



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 108 TO FACILITY OPERATING LICENSE NO. NPF-43  
DETROIT EDISON COMPANY  
FERMI-2  
DOCKET NO. 50-341

1.0 INTRODUCTION

On September 12, 1995, the U.S. Nuclear Regulatory Commission (NRC) approved issuance of a revision to 10 CFR Part 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors" which was subsequently published in the Federal Register on September 26, 1995, and became effective on October 26, 1995. The NRC added Option B "Performance-Based Requirements" to allow licensees to voluntarily replace the prescriptive testing requirements of 10 CFR Part 50, Appendix J, with testing requirements based on both overall leakage rate performance and the performance of individual components.

By application dated December 21, 1995, Detroit Edison Company, (the licensee) requested changes to the Operating License and Technical Specifications (TS) for the Fermi 2 plant. The proposed changes would permit implementation of 10 CFR Part 50, Appendix J, Option B. The licensee has established a "Containment Leakage Rate Testing Program" and proposed adding this program to the TS. The program references Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak Test Program," dated September 1995, which specifies a method acceptable to the NRC for complying with Option B.

2.0 BACKGROUND

Compliance with 10 CFR Part 50, Appendix J, provides assurance that the primary containment, including those systems and components which penetrate the primary containment, do not exceed the allowable leakage rate specified in the TS and Bases. The allowable leakage rate is determined so that the leakage assumed in the safety analyses is not exceeded.

On February 4, 1992, the NRC published a notice in the Federal Register (57 FR 4166) discussing a planned initiative to begin eliminating requirements marginal to safety which impose a significant regulatory burden. Appendix J of 10 CFR Part 50 was considered for this initiative and the staff undertook a study of possible changes to this regulation. The study examined the previous performance history of domestic containments and examined the effect on risk of a revision to the requirements of Appendix J. The results of this study are reported in NUREG-1493, "Performance-Based Leak-Test Program."

Based on the results of this study, the staff developed a performance-based approach to containment leakage rate testing. On September 12, 1995, the NRC approved issuance of this revision to 10 CFR Part 50, Appendix J, which became effective on October 26, 1995. The revision added Option B, "Performance-Based Requirements," to Appendix J to allow licensees to voluntarily replace the prescriptive testing requirements of Appendix J with testing requirements based on both overall and individual component leakage rate performance.

Regulatory Guide 1.163 was developed as a method acceptable to the NRC staff for implementing Option B. This RG states that the Nuclear Energy Institute (NEI) guidance document NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," provides methods acceptable to the NRC staff for complying with Option B with four exceptions which are described therein.

Option B requires that the RG or other implementation document used by a licensee to develop a performance-based leakage rate testing program must be included, by general reference, in the plant TS. The licensee has referenced RG 1.163 in the Fermi 2 TS.

Regulatory Guide 1.163 specifies an extension in Type A test frequency to at least one test in 10 years based upon two consecutive successful tests. Type B tests may be extended up to a maximum interval of 10 years based upon completion of two consecutive successful tests and Type C tests may be extended up to 5 years based on two consecutive successful tests.

By letter dated October 20, 1995, NEI proposed TS to implement Option B. After some discussion, the staff and NEI agreed on final TS which were attached to a letter from C. Grimes (NRC) to D. Modeen (NEI) dated November 2, 1995. These TS are to serve as a model for licensees to develop plant-specific TS in preparing amendment requests to implement Option B.

For a licensee to determine the performance of each component, factors that are indicative of or affect performance, such as an administrative leakage limit, must be established. The administrative limit is selected to be indicative of the potential onset of component degradation. Although these limits are subject to NRC inspection to assure that they are selected in a reasonable manner, they are not TS requirements. Failure to meet an administrative limit requires the licensee to return to the minimum value of the test interval.

Option B requires that the licensee maintain records to show that the criteria for Type A, B, and C tests have been met. In addition, the licensee must maintain performance comparisons of the overall containment system and individual components to show that the test intervals are adequate. These records are subject to NRC inspection.

### 3.0 EVALUATION

In its December 21, 1995, letter, the licensee proposed establishing a "Primary Containment Leakage Rate Testing Program" and proposed adding this program to the TS. The program references RG 1.163, which specifies a method

acceptable to the NRC for complying with Option B. The proposal requires a change to existing TS Section 3/4.6.1.2, "Primary Containment Leakage," TS 3/4.6.1.3, "Primary Containment Air Locks," TS 3/4.6.1.5, "Primary Containment Structural Integrity," and the addition of the "Primary Containment Leakage Rate Testing Program" to TS 6.0, "Administrative Controls." Corresponding bases would also be modified.

Option B permits a licensee to choose Type A, or Type B and C, or Type A, B, and C testing to be done on a performance basis. The licensee has elected to perform Type A, B, and C testing on a performance basis.

The TS changes proposed by the licensee are in compliance with the requirements of Option B and consistent with the guidance of RG 1.163, and the generic TS of the November 2, 1995, letter and are, therefore, acceptable to the staff.

Paragraph V.B.1 of 10 CFR Part 50, Appendix J, Option B, states that specific exemptions to Option A are still applicable to Option B, if necessary, unless specifically revoked by the NRC.

The licensee evaluated the existing exemptions from Option A against the new requirements of Option B and determined that two of the exemptions will be retained. A previously approved exemption to the original Appendix J requirements concerning reduced pressure for main steam isolation valve testing has been retained in Section 3.6.1.2.c. In addition, an approved exemption to test the LPCI Loop A and B injection isolation valves in accordance with TS Section 4.4.3.2.2 in lieu of the Type B and C Appendix J local leak-rate test requirements has been maintained in the proposed changes.

References to four previously granted exemptions have been deleted from the proposed Fermi 2 TS because these exemptions are not required under the new 10 CFR Part 50 Appendix J, Option B, regulations. These exemptions include two one-time schedule exemptions, the exemption for Type A data analysis methods, and the exemption for testing of airlocks after each opening. The latter two are no longer needed due to the added flexibility afforded by RG 1.163 and the NEI 94-01 methodology.

The staff has reviewed the licensee's proposed disposition of its existing (Option A) Appendix J exemptions as they relate to the Option B requirements, and pursuant to the provisions of 10 CFR Part 50, Appendix J, Option B, paragraph V.B.1, finds it acceptable.

Finally, a modification was proposed for TS Table 4.0.2-1. Due to the extended plant outage resulting from the 1993 turbine generator failure, the licensee rescheduled the fifth refueling outage from spring 1996 to fall 1996. In order to support the revised plant outage schedule, the licensee requested a one-time change to extend a number of surveillance test intervals. This was proposed in order to avoid shutting down the plant in mid-cycle to perform surveillances. License Amendment No. 106, issued on March 1, 1996, granted this request. TS Table 4.0.2-1, "Surveillance Test Intervals Extended To October 5, 1996," which was introduced in Amendment No. 106, identified each of the surveillances whose test intervals were extended. However, due to the

implementation of Option B to 10 CFR Part 50 Appendix J, several surveillances included in TS Table 4.0.2-1 are being eliminated. Since surveillance requirements 4.6.1.2.b, 4.6.1.2.d and 4.6.1.2.g are being eliminated as a part of this license amendment, the licensee has proposed eliminating these items from the table. Because these surveillances are no longer included in the TS, the staff finds their removal from TS Table 4.0.2-1 acceptable.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan state official was notified of the proposed issuance of the amendment. The state official had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (61 FR 7551). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

### 5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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