



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 81 TO FACILITY OPERATING LICENSE NO. NPF-37,  
AMENDMENT NO. 81 TO FACILITY OPERATING LICENSE NO. NPF-66,  
AMENDMENT NO. 73 TO FACILITY OPERATING LICENSE NO. NPF-72,  
AND AMENDMENT NO. 73 TO FACILITY OPERATING LICENSE NO. NPF-77  
COMMONWEALTH EDISON COMPANY  
BYRON STATION, UNITS 1 AND 2  
BRAIDWOOD STATION, UNITS 1 AND 2  
DOCKET NOS. STN 50-454, STN 50-455, STN 50-456 AND STN 50-457

1.0 INTRODUCTION

By letter dated December 6, 1995, as supplemented February 27, 1996, and March 28, 1996, the Commonwealth Edison Company (ComEd, the licensee) requested amendments to the Technical Specifications (TS) appended to Facility Operating License Nos. NPF-37 and NPF-66 for the Byron Station, Units 1 and 2, and Operating License Nos. NPF-72 and NPF-77 for the Braidwood Station, Units 1 and 2. The proposed amendments would revise the TSs to reflect the approval for the licensee to use 10 CFR Part 50, Appendix J, Option B for the Byron and Braidwood containment leakage rate test program. The February 27, 1996, supplement modified the TS pages to be more consistent with the published guidance, but did not change the primary intent of the request. The March 28, 1996, letter modified TS 4.6.1.2 to indicate that the minimum interval between Type A tests is the nominal refueling outage and TS 4.6.1.3.a to be consistent with the intent of the TSs developed by the staff in cooperation with NEI. Neither supplemental submittal affected the initial proposed no significant hazards consideration determination.

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 TSs 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 Containment 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," September 1995 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 the regulatory guide or other implementation document used by a licensee to develop a performance-based leakage testing program must be included, by general reference, in the plant TSs.

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

In order for a licensee to determine the performance of each component, a licensee must 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 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 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 December 6, 1995, letter to the NRC proposes to revise Section 1, "Definitions;" Section 3/4.6.1.1, "Containment Integrity;" Section 3/4.6.1.2, "Containment Leakage;" Section 3/4.6.1.3, "Containment Air Locks;" Section 3/4.6.1.7, "Containment Purge Ventilation System;" and associated Indexes and Bases. With minor variations the proposal would change all the affected surveillances to require testing in accordance with 10 CFR Part 50, Appendix J, Option B, and Regulatory Guide 1.163, dated September 1995. The primary impact is to allow use of 10 CFR Part 50, Appendix J, Option B, for primary containment leakage rate testing.

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 performance of primary containment leakage rate testing in accordance with the guidelines contained in Regulatory Guide 1.163. TSs meeting the intent of those transmitted to NEI in a letter dated November 2, 1995, as noted below, were also proposed.

The licensee's proposed TSs differed in format from the model TSs developed by the NRC staff in cooperation with NEI. However, all the essential elements were included. The peak calculated containment internal pressure for the design-basis loss-of-coolant accident,  $P_a$ , is specified in the TSs. The maximum allowable primary containment leakage rate,  $L_a$ , at  $P_a$ , is also specified. The surveillance requirements for containment leakage rate testing and containment air lock testing have been revised to be performed in accordance with 10 CFR Part 50, Appendix J, Option B, and Regulatory Guide 1.163, dated September 1995.

The licensee also proposed to delete references to  $P_t$ ,  $L_t$ ,  $L_c$  and  $L_o$  from TS 3/4.6.1.2., and its associated Bases, which were no longer appropriate with the change to Option B. The staff agrees that the deleted surveillances are unnecessary or inconsistent with Option B.

Based on the above the licensee's proposed changes implementing Option B of Appendix J are acceptable.

As part of its submittal, the licensee also proposed to revise TS 4.6.1.7.3 regarding the testing of valves with resilient seal material. However, the scope of 10 CFR Part 50, Appendix J, did not include changes to testing of such valves and the licensee's submittal did not include sufficient information for the staff to evaluate the proposed change independently of the others. Consequently, approval is not granted in this amendment. The staff would consider this proposed change in a future submittal accompanied by a supporting safety analysis.

In its March 28, 1996, letter, the licensee revised its proposed change to TS 4.6.1.2 to indicate that the minimum interval between Type A tests is the nominal refueling outage. The staff has that proposed change under review and will address it in a future amendment.

In addition to the above, the licensee proposed a change to surveillance requirement 4.6.1.1.a to add a statement that the valves that are open under administrative controls are not required to meet the surveillance requirement during the time the valves are open. This surveillance currently requires verifying that all penetrations not capable of being closed by operable containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except as provided in Table 3.6-1 of Specification 3.6.3. This surveillance helps to ensure that post-accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. This surveillance does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves capable of being mispositioned are in the correct position. Valves that are open under administrative control are obviously already known to be open. The administrative controls are considered sufficient to assure that the valves will be closed as conditions require. Therefore, the proposed change is acceptable.

#### 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 and change surveillance requirements. 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 (61 FR 7547). 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 Contributor: John Hickman  
Richard Lobel

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