NRC PDR

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

September 21, 1979

Docket No.: 50-317

Mr. A. E. Lundvall, Jr.
Vice President - Supply
Baltimore Gas & Electric Company
P. O. Box 1475
Baltimore, Maryland 21203

Dear Mr. Lundvall:

In the continuation of our review of your July 3, 1979 request regarding spent fuel pool modification for Calvert Cliffs Unit No. 1, we find that a second set of additional information as detailed in the enclosure is needed to complete our review.

In order to complete our review in a timely manner, please provide the additional information at your earliest convenience.

Sincerely,

Robert W. Reid

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosure:
Request for Additional
Information

cc w/enclosure: See next page

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ENCLOSURE

REQUEST FOR ADDITIONAL INFORMATION

CALVERT CLIFFS NUCLEAR POWER PLANT
SPENT FUEL STORAGE POOL MODIFICATION

1. Discuss the provisions employed to limit the maximum height of a fuel assembly passing over the rack assembly to 24 inches.

2. Provide sufficient details of the rack base supporting structure, sliding surfaces, all gaps (clearance and expansion) of the rack structure, and fuel handling system.

3. Discuss the effects of the increased loads due to the new rack structures on the fuel pool liner and structures.

4. Discuss the effects of postulating inclined fuel assembly drop on top of the rack.

5. Describe the provisions employed to prevent movement of heavy objects over the spent fuel assemblies. Include a description of all items which may be moved over the spent fuel assemblies. State whether the consequences of dropping any of these items onto the rack are more severe than the fuel drop accident.

6. Discuss the inservice surveillance plans, if any, that you have developed to assure long-term corrosion protections for the fuel rack system in the pool environment.

7. Provide discussion on the material, fabrication, installation and quality control of the spent fuel racks. Indicate whether these requirements are in conformance with Subsection NF of the ASME Code.

8. Provide the damping values used in the non-linear sliding analysis and include any justification for any values higher than those specified in the FSAR.

9. Discuss the effect of the temperature gradient across the rack structure due to differential thermal effect between a full and empty cell.

10. For the accident fuel assembly drop condition, describe in detail the assumptions, type of analysis, ductility ratios and allowable stresses used in the analysis to insure that the acceptance criteria for this case are satisfied. Provide, also, your basis for concluding that the leak tightness of the fuel pool is maintained.

11. Indicate whether tilting motion of the racks and rack modules under seismic effects (OBE and SSE) has been considered in the analysis. If so, provide the factor of safety under all loading combinations.

12. Provide sufficient details (disucssion and sketches) regarding the mathematical models used in the seismic analysis. Indicate how the shear forces in each module is calculated and discuss the effect of sliding on the response.

13. Indicate if this proposed modification conforms with the NRC position on fuel pool modifications entitled "OT Position for Review and Acceptance of Spent Fuel Storage and Handling Applications", issued on April 14, 1978, and later amended on January 18, 1979, copy enclosed.

14. Discuss the possibility of swelling in the cell containing the B_4C composite (inward and outward) due to offgasing generating internal pressure and discuss the provisions employed to prevent such swelling or the provision employed such that withdrawal of the fuel assembly is insured.