UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

50-317/318

August 12, 1999

Mr. Charles H. Cruse, Vice President
Nuclear Energy Division
Baltimore Gas and Electric Company
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: STATUS OF OPEN AND CONFIRMATORY ITEMS FROM MARCH 21, 1999, SAFETY EVALUATION REPORT FOR BALTIMORE GAS AND ELECTRIC COMPANY'S LICENSE RENEWAL APPLICATION FOR CALVERT CLIFFS UNIT NOS. 1 AND 2

Dear Mr. Cruse:

On July 28, 1999, the Nuclear Regulatory Commission (NRC) staff held a public meeting with representatives of Baltimore Gas and Electric Company (BGE) at Rockville, Maryland, to discuss the progress of the NRC staff's review of BGE's License Renewal Application for its Calvert Cliffs Nuclear Power Plants, Units Nos.1 and 2. During the meeting, both the NRC and BGE agreed that the staff would provide feedback to BGE regarding the status of safety evaluation report (SER) open and confirmatory items based on BGE's responses to these items by letter dated July 2, 1999. In addition, BGE also requested that the staff notify BGE if there are any staff concerns that resulted from BGE's submittal, dated July 16, 1999, which provided comments on the accuracy of the March 21, 1999, SER.

The purpose of this letter is to provide BGE with the status regarding the following open and confirmatory items, to propose an acceptable way to resolve these items, and to request that public meetings (combined if possible) be held to discuss their resolution:

- 3.2.3.3.1.1-2 Stress Corrosion Cracking Plausibility in Reactor Coolant System
- 3.2.3.2.1-2 Stress Corrosion Cracking Aging Management Program for Reactor Pressure Vessel Seal Leakoff Line
- 3.2.3.2.1-4 Inspections of Small Bore Reactor Coolant System Piping
- 3.10.3.2.1 Tendon Prestress Curves Extrapolated to 60 Years
- 4.1.3-2 Time Limited Aging Analysis for Tendon Prestressing
- 3.1.5.3-1 Application of BGE's Appendix B Program to Non-Safety-Related Components (confirmatory item)
- 3.2.3.2.1-4 Aging Management of Control Element Assembly Shroud Bolts (confirmatory item)

Open Item 3.2.3.3.1.1-2
Industry experience indicates that stress corrosion cracking is a plausible aging mechanism. An acceptable way to resolve this item is to manage the aging effect through an aging management activity that can take credit for an already existing program, e.g., ASME Section XI.

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Open Item 3.2.3.2.1-2
BGE has proposed an aging management program that appears to rely on leak detection rather than inspections to look for degradation of material condition before leaks actually occur. The staff believes that a preventive aging management program is necessary.

Open Item 3.2.3.2.1-4
BGE has proposed using the results of inspections of Chemical and Volume Control System (CVCS) small bore piping to determine if there would be a need to conduct inspections of reactor coolant (RCS) small bore piping. Because the staff believes there are differences in the fabrication of piping used for these systems the staff believes that inspections of CVCS small bore piping may not be bounding. Therefore, it is necessary to establish that inspections of CVCS small bore piping would be bounding on the RCS small bore piping or propose an alternative aging management program.

Open Items 3.10.3.2.1 and 4.1.3-2
The staff recognizes that the applicant may not have a sufficient database from past inspections to reliably project the tendon prestressing force to 60 years. Consequently, a more appropriate method of conducting a time-limited aging analysis (TLAA) is by continued aging management. Therefore, as provided for in Part 54, TLAA of containment tendon forces can be conducted in accordance with Part 54.21(c)(iii) by relying on the tendon surveillance program required by Part 50.55a(b)(ix) which is a current licensing basis requirement, as well as into the extended period of operation.

