

March 8, 2000

Mr. J. P. O'Hanlon  
Senior Vice President - Nuclear  
Virginia Electric and Power Company  
5000 Dominion Blvd.  
Glen Allen, Virginia 23060

SUBJECT: NORTH ANNA POWER STATION UNITS 1 AND 2 - ASME SECTION XI RELIEF REQUESTS IWE-7 AND IWE8 - CONTAINMENT INSPECTION SECOND 10-YEAR INSPECTION INTERVAL (TAC NOS. MA6564 AND MA6565)

Dear Mr. O'Hanlon:

The purpose of this letter is to grant the relief you requested for North Anna, Units 1 and 2, in Relief Requests IWE7 and IWE8 related to your inservice inspection program.

In your letters dated September 16 and September 27, 1999, you submitted Relief Requests IWE3, IWE7 and IWE8 for North Anna Power Station, Units 1 and 2, and Surry Power Station, Units 1 and 2. The letter of September 27, 1999, provided a revised relief request IWE3 for North Anna, Units 1 and 2. Our letter granting the relief sought in IWE3 for North Anna was sent to you October 1, 1999. This letter transmits our evaluation of your requests IWE7 and IWE8 for North Anna, Units 1 and 2. We will provide our evaluation of your relief requests IWE3, IWE7, and IWE8 for Surry at a later date.

In your letter dated September 16, 1999, you stated that North Anna Power Station, Unit 1 and Unit 2, are presently in the second 10-year inservice inspection interval. In a *Federal Register* notice dated August 8, 1996, NRC amended 10 CFR 50.55a to incorporate, by reference, the 1992 Edition of the American Society of Mechanical Engineers (ASME) Code with the 1992 Addenda of Subsections IWE and IWL. The effective date of the amended rule was September 9, 1996. Pursuant to 10 CFR 50.55a(a)(3)(i), your letters dated September 16 and September 27, 1999, requested relief from certain requirements of Subsection IWE of the 1992 Edition with the 1992 Addenda of ASME Section XI. Those requirements include supplementing visual examinations which detect surface flaws or suspect areas by either surface or volumetric examination (related to IWE7) or post-repair leak tests which are already required by 10 CFR Part 50, Appendix J, and certain other post-repair and administrative requirements (related to IWE8).

Based on our evaluation of your relief request IWE7, it is concluded that the proposed alternative provides an acceptable level of quality and safety. Therefore, pursuant to

10 CFR 50.55a(a)(3)(i), the proposed alternative is authorized in that it provides an acceptable level of quality and safety. For relief request IWE8, the staff concludes that compliance with the Code requirements would result in hardship without a compensating increase in the level of quality and safety, and that your proposed alternative will provide reasonable assurance of quality and safety. Therefore, the proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(ii). The staff's evaluation and conclusions are contained in the Enclosure.

Sincerely,

*/RA/*

Richard L. Emch, Jr., Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-338 and 50-339

Enclosure: As stated

cc w/encl: See next page

10 CFR 50.55a(a)(3)(i), the proposed alternative is authorized in that it provides an acceptable level of quality and safety. For relief request IWE8, the staff concludes that compliance with the Code requirements would result in hardship without a compensating increase in the level of quality and safety, and that your proposed alternative will provide reasonable assurance of quality and safety. Therefore, the proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(ii). The staff's evaluation and conclusions are contained in the Enclosure.

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUESTS IWE7 AND IWE8

VIRGINIA ELECTRIC POWER COMPANY

NORTH ANNA POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-338 AND 50-339

1.0 INTRODUCTION

By letter dated September 16, 1999 (Ref. 1), the licensee, Virginia Electric & Power Company, submitted relief request Nos. IWE7 and IWE8 seeking relief from some of the ASME Code, Section XI, Subsection IWE requirements for North Anna Power Station, Units 1 and 2. These relief requests have been submitted for the subsequent inspections of containment.

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(b) and (g), inservice inspection of containment must meet the requirements of the 1992 Edition, 1992 Addenda of Section XI, Subsection IWE. Pursuant to 10 CFR 50.55a(g)(6)(ii)(B), the first period containment examinations must be completed by September 9, 2001. Alternatives to the requirements of 10 CFR 50.55a(g) may be authorized under 10 CFR 50.55a(a)(3), if (i) the proposed alternative provides an acceptable level of quality and safety, or (ii) compliance with the specific requirement of the Code would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

2.0 EVALUATION

Request for Relief RR-IWE7

Code Requirement: The last sentence of Subarticle 3200 in the 1992 Edition of ASME Section XI states: "Visual examinations that detect surface flaws or areas that are suspect shall be supplemented by either surface or volumetric examination." Relief is requested from the mandatory requirement to supplement visual examinations which detect surface flaws or areas that are suspect with either a surface or volumetric examination.

