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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

OF THE FIRST 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, ET AL.

PERRY NUCLEAR POWER PLANT, UNIT 1

DOCKET NUMBER 50-440

1.0 INTRODUCTION

By letters dated March 31, 1987, April 12 and November 18, 1988 and January 6, 1989, the Cleveland Electric Illuminating Company, Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company and Toledo Edison Company (the licensees) submitted the first 10-year interval Inservice Inspection Program Revision 0, associated relief requests and responses to the NRC staff requests for additional information for the Perry Nuclear Power Plant, Unit No. 1. Technical Specification 4.0.5 for the Perry Nuclear Power Plant, Unit 1, states that the surveillance requirements for Inservice Inspection and Testing of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Class 1, 2, and 3 components shall be applicable as follows: Inservice inspection of ASME Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME 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).

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 initial 10-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 12 months prior to the issuance of the operating license, subject to the limitations and modifications listed therein. 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.

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 his 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 or 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.

The licensees have prepared the Perry Nuclear Power Plant, Unit 1, first 10-Year Interval Inservice Inspection (ISI) Program Plan, Revision 0, to meet the requirements of the 1983 Edition, Summer 1983 Addenda, of Section XI of the ASME Boiler and Pressure Vessel Code, except that the extent of examination for Class 2 piping welds has been determined by ASME Code Case N-408 as allowed by NRC Regulatory Guide 1.147. The staff, with technical assistance from its contractor, the Idaho National Engineering Laboratory (INEL), has evaluated the first 10-Year Interval Inservice Inspection Program Plan, Revision 0, additional information related to the Program Plan, and the requests for relief from certain ASME Code requirements determined to be impractical for Perry Nuclear Power Plant, Unit 1, during the first inspection interval.

2.0 EVALUATION

The ISI Program Plan has been evaluated for (a) application of the correct Section XI Code edition and addenda, (b) compliance with examination and system pressure test requirements of Section XI, (c) acceptability of the examination sample, (d) compliance with prior ISI commitments made by the licensee, (e) correctness of the application of system or component examination exclusion criteria, and (f) adequate information in support of requests for relief from impractical Section XI Code requirements. The staff has determined that the licensees' ISI Program Plan reflects compliance with the requirements listed above.

The information provided by the licensees in support of requests for relief from impractical requirements has been evaluated and the bases for granting relief from those requirements are documented in the attached INEL Technical Evaluation Report EGG-MS-8378. We concur with and adopt the findings and recommendations contained in the subject report. Table 1 presents a summary of the reliefs requested and the status of the requests as determined by the staff.

3.0 CONCLUSION

The staff concludes that the Perry Nuclear Power Plant, Unit 1, first 10-Year Interval Inservice Inspection Program Plan, Revision 0, with the additional information provided and the specific written relief, constitutes the basis for compliance with 10 CFR 50.55a(g) and Technical Specification 4.0.5 and is, therefore, acceptable. With respect to the relief granted, the staff has determined, pursuant to 10 CFR 50.55a(g)(6)(i), that the requirements of

the code are impractical and, based on the alternative requirements imposed, the relief is authorized by law, will not endanger life or property or the common defense and security and is otherwise in the public interest, giving due consideration to the burden that could result if the requirements were imposed on the facility.

Attachments:
1. Table 1 - Summary of Reliefs
2. Technical Evaluation Report EGG-MS-8378
   December 1989

TABLE 1

SUMMARY OF RELIEF REQUESTS

Relief Request Number	System or Component	Exam. Cat.	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Status
IR-001 (part 1 of 3)	Reactor Pressure Vessel	B-A	B1.11	Circumferential shell welds: 1-B13-AA 1-B13-AB 1-B13-AC 1-B13-AD	Volumetric (Volumetric and surface for Item B1.40 welds)	None. Volumetric examination to maximum extent practical and 100% surface examination of weld 1-B13-AG	Granted
			B1.12	Longitudinal shell welds: 1-B13-BA 1-B13-BB 1-B13-BC 1-B13-BE 1-B13-BG 1-B13-BJ 1-B13-BK 1-B13-BN 1-B13-BP 1-B13-BR			
			B1.21	Circumferential head weld 1-B13-AH			
			B1.22	Meridional head welds: 1-B13-DG 1-B13-DH			
			B1.40	Head-to-flange weld 1-B13-AG			

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Relief Request Number	System or Component	Exam. Cat.	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Status
IR-001 (part 2 of 3)	Reactor Pressure Vessel	B-D	B3.90	Nozzle-to-vessel welds: 1-B13-N1A-KA, -N1B-KA, -N2A-KA, -N2B-KA, -N2C-KA, -N2D-KA, -N2E-KA, -N2F-KA, -N2G-KA, -N2H-KA, -N2J-KA, -N2K-KA, -N4A-KA, -N4B-KA, -N4C-KA, -N4D-KA, -N4E-KA, -N4F-KA, -N5A-KA, -N5B-KA, -N6A-KA, -N6B-KA, -N6C-KA, -N7-KA, -N8-KA, -N9A-KA, -N9B-KA, -N15-KA	Volumetric	None. Volumetric examination to maximum extent practical	Granted
			B3.100	Nozzle inside radius sections: 1-B13-N1A-IR, -N1B-IR, -N2A-IR, -N2B-IR, -N2C-IR, -N2D-IR, -N2E-IR, -N2F-IR, -N2G-IR, -N2H-IR, -N2J-IR, -N2K-IR, -N4A-IR, -N4C-IR, -N4D-IR, -N4F-IR, -N7-IR, -N8-IR, -N9A-IR, -N9B-IR			

