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April 28, 2000
LIC-00-0024

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Mail Station PI-137
Washington, DC 20555

Reference: 1. Docket No. 50-285
2. American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI (92 Ed. 92 Add.) IWE/IWL

Subject: Request for Relief from ASME Boiler and Pressure Vessel Code, Section XI, Subsections IWE and IWL Requirements for Containment Inspections

The purpose of this letter is for the Omaha Public Power District (OPPD) to request relief, pursuant to 10 CFR 50.55a(a)(3), from certain requirements of Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, regarding containment inspection examinations at the Fort Calhoun Station (FCS) Unit 1.

In the Federal Register, dated August 8, 1996 (61 FR 41303), the Nuclear Regulatory Commission (NRC) amended 10 CFR 50.55a to incorporate, by reference, the 1992 Edition and Addenda of Subsections IWE, "Requirements for Class MC and Metallic Liners of Class CC Components of Light-Water Cooled Power Plants," and IWL, "Requirements for Class CC Concrete Components of Light-Water Cooled Power Plants," of the ASME Code. This requirement was made effective September 9, 1996. Licensees are required to incorporate Subsections IWE and IWL requirements into their Inservice Inspection Program and to perform expedited containment examinations within five years of the effective date of the amended regulation.

A Containment Inservice Inspection Program has been in development over the past couple of years for FCS to comply with 10 CFR 50.55a(g)(6)(ii)(B) and the applicable requirements of the ASME B&PV Code, Section XI, Subsections IWE and IWL, 1992 Edition, 1992 Addenda.

OPPD has identified seven (7) relief requests to support implementation of the FCS Unit 1 Containment Inservice Inspection Program regarding examination requirements specified by Subsections IWE and IWL of the ASME B&PV Code. OPPD is requesting relief from those ASME B&PV Code, Section XI requirements that result in hardship or unusual difficulty, or for which proposed alternatives will provide an adequate level of quality and safety in accordance with 10 CFR 50.55a(a)(3).

LIC-00-0024
Page 2

Attached to this cover letter are the seven (7) requests for relief from the Section XI, IWE and IWL requirements. OPPD requests NRC approval of the enclosed relief requests by October 1, 2000, in order to support planning for the 2001 Refueling Outage.

If you should have questions, please contact me.



S. K. Gambhir
Division Manager –
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SKG/CNB/rem

Attachment

c: E. W. Merschoff, NRC Regional Administrator, Region IV
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**CONTAINMENT INSPECTION PROGRAM RELIEF REQUESTS
FORT CALHOUN STATION UNIT 1**

Request Number	Applicable Code Section	Title
IWE-001	Table IWE-2500-1, E-D	Visual Examinations of Seals and Gaskets
IWE-002	Table IWE-2500-1, E-G	Visual Examination (VT-1), Torque/Tension Test of Pressure Retaining Bolting
IWE-003	IWE-2420(b) and (c)	Successive Examinations
IWE-004	IWE-2500(b)	Visual Examination of Paint or Coatings Prior to Removal
IWE-005	IWE-2200(g)	Preservice Inspection of Reapplied Paint or Coatings
IWE-006	Table IWE-2500-1, E-A	VT-3 Examination of Accessible Areas of the Containment Vessel
IWL-007	IWL-2310, IWA-2210	Remote Visual Examination of Concrete Containment Surfaces

**Fort Calhoun Station Unit 1
IWE First 10-Year Interval
Request for Relief
IWE-001**

COMPONENT IDENTIFICATION

Fort Calhoun Station Unit 1

Seals and gaskets of Class MC pressure retaining components and metallic liners of Class CC components, Examination Category E-D, Item Numbers E5.10 and E5.20 of IWE-2500, Table IWE-2500-1, ASME Section XI, 1992 Edition, 1992 Addenda.

CODE REQUIREMENT

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (B&PV), 1992 Edition, 1992 Addenda, Section XI, Subsection IWE, Table IWE-2500-1, "Examination Categories," Examination Category E-D, Items E5.10 and E5.20 require a visual examination of 100 percent of the containment seals and gaskets for Class MC pressure retaining components and metallic shell and penetration liners of Class CC components.

The required examination method for these examinations is a VT-3 examination once each interval.

