

April 12, 2006

Mr. James A. Spina, Vice President  
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 NO. 1 - APPROVAL OF  
EXTENSION REQUEST FOR COMPLETION OF CORRECTIVE ACTIONS IN  
RESPONSE TO GENERIC LETTER 2004-02 (TAC NO. MC4672)

Dear Mr. