alexich (I&M) to H. R. Denton (NRC), "Donald C. Cook Nuclear Plant Units 1 and 2, NRC Generic Letter 84-04; Elimination of Postulated Pipe Breaks in Primary Main Loops, Generic Issue A-2, Asymmetric Blowdown Loads on PWR Primary Systems, Request for License Condition Deletion," AEP:NRC:0137D, dated September 10, 1984.

3. Letter from D. G. Eisenhut (NRC) to All Operating PWR Licensees, Construction Permit Holders and Applicants for Construction Permits, "Safety Evaluation of Westinghouse Topical Reports Dealing With Elimination of Postulated Pipe Breaks in PWR Primary Main Loops (Generic Letter 84-04)," dated February 1, 1984.

4. Letter from S. A. Varga (NRC) to J. Dolan (I&M), No Subject, dated November 22, 1985.

In Reference 1, Indiana Michigan Power Company (I&M), the Licensee for Donald C. Cook Nuclear Plant (CNP) Units 1 and 2, requested approval to apply

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LBB methodology to the pressurizer surge line, thereby eliminating the need to consider the dynamic effects of a postulated, non-mechanistic rupture of this line. During a telephone conversation with members of the NRC staff on September 29, 2000, I&M agreed to provide additional information regarding CNP's leak detection capability and its seismic qualification.

Technical Specification (T/S) 3/4.4.6 requires that a leak detection system consisting of one containment atmosphere particulate radioactivity monitoring channel, a containment sump level and flow monitoring system, and either a containment humidity monitor or one containment atmosphere gaseous radioactivity monitoring channel be operable during Modes 1, 2, 3, and 4. As noted in the I&M response to an NRC question during the licensing process (Question 421.34), the leak detection systems are not seismically qualified. The leak detection system has, however, been credited by I&M with the capability to detect a 1-gpm leak in four hours to meet Generic Letter (GL) 84-04 requirements for using LBB methodology, References 2 and 3. The NRC reviewed the leak detection system for applicability to LBB utilization, and found it to be acceptable (Reference 4). The T/Ss require that all of the systems used to detect leakage be subjected to a channel calibration. Of these systems, the particulate radiation monitoring system, which GL 84-04 does not require to be seismically qualified, is capable of detecting a 0.5-gpm leak in one hour.

The particulate radiation monitoring system has redundant channels, one of which is required to be operable. In accordance with the T/S, the channels are subjected to twice daily channel checks (including a source check), a quarterly channel functional test, and an eighteen-month channel calibration.

Notification of an adverse condition, such as a system leak or a monitor failure, is accomplished via the radiation monitoring control terminals and the plant process computer. These devices create the radiation monitoring system alarm. During the preparation of a 1998 system status report, a tabulation of the radiation monitoring system availabilities was assembled. The data was obtained from ongoing system engineer informal reviews of associated operating logs and condition reports. The cognizant system engineer reported in the January 1998 system status report the following availabilities:

Year	% Availability
1997	99.85
1996	99.89
1995	99.80
1994	99.82
1993	99.83
1992	99.65

I&M has performed an engineering evaluation on the sensitivity of the lower containment particulate radiation monitoring channel to detect leakage. The evaluation's conclusion is that the particulate radiation monitor is capable of detecting a 0.5 gpm leak within one hour. The evaluation assumes the existence of a 0.5 gpm leak from the reactor coolant system and calculates the resulting airborne activity transient in the lower containment volume. The time at which the activity, which includes both background and coolant activity obtained from operating data, exceeds the monitor's setpoint is the time of detection.

I&M considers that the systems' redundancy, the frequent surveillances, the past reliability, and the detection capability evaluation provide reasonable assurance that a system is available to detect an RCS leakage of 0.5 gpm in one hour.

This information is being provided to illustrate that additional margin is available beyond that required by Reference 3. This is not intended to alter the existing licensing basis leakage sensitivity of 1 gpm in four hours as stated in Reference 2.

There are no new commitments in this letter.

Should you have any questions, please contact Mr. Wayne J. Kropp, Director of Regulatory Affairs, at (616) 697-5056.

Sincerely,

M. W. Rencheck
Vice President Nuclear Engineering

/jen

c: J. E. Dyer
MDEQ – DW & RPD
NRC Resident Inspector
R. Whale