

November 2, 1995

Mr. Robert E. Denton  
Vice President - Nuclear Energy  
Baltimore Gas and Electric Company  
Calvert Cliffs Nuclear Power Plant  
1650 Calvert Cliffs Parkway  
Lusby, MD 20657

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT  
REGARDING AN EXEMPTION FROM 10 CFR 50.44, 10 CFR 50.46, AND  
10 CFR PART 50, APPENDIX K FOR LEAD FUEL ASSEMBLIES CALVERT  
CLIFFS NUCLEAR POWER PLANT, UNIT NO. 1 (TAC NO. M93232)

Dear Mr. Denton:

Enclosed for your information is a copy of an "Environmental Assessment and Finding of No Significant Impact." This notice relates to Baltimore Gas and Electric Company's (BGE) letter dated July 13, 1995, in which BGE requested a temporary exemption from 10 CFR 50.44, 10 CFR 50.46, and 10 CFR Part 50, Appendix K to allow the use of lead fuel assemblies with advanced cladding materials.

Four lead fuel assemblies are scheduled to be inserted into the Unit 1 reactor core during the upcoming refueling outage and will remain in the core for Cycles 13, 14, and 15. The enclosed assessment relates to the requested temporary exemption.

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,

Original signed by:

Daniel G. McDonald, Jr., Senior Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-317

Enclosure: Environmental Assessment

cc w/encl: See next page

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

November 2, 1995

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Vice President - Nuclear Energy  
Baltimore Gas and Electric Company  
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Sincerely,

A handwritten signature in black ink, appearing to read "Daniel G. McDonald, Jr.", written in a cursive style.

Daniel G. McDonald, Jr., Senior Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-317

Enclosure: Environmental Assessment

cc w/encl: See next page

Mr. Robert E. Denton

Calvert Cliffs Nuclear Power Plant  
Unit No. 1

cc:

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UNITED STATES NUCLEAR REGULATORY COMMISSION  
BALTIMORE GAS AND ELECTRIC COMPANY  
DOCKET NO. 317  
CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 1  
ENVIRONMENTAL ASSESSMENT AND FINDING OF  
NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of a temporary exemption from the provisions of 10 CFR 50.44, 10 CFR 50.46, and Appendix K to 10 CFR Part 50 to Baltimore Gas and Electric Company (the licensee), for the Calvert Cliffs Nuclear Power Plant, Unit No. 1 (CC1), located in Calvert County, Maryland.

ENVIRONMENTAL ASSESSMENT

Identification of the Proposed Action:

This Environmental Assessment has been prepared to address potential environmental issues related to the licensee's application of July 13, 1995. The proposed action would allow the licensee to use four lead fuel assemblies with advanced cladding material, zirconium-based alloys, that do not meet the definition of Zircaloy or ZIRLO which are referred to in Title 10 of the Code of Federal Regulations. The lead fuel assemblies are scheduled to be loaded into the CC1 reactor core during the upcoming refueling outage and will remain in the core for Cycles 13, 14, and 15.

Enclosure

The Need for the Proposed Action:

The proposed temporary exemption from 10 CFR 50.44, 10 CFR 50.46, and Appendix K to 10 CFR Part 50 is needed because these regulations specifically refer to light-water reactors containing fuel consisting of uranium oxide pellets enclosed in zircaloy or ZIRLO tubes. A new zirconium-based alloy cladding has been developed, which is not the same chemical composition as zircaloy or ZIRLO, and the licensee wants to insert assemblies with the new cladding material into the CCI reactor core and test them during power operation.

Environmental Impacts of the Proposed Action:

With regard to potential radiological impacts to the general public, the proposed temporary exemption involves features located entirely within the restricted area as defined in 10 CFR Part 20. The lead fuel assemblies, with the zirconium-based alloy cladding, meet the same design basis as the Zircaloy-4 fuel which is currently in the CCI reactor core. No safety limits will be changed or setpoints altered as a result of using the lead fuel assemblies. The Updated Final Safety Analysis Report (UFSAR) analysis are bounding for the lead fuel assemblies as well as the remainder of the core. The mechanical properties and behavior of the lead fuel assemblies during postulated loss-of-coolant-accidents (LOCA) and non-LOCA transients and operational transients will be essentially the same. In addition, the four lead fuel assemblies represent a small portion of the total core and will be placed in non-limiting core locations which experience no more than 0.95 of the core power density during operation. The small number of lead fuel assemblies, in conjunction with the similarity of the chemical and material

characteristics with the existing fuel, ensures that hydrogen production will not be significantly different from previous assessments.

Therefore, the proposed temporary exemption, which would allow the operation of CC1 with four lead fuel assemblies in its reactor core, will not significantly affect the consequences of radiological accidents previously considered.

With regard to potential nonradiological impacts, the proposed action involves features located entirely within the restricted area as defined in 10 CFR Part 20. It does not affect nonradiological plant effluents and has no other environmental impact. Accordingly, the Commission concludes that there are no significant nonradiological environmental impacts associated with the proposed action.

Alternatives to the Proposed Action:

Since the Commission has concluded there is no measurable environmental impact associated with the proposed action, any alternatives with equal or greater environmental impact need not be evaluated. As an alternative to the proposed action, the NRC staff considered denial of the proposed action. Denial of the application would deny the licensee the operational flexibility to demonstrate any improved cladding material performance and would not reduce the environmental impacts.

Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in the Final Environmental Statement for CC1.

Agencies and Persons Consulted:

In accordance with its stated policy, on October 24, 1995, the staff consulted with the Maryland State official, Mr. Richard McLean of the Department of Natural Resources, regarding the environmental impact of the proposed action. The State official had no comments.

FINDING OF NO SIGNIFICANT IMPACT

Based upon the environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the Commission has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated July 13, 1995, which is available for public inspection at the Commission's Public Document Room, The Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Calvert County Library, Prince Frederick, Maryland 20678.

Dated at Rockville, Maryland, this 2nd day of November 1995.

FOR THE NUCLEAR REGULATORY COMMISSION



Ledyard B. Marsh, Director  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation