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July 31, 1981

EF2 - 54195

Mr. L. L. Kintner
Division of Project Management
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Kintner:

Reference: Enrico Fermi Atomic Power Plant, Unit 2
NRC Docket No. 50-341

Subject: Containment Leakage Testing

The following items respond to concerns discussed during telephone conversations on July 17 and July 23 between John Lane, NRC and Mel Batch, Edison.

1. Duration of Type A Test

Our testing procedures and equipment are molded to fit the requirements in ANSI/ANS-56.8-1981. This standard incorporates a formula for duration of type A test which allows tests as short as 8 hours. However, Mr. Lane pointed out that the NRC has not yet endorsed this standard. Consequently, Detroit Edison agrees to the 24-hour type A test currently being required by the NRC. We believe the new standard is the result of a careful study and urge NRC to complete the review of it.

2. Pressure of Water used for Testing

As requested, $1.1P_A$ will be used. (See PSAR 6.2.4.4.3).

3. Leakage Rates for Valves Tested with Water

Values for acceptable leakage rates will be included in the technical specifications for those valves tested with water. Values will be given for each valve and for the total leakage through these valves. This leakage will be included as a portion of the total source term used for site radiological dose analysis.

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4. 90-Day tests on Butterfly Valves

To respond to NRC expressed concerns on deterioration of seats on butterfly valves in the purge system, Detroit Edison agrees to a test on these valves every 90 days in addition to the Type C tests. We currently envision the tests will consist of:

a. Pressurizing the region between the valves to 1/2 P_A

b. Determining the rate of pressure decay

c. Comparing the rate of decay with previous tests by "trending."

d. Repairing the valves if the results indicate the leakage has increased by 20% from the similar test done at the time of the previous Type C test.

5. Leakage Limit for CRD System

Section 3 of our letter EF2-53932, July 2, 1981, discusses detection of leakage through CRD system penetrations. Mr. Lane requested we quantify our detection methods, Section 7.6.1.8.5.4 of the FSAR includes a discussion of the sensitivity of the floor drain sump. That section gives a leakage rate detection limit of 5 gpm and discusses the bases for that limit.

6. Secondary Containment Leakage Testing

We have agreed to perform a periodic test of secondary containment inleakage rate and drawdown time. (See SER Section 6.2.3).

7. Testing Shear and Ball Valves in TIP System

The Detroit Edison Company commits to:

a. Replacing explosive charges in shear valves prior to fuel load with fresh, factory-certified charges.

b. Performing Type C tests on ball valves prior to fuel load.

c. Replacing all explosive charges during refueling outages with fresh, factory-certified, charges at 5 ± 1 year intervals. This internal is consistent with factory recommendations.

d. Performing Type C tests on the ball valves on same schedule as charge replacement and following any maintenance on ball valves which could affect leakage.

Type C testing the ball valves requires removing the guide tubing between the penetration and the indexing mechanism. To do this too frequently is imprudent for it jeopardizes system reliability. In addition, the system is continuously monitored for excessive leakage via the flow meter on the TIP purge system ("Excessive Leakage" would be 140 cu ft/day. Furthermore, the ball valves incorporate limit switches with open and closed indicators in the relay room. Thus, the ball valves are monitored for both excessive leakage and maloperation. We believe these arguments provide justification for the 5-year test interval.

8. Isolation Signals on Bypass Leakage Valves

The valves in question are on the steam supply drain pots on RCIC and HPCI: V17-2024, 2025, 2036, 2037. Our July 2 letter, EF2-53932, states these close upon the initiation of opening of the steam supply valves to their respective turbines. John Lane questioned this arrangement since it fails to meet the criteria for two signals for isolation valves.

Upon further study, we believe the arrangement is satisfactory. The signals which open the steam supply valves to the HPCI and RCIC include safety grade containment isolation signals RPV Level 2 and High Drywell Pressure. Consequently, both containment isolation signals <u>are</u> used to close valves V17-2024, 2025, 2036, 2037 albeit indirectly.

The leakage limit on these valves will be that suggested in Section XI of the ASME Code. These valves close in five seconds or less. No other lines from the RCIC or HPCI steam supply exit secondary containment.

9. Revision to Previous Letter

Our letter of June 23, 2981, EF2-53867, stated we would add a statement to FSAR Section 6.2.4.4.3 to the effect that manufactured test data will be available supporting the justification for Type C tests in opposite direction. That statement is too general; it will not be added to the FSAR.

We believe the main concern for reverse testing is on gate valves; a review of the design of globe and butterfly valves shows that leakage measured by reverse testing these valves will be equal or more conservative than "forward" testing. We have obtained data and statements from our butterfly valve manufacturerindicating the valves function satisfactorily pressurized in the reverse direction and that, therefore, reverse testing is feasible as well as meaningful. The gate valves used on Fermi 2 have wedge shape disks. Valves of this type have the same sealing characteristics in either direction.

Sincerely,

W. F. Colbert
Technical Director
Enrico Fermi 2

WFC/MLB/dk