BASIS FOR RELIEF

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is requested for the Fort Calhoun Station Unit 1 on the basis that compliance with the specified Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Fort Calhoun has determined that the following types of containment penetrations have seals and gaskets which may be subject to the requirements of IWE-2500, Table IWE-2500-1, Examination Category E-D. A description of these penetrations and their associated seals and gaskets is provided below.

Electrical Penetrations:

Containment electrical penetrations are of the canister type furnished by the manufacturer (Conax) as fully assembled, factory tested units. A piece of carbon steel pipe called the barrel, with flat, stainless steel headers welded to each end comprise the canisters. Feed throughs pass through both headers, to which they were sealed by means of compression sealing glands. Feed throughs were fabricated of teflon-insulated, solid conductors bound in a matrix of insulating/sealing material, all held in compression within a swaged,

stainless steel outer housing. A mounting gland was welded to the barrel. Field installation only requires welding the canisters into penetration pipe studs and attachment of cables.

On installation, the mounting gland was field welded to the inner end of the containment penetration pipe stub, and a welding ring was welded at one edge of the canister and at the other edge to the pipe stub. A port through the barrel and mounting gland connects the canister interior with spaces between welds provided under the mounting gland and welding rings, to allow pressure testing of the canister and all shop and field welds.

A second electrical penetration (type B) utilizes a single header plate on the auxiliary building side of the pipe. Support plates are located on the pipe and on the containment end.

For pressure testing, a pressurizing connection with a pressure gage is provided on the outer header. This provision makes possible either periodic leak testing or monitoring by pressurizing the canister with dry gas, sealing off, and periodically checking gage indication.

Mechanical Penetrations with Bolted Connections:

The fuel transfer tube consists of a bolted flanged joint with gasket. The fuel transfer tube is designed to be leak rate tested in accordance with 10 CFR 50, Appendix J to verify the integrity of the gasketed connection.

Personnel Air Lock, Equipment Hatch, and Access Openings:

The Personnel Air Lock utilizes an inner and outer door with double gaskets on each door to seal the airlock doors to the bulkhead on the containment penetration. The airlock also contains other gaskets and seals, such as those for sealing the handwheel shaft, electrical penetrations, and equalizing pressure connections. The sealed joints on the airlock are designed to permit testing in accordance with 10 CFR 50 Appendix J and Technical Specifications.

The Equipment Hatch utilizes double gaskets to seal the hatch cover to the Equipment Hatch penetration. The sealed joint has been designed to permit testing in accordance with 10 CFR 50 Appendix J and Technical Specifications.

Leak tightness of containment pressure retaining seals and gaskets is verified by Type B tests in accordance with Option A of 10 CFR 50, Appendix J, as required by Technical Specifications. Overall containment leakage is verified by Type A tests in accordance with Option B of 10 CFR 50, Appendix J. Although the Type A test does not verify individual penetration leakage, it does provide additional assurance that there is no significant leakage through the containment pressure boundary, which includes all sealed penetrations. As noted in 10 CFR 50 Appendix J, the purpose of the test is to measure

leakage of containment or penetrations whose design incorporates resilient seals, gaskets, sealant compounds, and electrical penetrations fitted with flexible metal seal assemblies.

Although not required by the Code, practical examination considerations of seals and gaskets require the joints, which are proven adequate through Appendix J testing, to be disassembled for electrical penetrations. This would involve a pre-maintenance Appendix J test, de-termination of cables at electrical penetrations if enough cable slack is not available, disassembly of the joint, removal and examination of the seals and gaskets, reassembly of the joint, re-termination of the cables if necessary, post maintenance testing of the cables, and a post maintenance Appendix J test of the penetration. The work required for mechanical penetrations, the equipment hatch, and airlock would be similar except for the de-termination, re-termination, and testing of cables. This imposes the risk that the equipment could be damaged during this process. The 1992 Edition 1993 Addenda, of Section XI recognizes that disassembly of joints to perform these examinations is not warranted. Note 1 in Examination Category E-D was modified in the 1995 Edition of Section XI to state that sealed or gasket connections need not be disassembled solely for the performance of examinations. However, without disassembly, most of the surface of the seals and gaskets would be inaccessible.

For those penetrations that are routinely disassembled, a Type B test is required upon final assembly and prior to start-up. Since the Type B test will assure the leak tight integrity of primary containment, the performance of the visual examination would not increase the level of quality and safety.

