



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

SAFETY EVALUATION REPORT BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO THE SECOND TEN-YEAR INTERVAL INSERVICE INSPECTION PROGRAM

BOSTON EDISON COMPANY

PILGRIM NUCLEAR POWER STATION, UNIT 1

DOCKET NO. 50-293

INTRODUCTION

The Technical Specifications for the Pilgrim Nuclear Power Station, Unit 1, states that the structural integrity of the primary system boundary shall be maintained at the level required by the ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," Articles IWA, IWB, IWC, IWD, and IWF and mandatory appendices as required by 10 CFR 50, Section 50.55a(g), except where specific relief has been granted by the Nuclear Regulatory Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i). Inservice inspection of components shall be performed in accordance with the Pilgrim Nuclear Power Station, Unit 1, Inservice Inspection Program.

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, to the extent practical within the limitations of design, geometry and materials of construction of the components. In addition, inservice examination of components and systems pressure tests conducted during successive 120-month inspection intervals shall comply with the requirements in the latest edition and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) on the date 12-month prior to the start of the 120-month inspection interval, subject to the limitations and modifications listed therein.

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Pursuant to 10 CFR 50.55a(g)(5)(iii), if the licensee determines that conformance to an examination requirement of Section XI of the ASME Code is not practical for his facility, information is submitted to the Commission in support of that determination and a request made for relief from the requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and impose alternative requirements as it determines are authorized by law and 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 Boston Edison Company, the licensee, prepared the Second Ten-Year Interval Inservice Inspection Program, Revision 3, for the Pilgrim Nuclear Power Station, Unit 1, to meet the requirements of the ASME Code, Section XI, 1980 Edition, including Winter 1980 Addenda. The second ten-year inspection interval began on December 8, 1982, and ends on December 8, 1992.

The Second Ten-Year Interval Inservice Inspection Program, Revision 3, submitted December 12, 1986, Amendment ISI 87-02, submitted March 2, 1988, and additional information, including requests for relief from ASME Code requirements determined by the licensee to be impractical for the Pilgrim Nuclear Power Station, Unit 1, was reviewed by the staff and their contractor, Idaho National Engineering Laboratory. Revision 3 of the Second Ten-Year Interval Inservice Inspection Program reflect the current plant configuration including the recirculation pipe replacement made during the 1983/1984 outage. The licensee provided an itemized listing of components, isometric drawings, a listing of the ultrasonic calibration blocks used during the second ten-year interval, and clarification of the examination procedures in support of the program. The program was evaluated for a) compliance with the appropriate ASME Code Section XI Edition and Addenda, b) acceptability of the examination sample, c) exclusion criteria, and d) compliance with augmented and/or other examination commitments identified during the licensing process.

EVALUATION

The determinations addressed by the licensee in the Second Ten-Year Interval Inservice Inspection Program, Revision 3, and to the staff's request for additional information that certain ASME Code requirements were impractical to perform at the Pilgrim Nuclear Power Station, Unit 1, were evaluated. The detailed evaluation is attached in the Technical Evaluation Report (TER) from our contractor, Idaho National Engineering Laboratory. The staff concurs with and adopts the evaluation with the exception that relief is not granted for category B-A welds in the reactor pressure vessel. The examination procedure for these welds is under staff review at this time. The summary of our evaluation is shown in Table 1. As noted in the attached TER, requiring compliance with all the exact Section XI required inspections would require redesign of a significant number of plant systems, sufficient replacement components to be obtained, installation of the new components, and baseline examination of these components. The reactor pressure vessel and a number of the piping and component support systems are examples of components that would require redesign to meet the specific inservice examination provisions. Even after the redesign efforts, complete compliance with the Section XI examination requirements probably could not be achieved.

Reference is made in this evaluation to the Safety Evaluation Report, August 13, 1985, including the Technical Evaluation Report (SAIC - 84/1656) by Science Application International Corporation, and to the Supplemental Safety Evaluation Report, February 6, 1987.

CONCLUSION

We conclude from our evaluation that the Second Ten-Year Interval Inservice Inspection Program, Revision 3, for the Pilgrim Nuclear Power Station, Unit 1, is acceptable and in compliance with 10 CFR 50.55a(g)(4). Pursuant to 10 CFR 50.55a(g)(6)(i), we have determined that certain ASME Code Section XI examination requirements are impractical to perform at the Pilgrim station, Unit 1, and

have granted relief from those requirements and we have imposed alternative requirements, as necessary. This relief is authorized by law and would not endanger life or property or the common defense and security and is in the public interest giving due consideration to the burden upon the licensee that would result if the requirements were imposed on the facility.

Pursuant to 10 CFR 50.55a(g)(6)(i) and based on the alternatives proposed, relief is granted from ASME Code Section XI requirements for request numbers PRR-1, Rev. 3, PRR-2, Rev. 0, PRR-3, Rev. 1, PRR-7, Rev. 1, PRR-8, Rev. 1, PRR-10, Rev. 0, PRR-11, Rev. 0, PRR-13, Rev. 0, and PRR-15, Rev. 0.

The staff is in process of reviewing the examination procedures for the reactor pressure vessel and relief is not granted for request numbers PRR-4, Rev. 1 and PRR-5, Rev. 1, Category B-A welds. Relief requests number PRR-6, PRR-12, Rev.0 and PRR-14, Rev. 1 were withdrawn and subsequently no action was taken on these requests.

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TABLE 1
STATUS OF REQUESTS FOR RELIEF FROM ASME
CODE REQUIREMENT

<u>REQUEST NUMBER</u>	<u>EXAMINATION CATEGORY</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
PRR-4, Rev. 1	B-A Item B1.11 and B-1.12	Reactor Pressure Vessel Shell Circumferential and Longitudinal Welds	Not Granted
FRR-5, Rev. 1	B-A Item B1.21 and B1.22	Reactor Pressure Vessel Bottom Head Welds	Not Granted
PRR-9, Rev. 1	B-D Item B3.90 and B3.100	Reactor Pressure Vessel Nozzle to Vessel Welds and Inside Radius Section	Granted
PRR-1, Rev. 3	B-J Item B9.11 and B9.21 B-K-1 Item B10.10	Class 1 Piping System Pressure Retaining and Integrally welded Attachments within Flued Head Penetrations	Granted
PRR-6	B-J Item B9.10 and B9.40	Class 1 Piping System Pressure Retaining Welds	Withdrawn
PRR-2, Rev. C	B-L-2, Item B12.20	Recirculation Pump- Internal Surfaces	Granted
PRR-3 Rev. 1	B-M-2, Item B12.40	Class 1 Valve Bodies Internal Surfaces	Granted
PRR-8, Rev. 1	C-B, Item C2.21	RHR Heat Exchanges Nozzle-to- Vessel Welds and Inside Radius Sections	Granted
PRR-6	C-F, Item C5.10 and C5.32	Class 2 Piping Systems - Pressure Retaining Welds	Withdrawn
PRR-7 Rev. 1	C-F, Item C5.11 and C5.12	Containment Atmospheric Control System-Pressure Retaining Welds	Granted
PRR-12, Rev. 0	C-H	Hydrostatic Test of the Control Rod Drive Hydraulic System	Withdrawn

<u>REQUEST NUMBER</u>	<u>EXAMINATION CATEGORY</u>	<u>DESCRIPTION</u>	<u>STATUS</u>
PRR-13, Rev. 0	C-H	Hydrostatic Test of the Class 2 Portions of the Containment Atmospheric Control System	Granted
PRR-15, Rev. 0	C-H	Hydrostatic Test of the High Pressure Coolant Injection Turbine Exhaust Drain Line	Granted
PRR-10, Rev. 0	D-B	Hydrostatic Test of Two Ten-liter Shielded Samples Chambers	Granted
PRR-11, Rev. 0	D-B	Hydrostatic Test of the Salt Service Water System	Granted
PRR-14,	C-H, D-A, D-B, D-C	Hydrostatic Test of Class 2 and 3 Systems Containing Relief valves and Instrumentation.	Withdrawn