CHARLES H. CRUSE
Vice President
Nuclear Energy

Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, Maryland 20657
410 495-4455

BGE

November 12, 1998

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 Request for Additional Information for the Review of the Calvert Cliffs Nuclear Power Plant, Units 1 & 2, Integrated Plant Assessment Report for the Containment Isolation Group

REFERENCES:

(a) Letter from Mr. C. H. Cruse (BGE) to NRC Document Control Desk, dated November 14, 1997, "Request for Review and Approval of System and Commodity Reports for License Renewal"

(b) Letter from Mr. D. L. Solorio (NRC) to Mr. C. H. Cruse (BGE), September 2, 1998, "Request for Additional Information for the Review of the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 & 2, Integrate Plant Assessment Reports for the Containment Isolation Group, Containment Spray System, and Primary Containment Heating and Ventilation System"

(c) Letter from Mr. D. L. Solorio (NRC) to Mr. C. H. Cruse (BGE), September 24, 1998, "Renumbering of NRC Requests for Additional Information on Calvert Cliffs Nuclear Power Plant License Renewal Application Submitted by the Baltimore Gas and Electric Company"

Reference (a) forwarded three Baltimore Gas and Electric Company (BGE) system and commodity reports for license renewal. Reference (b) forwarded questions from NRC staff on three sections of the BGE License Renewal Application, including the Containment Isolation Group. Reference (c) forwarded a numbering system for tracking BGE's response to all of the BGE License Renewal Application requests for additional information and the resolution of the responses. Attachment (1) provides our responses to the Containment Isolation Group questions contained in Reference (b). The questions are renumbered in accordance with Reference (c).

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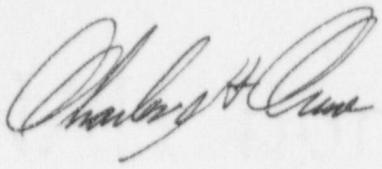
NRC Distribution Code A036D

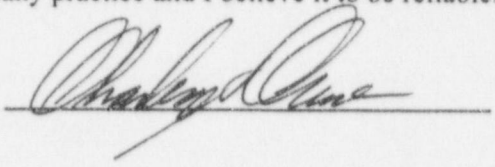
Should you have further questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,



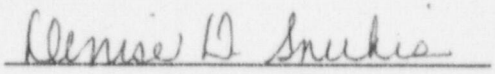
STATE OF MARYLAND :
: **TO WIT:**
COUNTY OF CALVERT :

I, Charles H. Cruse, being duly sworn, state that I am Vice President, Nuclear Energy Division, Baltimore Gas and Electric Company (BGE), and that I am duly authorized to execute and file this response on behalf of BGE. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other BGE employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.



Subscribed and sworn before me, a Notary Public in and for the State of Maryland and County of Calvert, this 12th day of November, 1998.

WITNESS my Hand and Notarial Seal:



Notary Public

My Commission Expires:

2/1/2002

Date

CHC/KRE/dlm

Attachment: (1) Response to Request for Additional Information; Integrated Plant Assessment Report for the Containment Isolation Group

cc: R. S. Fleishman, Esquire
J. E. Silberg, Esquire
S. S. Bajwa, NRC
A. W. Dromerick, NRC
H. J. Miller, NRC
C. I. Grimes, NRC
D. L. Solorio, NRC
Resident Inspector, NRC
R. I. McLean, DNR
J. H. Walter, PSC

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION;

INTEGRATED PLANT ASSESSMENT REPORT FOR THE

CONTAINMENT ISOLATION GROUP

Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
November 12, 1998

NRC Question No. 5.5.1

Clarify whether all the containment isolation valves (CIVs) listed in Table 5-3, "Containment Isolation Valves," of the Calvert Cliffs Nuclear Power Plant Updated Final Safety Analysis Report are subject to an aging management review. For any valves that are not, provide the basis for their exclusion.

BGE Response

All CIVs listed in Table 5-3 are subject to aging management review. Containment isolation valves that are part of systems addressed in other sections of Baltimore Gas and Electric Company's (BGE's) License Renewal Application (LRA) are included with those sections. In order to determine where the CIVs are addressed in the LRA, the following cross-reference of penetration numbers (Table 5-3 of the Updated Final Safety Analysis Report) and LRA sections is given below for information:

Penetration No.	LRA Section	Penetration No.	LRA Section
1A	5.13	23	5.5
1B	5.5	24	5.13
1C	5.2	37	5.5
1D	5.13	38	5.5
2A	5.2	39	5.15
2B	5.2	41	4.1 (MOV652)
7A	5.11B		5.15 (MOV651)
7B	5.11B	44	5.5
8	5.5	47A	5.13
9	5.6	47B	5.13
10	5.6	47C	5.13
13*	5.11B	47D	5.13
14*	5.11B	48A	5.11B
15	5.14	48B	5.11B
15	5.14	49A	5.13
16	5.3	49B	5.13
18	5.3	49C	5.13
19A	5.4	50	5.11B
19B	5.4	59	5.18
20A	5.15	60	5.12
20B	5.12	61	5.18
20C	5.12		

* Note: The isolation function in Modes 1-4 previously performed by CIVs is now performed by blind flanges.

NRC Question No. 5.5.2

In Groups 1 and 2 under aging management programs and demonstration of aging management, the statement is made that the occurrence of crevice corrosion, general corrosion, microbiologically induced corrosion, and pitting is expected to be limited and not likely to affect the intended function of the Group 1 and 2 components. Provide the basis for this conclusion.

BGE Response

The statement was made only to clarify why no mitigation activities are deemed necessary for these mechanisms, not to imply they would not occur. The application still concludes they are plausible and describes discovery methods to detect them. Baltimore Gas and Electric Company's expectations of limited corrosion are based on past experience with systems containing well water. The water has not caused corrosion problems in these systems in the past, and it is not expected to cause corrosion problems in the future. Components in this group are included in an age-related degradation inspection program to detect these mechanisms, which will either substantiate or contradict these expectations. Appropriate follow-up actions will be taken based on the results of the age-related degradation inspection program as described on page 5.5-11 of the LRA.

NRC Question No. 5.5.3

American Society of Mechanical Engineers (ASME) Code Section III, American National Standards Institute (ANSI) B31.1 and ANSI B31.7 contain certain fatigue analysis requirements. For ASME Code Class 1 components and ANSI B31.7 piping, the Code requires the calculation of the cumulative usage factor. For ASME Code Class 2 and 3 components, and ANSI B31.1 piping, the Code specifies allowable stress levels based on the number of anticipated transients or thermal cycles. Explain why, in Table 5.5-2, fatigue is not considered as a plausible aging mechanism for the containment isolation (CI) group components, which are designed in accordance with ANSI B31.7 or similar requirements of ASME Code Section III.

BGE Response

Although the referenced piping design codes require consideration of fatigue, this should not be construed to mean that fatigue is generically plausible. American National Standards Institute B31.7 requires calculation of the cumulative usage factor for Class 1 components only. Fatigue of ANSI B31.7 Class 2 and 3 components is addressed in the same manner as B31.1 components. Except for the fire protection piping, which was designed to National Fire Protection Association requirements, the piping addressed by this section of the application was designed to ANSI B31.7 Class 2 and 3.

The design for B31.7 Class 2 and 3 components at Calvert Cliffs used a fatigue stress reduction factor of 1.0, which corresponds to a presumed 7000 cycles over plant life. For a 60-year life, this equates to approximately 116 full stress cycles per year (more than 2 per week). This is well in excess of actual thermal cycling, and the 7000 cycle limit is very conservative. Thus, fatigue is not a plausible aging mechanism for CI group components throughout the period of extended operation.

NRC Question No. 5.5.4

American Society of Mechanical Engineers Code Section XI requires system leakage tests and system hydrostatic tests along with certain visual inspections for Class 2 and 3 components. Describe, in summary form, how these Section XI requirements are applied to CI group components.

BGE Response

The waste gas decay tanks and associated piping components were classified Non-Class, and all CI group penetration piping components were classified MC and Non-Class for ASME Section XI. Thus, Class 2 and 3 requirements currently do not apply. During development of the ASME Section XI IWE program, the existing classification of the CI group penetration piping was identified as a non-conforming condition. Calvert Cliffs is currently in the process of reclassifying this piping Class MC and Class 2, which is consistent with the intent of the ASME Code. Also, the program to inspect Class MC components is currently in the development stage and has not yet been implemented. None of these ongoing activities are credited with managing aging in the BGE LRA.

NRC Question No. 5.5.5

Are there any parts of the systems, structures, or components described in Section 5.5 that are inaccessible for inspection? If so, describe what aging management program will be relied upon to maintain the integrity of the inaccessible areas. If the aging management program for the inaccessible areas is an evaluation of the acceptability of inaccessible areas based on conditions found in surrounding accessible areas, please provide information to show that conditions would exist in accessible areas that would indicate the presence of or result in degradation to such inaccessible areas. If different aging effects or aging management techniques are needed for the inaccessible areas, please provide a summary to address the following elements for the inaccessible areas: (1) Preventive actions that will mitigate or prevent aging degradation; (2) Parameters monitored or inspected relative to degradation of specific structure and component intended functions; (3) Detection of aging effects before loss of structure and component intended functions; (4) Monitoring, trending, inspection, testing frequency, and sample size to ensure timely detection of aging effects and corrective actions; (5) Acceptance criteria to ensure structure and component intended functions; and (6) Operating experience that provides objective evidence to demonstrate that the effects of aging will be adequately managed.

BGE Response

Baltimore Gas and Electric Company can access all components in the CI group if required.