Licensee's Proposed Alternative: The licensee is proposing to replace the sentence with: "Visual examinations that detect surface flaws or areas that are suspect shall be supplemented by either surface or volumetric examination, when specified as a result of the engineering evaluation performed in IWE-3122.4."

Enclosure

Staff Evaluation: In its discussion of “Basis for Relief,” the licensee emphasizes that requiring supplemental examination in all cases (as required by the Code language) will result in unnecessary radiation exposure and examination costs without a commensurate safety benefit. The staff recognizes the impact of this requirement. At the same time, the staff recognizes that when a flaw is detected during a visual examination, unless it is verified as a surface flaw, the only way to determine the depth and extent of the flaw is through surface or volumetric examination. However, the staff believes that the evaluation procedure specified in Subparagraph IWE-3122.4 will ensure the detection of a flaw that is significant enough to impact the integrity of the containment. IWE-3122.4 allows components to be acceptable for service without the removal or repair of the flaw or area of degradation, provided that an engineering evaluation indicates that the flaw or area of degradation is nonstructural in nature or has no effect on the structural integrity of the containment. When flaws are accepted by engineering evaluation, they are required to be reexamined during the successive examinations. Hence the staff concludes that the implementation of the proposed alternative will ensure the quality and safety of the containment structures. The staff authorizes the use of the proposed alternative pursuant to 10 CFR 50.55a(a)(3)(i).

#### Request for Relief RR-IWE8

Code Requirement: Table IWE-2500-1, Examination Category E-P provides examination and test requirements for all pressure-retaining components of the containment vessel. Relief is requested from the use of the Examination Category E-P portion of the Table and associated inspection by authorized nuclear in-service inspector (ANII) as required by IWA-2110.

The test requirements include a system leakage test for the containment vessel pressure retaining boundary, or an Appendix J, Type B, leak test for containment penetration bellows, airlocks, and seals and gaskets. Nearly all of the test requirements, examination methods, acceptance standards, and extents and frequencies of examination refer solely to 10 CFR Part 50, Appendix J for their requirements.

Licensee's Proposed Alternative: “Testing and examination shall be conducted in accordance with 10 CFR [Part 50] 50, Appendix J, as applicable. No additional requirements necessitated by Table IWE-2500-1, Category E-P nor IWA-2110 as it would be applied to the Appendix J program will be followed.”

Staff Evaluation: The staff recognizes that this part (Examination Category E-P) of Table IWE-2500-1 references extensively the requirements of Appendix J of 10 CFR Part 50. The implementation of this part of the Table will require the licensee to change its current leak testing procedures and examination of results to allow an inspection by an ANII. Normally, an inspection by an ANII enhances the quality of the test procedures and associated examinations. However, the licensee has been following the requirements of Appendix J and quality assurance procedures that comply with the requirements of Appendix B of 10 CFR Part 50, that assure adequate quality and safety of the pressure-retaining components. Moreover, the licensee will implement the requirements of IWE-5220 following repair, modifications, or replacement. IWE-5220 provides for a pneumatic leakage test of major repairs, modifications, or replacements, in accordance with Appendix J, paragraph IV.A, which specifies acceptance criteria and provides for measured leakage to be included in a report to the Commission. Thus, the staff concludes that granting relief to the licensee from the requirements of Examination Category E-P of Table IWE-2500-1 will reduce unnecessary burden on the licensee without

affecting the quality and safety of the pressure-retaining components of containment. Therefore, the staff authorizes the use of the proposed alternative pursuant to 10 CFR 50.55a(a)(3)(ii).

### 3.0 CONCLUSION

Based on the information provided in the relief requests, the staff concludes that for relief request RR-IWE7, the licensee's proposed alternatives will provide an acceptable level of quality and safety. Therefore, the proposed alternative is authorized for containment inspections pursuant to 10 CFR 50.55a(a)(3)(i). For Relief Request RR-IWE8, the staff concludes that compliance with the Code requirements would result in hardship without a compensating increase in the level of quality and safety, and that the licensee's proposed alternative will provide reasonable assurance of quality and safety. Therefore, the proposed alternative is authorized for containment inspections pursuant to 10 CFR 50.55a(a)(3)(ii).

Principal Contributor: H. Ashar

Date: March 8, 2000

REFERENCES

1. Letter from L. N. Hartz (VEPCO) to NRC, "ASME Section XI Relief Requests," September 16, 1999
2. Letter from L. N. Hartz (VEPCO) to NRC, "RR-IWE-3," September 27, 1999
3. Letter from R. L. Emch (NRC) to J. P. O'Hanlon (VEPCO), "North Anna Power Station - Units 1 and 2 - ASME XI Relief Request RR-IWE-3," October 1, 1999

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Virginia Electric and Power Company

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Units 1 and 2

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