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BGE

May 11, 1994

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
Response to NRC Generic Letter 92-01, "Reactor Vessel Structural Integrity"
Close-out Letter (TAC Nos. M83446; M83447)

REFERENCES:

(a) Letter from Mr. D. G. McDonald, Jr. (NRC) to Mr. R. E. Denton (BGE), dated April 11, 1994, Generic Letter 92-01, Revision 1, "Reactor Vessel Structural Integrity," Calvert Cliffs Nuclear Power Plant, Units 1 and 2

(b) Letter from Mr. R. E. Denton (BGE) to NRC Document Control Desk, dated October 8, 1993, Response to the NRC's Request for Additional Information Regarding Baltimore Gas and Electric Company's Response to Generic Letter 92-01 and Capsule Report BAW-2160 Data Clarification

(c) Letter from Mr. G. C. Creel (BGE) to NRC Document Control Desk, dated June 30, 1992, Response to Generic Letter 92-01, Reactor Vessel Structural Integrity, 10 CFR 50.54(f)

(d) Byrne, S. T., et al., "Testing and Evaluation of Calvert Cliffs Units 1 & 2 Reactor Vessel Materials Irradiation Surveillance Program Baseline Samples," Combustion Engineering, TR-ESS-001 (January 1975)

By letter dated April 11, 1994 (Reference a), you provided us the results of your review of our response to Generic Letter (GL) 92-01, Reactor Vessel Structural Integrity. Your letter indicates that the NRC staff has determined that Baltimore Gas and Electric Company (BGE) has provided the information requested in GL 92-01. Your letter also indicates that the staff has identified open issues concerning generic data we provided for unirradiated upper-shelf energy (USE) values. This letter provides BGE's response to your request for a schedule to resolve the open issues, and for verification of the information you requested.

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I. SCHEDULE TO RESOLVE OPEN ISSUES

OPEN ISSUE 1: Unirradiated Upper-Shelf Energy Value for Calvert Cliffs Unit 1 Weld Seams 3-203-A,B,C

In our October 8, 1993 letter (Reference b), we informed you that we were in the process of determining the unirradiated USE value for Calvert Cliffs Unit 1 Weld Seams 3-203-A,B,C from the section of Shoreham reactor vessel we purchased for this purpose. The Shoreham Weld Seam 5-306 and the Calvert Cliffs Unit 1 Weld Seams 3-203-A,B,C were fabricated using identical weld wire heats, flux types, and flux lots. The results are expected in summer 1994.

SCHEDULE: The results will be provided to the NRC by August 31, 1994.

OPEN ISSUE 2: Unirradiated Upper-Shelf Energy Value for Calvert Cliffs Unit 2 Weld Seams 2-203-A,B,C

In Reference (b), we provided a table of unirradiated USE values for other Combustion Engineering welds fabricated with similar welding procedures using Linde 124 flux. From this table, we determined a conservative unirradiated USE value of 88 ft-lbs for Weld Seams 2-203-A,B,C. In your letter (Reference a), you indicated that these types of values are unacceptable because they do not consider heat variability.

A Combustion Engineering Owners Group task will soon be underway to examine separability of weld populations by weld flux type. The Owners Group project is scheduled to be completed by mid-1995. Upon completion of this project, we will provide you with a USE value for Calvert Cliffs Unit 2 Weld Seams 2-203-A,B,C that will reflect the criteria set forth in your letter.

SCHEDULE: The results will be provided to the NRC by July 31, 1995.

II. VERIFICATION OF DATA FILE

SUMMARY FILE FOR PRESSURIZED THERMAL SHOCK (Reference a, Enclosure 1)

CALVERT CLIFFS UNIT 1 (Page 1)

1. The method of determining unirradiated reference temperature (IRT_{ndt}) for Interior Shell Course D-7206-3 should be "Plant Specific" not "Materials Engineering Branch Technical Position 5-2 (MTEB 5-2)." The IRT_{ndt} value was determined from the results of drop weight tear tests (DWTT) and transversely-oriented Charpy V-Notch (CVN) tests as described in the American Society of Mechanical Engineers (ASME) Code, Section III, NB-2331 (Reference c, d).

2. The reference for the fluence data is incorrectly dated. The correct date is December 13, 1991.

CALVERT CLIFFS UNIT 2 (Page 2)

1. Date of expiration for Calvert Cliffs Unit 2 operating license is August 13, 2016, not "8/31/2016" as shown in Column 1.

2. A more appropriate IRT_{ndt} value for the Lower Shell Course D-8907-2 is 20°F. The 10°F IRT_{ndt} was based on DWTT and longitudinally-oriented CVN tests corrected in accordance with MTEB 5-2. The 20°F IRT_{ndt} value was determined from the results of DWTT and transversely-oriented CVN tests as described in the ASME Code, Section III, NB-2331 (Reference d). Accordingly, the method of determining the IRT_{ndt} should also be changed from "MTEB 5-2" to "Plant Specific."

   [In our June 30, 1992 response to GL 92-01, we incorrectly reported the nil ductility transition temperature (NDTT) for the Lower Shell Course D-8907-2 as 18°F (Reference c, Enclosure to Attachment 1, Page 2). This was a typographical error. The correct NDTT value is 10°F.]

3. The reference for the fluence data is incorrectly dated. The correct date is December 13, 1991.

SUMMARY FILE FOR UPPER SHELF ENERGY (Reference a, Enclosure 2)

CALVERT CLIFFS UNIT 1 (Page 1)

1. Date of expiration for Calvert Cliffs Unit 1 operating license is July 31, 2014, not "7/21/2014" as shown in Column 1.

2 We did not provide the unirradiated USE value of 110 ft-lbs for the Lower Shell Axial Welds 3-203-A,B,C. Per the discussion above, under Open Issue 1, we will provide this value by August 31, 1994.

   Under the column "Method of Determin. Unirrad. USE," the entry is "Equiv. to Sister Plant." This term has not been defined in Enclosure 3. Since our proposed methodology to determine the unirradiated USE for the Lower Shell Axial Welds 3-203 A,B,C is to use another plant's weld, fabricated with identical weld wire heats, flux types, and flux lots, we believe "Sister Plant" should be used for the method of determining the unirradiated USE.

3. The reference for the fluence data is incorrectly dated. The correct date is December 13, 1991.

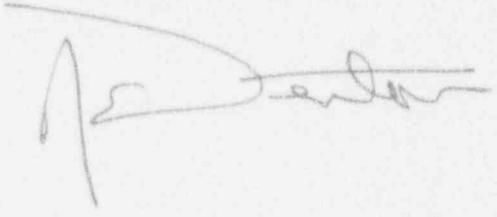
CALVERT CLIFFS UNIT 2 (Page 2)

1. Date of expiration for Calvert Cliffs Unit 2 operating license is August 13, 2016, not "8/31/2016" as shown in Column 1.

2. The reference for the fluence data is incorrectly dated. The correct date is December 13, 1991.

Should you have any further questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,



RED/GT/dlm

cc: D. A. Brune, Esquire
J. E. Silberg, Esquire
R. A. Capra, NRC
D. G. McDonald, Jr., NRC
T. T. Martin, NRC
P. R. Wilson, NRC
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