

August 26 1998

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS NOS. 1 & 2, COMMODITY REPORT FOR THE FUEL HANDLING EQUIPMENT AND OTHER HEAVY LOAD HANDLING CRANES (TAC NOS. MA0293, MA0294, AND M99212)

Dear Mr. Cruse:

By letter dated October 22, 1997, Baltimore Gas and Electric Company (BGE) submitted for review the Fuel Handling Equipment and Other Heavy Load Handling Cranes (2.2) commodity report as attached to the "Request for Review and Approval of System and Commodity Reports for License Renewal." BGE requested that the Nuclear Regulatory Commission (NRC) staff review the Fuel Handling Equipment and Other Heavy Load Handling Cranes (2.2) commodity report to determine if the report meets the requirements of 10 CFR 54.21(a), "Contents of application-technical information," and the demonstration required by 10 CFR 54.29(a)(1), "Standards for issuance of a renewed license," to support an application for license renewal if BGE applied in the future. By letter dated April 8, 1998, BGE formally submitted its license renewal application.

The NRC staff has reviewed the Fuel Handling Equipment and Other Heavy Load Handling Cranes (2.2) commodity report against the requirements of 10 CFR 54.21(a)(1), 10 CFR 54.21(a)(3). By letter dated April 4, 1996, the staff approved BGE's methodology for meeting the requirements of 10 CFR 54.21(a)(2). Based on a review of the information submitted, the staff has identified in the enclosure, areas where additional information is needed to complete its review.

Please provide a schedule by letter or telephonically for the submittal of your responses within 30 days of the receipt of this letter. Additionally, the staff would be willing to meet with BGE prior to the submittal of the responses to provide clarifications of the staff's requests for additional information.

Sincerely,
~~Original~~ Signed By

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

Docket Nos. 50-317 and 50-318
Enclosure: Request for Additional Information
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PDLR Staff

BThomas (BET)

JLyons (JEL)

TCheng (TMC)

SLittle (SLL)

Mr. Charles H. Cruse
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. Thomas N. Prichett, 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

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

REQUEST FOR ADDITIONAL INFORMATION
CALVERT CLIFFS NUCLEAR POWER PLANT
UNIT NOS. 1 & 2
FUEL HANDLING EQUIPMENT AND OTHER HEAVY LOAD HANDLING CRANES
COMMODITY REPORT, SECTION 3.2
DOCKET NOS. 50-317 AND 50-318

Section 3.2.1 - Scoping

1. Provide the basis for excluding the spent fuel shipping cask wash down pit, a structural component in the spent fuel storage system, and the fuel transfer tube from the scope of license renewal.
2. Section 3.2.1, pages 3.2-1 and 3.2-2, briefly discuss the spent fuel stainless steel storage racks. While the spent fuel storage racks are not specifically identified as subcomponents within the spent fuel storage system that are within scope of license renewal, they are identified as components subject to an aging management review. Please clarify the scoping conclusion for the spent fuel storage racks, and provide a cross reference to where the discussion is provided in the license renewal application (LRA).
3. Section 3.2.1, under New Fuel Storage and Elevator, states that the new fuel elevators are part of the fuel handling system discussed in a subsequent paragraph in Section 3.2. Please explain why the system is called the new fuel storage and elevator system, yet the new fuel elevators are described as not being part of the system.
4. Section 3.2.1, page 3.2-5 includes a statement that there are components in the crane system that are not subject to the guidelines in NUREG-0612 because (1) there is adequate separation between the lift points and safe shutdown equipment, and (2) the load does not qualify as a heavy load. Please provide the distance Baltimore Gas and Electric Company (BGE) considers as adequate separation and the basis? Also, explain how adequate separation between lift points and irradiated fuel is considered when scoping the components in the crane system that are subject to the guidelines in NUREG-0612.
5. Is the spent fuel shipping cask wash down pit reinforced concrete subject to aging management review (AMR)? If not, provide the basis for excluding it from an AMR.
6. Is the spent fuel shipping cask wash down pit stainless steel liner subject to AMR? If not, provide the basis for excluding it from an AMR.