When the airlock and equipment hatch containing these materials are tested in accordance with 10 CFR 50, Appendix J, degradation of the seals and gaskets would be revealed by an increase in the leakage rate. Corrective measures would be applied and the component retested. Repair or replacement of seals and gaskets is not subject to Code (1992 edition, 1992 addenda) requirements in accordance with Paragraph IWA-4111(b)(5) of Section XI.

The VT-3 visual examinations required by Subsection IWE for some seals on penetrations, such as the fuel transfer tube, will increase personnel radiological exposure with no compensating increase in the level of quality and safety. Testing the seals and gaskets in accordance with 10 CFR 50, Appendix J will provide adequate assurance of the leak-tight integrity of seals and gaskets.

PROPOSED ALTERNATIVE PROVISIONS

As an alternative to the requirements of the ASME B&PV Code, Section XI, Subsection IWE, 1992 Edition, 1992 Addenda, the leak tightness of containment seals and gaskets will be verified by leak testing in accordance with 10 CFR 50, Appendix J, as required by Technical Specifications. No additional alternatives to the VT-3 visual examinations required by Table IWE-2500-1, Examination Category E-D, for Items E5.10 and E5.20 will be performed.

PERIOD FOR WHICH RELIEF IS REQUESTED

Relief is requested for the first inspection interval for containment inspections required by ASME B&PV Code, Section XI, 1992 Edition, 1992 Addenda at Fort Calhoun Station Unit 1.

**Fort Calhoun Station Unit 1
IWE First 10-Year Interval
Request for Relief
IWE-002**

COMPONENT IDENTIFICATION

Fort Calhoun Station Unit 1

Pressure retaining bolting of Class MC pressure retaining components and metallic shell and penetration liners of Class CC components, Examination Category E-G, Item Numbers E8.10 and E8.20 of IWE-2500, Table IWE-2500-1, ASME Section XI, 1992 Edition, 1992 Addenda.

CODE REQUIREMENT

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (B&PV), 1992 Edition, 1992 Addenda, Section XI, Subsection IWE, Table IWE-2500-1, "Examination Categories," Examination Category E-G, "Pressure Retaining Bolting," Item E8.10, provides requirements for a VT-1 visual examination of bolted connections.

ASME B&PV Code Section XI, 1992 Edition, 1992 Addenda, Table IWE-2500-1, Examination Category E-G, "Pressure Retaining Bolting," Item E8.20, provides requirements for a torque or tension test of bolted connections that have not been disassembled and reassembled during the inspection interval.

BASIS FOR RELIEF

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is requested for the Fort Calhoun Station Unit 1 on the basis that compliance with the specified Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

10 CFR 50.55a was amended in the Federal Register to require the use of the 1992 Edition, 1992 Addenda, Section XI when performing containment inspections. Section XI requires a VT-1 visual examination of bolted connections which was reevaluated during subsequent rewrites of Subsection IWE. During the review of Examination Category E-G examination criteria, the following factors were considered:

- 1) Containment surfaces, including bolted connections, are already subject to visual examination in accordance with Table IWE-2500-1, Examination Category E-A.
- 2) Bolted connections in containment are subject to the performance of 10 CFR 50 Appendix J testing.

- 3) Containment bolting is not subject to a known degradation mechanism, primarily because it is not in contact with a corrosive environment. There have been no problems with containment bolting identified within the industry.

The conclusion reached by ASME Section XI was that Examination Category E-G examinations on bolted connections were not warranted. In the commentary which accompanied the Subsection IWE rewrite, the following was written:

“Pressure retaining bolting as a separate category has been deleted, and the examination requirements for pressure retaining bolting have been consolidated into Category E-A. Examination of pressure retaining bolting does not require removal or disassembly, and only those exposed surfaces of the bolting materials need be examined.”

As a result, Examination Category E-G has been eliminated from Table IWE 2500-1 in the 1998 Edition of ASME Section XI.

The performance of VT-1 visual examinations on bolted connections in accordance with the 1992 Edition, 1992 Addenda represents a hardship with no compensating increase in the level of quality and safety. The reexamination of bolted connections that are already examined as part of Examination Category E-A, and tested in accordance with 10 CFR 50, Appendix J, unnecessarily increases the number of inservice examinations and the associated radiation exposure to personnel.

