



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO FIRST TEN-YEAR INTERVAL INSERVICE INSPECTION
REQUESTS FOR RELIEF IR-001, REV. 1, IR-021, REV. 2,
IR-022, REV. 2, AND IR-027, REV. 0
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, ET AL.
PERRY NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-440

1.0 INTRODUCTION

The Technical Specifications for the Perry Nuclear Power Plant, Unit 1, state that the inservice inspection and testing of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). Part 50.55a(a)(3) of Chapter I, Title 10 states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first ten-year interval comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) on the date twelve months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for the Perry Nuclear Power Plant, Unit 1, first 10-Year Inservice Inspection (ISI) Interval is the 1980 Edition, through Winter 1981 Addenda. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein and subject to Commission approval.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission in support of that determination and a request made for relief from the ASME Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life, property, or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed. In a letter dated July 13, 1992, the licensee, Centerior Energy, submitted IR-027, and revised Requests for Relief Nos. IR-001, IR-021, and IR-022.

2.0 EVALUATION AND CONCLUSIONS

The staff, with technical assistance from its contractor, the Idaho National Engineering Laboratory (INEL), has evaluated the information provided by the licensee in support of its Requests for Relief Nos. IR-001, IR-021, IR-022 and IR-027. Based on the information submitted, the staff adopts the contractor's conclusions and recommendations presented in the Technical Evaluation Summary attached. The staff concludes that for Requests for Relief IR-001, Rev. 1, IR-21, Rev. 2, and IR-22, Rev. 2, no technical content was revised, and that relief may remain granted based on the previous evaluations pursuant to 10 CFR 50.55a(g)(6)(i), with the following exception: *10 CFR 50.55a(g)(6)(ii)(A)(1) states that all previously granted reliefs under paragraph 50.55a for Examination Category B-A, Item B1.10 are revoked for the interval in effect on September 8, 1992, with the exceptions covered under 10 CFR 50.55a(g)(6)(ii)(A)(3). Based on this new regulation, the relief previously granted for Items B1.11 and B1.12 (reactor vessel shell welds) are no longer valid and should be deleted from this request.*

In addition, the staff has concluded for Relief No. IR-27 that the Code requirements are impractical to perform, because the integral attachments are inaccessible as they are buried in fire retardant Pyrocrete. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i) relief may be granted for Request for Relief IR-27. The licensee's proposed alternative examination in IR-27 will provide reasonable assurance of structural integrity of the Standby and HPCS Diesel Fuel Oil integral attachments. Accordingly, the staff concludes that granting the relief relative to Relief No. IR-27 and allowing the licensee's proposed alternative examination are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. In making this determination, we have given due consideration to the burden that could result if the Code requirements were imposed on the facility.

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Date: February 24, 1994

Attachment: Technical Evaluation Summary

TECHNICAL EVALUATION SUMMARY
OF THE FIRST TEN-YEAR INTERVAL INSERVICE INSPECTION
REQUESTS FOR RELIEF
FOR
CENTERIOR ENERGY
PERRY NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-440

1.0 INTRODUCTION

In a letter dated July 13, 1992, the licensee, Centerior Energy, submitted revised Requests for Relief IR-001 (Revision 1), IR-021 (Revision 2), and IR-022 (Revision 2), and a new request for relief, IR-027 (Revision 0). The Idaho National Engineering Laboratory (INEL), has evaluated the information provided by the licensee in support of Requests for Relief Nos. IR-001, IR-021, IR-022, and IR-027 as follows.

2.0 EVALUATION

- A. Request for Relief IR-001 (Revision 1), Examination Categories B-A, B-D, and B-F, Reactor Pressure Vessel (RPV) Shell and Head Welds, RPV Nozzle Welds and Inside Radius Sections, and Nozzle-to-Safe End Welds

Note: This request was previously evaluated and granted in an NRC Safety Evaluation Report (SER) dated April 25, 1990. Revision 1 of this relief request contains editorial updates and adds the components listed below.

<u>Exam Cat/ Item No.</u>	<u>Weld ID</u>	<u>% Completed</u>	<u>Description of Limitation</u>
B-F/B5.10	1B13-NA1- ATTACHMENTS	80 (a) 100 (b)	Scan path obstructed by nozzle geometry
B-F/B5.10	1B13-N1B- ATTACHMENTS	80 (a) 100 (b)	Scan path obstructed by nozzle geometry

- (a) - Perpendicular scan
(b) - Parallel scan

Since no technical changes have occurred, relief remains granted based on the previous evaluation with the following exception: 10 CFR 50.55a(g)(6)(ii)(A)(1) states that all previously granted reliefs under paragraph 50.55a for Examination Category B-A, Item B1.10 are revoked for the interval in effect on September 8, 1992, with the exceptions covered under 10 CFR 50.55a(g)(6)(ii)(A)(3). Based on this new regulation, the relief previously granted for Items B1.11 and B1.12 (reactor vessel shell welds) are no longer valid and should be deleted from this request.

B. Request for Relief IR-021 (Revision 2), Examination Category D-B, Item D2.20, Integral Attachments of Component Supports and Restraints

Note: This request for relief was previously evaluated and granted in an NRC SER dated February 14, 1992. Revision 2 of this relief request contains editorial updates and adds the integral attachments listed below.

