



February 20, 2001

C0201-03
10 CFR 50.55a

Docket Nos. 50-315
50-316

U. S Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Stop O-P1-17
Washington, D.C. 20555-001

Donald C. Cook Nuclear Plant Units 1 and 2
REQUEST FOR RELIEF FROM THE PROVISIONS OF
THE ASME CODE, SECTION XI, FOR CONTAINMENT INSPECTIONS

- References: 1. Letter, R. R. Bellamy, U. S. Nuclear Regulatory Commission (NRC), to J. K. Wood, Centerior Service Company, "Relief From Certain ASME Code Requirements for Inservice Inspection for Facility Operating License No. NPF-3, Davis-Besse Nuclear Power Station, Unit 1," dated June 30, 1998.
2. Letter, C. M. Craig, NRC, to N. L. Haskell, Palisades Plant, "Palisades Plant – Evaluation of Relief Requests for Inservice Inspection Relating to ASME Section XI, Subsections IWE and IWL," dated July 26, 1999.

Pursuant to 10 CFR 50.55a(a)(3), Indiana Michigan Power Company (I&M), the Licensee for Donald C. Cook Nuclear Plant (CNP) is submitting proposed alternatives to the containment inspection requirements of the American Society of Mechanical Engineers (ASME) Code, Section XI, subsections IWE and IWL. Inspection of the containment structure in accordance with ASME Section XI, Division 1, 1992 Edition with the 1992 Addenda is required by 10 CFR 50.55a(g)(6)(ii)(B). Furthermore, this section of 10 CFR 50.55a requires that the initial inspection be completed by September 9, 2001. In accordance with 10 CFR 50.55a(a)(3), licensees may propose alternatives to the code requirements providing they demonstrate:

- That the proposed alternative provides an acceptable level of quality and safety; or,

- Compliance with the specified requirements results in a hardship, or unusual difficulty without a compensating increase in the level of quality and safety.

The attachments to this letter contain four proposed alternatives to the provisions of the ASME code requirements for containment inservice inspections. These relief requests are being submitted under the provisions of 10 CFR 50.55a(a)(3)(ii) as compliance with the specified requirements results in a hardship, or unusual difficulty without a compensating increase in the level of quality and safety.

The proposed alternatives are similar to alternatives that have been approved for other plants in References 1 and 2.

To allow completion of the expedited containment examination prior to the required date of September 9, 2001 (10 CFR 50.55a(g)(6)(ii)(B)), I&M requests approval of the relief requests by July 31, 2001.

Should you have any questions, please contact Mr. Ronald W. Gaston, Manager of Regulatory Affairs, at (616) 697-5020.

Sincerely,



M. W. Rencheck
Vice President Nuclear Engineering

/jen

c: J. E. Dyer
MDEQ – DW & RPD
NRC Resident Inspector
R. Whale

Attachments

Relief Request CISIR-01

A. Components for Which Relief is Requested

Code Class: MC
Examination Category: E-D
Item Numbers: E5.10 and E5.20
Description: Examination Requirements for Seals and Gaskets

B. Code Requirements

ASME Section XI, 1992 Edition with the 1992 Addenda, Table IWE-2500-1, Examination Category E-D, Item Numbers E5.10 and E5.20 require a VT-3 visual examination to be performed on seals and gaskets that assure containment leak tight integrity. Examination is required once each 10-year inspection interval.

IWE-3513, "Standards for Examination Category E-D, Seals, Gaskets, and Moisture Barriers," requires seals, gaskets, and moisture barriers to be examined for wear, damage, erosion, tear, surface cracks, or other defects that may violate the leak-tight integrity.

C. Code Requirement from Which Relief is Requested

Relief is requested from the ASME Section XI, 1992 Edition, 1992 Addenda, Table IWE-2500-1, Examination Category E-D requirement to VT-3 examine seals and gaskets on airlocks, hatches, and other devices to assure containment leak-tight integrity.

D. Basis for Relief

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

The following components include seals and gaskets:

Electrical Penetrations

Electrical penetrations use a closure plate that is welded to the containment penetration. Modules through which electrical conductors pass are installed in the closure plate. The type of seals used on the modules are compression fittings that are manufactured by Conax. These seals cannot be inspected without disassembly of the penetration to gain access to the seals.

Piping Penetrations

Blind flanged piping penetrations employ gasket and o-ring seals in conjunction with pressure retaining bolting to maintain containment integrity. These seals and gaskets cannot be inspected without disassembly of the penetration bolting.

