

February 2, 2001

Mr. Charles H. Cruse  
Vice President - Nuclear Energy  
Calvert Cliffs Nuclear Power Plant, Inc.  
Calvert Cliffs Nuclear Power Plant  
1650 Calvert Cliffs Parkway  
Lusby, MD 20657-4702

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2 -  
ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT  
IMPACT REGARDING EXEMPTION REQUESTS TO USE THE AMERICAN  
SOCIETY OF MECHANICAL ENGINEERS (ASME) CODE CASE N-640  
(TAC NOS. MB0001 AND MB0002)

Dear Mr. Cruse:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your September 14, 2000, application for an exemption from the requirements in 10 CFR Part 50, Appendix G, for generating the pressure-temperature (P-T) limit curves for Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2. The new P-T limits are proposed to be generated using the methodology in ASME Code Case N-640, "Alternate Reference Fracture Toughness for Development of P-T Limit Curves for ASME Section XI, Division I," instead of using the methodology in 10 CFR Part 50, Appendix G.

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

Sincerely,

*/RA/*

Donna Skay, Project Manager, Section I  
Project Directorate 1  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosures: Environmental Assessment

cc w/encls: See next page

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SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2 - ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT REGARDING EXEMPTION REQUESTS TO USE THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) CODE CASE N-640 (TAC NOS. MB0001 AND MB0002)

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UNITED STATES NUCLEAR REGULATORY COMMISSION  
CALVERT CLIFFS NUCLEAR POWER PLANT, INC.  
DOCKET NOS. 50-317 AND 50-318  
CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2  
ENVIRONMENTAL ASSESSMENT AND FINDING OF  
NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an exemption from certain requirements of Appendix G to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 50) for Renewed Facility Operating License Nos. DPR-53 and DPR-69, issued to Calvert Cliffs Nuclear Power Plant, Inc. (CCNPPI or the licensee) for operation of the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (CCNPP), located in Calvert County, Maryland.

ENVIRONMENTAL ASSESSMENT

Identification of the Proposed Action:

Appendix G to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 50) requires that pressure-temperature (P-T) limits be established for reactor pressure vessels (RPVs) during normal operating and hydrostatic or leak rate testing conditions. Specifically, 10 CFR Part 50, Appendix G, states, "The appropriate requirements on both the pressure-temperature limits and the minimum permissible temperature must be met for all conditions." Appendix G of 10 CFR Part 50 goes on to specify that the requirements for these limits are the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, Appendix G, limits.

The licensee requested in its submittal dated September 14, 2000, that the staff exempt CCNPP from the specific requirement of Appendix G to 10 CFR Part 50 that the P-T limits meet the safety margin requirements specified in the ASME Code, Section XI, Appendix G and instead use an alternate fracture toughness curve shown in the ASME Code, Section XI, Appendix A as permitted by ASME Code Case N-640. Code Case N-640 permits the use of an alternate reference fracture toughness ( $K_{IC}$  fracture toughness curve instead of  $K_{Ia}$  fracture toughness curve) for reactor vessel materials in determining the P-T limits. Since the  $K_{IC}$  fracture toughness curve shown in ASME Code, Section XI, Appendix A, Figure A-2200-1 (the  $K_{IC}$  fracture toughness curve) provides greater allowable fracture toughness than the corresponding  $K_{Ia}$  fracture toughness curve of ASME Code, Section XI, Appendix G, Figure G-2210-01, using Code Case N-640 for establishing the P-T limits would be less conservative than the methodology currently endorsed by 10 CFR Part 50, Appendix G, and therefore, an exemption to apply the Code Case would be required.

The proposed action is in accordance with the licensee's application for exemption dated September 14, 2000.

The Need for the Proposed Action:

Because the RCS P-T operating window is defined by the P-T operating and test limit curves developed in accordance with the ASME Code, Section XI, Appendix G, procedure, continued operation of CCNPP with the present P-T curves without the relief provided by ASME Code Case N-640 would unnecessarily require the RPVs to maintain a temperature exceeding 212 °F in a limited operating window during the pressure test. Consequently, steam vapor hazards would continue to be one of the safety concerns for personnel conducting inspections in primary containment. Implementation of the proposed P-T curves, as allowed by ASME Code Case N-640, does not significantly reduce the margin of safety and would eliminate steam

vapor hazards by allowing inspections in primary containment to be conducted at a lower coolant temperature.

10 CFR 50.60(b) allows proposed alternatives to the requirements of Appendix G to be used when an exemption is granted by the Commission under 10 CFR 50.12.

In the request for exemption to use Code Case N-640, the staff has determined that, pursuant to 10 CFR 50.12(a)(2)(ii), the underlying purpose of the regulation will continue to be served by the implementation of this Code Case.

Environmental Impacts of the Proposed Action:

The NRC has completed its evaluation of the proposed action and concludes that the exemption described above would provide an adequate margin of safety against brittle failure of the CCNPP RPVs.

The proposed action will not significantly increase the probability or consequences of accidents, no changes are being made in the types of any effluents that may be released offsite, and there is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential nonradiological environmental impacts, the proposed action does not involve any historic sites. It does not affect nonradiological plant effluents and has no other environmental impact. Therefore, there are no significant nonradiological impacts associated with the proposed action.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action.

Alternatives to the Proposed Action:

As an alternative to the proposed action, the staff considered denial of the proposed action (i.e., the “no-action” alternative). Denial of the application would result in no change in

current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in the Final Environmental Statement for the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2, dated April 1984.

Agencies and Persons Consulted:

In accordance with its stated policy, on January 31, 2001, the staff consulted with the Maryland State official, R. McLean of the Maryland Department of Natural Resources, regarding the environmental impact of the proposed action. The State official had no comments.

FINDINGS OF NO SIGNIFICANT IMPACT

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC 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 September 14, 2000, which is available for public inspection at the NRC Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the ADAMS Public Library component on the NRC Web site, <http://www.nrc.gov> (the Electronic Reading Room).

Dated at Rockville, Maryland, this 2<sup>nd</sup> day of February 2001.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Donna Skay, Project Manager, Section 1  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation