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January 24, 1992

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
Modification of the Withdrawal Schedule for Reactor Vessel Material
Specimens for Calvert Cliffs Unit #1

Gentlemen:

Pursuant to Appendix A of 10 CFR Part 50, Baltimore Gas & Electric Company (BG&E) hereby submits for approval a change to its schedule for withdrawal of reactor vessel material surveillance capsules for Calvert Cliffs Unit 1. The proposed change consists of only interchanging the surveillance capsule scheduled to be withdrawn for the second interval (the 104° capsule) with that scheduled to be withdrawn for the fourth interval (the 97° capsule). The second interval capsule withdrawal is scheduled to take place during the spring 1992 refueling outage (March 6 through May 31). We request that you provide us with your response before the scheduled outage.

The justification for the schedule change is contained in the attachment to this letter. Should you have any questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,

GCC/GT/gt/dlm

Attachment: Justification for the Proposed Change to the Schedule for Withdrawal of Reactor Vessel Material Surveillance Capsule for Calvert Cliffs Unit 1

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ATTACHMENT

Justification for the Proposed Change to the Schedule for
Withdrawal of Reactor Vessel Material Surveillance Capsule for
Calvert Cliffs Unit 1

Baltimore Gas and Electric Company

Docket Nos. 50-317 and 50-318

January 24, 1992

ATTACHMENT

Justification for the Proposed Change to the Schedule for Withdrawal of Reactor Vessel Material Surveillance Capsule for Calvert Cliffs Unit 1

I. BACKGROUND

Appendix H of 10 CFR part 50 describes reactor vessel material surveillance program requirements. Paragraph (II)(B)(3) of this appendix states that a proposed material withdrawal schedule must be submitted with a technical justification and approved prior to implementation.

The table below shows the original schedule, the 1982 revised schedule, and the 1992 proposed schedule for Calvert Cliffs Unit 1 surveillance capsule removal.

<u>Schedule (Yrs)</u>	<u>Location in Degrees</u>		
	<u>Original</u>	<u>1982 (Revised)</u>	<u>1992 (Proposed)</u>
5	97	263	263
14	104	104	97
23	284	284	284
30	263	97	104
35	277	277	277
40	83	83	83

The capsule at the 263° location was removed for the first interval instead of the capsule located at the 97° as was called for by the originally approved schedule. These two locations are isofluent. The justification and the subsequent NRC approval for this schedule change are documented in References (1) and (2), respectively.

The table that contains the capsule withdrawal schedule has been removed from the Calvert Cliffs Units 1 and 2 Technical Specifications by license amendment in accordance with the guidance provided by NRC Generic Letter 91-01 (References 3, 4, and 5). Upon approval, the 1992 schedule will be reflected in the next update of the Calvert Cliffs Updated Final Safety Analysis Report.

II. JUSTIFICATION

a. Standard Reference Material (SRM)

Capsule 104° contains SRM Charpy impact specimens while capsule 97° contains Base Metal (Transverse) Charpy impact specimens in the corresponding compartment. All other sets of specimens are identical. The 263° location capsule pulled for the first interval also contained SRM specimens. The 263° and 104° capsules are the only two capsules from the original surveillance program to contain SRM specimens. In a surveillance program, it is desirable to test SRM specimens at widely separated values of fluence. Hence, deferring the withdrawal of the 104° capsule until later in vessel life (30-year interval) will provide the desired separation in fluence value for the two SRM specimens. The original surveillance schedule (before it was revised, References 1 and 2) also supported testing of the SRM specimen at widely separated values of fluence.

ATTACHMENT

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b. Ex-vessel Dosimetry Benchmarking

The 263° location that was left vacant by the withdrawal of the first interval surveillance capsule has been employed in a supplemental surveillance capsule program designed to improve the accuracy of vessel-incident and through-wall neutron flux and fluence measurements. The program consists of installing in-vessel and ex-vessel neutron dosimetry at azimuthally equivalent locations to benchmark the resulting readings. The errors in calculated fluence due to radial variations is greatly minimized by benchmarking them to the readings from azimuthally equivalent locations. One set of such readings has already been obtained by analyzing dosimetry that was irradiated during Cycle 9.

During fabrication of the in-vessel supplemental surveillance capsule, installed at the start of Cycle 10, we located an archival weld block containing McGuire Unit 1 material which has been shown to be equivalent to the Calvert Cliffs Unit 1 limiting material. Charpy impact specimens were fabricated from this material and were installed in the 263° capsule holder in the vessel along with new in-vessel and ex-vessel dosimetry.

Continuing irradiation of the limiting material Charpy specimens in the in-vessel 263° location is vital to BG&E's Reactor Vessel Embrittlement Management Program. Therefore, the in-vessel capsule will not be withdrawn at the end of Cycle 10 to benchmark the ex-vessel dosimetry capsule results as was the case at the end of Cycle 9. However, since the 97° location is isofluent to the 263° location, withdrawing the 97° location surveillance capsule instead the currently approved 104° location capsule will still allow the 263° location ex-vessel dosimetry results to be benchmarked.

III. REFERENCES

1. Letter from Mr. R. F. Ash (BG&E) to Mr. R. A. Clark (NRC), dated January 20, 1982
2. Letter from Mr. R. A. Clark (NRC) to Mr. A. E. Lundvall, Jr. (BG&E), dated February 2, 1982
3. Generic Letter 91-01, "Removal of the Schedule for Withdrawal of Reactor Vessel Material Specimens from Technical Specifications," dated January 4, 1991
4. Letter from Mr. G. C. Creel (BG&E) to NRC Document Control Desk, dated May 24, 1991
5. Letter from Mr. D. G. McDonald, Jr. (NRC) to Mr. G. C. Creel (BG&E), dated July 30, 1991