

BALTIMORE GAS AND ELECTRIC COMPANY

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May 20, 1980

ARTHUR E. LUNDVALL, JR.
VICE PRESIDENT
SUPPLY

Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attn: Mr. Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Subject: Calvert Cliffs Nuclear Power Plant
Units Nos. 1 & 2, Dockets Nos. 50-317 & 50-318
Spent Fuel Pool Modification

- References: a) BG&E letter dated 7/3/79 from J. W. Gore, Jr. to
H. R. Denton, Request for Amendment
b) BG&E letter dated 4/14/80 from A. E. Lundvall, Jr.
to R. W. Reid, same subject.

Gentlemen:

Reference (a) requested an amendment to allow increased spent fuel storage capacity at Calvert Cliffs. The following additional information has been requested by your Staff.

Radiation Exposure

In reference (b), Attachment 1, the response to question B.1 contains a math error. Rack removal is expected to result in a 2.7 man-rem exposure rather than the 0.27 man-rem stated. This yields a total of 9.93 man-rem for the complete modification.

Waste Handling

The racks currently in the spent fuel pool will be hydrolazed to remove gross contamination as they are removed from the pool. The racks will then be wrapped in plastic and crated for temporary storage. At a later date they will be electropolished to remove the surface layer of the rack steel. Because we do not anticipate that the racks will be irradiated, the electropolishing should remove all contamination. The racks could, therefore, be sold as scrap or buried in an ordinary landfill. The liquid runoff from the electropolishing process will be processed as normal liquid waste through ion exchangers.

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Structural Analysis

On page 6 of Attachment 2 to Reference (b) the second paragraph should read:

"It has, therefore, been concluded that neither the straight drop of the fuel assembly on top of the storage cell nor the straight drop of the fuel assembly through the storage cell with impact on top of the rack base structure will adversely affect the value of K_{eff} or the leaktight integrity of the pool."

The following additional questions were asked:

1.0 Question: What type of analysis was used to check the spent fuel pool structure?

Response: The spent fuel pool was analyzed using a 3-dimensional linear finite element model. Stresses were checked at critical sections at the pool wall and the pool floor. ACI 318 is the code used in the analysis.

2.0 Question: What type of loading combinations were used in the analysis of the pool structure?

Response: The loading combinations of the spent fuel pool conforms to FSAR TABLE 5-3, Section 5.6.1.2., combined with the loading due to overall temperature change and thermal gradient.

3.0 Question: What stress limits were used in the analysis of the pool structure?

Response: All stresses are limited to the stress limits established by Section 5A of the FSAR.

4.0 Question: What type of analysis was used to check the spent fuel pool liner adequacy?

Response: The pool liner was analyzed for the most critical loading cases, as determined by the rack analysis and design. The analysis consisted of checking the plate for bearing and tearing at each support leg and checking the concrete beneath the plate for local bearing.

5.0 Question: What type of loading combinations were used in the analysis of the liner plate?

Response: The most severe of the loading combinations resulting from analysis of the poison racks performed by Nuclear Energy Services, Inc. were used - the dead load plus live load and design basis earthquake.

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6.0 Question: What stress limits were used in the analysis of the pool liner?

Response: The following stress limits were used to check the liner plate:

Concrete Bearing: (2) $0.85 f'_c$ (Code allowable ACI 318)

Steel Plate:

Dead Load plus OBE 0.60 Fy (AISC Code allowable for tension)

Dead Load plus DBE, or accident case 1.33 (0.60) Fy

In addition, reference (b) requested that you consider the amendment change to be for 1830 fuel assemblies instead of the 1760 spaces we requested earlier. BG&E wishes to postpone the request to increase storage capacity from 1760 to 1830 spaces. Our schedule calls for the installation of 830 of these spaces in the summer of 1980 and the remainder in 1981 or 1982. We feel the prenotice which must accompany the request for additional space could impact our installation schedule for the first 830 spaces, and therefore, BG&E withdraws the request of the 1830 spent fuel storage spaces at this time. At a later time we will request an amendment to store 1830 spent fuel assemblies.

Very truly yours,



cc: J. A. Biddison, Esquire
G. F. Trowbridge, Esquire
Mr. E. L. Conner, Jr. - NRC