

March 20, 2000

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

SUBJECT: SURRY POWER STATION UNITS 1 AND 2 - ASME SECTION XI RELIEF
REQUESTS IWE3, IWE7 AND IWE8 - CONTAINMENT INSPECTION THIRD
10-YEAR INSPECTION INTERVAL (TAC NOS. MA6566 AND MA6567)

Dear Mr. O'Hanlon:

The purpose of this letter is to grant the relief you requested for Surry, Units 1 and 2, in Relief Requests IWE3, 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. This letter transmits our evaluation of your requests IWE3, IWE7 and IWE8 for Surry, Units 1 and 2. Our letter granting the relief sought in IWE3 for North Anna was sent to you October 1, 1999. A letter granting the relief sought in IWE7 and IWE8 for North Anna is being sent separately.

In your letter dated September 16, 1999, you stated that Surry Power Station Units 1 and 2 are presently in the third 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 performing a VT-2 visual examination following repair, replacement or modification under Article IWE-5000 (related to IWE3), 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 requests IWE3 and IWE7, it is concluded that, for each request, 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. 50-280 and 50-281

Enclosure: As stated

cc w/encl: See next page

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. 50-280 and 50-281

Enclosure: As stated

cc w/encl: See next page

Distribution

- File Center
- PUBLIC
- PDII R/F
- H. Berkow
- E. Dunnington
- G. Edison
- OGC
- G. Hill (4)
- ACRS
- M. Tschiltz, EDO
- R. Haag, RII
- H. Ashar, EMEB
- D. Terao, EMEB

DOCUMENT NAME: C:\Ma6566IWE.wpd

OFFICE	PM:PDII/S1	LA:PDII/S1	OGC	SC/PDII/S1
NAME	GEdison:cn	EDunnington	RHoefling	REmch
DATE	2/24/00	2/23/00	3/6/00	3/14/99
COPY	Yes/No	Yes/No	Yes/No	Yes/No

OFFICIAL RECORD COPY

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUESTS IWE3, IWE7 AND IWE8

VIRGINIA ELECTRIC POWER COMPANY

SURRY POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-280 AND 50-281

1.0 INTRODUCTION

By letters dated September 16, 1999 (Ref. 1) and September 27, 1999 (Ref. 2), the licensee, Virginia Electric & Power Company, submitted relief request Nos. IWE3, IWE7 and IWE8 seeking relief from the ASME Code, Section XI, Subsection IWE requirements for Surry 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) Sections 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-IWE3

Code Requirement: Paragraph IWE-5240 of the 1992 Addenda of the Code requires that the requirements of Paragraph IWA-5240 for visual examinations (VT-2) are applicable following repair, replacement, or modification. In Reference 1, the licensee proposed to eliminate this requirement. In Ref. 2, the licensee revised its submittal and proposed an alternative in lieu of the Code requirement.

Licensee's Proposed Alternative: A pre-service visual examination (VT-3) will be performed on the repair or replacement to determine the general mechanical and structural condition of the repair. Testing and examination shall be conducted in accordance with 10 CFR Part 50, Appendix J, as applicable. If a VT-2 visual examination cannot be performed in conjunction with the test, then a VT-1 examination will be performed after the test is completed

Staff Evaluation: IWE-5220 requires tests following repair, modification, or replacements. These tests include leakage tests in accordance with the provisions of 10 CFR Part 50,