Equipment Hatch and Personnel Airlocks

The equipment hatch and personnel airlocks utilize inner and outer door seals to ensure leak tight integrity. The hatches and personnel airlocks also contain hand wheel shaft seals, electrical penetration seals, view port gaskets, and equalizing valve seals that require disassembly to gain access to the gaskets and seals.

Due to component configurations, visual examination of seals and gaskets in most cases would require the associated joints to be disassembled. Electrical penetrations would need a pre-maintenance 10 CFR 50, Appendix J test, de-termination of the electrical cables 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, post maintenance testing of the cables, and a post maintenance 10 CFR 50, Appendix J test of the penetration. The work required for other containment penetrations would be similar except for the de-termination, re-termination, and testing of the cables.

The 1993 Addenda to Section XI recognizes that disassembly of joints to perform examinations on seals and gaskets is not warranted. Note 1 in Examination Category E-D was modified in the 1993 Addenda to 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. Therefore, the examination provides little useful information.

The components described above are currently tested in accordance with 10 CFR 50, Appendix J, Type B requirements. Degradation of the seal or gasket material is revealed by an increase in the leakage rate. When leakage rates exceed the acceptance standards, corrective measures are applied and the component is re-tested.

E. Proposed Alternative

Indiana Michigan Power Company proposes to verify the pressure retaining capability of seals and gaskets by the performance of 10 CFR 50, Appendix J, Type B testing once each inspection interval.

Relief Request CISIR-02

A. Components for Which Relief is Requested

Code Class: CC
Examination Category: L-A
Item Numbers: L1.11
Description: Visual Examination Requirements for Minimum Illumination and Maximum Direct Examination Distance of Class CC Components

B. Code Requirement

ASME Section XI, 1992 Edition, 1992 Addenda, IWL-2310, "Visual Examination and Personnel Qualification," and IWA-2210, "Visual Examinations," specify minimum illumination and maximum direct examination distance for all concrete surfaces:

- (a) VT-1C visual examinations are conducted to determine concrete deterioration and distress for suspect areas detected by VT-3C visual examinations, and conditions (e.g., cracks, wear, or corrosion) of tendon anchorage and wires or strands. Minimum illumination, maximum direct examination distance, and maximum procedure demonstration lower case character height shall be as specified in IWA-2210 for the VT-1 visual examination.
- (b) VT-3C visual examinations are conducted to determine the general structural condition of concrete surfaces of containments by identifying areas of concrete deterioration and distress, such as defined in ACI 201.1 R-68. The minimum illumination, maximum direct examination distance, and maximum procedure demonstration lower case character height shall be as specified in IWA-2210 for the VT-3 visual examination.

C. Code Requirement from Which Relief is Requested

Relief is requested for IWA-2210, visual examination requirements for minimum illumination and maximum direct examination distance of Class CC components under IWL-2300.

D. Basis for Relief

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

For example, the containment dome concrete surfaces are difficult to inspect because the original design did not provide ladders or other access means. As a result, the Section XI maximum direct examination distance and minimum illumination requirements are difficult to meet and would necessitate the installation of extensive temporary scaffold systems or a climbing scaffold

system to access these portions of the containment. These scaffolds would provide only limited access due to containment geometric restrictions, as well as structural and equipment interferences; however, their installation, use, and removal could jeopardize personnel safety.

E. Proposed Alternative

Indiana Michigan Power Company proposes modifying the direct examination distance and the illumination requirements when performing visual examinations remotely. Specifically, when performing the visual examinations required per IWL-2310 remotely, the maximum direct examination distance specified in Table IWA-2210-1 may be increased and the minimum illumination requirements specified in Table IWA-2210-1 may be decreased. This will be done provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.

Relief Request CISIR-03

A. Components for Which Relief is Requested

Code Class: MC
Examination Category: N/A
Item Numbers: N/A
Description: Requirements for Successive Examination of Class MC Components

B. Code Requirements

ASME Section XI, 1992 Edition with the 1992 Addenda, IWE-2420(b), "Successive Inspections," states that when component examination results require evaluation of flaws, areas of degradation, or repairs in accordance with IWE-3000, "Acceptance Standards," and the component is found to be 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 IWE-2411, "Inspection Program A," or IWE-2412, "Inspection Program B," in accordance with Table IWE-2500-1, "Examination Category E-C."

