



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

ON THE THIRD 10-YEAR INTERVAL INSERVICE INSPECTION

PROPOSED ALTERNATE ASME CODE, SECTION XI,

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2

DOCKET NUMBERS: 50-317 AND 50-318

1.0 INTRODUCTION

The inservice inspection of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME CODE) 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). 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 10-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) 12 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 Calvert Cliffs Plant's third 10-year inservice inspection (ISI) interval commencing in July 1, 1999, would be the 1989 Edition. 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.

By letter dated June 16, 1999, Baltimore Gas and Electric Company (the licensee) for Calvert Cliffs Nuclear Power Plant, proposed an alternative to the requirements of 10 CFR 50.55a(g)(4) in regard to compliance with the latest approved edition of the ASME Code, Section XI, for the Third 10-year inspection interval of Calvert Cliffs Units 1 and 2 beginning on July 1, 1999.

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Enclosure

Pursuant to 10 CFR 50.55a(g)(4)(ii), the applicable Code for inservice examination during the third 10-year inspection interval would be the 1989 Edition of the ASME Code, Section XI, which is currently incorporated by reference in 10 CFR 50.55a(b)(2). However, the licensee had earlier proposed in its submittal to the NRC dated January 29, 1999, to adopt the 1998 Edition of the ASME Code, Section XI, for the third 10-year inspection interval and provided a paragraph-by-paragraph analysis of the 1998 Code with the 1989 Edition which is currently under review by the NRC. In the interim, the licensee, therefore, has proposed to continue with the use of the 1983 Edition of the ASME Code, Section XI with the Summer 1983 Addenda for all Class 1, 2, and 3 components at least through the upcoming Unit 1 refueling outage during the year 2000 and until such time into the interval that the NRC completes its review of the 1998 Edition of the ASME Code, Section XI. Further, the licensee has requested that all inservice examinations performed during an inspection period under the 1983 Code and any additional examinations that the licensee selects to perform in accordance with the 1998 Code may be credited to the percentage requirement of the 1998 Edition of the ASME Code, Section XI when approved. The staff has evaluated the licensee's proposed alternatives pursuant to 10 CFR 50.55a(a)(3)(i).

## 2.0 EVALUATION

Calvert Cliffs Units 1 and 2 will enter into the third 10-year inspection interval on July 1, 1999, following an NRC approved extension of the second 10-year inspection interval that began on April 1, 1987. The licensee had earlier proposed to the NRC that it would adopt a later code than the currently approved ASME Section XI Code which is the 1989 Edition for the third 10-year inspection interval and subsequently had provided a paragraph-by-paragraph comparison of the requirements of the 1989 Edition with that of the 1998 Edition of the Section XI Code to which the ISI program would have complied. The staff is currently reviewing the licensee's submittal. In the interim, however, the licensee proposes to use the 1983 Edition of the Section XI including the Summer 1983 Addenda (Code in effect during the second inspection interval) beginning with the third 10-year inspection interval until the NRC review is completed. Therefore, the staff's review has focused on the impact of safety due to continuing use of the 1983 ASME Code, Section XI, including the Summer 1983 Addenda in the third ten-year inspection interval. Dating back to 1987, the staff notes that the licensee has continued to maintain an effective inservice inspection program conforming to the requirements of the subject Code. The rules for inservice inspection including the mandatory requirements and the non-mandatory guidance provided in the Code has afforded reasonably certain protection of life and property. Nevertheless, as the plants upgrade their inservice inspection program to the later edition of the ASME Code, Section XI, pursuant to 10 CFR 50.55a(g)(4)(ii), the subject Code has been noted to be the applicable code for approximately 30 nuclear units in various inspection intervals and hence, is believed to be reliable from industry experience. The staff, therefore, has determined that the continued use of the 1983 Edition, ASME Code, Section XI, including the Summer 1983 Addenda during the third 10-year inspection interval as an interim Code until the NRC review of the 1998 Code is completed, would provide an acceptable level of quality and safety. The staff further believes that any examination performed in a given inspection period using the subject Code, may well be credited to the examination requirement of the component under the later Code since duplication of inservice

examination of a component because of a Code change will not necessarily result in enhancement of safety. Therefore, the percentage of examinations completed using the subject Code during an inspection period may also be credited to the required percentage of examinations when the 1998 Section XI Code becomes effective for Calvert Cliffs Units 1 and 2.

### 3.0 CONCLUSION

The staff concludes that the use of the 1983 ASME Section XI Code including the Summer 1983 Addenda as an interim code for the third 10-year inspection interval of Calvert Cliffs Units 1 and 2 until the staff completes its review of the 1998 Code, would provide an acceptable level of quality and safety. The licensee can at least use this Code through the upcoming refueling outage of Unit 1 in the year 2000 even if the staff's review is completed prior to the outage. Since the subject Code is believed to provide equivalent protection as that provided by a later edition, the staff has determined that the licensee may also take credit for inservice examinations performed under this Code to be applicable towards the requirements of a later Code when approved. Therefore, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for both units of Calvert Cliffs during the third 10-year inspection interval.

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