



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NOS. 197 AND 80 TO FACILITY OPERATING
LICENSE NOS. DPR-66 AND NPF-73
DUQUESNE LIGHT COMPANY
OHIO EDISON COMPANY
PENNSYLVANIA POWER COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
THE TOLEDO EDISON COMPANY
BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2
DOCKET NOS. 50-334 AND 50-412

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 performance and the performance of individual components.

By letter dated December 15, 1995, as supplemented March 5, 1996, the Duquesne Light Company (the licensee) submitted a request for changes to the Beaver Valley Power Station, Unit Nos. 1 and 2, Technical Specifications (TSs). The requested changes would make the TSs consistent with Option B of Appendix J of 10 CFR Part 50 and the implementing guidance of Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak Test Program," dated September 1995. Option B of Appendix J permits implementation of a performance-based leak rate test schedule in lieu of the prescriptive requirements contained in Option A of Appendix J. These amendments would remove from the TSs the prescriptive requirements of Option A concerning test frequencies and test methodology. These amendments would also include minor administrative and editorial changes to add consistency between the Bases and the TSs and provide additional clarification. The licensee has established a "Containment Leakage Rate Testing Program" and proposed adding this program to the TSs. The program references 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. The March 5, 1996, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination or expand the amendment request beyond the scope of the January 3, 1996, Federal Register notice.

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 specified in the TSs and Bases. The allowable leakage rate is determined so that the leakage rate 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, "Primary Containment Leakage Testing for Water-Cooled Power Reactors," of 10 CFR Part 50 was considered for this initiative and the NRC 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 NRC 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.

RG 1.163, "Performance-Based Containment Leak Test Program," dated 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 NEI 94-01, Revision 0, "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 testing program, must be included, by general reference, in the plant TSs. The licensee has referenced RG 1.163, dated September 1995, in the proposed Beaver Valley TSs.

RG 1.163, dated September 1995, 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 TSs to implement Option B. After some discussion, the NRC staff and NEI agreed on final TSs which 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, 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 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

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's December 15, 1995, and March 5, 1996, letters to the NRC propose to establish a "Containment Leakage Rate Testing Program" and propose to add this program to the TSs. The program references RG 1.163, "Performance-Based Containment Leak Test Program," dated September 1995, which specifies methods acceptable to the NRC for complying with Option B. This requires a change to existing TS 3/4.6.1.1, 3/4.6.1.2, 3/4.6.1.3, 3/4.6.1.6, 6.9.2.g., and the TS index, and the addition of the "Containment Leakage Rate Testing Program" as TS 6.17. Corresponding bases were also modified.

The TS changes proposed by the licensee are in compliance with the requirements of Option B and consistent with the guidance of Regulatory Guide 1.163, dated September 1995. Further, despite the different format of the licensee's current TSs, all of the important elements of the guidance provided in the NRC letter (C. I. Grimes) to NEI (D. J. Modeen) dated November 2, 1995, are included in the proposed TSs. However, the licensee has proposed several changes that are in addition to the model TSs, and these are discussed below.

In TS 3.6.1.1, "Containment Integrity," the allowed ACTION time to reach cold shutdown from hot standby if containment integrity is lost is reduced from 36 hours to 30 hours. A completion time of 30 hours is consistent with the other ACTIONS pertaining to containment and is a conservative change, and is, therefore, acceptable.

The ACTION for TS 3.6.1.2, "Containment Leakage," currently states that, with containment leakage rates exceeding their limits, restore the leakage rates to within the limits "prior to increasing the Reactor Coolant temperature above 200°F." The proposed ACTION states:

With the containment leakage rates exceeding the limits, restore the leakage rates to within limits within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The proposed change corrects a deficiency in the current TS, which does not recognize that containment leakage rates can be determined during plant operation (Modes 1 through 4). The proposed words are consistent with the other ACTIONS for containment, and the Improved Standard TS (NUREG-1431, Revision 1), and are acceptable.

The proposed changes to TS 4.6.1.3, surveillance requirements for containment air locks, retain the air lock leakage rate testing acceptance criteria and surveillance requirements (except testing frequency), instead of putting these items in the Containment Leakage Rate Testing Program, as was done in the model TSs. The content of the proposed TSs is consistent with the model TSs; only the format and location of the requirements are different. Therefore, this editorial difference is acceptable.

Proposed TS 4.6.1.3.a.2.b) retains a requirement from the current TS that exceeds the guidance of NEI 94-01, Revision 0. It requires a full pressure (P_a) air lock leakage rate test following maintenance performed on the outer door which may result in a decrease in closure force on any part of the door sealing surface. This requirement is more conservative than the guidance of RG 1.163, dated September 1995, and NEI 94-01, Revision 0, and is present in the current TS, and is, therefore, acceptable.

The ACTION for TS 3.6.1.6, "Containment Structural Integrity," currently states that, with containment structural integrity not conforming to the Limiting Condition For Operation (LCO), restore the structural integrity to within the limits "prior to increasing the Reactor Coolant temperature above 200°F." The proposed ACTION changes the quoted words to "within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours." The proposed change corrects a deficiency in the current TS, which does not recognize that containment structural integrity can be out of conformance with the LCO during plant operation (Modes 1 through 4). The proposed words are consistent with the other ACTIONS for containment, the proposed change to TS 3.6.1.2 discussed above, and the Improved Standard TS (NUREG-1431, Revision 1), and are acceptable.

TS 4.6.1.6.1 and 2, surveillance requirements for Containment Structural Integrity, are being revised to require the performance of visual examinations of the exposed accessible areas of the containment interior and exterior surfaces at the frequency specified in the Containment Leakage Rate Testing Program. These examinations will be conducted prior to performing a Type A

test and during two other refueling outages before the next Type A test (if the interval for the Type A test has been extended to 10 years). Further, reports of containment visual inspections will be in accordance with the Containment Leakage Rate Testing Program. These changes are consistent with RG 1.163, dated September 1995, and are, therefore, acceptable.

The model TS, in the Bases for TS 3.6.1.1.1, state that RG 1.163 and NEI 94-01 include acceptance criteria for as-left and as-found Type A leakage rates and combined Type B and C leakage rates, which may be reflected in the Bases.

The proposed Bases for TS 3/4.6.1.2, "Containment Leakage," do reflect these acceptance criteria, and proper means for determining as-left and as-found leakage rates. As an extension of this, the licensee is further proposing additional words, beyond the model TSs, for TS 6.17, "Containment Leakage Rate Testing Program," to also reflect these acceptance criteria and proper means for determining as-left and as-found leakage rates. The NRC staff has reviewed these additional words and finds that they are consistent with RG 1.163, dated September 1995, and NEI 94-01, Revision 0, and are, therefore, acceptable.

In summary, the NRC staff has reviewed the changes to the TSs and associated Bases proposed by the licensee and finds that they are in compliance with the requirements of Appendix J, Option B, and consistent with the guidance of RG 1.163, dated September 1995, and are, therefore, acceptable.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes 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 179). The amendments also relate to changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (10). 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.

5.3 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.

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Date: March 19, 1996