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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 196 AND 177 TO

FACILITY OPERATING LICENSE NOS. NPF-4 AND NPF-7

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

NORTH ANNA POWER STATION, UNITS NO. 1 AND NO. 2

DOCKET NOS. 50-338 AND 50-339

1.0 INTRODUCTION

By letter dated November 20, 1995, as supplemented by letter dated January 23, 1996, the Virginia Electric and Power Company (the licensee) proposed a change to the Technical Specifications (TS) for the North Anna Power Station, Units No. 1 and No. 2 (NA-1&2). The proposed TS change would permit the use of 10 CFR Part 50, Appendix J, Option B, Performance-Based Requirements. The January 23, 1996 supplemental letter contained clarifying information only, and did not change the staff's proposed no significant hazards consideration.

2.0 BACKGROUND

Compliance with Appendix J provides assurance that the primary containment, and 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 eliminate 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, September 1995, "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) 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 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 technical specifications.

Regulatory Guide 1.163 specifies an extension in Type A test frequency from three approximately equally spaced tests in ten years 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 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, 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 technical specifications requirements. Failure to meet an administrative limit requires the licensee to return to the minimum test interval for that component.

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 20, 1995 and January 23, 1996 letters to the NRC proposed technical specifications changes to permit the use of Option B of the revised 10 CFR Part 50 Appendix J. 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. These technical specifications changes refer to Regulatory Guide 1.163, September 1995, "Performance-Based Containment Leak Test Program" which specifies a method acceptable to the NRC for complying with Option B. This requires changes to technical specifications 4.6.1.1.a, 4.6.1.1.c, 4.6.1.2.a through d, 4.6.1.3.a, 4.6.1.6.1, 4.6.1.6.2, and 6.9.2.p and 6.9.2.r.

These technical specifications changes replace specific surveillance requirements related to primary containment leakage rate testing and the corresponding acceptance criteria and test methods with a requirement to perform the required testing as required by 10 CFR Part 50, Appendix J, Option B, as modified by approved exemptions, in accordance with the guidelines in Regulatory Guide 1.163, September 1995. The licensee chose not to include its performance testing program in the technical specifications as an administrative program as proposed in the November 2, 1995 letter to NEI discussed above. The November 2, 1995 letter provided guidance to licensees but is not an NRC requirement. The staff has reviewed the licensee's proposed changes and finds them consistent with the requirements of 10 CFR Part 50, Appendix J, Option B, in that the changes include general reference in the TS to the regulatory guide used by the licensee to develop the performance-based leakage-testing program for NA-1&2. The staff therefore concludes that the licensee's request to implement 10 CFR Part 50, Appendix J, Option B, is acceptable.

In addition to the technical specifications changes related to Appendix J, Option B, the licensee also proposed a change to the frequency of the airlock interlock mechanism surveillance to assure that only one air lock door in each air lock can be opened at a time (4.6.1.3.b). The licensee proposed changing the frequency from at least once every 18 months to "at least once per refueling outage." The staff finds this change acceptable since air lock interlock mechanisms are typically reliable, and are most effectively and safely checked at refueling outages.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Virginia State official was notified of the proposed issuance of the amendment. The State official had no comment.

5.0 ENVIRONMENTAL CONSIDERATION

These 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. 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 these amendments involve no significant hazards consideration and there has been no public comment on such finding (60 FR 65685). Accordingly, these 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.

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