In addition to the visual examination of bolted connections, the 1992 Edition, 1992 Addenda, Section XI, requires that bolt torque or tension testing be performed on bolted connections that have not been disassembled and reassembled during the inspection interval. Determination of the torque or tension value would require that the bolting be un-torqued and then re-torqued or re-tensioned. The performance of a 10 CFR 50, Appendix J test proves that the bolt torque or tension remains adequate to provide a leak rate that is within acceptable limits. The torque or tension value of bolting only becomes an issue if the leak rate is excessive. Once a bolt is torqued or tensioned, it is not subject to dynamic loading that could cause it to experience significant change. Furthermore, the IWE penetration components at Fort Calhoun Station Unit 1 do not include any configuration considered as pressure unseating bolted connections. Appendix J testing and visual inspection is adequate to demonstrate that the design function is met. Torque or tension testing is not required on any other ASME Section XI, Class 1, 2, or 3 bolted connections or their supports as part of the inservice inspection program.

PROPOSED ALTERNATIVE PROVISIONS

The adequacy of Class MC containment pressure retaining bolted connections shall be verified by the following:

- 1) Exposed surfaces of bolted connections shall be visually examined in accordance with the requirements of Table IWE-2500-1, Examination Category E-A, Containment Surfaces, and
- 2) Bolted connections shall meet the pressure test requirements of 10 CFR 50, Appendix J.

PERIOD FOR WHICH RELIEF IS REQUESTED

Relief is requested for the first inspection interval for containment inspections required by ASME B&PV Code, Section XI, 1992 Edition, 1992 Addenda, at Fort Calhoun Station Unit 1.

**Fort Calhoun Station Unit 1
IWE First 10-Year Interval
Request for Relief
IWE-003**

COMPONENT IDENTIFICATION

Fort Calhoun Station Unit 1

Class MC pressure retaining components and metallic shell and penetration liners of Class CC components, Paragraphs IWE-2420(b) and IWE-2420(c) successive examination requirements for components found acceptable for continued service.

CODE REQUIREMENT

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (B&PV), 1992 Edition, 1992 Addenda, Section XI, Subsection IWE, Paragraphs IWE-2420(b) and IWE-2420(c) requires that when component examination results require evaluation of flaws, evaluation of areas of degradation, or repairs in accordance with Article IWE-3000, and the component is found acceptable for continued service, the areas containing such flaws, degradation, or repairs shall be reexamined during the next inspection period listed in the schedule of the inspection program of paragraph IWE-2411 or Paragraph IWE-2412, in accordance with Table IWE-2500-1, Examination Category E-C.

BASIS FOR RELIEF

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is requested on the basis that compliance with the specified Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The purpose of the repair in accordance with Section XI, Article IWA-4000, is to restore the component to an acceptable condition for continued service in accordance with the acceptance standards of Article IWE-3000. In addition, Paragraph IWA-4150 of Article IWA-4000 requires the owner to conduct an evaluation of the suitability of the repair including consideration of the cause of failure to preclude recurrence of the component degradation.

If the repair has restored the component to an acceptable condition, successive examinations are not warranted. If the repair was not suitable, than the repair does not meet Code requirements and the component is not suitable for continued service. Neither Paragraphs, IWB-2420(B), IWC-2420(b), nor Paragraph IWD-2420(b) require a repair to be subject to successive examination requirements. Furthermore, if the repaired component is subject to accelerated degradation, it would require augmented examination in accordance with Paragraph IWE-1240 and Table IWE-2500-1, Examination Category E-C. The purpose of IWE-2420(b) is to manage components found to be acceptable for

continued service (i.e., no repair or replacement at this time) as an Examination Category E-C component. If the component has been repaired or replaced, then the more frequent examination would not be needed. The successive examination of repairs in accordance with Paragraphs IWE-2420(b) and IWE-2420(c) constitutes a burden without a compensating increase in quality or safety.

Further, the ASME Main Committee has determined that the requirement to perform successive examinations of repaired areas per Examination Category E-C is no longer warranted. The ASME Main Committee has approved the revision to Subsection IWE that eliminated this requirement. This revision of Subsection IWE was published in the ASME B&PV Code, Section XI, 1998 Edition.

PROPOSED ALTERNATIVE PROVISIONS

Successive examinations in accordance with Paragraphs IWE-2420(b) and IWE-2420(c) are not required for repairs made in accordance with Section XI, 1992 Edition, 1992 Addenda, Article IWA-4000. In lieu of the successive examinations required by IWE-2420, an acceptable level of quality and safety will be provided by the Section XI, Article IWA-4000 repair process and subsequent examinations and evaluations.

