



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

INSERVICE INSPECTION REQUEST FOR RELIEF

PECO ENERGY COMPANY

PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

DOCKET NOS. 50-277 AND 50-278

1.0 INTRODUCTION

The Technical Specifications for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3 state that the inservice inspection 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). 10 CFR 50.55a(a)(3) 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 and subsequent intervals 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) twelve months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable ASME Code, Section XI, for the Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3, second ten-year inservice inspection (ISI) interval is the 1980 Edition through Winter 1981 addendum. 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 May 6, 1997, PECO Energy Company, submitted to the NRC its request for relief on the schedule of performing the Code-required ten-year hydro of the reactor vessel and the Class I piping for Peach Bottom Units 2 and 3. The NRC staff has reviewed and evaluated the licensee's request for relief and the proposed alternative, pursuant to 10 CFR 50.55a(a)(3)(ii) for Peach Bottom Units 2 and 3.

2.0 REQUESTED RELIEF

2.1 Licensee's Request

For Peach Bottom Units 2 and 3, PECO Energy Company (PECO Energy) performed hydrostatic tests of reactor vessels and Class I piping in their second ten-year intervals, during the March, 1991 and the December, 1991 outages respectively, as a result of modifications to Class I piping in both units. Performance of an additional test at or near the end of the second ten-year interval during the 1997 and 1998 outages of each unit to meet the Code requirement regarding the scheduling of this once per interval test, would be redundant to the tests previously performed earlier in the interval. The licensee requests that the 1991 tests satisfy the hydrostatic test requirement for the second interval. In the third interval, this test will be performed in the second period, which will ensure that the time between tests will not exceed three periods.

2.2 Licensee's Component Identification

Reactor Vessel and Class I piping

2.3 ASME Code, Section XI Requirements

The ASME Code, Section XI, 1980 Edition through Winter 1981 Addenda, Table IWB-2500-1, Item No. B15.11, Examination Category B-P, requires a hydrostatic test of the Reactor Vessel and the Class I piping once in the ten-year interval at or near the end of the interval.

2.4 Licensee's Proposed Alternative Testing

The licensee proposed to let the 1991 hydrostatic tests on Units 2 and 3 satisfy the hydrostatic test requirements for the second interval. The licensee proposed that the hydrostatic test for the third interval be performed in the second period (i.e., in the middle not at the end of the third interval). The licensee also stated in the basis for relief that a system leakage pressure test in accordance with Table IWB-2500-1, Item No. B15.10 is performed when the hydrostatic test is not performed.

2.5 Licensee's Basis for Relief

Hydrostatic tests were performed during the 2R08 outage of Unit 2 and the 3R08 outage of Unit 3, the second period of the second inservice interval of both units, following modifications to their Class I piping. These tests showed acceptable results and satisfied the Code requirement of one hydro test per interval. However, to repeat the tests during the 3R11 outage of Unit 3 (1997) and the 2R12 of Unit 2 (1998) to satisfy the Code requirement of performing the test at or near the end of the interval, would create an undue hardship without a compensating increase in safety. The undue hardship results from the financial burden incurred as a result of the increased outage length to perform the test. For the subsequent interval, the test would be performed in the second period. This schedule is consistent with the Code requirements for Class 2 testing, which recognizes that the hydrostatic tests may be performed on a nominal 10-year frequency. This schedule is also consistent with the ASME Code, Section XI, Paragraph IWB-2420, which states that the sequence of component examinations established during the first inspection interval shall be repeated during each successive interval to the extent practical. Therefore, this proposed alternative frequency will provide an acceptable level of quality and safety.

3.0 EVALUATION:

The staff has reviewed the licensee's request for relief from performing the hydrostatic test at or near the end of the ten-year interval due to the hydrostatic test already performed in the second period of the same interval and statements proposing to perform a system leakage test at the end of the interval.

The slightly higher pressures imposed on the pressure boundary components during hydrostatic testing produce only a minor enhancement in leak detection capability. This enhancement of detecting leakage above that which occurs during a system leakage test at nominal operating pressure results only in a small increase in the ability to determine the pressure boundary integrity. The licensee has already complied with the Code in regard to the requirement to perform one hydrostatic test per inspection interval. The test provided

an acceptable result. If a leak were to develop during the operating period of the remaining portion of the inspection interval, the system leakage test that is proposed by the licensee at the end of the interval, should detect that with reasonable confidence, therefore providing an acceptable level of quality and safety. Therefore, the mid-interval hydro-static test supplemented with a system leakage test at the end of the interval, provides an reasonable assurance of structural integrity, and provides an acceptable level of quality and safety.

4.0 CONCLUSION

The licensee has performed a hydrostatic test of the Class I piping along with the reactor vessel of Peach Bottom Units 2 and 3, during the second period of the inspection interval and proposes to perform a system leakage test at the end of the interval for each of the units as opposed to performing the Code required hydrostatic test at the end of the interval. The staff has determined that the proposed alternative schedule and testing provides reasonable assurance of structural integrity and an acceptable level of quality and safety. Therefore, the licensee's relief request No. RR-22 is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for Peach Bottom Units 2 and 3.

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