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Relief Request Number	System or Component	Exam. Cat.	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Status
IR-001 (part 3 of 3)	Class 1 Piping	B-F	B5.10	RPV nozzle-to-safe end welds: 1-B13-N2A-KB, -N2B-KB, -N2C-KB, -N2D-KB, -N2E-KB, -N2F-KB, -N2G-KB, -N2H-KB, -N2J-KB, -N2K-KB, -N4A-KB, -N4B-KB, -N4C-KB, -N4D-KB, -N4E-KB, -N4F-KB, -N5A-KB, -N5B-KB, -N6A-KB, -N6B-KB, -N6C-KB	Volumetric and surface	None. 100% surface examination and volumetric examination to maximum extent practical	Granted
IR-002	Reactor Recirc. Pump B	B-G-1	B6.180	Studs 1 through 16	Volumetric	None. Volumetric exam. to maximum extent practical	Granted
IR-003	Reactor Pressure Vessel	B-G-1	B6.40	Threads in the RPV flange	Volumetric	None. Volumetric exam. to maximum extent practical	Granted
IR-004	MS, RHR, HPCS, and RCIRC System Piping	B-J	B9.11	Circumferential welds: 1-B21-0025 1-B21-0133 1-B33-0062 1-E12-0406 1-E12-0880 1-E22-0012	Volumetric and surface	None. 100% surface exam. and volumetric exam. to maximum extent practical (partial surface exam. of weld 1-B33-0027U1, see RR IR-006)	Granted
			B9.12	Longitudinal welds: 1-B21-0122U 1-B33-0027U1			

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Relief Request Number	System or Component	Exam. Cat.	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Status
IR-005	Reactor Recirc. Piping	B-J	B9.11	Circumferential welds: 1-B33-0027, -0038, -0043, -0049, -0054, -0056, -0059, -0074, -0076, -0081, -0088, -0097, -0100, -0105, -0111, -0116, -0118, -0121	Volumetric and surface	None. 100% surface examination and volumetric examination to maximum extent practical	Granted
IR-006	Reactor Recirc. Piping	B-J	B9.12	Longitudinal weld 1-B33-0027U1	Volumetric and surface	None. Surface and volumetric exams. to maximum extent practical (see Relief Request IR-004)	Granted
IR-007	Class 1 Piping Integrally Welded Attachments	B-K-1	B10.10	Penetration-to-process pipe attachment welds: 1-E12-P411-WA, -P421-WA, -PRB2035-WA, -PRB2036-WA, -PRB2044-WA 1-E21-P112-WA, -PRB3046-WA 1-E22-P410-WA, -PRB3052-WA 1-E51-P123-WA, -P422-WA 1-N27-P121-WA, -P414-WA 1-G33-P131-WA 1-N22-P423-WA 1-B21-P122-WA, -P124-WA, -P415-WA, -P416-WA	Surface or volumetric	None. Surface examination to maximum extent practical	Granted

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Relief Request Number	System or Component	Exam. Cat.	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Status
IR-008	Class 1 Valves	B-M-1	B12.40	Valve body welds: 1-E12-F019 1-E12-F042A 1-E21-F005 1-E22-F036 1-E51-F064 1-E51-F013 1-G33-F004 1-G33-F100	Volumetric	None. Volumetric examination to maximum extent practical	Granted
IR-009	Control Rod Drive Housings	B-O	B14.10	Housing-to-flange welds (4 welds)	Volumetric or surface	None. Surface examination of six welds to maximum extent practical	Granted
IR-010	RHR Heat Exchanger	C-A	C1.20	Shell cylinder-to-head weld 1-E12-B001A-003	Volumetric	None. Volumetric examination to maximum extent practical	Granted
IR-011	RHR Heat Exchanger	C-B	C2.21	Inlet nozzle weld 1-E12-B001A-004	Volumetric and surface	None. 100% surface examination and volumetric examination to maximum extent practical	Granted

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Relief Request Number	System or Component	Exam. Cat.	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Status
IR-012	RHR Heat Exchanger	C-C	C3.10	Seismic lugs: 1-E12-B001A-SL1, -SL2, -SL3, -SL4	Surface	None. Surface examination to maximum extent practical for all welds except: 1-N11-H221-WA 1-N11-H222-WA 1-N11-H223-WA 1-N11-H224-WA 1-N27-H031-WA 1-N27-H032-WA	Granted
	Class 1 Piping		C3.20	Integral attachment welds: 1-E12-H173-WA, -H289-WA, -H290-WA, -H359-WA, -H360-WA, -H368-WA -H369-WA 1-E22-H087-WA 1-N11-H221-WA, -H222-WA, -H223-WA, -H224-WA 1-N27-H031-WA, -H032-WA			
IR-013	RHR, HPCS, and LPCS Pumps	C-G	C6.10	Casing welds: 1-E12-C002A, -C002C 1-E21-C001 1-E22-C001	Surface	Surface exam. of weld I.D. if pumps disassembled	Granted
IR-014	HPCS System Check Valve	C-G	C6.20	Valve body weld 1-E22-F003-SEAM	Surface	None. Surface examination to maximum extent practical	Granted
IR-015	Class 2 Piping Integrally Welded Attachments	C-C	C3.20	Penetration-to-process pipe attachment welds: 1-E12-P105-WA, -P407-WA 1-E21-P113-WA, -P412-WA 1-G33-P132-WA	Surface	None. Surface examination to maximum extent practical	Granted