PERIOD FOR WHICH RELIEF IS REQUESTED

Relief is requested for the first inspection interval for containment inspections required by ASME B&PV Code, Section XI, 1992 Edition, 1992 Addenda at Fort Calhoun Station Unit 1.

**Fort Calhoun Station Unit 1
IWE First 10-Year Interval
Request for Relief
IWE-004**

COMPONENT IDENTIFICATION

Fort Calhoun Station Unit 1

Class MC pressure retaining components and metallic shell and penetration liners of Class CC components, Subarticle IWE-2500(b) visual examination per Table IWE-2500-1 of painted or coated containment components prior to the removal of paint.

CODE REQUIREMENT

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (B&PV), 1992 Edition, 1992 Addenda, Section XI, Subsection IWE, Subarticle IWE-2500(b) requires that when paint or coatings are to be removed, the paint or coatings shall be visually examined in accordance with Table IWE-2500-1 prior to removal.

BASIS FOR RELIEF

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested for the Fort Calhoun Station Unit 1 on the basis that the proposed alternative provisions to the ASME Section XI Code requirements would provide an acceptable level of quality and safety.

10 CFR 50.55a was amended in the Federal Register to require the use of the 1992 Edition, 1992 Addenda, Section XI, when performing containment inspections. Subarticle IWE-2500(b) requires that when paint or coatings are to be removed, a visual examination of the paint or coatings shall be performed in accordance with Table IWE-2550-1. Neither paint nor coatings contribute to the structural integrity or leak tightness of the containment. The interiors of containment are painted or coated primarily to prevent rusting. Furthermore the paint or coatings on the containment pressure boundary were not subject to Code requirements when they were originally applied and are not subject to ASME Section XI requirements for repair and replacement in accordance with IWA-4111(b)(5). Deterioration or discoloration of the paint or coating materials on containment could be an indicator of potential degradation of the containment pressure boundary. Additional measures would have to be employed to determine the nature and extent of any degradation, if present. The application of ASME Section XI requirements for removal of paint or coatings, when unrelated to a Section XI repair or replacement activity, is a burden without a compensating increase in quality and safety.

PROPOSED ALTERNATIVE PROVISIONS

The paint and coatings in the containment will be examined in accordance with the Fort Calhoun Station Unit 1 Coatings Program. If degradation of the coating is identified, additional measures will be applied to determine if the containment pressure boundary is affected. Although repairs to paint or coatings are not subject to the repair/replacement requirements of ASME Section XI (Inquiry 97-22), repairs to the primary containment boundary, not including coatings, if required, would be conducted in accordance with ASME Section XI Code requirements.

PERIOD FOR WHICH RELIEF IS REQUESTED

Relief is requested for the first inspection interval for containment inspections required by ASME B&PV Code Section XI, 1992 Edition, 1992 Addenda at Fort Calhoun Station Unit 1.

**Fort Calhoun Station Unit 1
IWE First 10-Year Interval
Request for Relief
IWE-005**

COMPONENT IDENTIFICATION

Fort Calhoun Station Unit 1

Class MC pressure retaining components and metallic shell and penetration liners of Class CC components, Subarticle IWE-2200(g), preservice examination requirements of reapplied paint or coatings.

CODE REQUIREMENT

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (B&PV), 1992 Edition, 1992 Addenda, Section XI, Subsection IWE, Subarticle IWE-2200(g) requires that when paint or coatings are reapplied, the condition of the new paint or coating shall be documented in the preservice examination records.

BASIS FOR RELIEF

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested for the Fort Calhoun Station Unit 1 on the basis that the proposed alternative provisions to the ASME Section XI Code requirements would provide an acceptable level of quality and safety.

10 CFR 50.55a was amended in the Federal Register to require the use of the 1992 Edition, 1992 Addenda, Section XI when performing containment inspections. Subarticle IWE-2500(g) requires that when paint or coatings are reapplied, a preservice inspection is performed and documented in the preservice inspection records.