C. Code Requirement from Which Relief is Requested

Relief is requested from the IWE-2420(b) requirement to perform successive examination of a flaw area that was repaired in accordance with the requirements of IWE-3122.2, "Acceptance by Repair" and IWE-3122.3, "Acceptance by Replacement."

D. Basis for Relief

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

The purpose of a repair is to restore the component to an acceptable condition for continued service in accordance with the acceptance standards of IWE-3000. When a repair is performed, IWA-4150, "Verification of Acceptability," requires the owner to conduct an evaluation of the suitability of the repair, including consideration of the cause of the failure. If the repair has restored the component to an acceptable condition per IWE-3122.2 or the component has been replaced per IWE-3122.3, successive examinations are not warranted.

Repairs of components determined to be unsuitable per IWA-4150 evaluations do not meet code requirements and are thereby unacceptable for continued service. Furthermore, if the repair area is subject to accelerated degradation, it would still require augmented examination in accordance with IWE-1240, "Surface Areas Requiring Augmented Inspection."

Acceptance of the components for continued service per IWE-3122 is summarized below:

- IWE-3122.2 Specifies that a flaw shall be unacceptable unless it is removed by mechanical means or the component is repaired to the extent necessary to meet the acceptance standards of IWE-3000. IWE-3122.2 does not specify that a successive examination is required. Furthermore, when this repair is performed, IWA-4150 requires the owner to conduct an evaluation of the suitability of the repair including consideration of the cause of the failure. When a component has been repaired, successive examinations would be performed on the area that has been repaired and evaluated as acceptable, and not on the original flawed component.
- IWE-3122.3 Specifies that as an alternative to IWE-3122.2, the component or the portion of the component containing the flaw or degradation shall be replaced in accordance with IWE-7000. IWE-3122.3 does not specify that a successive examination is required. When a component has been replaced, successive examinations would not be performed on the original flawed component, but the replaced component.
- IWE-3122.4 (b)¹ Specifies that when a flaw or relevant condition is accepted by engineering evaluation, the area containing the flaw or degradation shall be reexamined in accordance with IWE-2420 (b) and (c).

E. Proposed Alternative

Indiana Michigan Power Company proposes to limit the successive examinations required by IWE-2420 (b) to components accepted by evaluation per IWE-3122.4.

¹ "Acceptance by Evaluation"

Relief Request CISIR-04

A. Components for Which Relief is Requested

Code Class	MC
Examination Category	E-G
Item Number:	E8.20
Description:	Alternative Requirements for Torque and Tension Testing of Class MC Pressure Retaining Bolting

B. Code Requirements

ASME Section XI, 1992 Edition with the 1992 Addenda, Table IWE-2500-1, Examination Category E-G, Item Number E8.20 requires pressure retaining bolting that has not been disassembled and reassembled during the inspection interval to be torque or tension tested.

Table IWE-2500-1, Examination Category E-G, Item Number E8.10 requires that the surfaces of bolted connections be VT-1 visually examined.

Table IWE-2500-1, Examination Category E-P, Item Number E9.40 requires leakage testing and examination in accordance with 10 CFR 50, Appendix J.

C. Code Requirements from Which Relief is Requested

Relief is requested from the ASME Section XI, 1992 Edition, Table IWE-2500-1, Examination Category E-G, Item No. E8.20, requirement to torque or tension test pressure retaining bolting that has not been disassembled and reassembled during the inspection interval.

D. Basis for Relief

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

Determination of the pressure retaining bolting torque or tension values requires that the bolting be de-tensioned and then re-tensioned. This activity is considered maintenance and would, therefore, require a 10 CFR 50, Appendix J, Type B test to be performed after the joint is retorqued or retensioned. The performance of the Type B test itself 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.

The verification of torque or tension values on bolted joints that have been proven leak tight through 10 CFR 50, Appendix J testing and visual inspection is deemed a hardship because of the additional resources required for the torque/tension testing and the follow-up 10 CFR 50, Appendix J testing. Additionally, the de-tensioning and re-tensioning activities may damage the components.

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.

E. Proposed Alternative

Indiana Michigan Power Company proposes no alternative examinations because the following examinations and tests required by Subsection IWE ensure the structural integrity and the leak-tightness of Class MC pressure retaining bolting:

Exposed surfaces of bolted connections shall be visually examined in accordance with the requirements of Table IWE-2500-1, Examination Category E-G, Pressure Retaining Bolting, Item Number E8.10.

Bolted connections shall meet the pressure test requirements of Table IWE-2500-1, Examination Category E-P, All Pressure Retaining Components, Item E9.40