Should BGE chose to perform the tendon prestress force TLAA using the requirement of 54.21(c)(iii) , BGE needs to propose an aging management program for the tendon force TLAA incorporating the following attributes:

- Parameters monitored or inspected as per 10 CFR 50.55a(b)(2)(ix)(b)
- Monitoring and trending as per Regulatory Guide 1.35, or equivalent method
- Acceptance criteria such that the projected tend on force trending remains above the predicted lower limit
- Corrective actions that include systematic retensioning of tendon population to ensure the adequacy of prestressing force
- Operating experience as applicable to tendon force monitoring

Confirmatory Item 3.1.5.3-1
BGE response states, in part, that the scope of their corrective actions program which implements the requirements of 10 CFR Part 50, Appendix B, includes all structures and components that are subject to aging management review (AMR) for license renewal, whether they are safety-related or not. However, other aspects of the Appendix B program do not necessarily apply to all the programs or activities associated with non-safety-related structures and components that are subject to AMR for license renewal.

controls" are applicable to non-safety-related structures systems and components (SSCs) that are subject to AMR. Accordingly, BGE should include, in a supplement to the final safety analysis report and/or in their quality assurance program description, an explicit commitment that those BGE Appendix B quality assurance program elements specifically related to corrective actions, confirmation processes, and administrative controls, apply to non-safety-related SSCs that are subject to AMR for license renewal.

Confirmatory Item: 3.2.3.2.1-4
The staff requests further discussion with BGE regarding the assumption implied by BGE's response that any potential failures will be random and not localized in order to support the argument that the hypothetical failure of a small number of bolts would not result in a safety issue.

As a result of the staff's review of the Duke Power Company license renewal application for its Oconee units the staff has identified void swelling as a potential aging mechanism warranting staff evaluation. Therefore, the staff requests further interaction with BGE to discuss what aging management alternatives are currently available in order to further the staff's assessment of this issue. Also, by letter dated August 5, 1999, the staff forwarded a license renewal position regarding scoping of components and structures within the scope of license renewal to the Nuclear Energy Institute. The staff would like to discuss void swelling and the resolution of license renewal positions with BGE while pursuing closure of the above mentioned open and confirmatory items.

Lastly, the staff has been reviewing the July 16, 1999, submittal to determine if any of the comments made by BGE require additional interaction between the staff and BGE. As of the date of this letter that effort is nearly complete and no issues requiring further interaction were identified; however, not all comments have been reviewed. If any issues are identified through the staff's review of the remainder of BGE's comments, the staff will notify BGE promptly so as to minimize the impact on the review schedule.

Sincerely,

original signed by:

David L. Solorio, Project Manager
License Renewal and Standardization Branch
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318
cc: See next page
*See previous concurrence
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Baltimore Gas & Electric Company
cc:

President
Calvert County Board of
Commissioners
175 Main Street
Prince Frederick, MD 20678

James P. Bennett, Esquire
Counsel
Baltimore Gas and Electric Company
P.O. Box 1475
Baltimore, MD 21203

Jay E. Silberg, Esquire
Shaw, Pittman, Potts, and Trowbridge
2300 N Street, NW
Washington, DC 20037

Mr. Bruce S. Montgomery, Director
NRM
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 287
St. Leonard, MD 20685

Mr. Richard I. McLean
Nuclear Programs
Power Plant Research Program
Maryland Dept. of Natural Resources
Tawes State Office Building, B3
Annapolis, MD 21401

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. Charles H. Cruse, Vice President
Nuclear Energy Division
Baltimore Gas and Electric Company
1650 Calvert Cliffs Parkway
Lusby, MD 20657-47027

Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 and 2

Mr. Joseph H. Walter, Chief Engineer
Public Service Commission of
Maryland
Engineering Division
6 St. Paul Centre
Baltimore, MD 21202-6806

Kristen A. Burger, Esquire
Maryland People's Counsel
6 St. Paul Centre
Suite 2102
Baltimore, MD 21202-1631

Patricia T. Birnie, Esquire
Co-Director
Maryland Safe Energy Coalition
P.O. Box 33111
Baltimore, MD 21218

Mr. Loren F. Donatell
NRC Technical Training Center
5700 Brainerd Road
Chattanooga, TN 37411-4017

David Lewis
Shaw, Pittman, Potts, and Trowbridge
2300 N Street, NW
Washington, DC 20037

Douglas J. Walters
Nuclear Energy Institute
1776 I Street, N.W.
Suite 400
Washington, DC 20006-3708
DJW@NEI.ORG

Barth W. Doroshuk
Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
NEF 1st Floor
Lusby, Maryland 20657

National Whistleblower Center
3233 P Street, N.W.
Washington, DC 20007

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