<u>Component ID</u>	<u>Description</u>	<u>% Completed</u>	<u>Limitation</u>
1P45-H0649-WA and 1P45-H0659-WA	Welded lugs for pipe support/ Emergency Service Water SS-305-791-110	0	Lugs located inside penetration in limited access sump

Since the technical content of Revision 2 has not changed, relief remains granted based on the previous evaluation.

C. Request for Relief IR-022 (Revision 2), Examination Category F-A, Item F3.10, Class 3 Component Supports

Note: This request for relief was previously evaluated and granted in an NRC SER dated February 14, 1992. Revision 2 of this relief request contains editorial updates and adds the integral attachments listed below.

<u>Component ID</u>	<u>Description</u>	<u>% Completed</u>	<u>Limitation</u>
1P45-H0401	Emergency Service Water SS-305-791-107	0	Underwater in limited access sump
1P45-H0402	Emergency Service Water SS-305-791-107	0	Underwater in limited access sump
1P45-F0649	Emergency Service Water SS-305-791-110	0	Inside penetration in limited access sump
1P45-H0659	Emergency Service Water SS-305-791-110	0	Inside penetration in limited access sump

Since the technical content of Revision 2 has not changed, relief remains granted based on the previous evaluation.

D. Request for Relief IR-027, Examination Category D-B, Item D2.20, Integral Attachments of Component Supports and Restraints

Code Requirement: Table IWD-2500-1, Examination Category D-B, Item D2.20, requires a 100% VT-3 visual examination of Class 3 integral attachments of component supports and restraints as defined by IWD-2500-1.

Licensee's Code Relief Request: The licensee requested relief from performing the Code-required VT-3 visual examination of Standby and HPCS Diesel Fuel Oil integral attachments 1R45-A003A-WA (SS-305-355-110), 1R45-A003B-WA (SS-305-355-111), and 1R45-A005-WA (SS-305-356-101).

Licensee's Basis for Requesting Relief: The licensee stated:

"The structural integrity of the pressure boundary was demonstrated during construction by meeting the requirements of the ASME Code Section III. All welds were inspected in accordance with the appropriate Code requirements. Weld techniques and welders were qualified in accordance with Code requirements and materials were purchased and traced in accordance with the appropriate Code and NRC requirements and guidelines.

The integrally attached (welded) anchors on the fuel oil day tanks are buried in fire retardant Pyrocrete in order to meet the PNPP fire protection program requirements per 10 CFR 50, Appendix R, and Branch Technical Position APCS 9.5-1, Appendix A (see PNPP USAR Appendix 9A, Section 9A.5(D)(2)(1)). Pyrocrete is a hard, rigid material. When applied, it is considered as a permanent feature of the system to endure through the life span of the facility. To remove this material from the day tanks would require cutting and chipping.

Complete examinations meeting the requirements of the ASME Code Section XI, Category F-A, have been performed on the accessible portion of two of the day tank component supports. At the time of the support exams, the Pyrocrete covering the integral attachments was examined for any condition which might have indicated their integral attachments were structurally degraded (i.e., severely cracked or missing Pyrocrete, support detached from component, etc.). The examinations produced acceptable results with no visible signs of structural degradation.

The pressure boundary passed the required preservice hydrostatic test and first period system functional pressure tests, and the plant has operated for the total of 1,106 equivalent full power days between November 1987 and March 1992.

In summary, because of acceptable initial conditions, the ability to detect severe degradation of the integral attachments by examination of the Pyrocrete during their component support examinations, and successful test and operating experience, it is concluded that the requested relief would not pose a significant impact on the overall level of plant quality and safety."

Licensee's Proposed Examination: At the time of the scheduled Examination Category F-A visual examinations of the day tank anchors, the Pyrocrete covering the integral attachments will be examined for conditions that could indicate structural degradation of the buried integral attachment welds.

Staff Evaluation: The Code requires a VT-3 visual examination of subject integral attachments. However, the attachment welds are buried in fire retardant Pyrocrete that is considered a permanent feature of the system. Therefore, the Code-required visual examination is impractical to perform for these welds. Imposition of the Code-required examination on the licensee would require removal and replacement of the existing Pyrocrete. As an alternative, the licensee proposes to examine the Pyrocrete around the attachment welds for evidence of structural degradation. Examination of the surrounding pyrocrete for signs of structural degradation (i.e., cracked or missing Pyrocrete) will provide an indication of the condition of the underlying component support and attachment weld. Thus, reasonable assurance of the operational readiness of the subject attachment welds will be provided.

Based on the evaluation above and pursuant to 10 CFR 50.55a(g)(6)(i), relief should be granted as requested.

3.0 CONCLUSION

We have reviewed the licensee's submittal and have concluded that, pursuant to 10 CFR 50.55a(g)(6)(1), the requirements of the Code are impractical and relief should be granted for Requests for Relief IR-001 (Revision 1), IR-021 (Revision 2), IR-022 (Revision 2), and IR-027 (Revision 0), with the following exception: 10 CFR 50.55a(g)(6)(ii)(A)(i) states that all previously granted reliefs under paragraph 50.55a for Examination Category B-A, Item B1.10 are revoked for the interval in effect on September 8, 1992, with the exceptions covered under 10 CFR 50.55a(g)(6)(ii)(A)(3). Based on this new regulation, the relief previously granted for Items B1.11 and B1.12 (reactor vessel shell welds) are no longer valid and should be deleted from this request.