Enclosure

Section 3.2.2 - Aging Management

7. Provide the basis for concluding there are no potential or plausible age related degradation mechanisms (ARDMs) warranting aging management for the fuel transfer tube.
8. The potential and plausible ARDMs for the fuel handling equipment (FHE) and heavy load handling crane (HLHC) systems have been listed in Table 3.2-1 of Section 3.2 of the license renewal application. Fatigue, wear and mechanical degradation/distortion has been considered a plausible degradation mechanism for the wire ropes. When bent over a sheave, a wire rope's load-induced stretch can cause it to rub against the groove, causing wear on the sheave or drum. Discuss the results of your evaluation of the wear of the sheaves and drums in contact with the wire ropes. Also indicate whether or not the sheaves and drums in contact with the wire ropes are subject to an AMR.
9. Indicate why fatigue, wear, and mechanical degradation/distortion are not considered plausible ARDMs for the clips, bolts and stops in the spent fuel cask handling crane, polar crane (PC), and intake structure semi-gantry crane subcomponents. Additionally, include in the response a discussion as to why mechanical degradation/distortion of clips, bolts and stops is not plausible in light of the fact that these cranes are subject to accidental loadings during normal operations as described in Section 3.2 on page 3.2-23.
10. Low cycle fatigue is considered plausible for the PC rails and fatigue has been identified as a potential ARDM for this item. It is stated in Section 3.2 that this ARDM, if unmanaged, could result in unstable crack growth under design loads at the flame-cut hole locations. Discuss your plans for mitigating the potential failure at flame cut holes and the potential fatigue damage in the PC trolley rails and in other FHE and HLHC components where flame cut holes might exist.
11. In Section 3.2.2 of the LRA, Table 3.2-1 lists those FHE and HLHC related structural components and subcomponents (the spent fuel shipping cask stainless steel support platform, IC trash racks stainless steel structural members, spent fuel pool platform stainless steel structural members, spent fuel elevator subcomponent stainless steel structural members, and fuel transfer carriage subcomponent stainless steel structural members) that are subject to the AMR and the potential and plausible ARDMs for these systems. This table also indicates that the aging effects are not plausible for most of these structural components and subcomponents. Provide a summary of the basis upon which you concluded that the aging effects such as pitting/crevice corrosion, elevated temperature, irradiation, stress relaxation, fatigue, wear, mechanical degradation/distortion, corrosion due to boric acid, are not plausible for those structural components and subcomponents.
12. As described in the first paragraph of Page 3.2-3 in Section 3.2.1, during the 1996 Unit 1 outage, four fillet welds connecting structural members on the fuel upending machine in the refueling pool failed due to low-cycle fatigue. After the implementation of corrective actions, BGE concluded that fatigue will not be plausible for these fuel handling equipment subcomponents. Provide the basis for concluding that low cycle fatigue is not plausible aging mechanism for other welds in stainless steel members such as fuel

transfer tube supports, new fuel elevator subcomponents and other components listed in Table 3.2-1.

13. Provide the basis for concluding that (1) only the polar crane rails need to be covered under Group 3 Aging Management, but not other crane rails, and (2) Group 4 Aging Management is applied only to wire ropes, but not to other crane components and subcomponents.
14. Discuss to what extent "loose bolts" (loose bolts at the connection of steel members, loose anchor bolts at cracked reinforced concrete members, etc.) were considered as aging effects for some of the fuel handling equipment and heavy load handling crane systems?
15. Provide a summary of the visual inspection procedures applied for the fuel handling equipment and heavy load handling crane systems, including the scope, method, acceptance criteria, frequency, and documentation. Alternatively, describe the process for establishing these attributes.
16. Provide a summary of the coatings inspection program that is intended to supplement the existing preventive maintenance tasks associated with the load handling equipment. Cite any Steel Structures Painting Council guidance that is used in the coatings inspection procedures. Generally describe the repair practices that are used for degraded coating conditions on the load handling equipment, and summarize the past experience with degraded coatings.