Appendix J, Paragraph IV.A, and a visual examination VT-2 in accordance with IWA-5240. The Appendix J tests allow for a certain amount of leakage. However, in accordance with IWE-5250, if the Appendix J leakage rates are exceeded, the source of leakage shall be located and the area shall be examined to the extent necessary to establish the requirements for corrective action. In lieu of a VT-2 visual examination, the licensee proposes to perform a pre-service VT-3 visual examination on the repair or replacement (Ref. 2). In addition, the licensee proposes to perform a VT-1 visual examination after a test is completed, when a VT-2 visual examination is not feasible to perform. The use of a pre-service VT-3 visual examination on the repair or replacement and a VT-1 when a VT-2 visual examination is not feasible provides reasonable verification that the structural integrity of the repair or replacement is sound and ensures the pressure boundary integrity of the containment. Therefore, the licensee's alternative proposal, to perform VT-1 visual examination following the test, where VT-2 visual examination in conjunction with the test is not feasible, is a reasonable approach for maintaining quality of a repair modification or replacement and for ensuring the integrity of the containment pressure boundary. The staff authorizes the use of the proposed alternative pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the licensee's proposed alternative provides an acceptable level of quality and safety.

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 the following alternative: "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."

Staff Evaluation: In its discussion of "Basis for Relief," the licensee emphasizes that requiring supplemental examination in all cases (as required by the Code) will result in unnecessary radiation exposure and examination costs without commensurate safety benefit. The staff acknowledges 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 method to determine the depth and extent of the flaw is through surface or volumetric examination. However, the staff agrees that the evaluation procedure specified in Subparagraph IWE-3122.4 will ensure the detection of a significant flaw that could 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 provide assurance of the leaktightness of the containment structures. The staff authorizes the use of the proposed alternative pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that it provides an acceptable level of quality and safety.

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 this part of the Table and associated inspection by an authorized nuclear inservice 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, 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 is almost a duplication of 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 50 that also 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 the need for an inspection by an ANII following an Appendix J leakage test as required by Examination Category E-P of Table IWE-2500-1, will result in an unnecessary burden on the licensee without increasing the quality and safety of the pressure-retaining components of containment. Therefore, the staff authorizes relief as requested pursuant to 10 CFR 50.55a(a)(3)(ii) on the basis that compliance with Code requirements would result in hardship without a compensating increase in the level of quality and safety.

3.0 CONCLUSION

Based on the information provided in the relief requests, the staff concludes that for relief requests RR-IWE3 and RR-IWE7, the licensee's proposed alternatives will provide an acceptable level of quality and safety. Therefore, the proposed alternatives are 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 20, 2000

REFERENCES

1. Letter from L. N. Hartz (VEPCO) to NRC, "ASME Section XI Relief Requests," dated September 16, 1999
2. Letter from L. N. Hartz (VEPCO) to NRC, "RR-IWE-3," dated September 27, 1999

Mr. J. P. O'Hanlon
Virginia Electric and Power Company

Surry Power Station

cc:

Mr. Donald P. Irwin, Esq.
Hunton and Williams
Riverfront Plaza, East Tower
951 E. Byrd Street
Richmond, Virginia 23219

Office of the Attorney General
Commonwealth of Virginia
900 East Main Street
Richmond, Virginia 23219

Mr. E. S. Grecheck
Site Vice President
Surry Power Station
Virginia Electric and Power Company
5570 Hog Island Road
Surry, Virginia 23883

Mr. J. H. McCarthy, Manager
Nuclear Licensing & Operations
Support
Innsbrook Technical Center
Virginia Electric and Power Company
5000 Dominion Blvd.
Glen Allen, Virginia 23060

Senior Resident Inspector
Surry Power Station
U. S. Nuclear Regulatory Commission
5850 Hog Island Road
Surry, Virginia 23883

Mr. W. R. Matthews
Site Vice President
North Anna Power Station
Virginia Electric and Power Company
P. O. Box 402
Mineral, Virginia 23117

Chairman
Board of Supervisors of Surry County
Surry County Courthouse
Surry, Virginia 23683

Dr. W. T. Lough
Virginia State Corporation
Commission
Division of Energy Regulation
P. O. Box 1197
Richmond, Virginia 23209

Robert B. Strobe, M.D., M.P.H.
State Health Commissioner
Office of the Commissioner
Virginia Department of Health
P.O. Box 2448
Richmond, Virginia 23218