Paint and coatings are not part of the containment pressure boundary under current Code requirements because they are not associated with the pressure retaining function of the component (Paragraph NE-2110(b) of ASME Section III). Neither paint nor coatings contribute to the structural integrity or leak tightness of the containment, although degradation of the coating could be symptomatic of liner plate deterioration. Furthermore, the paint and coatings on the containment pressure boundary were not subject to Code requirements when they were originally applied and are not subject to ASME XI requirements for repair or replacement in accordance with IWA-4111(b)(5). The adequacy of applied coatings is verified through the Fort Calhoun Unit 1 Coatings Program. Recording the condition of reapplied coating in the preservice record does not substantiate the containment structural integrity. Should deterioration of the coating in the reapplied area occur, the area will require additional evaluation regardless of the preservice record. Recording the condition of new paint or coating in the preservice records is a burden without a compensating increase in the level of quality and safety of the containment.

SECY 96-080, response to Comment 3.2 about IWE-2200(g) states, "In the NRC's opinion, this does not mean that a visual inspection must be performed with every application of paint or coating. A visual examination of the topcoat to determine the soundness and the condition of the topcoat should be sufficient." This is currently accomplished through the Fort Calhoun Station Unit 1 Coatings Program. Recording the condition of new paint or coatings in the preservice record is redundant to the requirements of the Fort Calhoun Station Unit 1 Coatings Program and is an administrative burden without a compensating increase in quality and safety.

PROPOSED ALTERNATIVE PROVISIONS

The paint and coatings in the containment will be examined in accordance with the Fort Calhoun Station Unit 1 Coatings Program. If degradation of the coating is identified, additional measures will be applied to determine if the containment pressure boundary is affected. Although repairs to paint or coatings are not subject to the repair/replacement requirements of Section XI (Inquiry 97-22), repairs to the primary containment boundary, not including coatings, if required, would be conducted in accordance with ASME Section XI Code requirements.

PERIOD FOR WHICH RELIEF IS REQUESTED

Relief is requested for the first inspection interval for containment inspections required by ASME B&PV Code, Section XI, 1992 Edition, 1992 Addenda at Fort Calhoun Station Unit 1.

**Fort Calhoun Station Unit 1
IWE First 10-Year Interval
Request for Relief
IWE-006 (Rev 1)**

COMPONENT IDENTIFICATION

Fort Calhoun Station Unit 1

Class MC pressure retaining components and metallic shell and penetration liners of Class CC components required to be examined per Table IWE-2500-1, Category E-A, Item 1.12.

CODE REQUIREMENT

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, 1992 Edition, 1992 Addenda, Section XI, Subsection IWE, Table IWE-2500-1, "Examination Categories," Examination Category E-A, "Containment Surfaces," Item E1.12, requires a 100 percent VT-3 examination of accessible surface areas of the containment vessel at the end of the 10-year inservice inspection interval.

BASIS FOR RELIEF

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested for the Fort Calhoun Station Unit 1 on the basis that the proposed alternative provisions to the ASME Section XI Code requirements would provide an acceptable level of quality and safety.

10 CFR 50.55a was amended in the Federal Register to require the use of the 1992 Edition, 1992 Addenda, Section XI, when performing containment inspections. Table IWE-2500-1, Examination Category E-A, Item E1.12 requires a 100 percent VT-3 examination of accessible surface areas of the containment vessel at the end of the 10-year interval.

The Section XI VT-3 requirements were developed for detecting flaws in metal components and are more stringent than those that would be required for the detection of degradation of containment surface areas due to corrosion. Corrosion of the base metal is the primary issue of concern for containment surface areas, and controls will be established for the performance of a general visual examination to detect age-related degradation mechanisms that may affect the structural integrity and/or leak-tightness of the containment. The alternative examination proposes a general visual examination performed of accessible areas by examiners qualified as stated below. If an area is determined to be suspect during the general visual examination, additional actions will be taken.

The general visual examination will be performed in accordance with paragraph IWE-3510.1. When evidence of degradation is detected by the examiner, a detailed visual examination will be performed to determine the magnitude and extent of any deterioration and distress of suspect containment surfaces. If a detailed visual examination can not be performed, the acceptability of the suspect area will be evaluated. The evaluation will address the requirements outlined in 10 CFR 50.55a(b)(2)(x)(A).

The general and/or detailed examination will be performed by personnel certified in accordance with CP-189. This level of certification will verify that the capability and visual acuity of the examiners are sufficient to detect evidence of potential degradation of the containment accessible surface areas.

