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May 24, 1991

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
License Amendment Request; Containment Leakage Testing

REFERENCES:

(a) ANSI N45.4-1972, "Leakage Rate Testing of Containment Structures for Nuclear Reactors," dated March 16, 1972

(b) ANSI/ANS 56.8-1987, "Containment System Leakage Testing Requirements," dated January 20, 1987

(c) 53FR45890, 10 CFR Part 50, Alternative Method of Leakage Rate Testing, dated November 15, 1988

Gentlemen:

The Baltimore Gas and Electric Company (BG&E) hereby requests an Amendment to its Operating License Nos. DPR-53 and DPR-69 for Calvert Cliffs Unit Nos. 1 & 2, respectively, with the submittal of proposed changes to the Technical Specifications.

DESCRIPTION:

The proposed amendment would revise the Technical Specification for both Units 1 and 2 to allow the use of the Mass Point method for conducting containment integrated leak rate tests and revise the required schedule for conducting such tests in accordance with 10 CFR Part 50, Appendix J.

REQUESTED CHANGE:

Change pages 3/4 6-2 of the Unit 1 and Unit 2 Technical Specifications to delete the reference to ANSI N45.4-1972 and revise the Type A leak rate testing schedule as shown on the marked-up pages attached to this transmittal.

BACKGROUND:

Calvert Cliffs Nuclear Power Plant (CCNPP) Technical Specification Surveillance Requirement 4.6.1.2 (Containment Leakage) currently requires the exclusive use of ANSI N45.5-1972 to determine containment leakage rates. This standard provides two acceptable methods of Containment Integrated Leakage Rate Testing (CILRT) calculations. The first method, Point-to-Point, is suited for uninsulated containments where atmospheric stability is affected by outside diurnal changes. The second method, Total Time, is appropriate for insulated containments (e.g., concrete) that are unaffected by diurnal changes. This method, used by CCNPP, calculates a series of leakage rates based on most recent data and the data taken at the start of the test. Each successive calculated leakage rate is therefore based on a longer period of time. The hourly leakage rate is determined by applying a linear least square fit to the calculated leakage rates at each time point.

Technical Specification 4.6.1.2 also requires that three CILRTs be conducted at 40$\pm$10 month intervals during each 10 year service period. However, Calvert Cliffs is on a 24-month fuel cycle which does not allow meeting both this surveillance interval and the interval required by 10 CFR Part 50, Appendix J.

SAFETY ANALYSIS/JUSTIFICATION:

Advances in leakage rate testing subsequent to the issuance of both ANSI N45.4 and our Technical Specifications have provided a newer method of evaluating test data called the Mass Point method. The Mass Point method is described in ANSI/ANS 56.8-1987 [Reference (b)], and is considered to be an acceptable method of determining containment integrated leakage rates. The Mass Point method involves calculating the containment air mass at different times by application of the Ideal Gas Law. The data is then analyzed by the method of linear least squares. The slope of this line represents the rate of change of air mass with respect to time, which is the leakage rate.

The Nuclear Regulatory Commission has amended 10 CFR Part 50, Appendix J, "Primary Containment Leakage Testing for Water-Cooled Power Reactors" to explicitly permit the use of the Mass Point statistical data analysis method [Reference (c)] after recognizing the Mass Point method as an improved alternative method of calculating containment integrated leakage rates. BG&E proposes to revise the Technical Specification to delete the reference to ANSI N45.4 which precludes the use of this approved testing method.

10 CFR Part 50, Appendix J also requires that the Type A test of the containment be performed periodically. These tests are to be scheduled as a set of three tests, at approximately equal intervals, during each 10 year service period, with the third test to coincide with the 10 year inservice inspections. Currently, the Calvert Cliffs Surveillance Requirement schedule requires the Type A tests to be conducted at 40$\pm$10 month intervals during each ten year service period. This TS required schedule is readily adaptable for 12 and 18 month fuel cycles. However, a 24 month fuel cycle does not provide for three tests within a 10 year service period with 40$\pm$10 months between each test. In a 24 month fuel cycle, the tests must be conducted every other refueling outage to be within the 30 to 50 month range allowed; however, this would require a minimum of 12 years to conduct the required set of three tests. BG&E proposes to revise the Technical Specification to match the wording of 10 CFR Part 50, Appendix J, which requires only that the tests be conducted "at approximately equal intervals" during the 10 year service period. Typically, this would result in test being conducted at intervals of four years, four years and two years over a ten year period.

DETERMINATION OF SIGNIFICANT HAZARDS:

This proposed change has been evaluated against the standards in 10 CFR Part 50.92 and has been determined to involve no significant hazards considerations, in that operation of the facility in accordance with the proposed amendment:

(1) *Would not involve a significant increase in the probability or consequences of an accident previously evaluated.*

The proposed change to Surveillance Requirement 4.6.1.2 will only delete reference to ANSI N45.4-1972. Conformance with Appendix J to 10 CFR Part 50 will still be required. Appendix J presently allows Containment Integrated Leakage Rate Test (CILRT) analysis methods in accordance with ANSI N45.4-1972, as well as the Mass Point method described in ANSI/ANS 56.8-1987 (when used with at least a 24-hour duration).

The proposed change allows the use of an improved alternative method of evaluating CILRT data. The Mass Point method is recognized to be a more reliable method of verifying that the leakage from the containment is maintained within acceptable limits. Therefore, the assessment of containment integrity through integrated leak rate testing is enhanced. As such, the consequences of previously evaluated accidents are not impacted. Since the change would only affect the allowed techniques for surveillance testing, there will be no increase in the probability of accidents previously evaluated.

The proposed change to the schedule provides only flexibility in meeting the same requirement for three tests in ten years. The additional flexibility is needed due to the 24 month fuel cycle currently being used. Since the testing type and bases are not changed, the probability and consequences of previously evaluated accidents are not significantly increased.

(2) *Would not create the possibility of a new or different type of accident from any accident previously evaluated.*

The technique used to calculate leakage rates in itself is not considered to be an initiator of any accidents, transients, incidents or events. The proposed change to the schedule only provides flexibility in meeting the same requirement for three tests in ten years. The testing type and bases are not changed. Therefore, these proposed changes will not create the possibility of a new or different type of accident from any previously evaluated.

(3) *Would not involve a significant reduction in a margin of safety.*

Should use of the Mass Point method be allowed, an enhanced determination of containment leakage through CILRT is available. As such, the confidence level of containment integrity would also be enhanced. The Technical Specification Bases indicated only that "the surveillance testing for measuring leakage rates are consistent with the requirements of Appendix J to 10 CFR Part 50." The proposed change to the schedule only provides flexibility in meeting the same requirement for three tests in ten years. The testing type and bases are not changed. Both changes would continue to provide for testing that is consistent with the requirement of Appendix J. Therefore, this change does not adversely impact the margin of safety.

SCHEDULE:

We request approval of this change by September 30, 1991, to allow time for appropriate planning of the next refueling outage. However, issuance of this amendment has not been identified as having an impact on plant operation or outage completion.

SAFETY COMMITTEE REVIEW:

These proposed changes to the Technical Specifications and our determination of significant hazards have been reviewed by our Plant Operations and Safety Review Committee and Off-Site Safety Review Committee, and they have concluded that implementation of these changes will not result in an undue risk to the health and safety of the public.

Very truly yours,

STATE OF MARYLAND :
: TO WIT :
COUNTY OF CALVERT :

I hereby certify that on the 23rd day of May, 1991, before me, the subscriber, a Notary Public of the State of Maryland in and for Calvert County, personally appeared George C. Creel, being duly sworn, and states that he is Vice President of the Baltimore Gas and Electric Company, a corporation of the State of Maryland; that he provides the foregoing information for the purposes therein set forth; that the statements made are true and correct to the best of his knowledge, information, and belief; and that he was authorized to provide the information on behalf of said Corporation.

WITNESS my Hand and Notarial Seal: Michelle D. Hall
Notary Public

My Commission Expires: February 2, 1994
Date

GCC/ERG/dlm

Attachment

cc: D. A. Brune, Esquire
J. E. Silberg, Esquire
R. A. Capra, NRC
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