



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 148 TO FACILITY OPERATING LICENSE NO. DPR-19,
AMENDMENT NO. 142 TO FACILITY OPERATING LICENSE NO. DPR-25,
AMENDMENT NO. 169 TO FACILITY OPERATING LICENSE NO. DPR-29
AND AMENDMENT NO. 165 TO FACILITY OPERATING LICENSE NO. DPR-30

COMMONWEALTH EDISON COMPANY

AND

MIDAMERICAN ENERGY COMPANY

DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3, AND

QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-237, 50-249, 50-254 AND 50-265

1.0 INTRODUCTION

By letters dated November 14, 1995, and January 4, 1996, Commonwealth Edison Company (the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License Nos. DPR-19, DPR-25, DPR-29 and DPR-30) for the Dresden Nuclear Power Station, Units 2 and 3, and Quad Cities Nuclear Power Station Units 1 and 2. The proposed changes would revise the technical specifications to reflect the approval for the licensee to use 10 CFR Part 50, Appendix J, Option B for the Dresden and Quad Cities Stations containment leakage rate test programs. The Commission has made an initial no significant hazards consideration determination regarding this request. That determination was published in the Federal Register on December 7, 1995 (60 FR 62896). The January 4, 1996, supplement only requested a change in the implementation schedule for the amendment. This information was within the scope of the original application and did not change the staff's initial proposed no significant hazards consideration determination. The November 14, 1995, and January 4, 1996, letters also requested similar changes for the LaSalle County Station. These requested changes will be addressed separately.

2.0 BACKGROUND

Compliance with 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 values specified in the technical specifications 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. 10 CFR Part 50, Appendix J, "Primary Containment Leakage Testing for Water-Cooled Power Reactors," 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 was subsequently published in the Federal Register on September 26, 1995, and 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, "Performance-Based Containment Leak Test Program", was developed as a method acceptable to the NRC staff for implementing Option B. This regulatory guide states that the Nuclear Energy Institute (NEI) guidance document 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 Regulatory Guide 1.163 or another implementation document used by a licensee to develop a performance-based leakage testing program must be included, by general reference, in the plant technical specifications.

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 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 technical specifications for implementing Option B. After some discussion, the staff and NEI agreed on a set of model technical specifications which were transmitted to NEI in a letter dated November 2, 1995. These technical specifications are to serve as a model for licensees to develop plant-specific technical specifications in preparing amendment requests to implement Option B.

In order for a licensee to determine the performance of each component, Regulatory Guide 1.163 provides that a licensee establish an administrative leakage limit. 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 technical specifications 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 comparisons of the performance of the overall containment system and the individual components to show that the test intervals are adequate. These records are subject to NRC inspection.

3.0 EVALUATION

The licensee's November 14, 1995, letter to the NRC proposes to establish a "Primary Containment Leakage Rate Program" and proposes to add this program to the technical specifications. The program references Regulatory Guide 1.163 which specifies methods acceptable to the NRC for complying with Option B. This requires a change to existing Technical Specifications 3/4.7.A, 3/4.7.C, and 3/4.7.D, the deletion of 3/4.7.B, and the addition of the program to Section 6.8 of the technical specifications.

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 licensee has committed to a Primary Containment Leakage Rate Testing Program in accordance with the guidelines contained in Regulatory Guide 1.163. Technical specifications consistent with those transmitted to NEI in a letter dated November 2, 1995, except as noted below, were also proposed.

The technical specification changes proposed by the licensee differ with the model technical specifications developed by the NRC staff in cooperation with NEI on one item. The generic surveillance for secondary containment integrity requires verifying that the leakage rate for all secondary containment bypass leakage meets certain criteria at a frequency in accordance with the Primary Containment Leakage Rate Testing Program. The licensee, however, has chosen to retain its existing surveillance which requires verifying once per 24 hours that the pressure within the secondary containment is ≥ 0.25 inch of vacuum water gauge, verifying once per 31 days that appropriate doors and penetrations are closed, and verifying once per 18 months that each standby gas treatment train can produce adequate secondary containment vacuum at a specified flow rate. The current specifications provide adequate assurance of secondary containment, were previously approved by the staff, and are acceptable. Based on the above, the licensee's proposed changes implementing Option B of Appendix J are acceptable.

Option B states that specific existing exemptions to Option A are still applicable unless specifically revoked by the NRC. Both Dresden and Quad Cities currently have approved exemptions to 10 CFR Part 50, Appendix J, that were issued by the NRC on June 25, 1982, and June 12, 1984, respectively. These exemptions, which focus on testing methodology aspects of Appendix J, are unaffected by the change to the Option B testing frequency requirements and are not affected by this amendment.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change 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. The NRC staff has determined that the amendments involve 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 amendments involve no significant hazards consideration, and there has been no public comment on such finding (60 FR 62896). Accordingly, the amendments meet 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 amendments.

6.0 CONCLUSION

The Commission 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: R. Lobel (by precedent)
D. Wigginton (by precedent)
J. Hickman

Date: January 11, 1996