PROPOSED ALTERNATIVE PROVISIONS

As an alternative to the ASME B&PV Code, 1992 Edition, 1992 Addenda, Section XI requirements for a VT-3 examination, a general visual examination in accordance with paragraph IWE-3510.1 of the accessible surface areas of the containment will be performed. When evidence of degradation is detected, a detailed visual examination will be performed of the suspect area. If a detailed visual examination can not be performed, the suspect area will be evaluated and dispositioned by a responsible engineer. The general and/or detailed visual examinations will be performed by personnel certified in accordance with CP-189.

PERIOD FOR WHICH RELIEF IS REQUESTED

Relief is requested for the first inspection interval for containment inspections required by ASME B&PV Code, Section XI, 1992 Edition, 1992 Addenda at Fort Calhoun Station Unit 1.

**Fort Calhoun Station Unit 1
IWL First Ten-Tear Interval
Request for Relief
IWL-007**

COMPONENT IDENTIFICATION

All components subject to the rules and requirements for inservice inspection of Class CC Concrete Components, Examination Category L-A, Concrete, Item L1.1 as applicable to IWL-2310, Visual Examination and Personnel Qualification and IWA-2210, Visual Examinations.

CODE REQUIREMENT

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (B&PV), 1992 Edition, 1992 Addenda, Section XI, Subsection IWL, Paragraph IWL-2310, Visual Examination and Personnel Qualification and IWA-2210, Visual Examinations requires specific minimum illumination and maximum direct examination distance for all concrete surfaces.

BASIS FOR RELIEF

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is requested for the Fort Calhoun Station Unit 1 on the basis that compliance with the specified Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

10 CFR 50.55a was amended in the Federal Register to require the use of the 1992 Edition, 1992 Addenda, Subsections IWE and IWL, Section XI when performing containment inspections. Subsection IWL Paragraph IWL-2310 specifies that the minimum illumination, maximum direct examination distance, and maximum procedure demonstration lower case character height shall be as specified in IWA-2210 for VT-1C and VT-3C visual examinations. IWA-2210 allows remote visual examination in lieu of direct visual examination, but requires that the remote examination procedure be demonstrated to resolve the selected test chart characters at minimum illumination levels as specified in Table IWA-2210-1. 10 CFR 50.55a(b)(2)(x)(B) allows an alternative to the minimum illumination and maximum examination distance requirements of Table IWA-2210-1 for remote visual examinations performed in accordance with IWE only. As a result, remote visual examinations of concrete containments under IWL must be demonstrated to meet the requirements of IWA-2210 and Table IWA-2210-1.

The VT-3C visual examinations required by Section XI are conducted to determine the general structural condition of concrete surfaces by identifying areas of concrete deterioration and distress, such as defined in ACI 201.1. Selected areas, such as those that

indicate suspect conditions, shall receive a VT-1C examination in accordance with IWL-2310.

Fort Calhoun Unit 1 has determined that accessibility to higher portions of the containment building make it a hardship to obtain the maximum direct examination distance and minimum illumination requirements. The installation of extensive temporary scaffold systems or a climbing scaffold system to access these portions of containment would be necessary. These scaffolds would provide limited access due to containment geometry restrictions as well as structural and equipment interference. The installation and removal of these scaffolds would increase both worker radiation exposure and personnel safety in order to meet Paragraph IWA-2210 requirements. Remote visual examinations are the only practical method for inspecting much of the concrete containment surface area. However, compliance with this requirement to resolve the specified test chart characters at typical examination distances and illumination requirements needed for remote concrete examinations would be difficult and unwarranted for the types of deterioration and distress defined in ACI 201.1. The purpose of IWL-2310 and IWA-2210 is to ensure that visual examinations are performed in a consistent manner that is capable of detecting the conditions for which the examination is performed. The proposed alternative provisions for Fort Calhoun Unit 1 satisfies this purpose while eliminating requirements that are inappropriate or unnecessary for visual examination of Class CC components.

PROPOSED ALTERNATIVE PROVISIONS

When performing remotely the visual examinations required by Subsection IWL, Paragraph IWL-2510, the maximum direct examination distance specified in Table IWA-2210-1 may be extended, and the minimum illumination requirements specified in Table IWA-2210-1 may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.

PERIOD FOR WHICH RELIEF IS REQUESTED

Relief is requested for the first inspection interval for containment inspections required by ASME B&PV Code, Section XI, 1992 Edition, 1992 Addenda at Fort Calhoun Station Unit 1.