

# BALTIMORE GAS AND ELECTRIC COMPANY

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June 30, 1980

ARTHUR E. LUNDVALL, JR.  
VICE PRESIDENT  
SUPPLY

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

Attn: Mr. D. G. Eisenhut, Director  
Division of Licensing

Subject: Calvert Cliffs Nuclear Power Plant  
Units Nos. 1 & 2, Dockets Nos. 50-317 & 50-318  
Palisades Nuclear Power Plant, Docket No. 50-255  
Fort Calhoun Nuclear Power Plant, Docket No. 50-285  
Millstone Nuclear Power Plant Unit No. 2, Docket No. 50-336  
Asymmetric LOCA Loads Final Report

- References:
- a) NRC letter dated 1/25/78 from V. Stello, Jr. to All PWR Licensees, Asymmetric LOCA Loads.
  - b) NRC memorandum dated 11/20/79 from S. B. Hosford to D. G. Eisenhut, same subject.
  - c) BG&E letter dated 2/15/80 from A. E. Lundvall, Jr. to H. R. Denton, same subject.
  - d) OPPD Letter dated 6/30/80 from W. C. Jones to H. R. Denton, same subject.

Gentlemen:

In our effort to respond to the requirements of Reference (a), the Combustion Engineering Owners' Group (CEOG) comprised of Baltimore Gas and Electric, Consumers Power, Northeast Utilities and the Omaha Public Power District hereby submits ten (10) copies of Enclosure (1), the CEOG Final Report in response to Reference (b). One of these copies is being forwarded directly to your Mr. Steve Hosford for review.

Appendix A of this report, ten copies of which are enclosed is considered proprietary. Enclosure (2) is an affidavit from Combustion Engineering, Inc. requesting that the information contained in Appendix A of Enclosure (1) be withheld from public disclosure in accordance with 10 CFR 2.790. A non-proprietary version of Appendix A is included in the report.

This report presents, with additional detail, the evaluations submitted in Reference (c). In addition, the evaluation of fuel assemblies (including grid structures), reactor internals, control rod drives and the biological shield wall are presented.

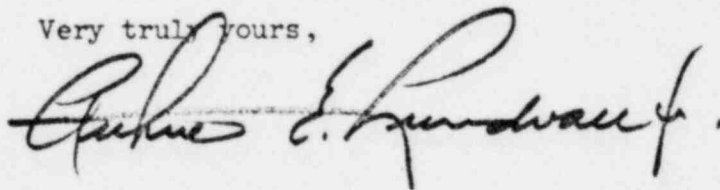
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The results of the analyses for Calvert Cliffs, Millstone, Fort Calhoun and Palisades demonstrate that the integrity and functionability of the reactor vessel, steam generator and reactor coolant pump supports, internals and ECCS piping. An evaluation of the generic plant fuel components shows that, except for grids in the outer row of fuel, all components, including grids in the internal bundles, can withstand calculated loads. In order to demonstrate the coolability of the outer fuel bundles for which grid load capability has been exceeded, a reduce channel ECCS analysis is being performed and results to date have demonstrated that a coolable geometry can be maintained with present operating conditions during the transient. Due to the recent work concerning this analysis, the full detail of the fuel analysis is not ready for submittal at this time. It is the intention of the CEOG to submit the detailed results of the ECCS analysis prior to August 1, 1980. The Palisades fuel loads were calculated to be less than the generic plant fuel loads and an evaluation of the Palisades fuel is currently being performed.

The capability of the biological shield walls for Calvert Cliffs and Millstone to withstand the applied loads has been demonstrated. The Palisades biological shield wall is currently being analyzed using detailed plant specific reaction loads for the reactor vessel supports and the primary coolant pump supports. For Fort Calhoun, it has been determined that the calculated loads exceed the design capability. An evaluation of the capability of the biological shield wall for Fort Calhoun leads us to conclude that adequacy of the wall could be demonstrated by state of the art analytical methods. We believe that such a complex analysis is unwarranted and instead propose to show, by fracture mechanics techniques, that the postulated pipe break is incredible and that the primary shield wall is capable of withstanding the largest credible pipe break predicted by those techniques. This approach and alternative solutions were presented to members of the NRC Staff in meetings held on May 7, 1980 and June 10, 1980. The schedule of fracture mechanics analysis which OPPD plans to pursue is presented in Reference (d). The plan for this analysis is presented in Appendix (d) of this report.

We believe that, on the basis of these results and the detailed results of the ECCS analysis to be forwarded, that continued operation of Calvert Cliffs Units 1 and 2, Fort Calhoun, Millstone Unit 2 and Palisades is justified.

Very truly yours,



cc: J. A. Biddison, Esquire  
G. F. Trowbridge, Esquire  
Messrs. E. L. Conner, Jr. - NRC  
P. W. Kruse - CE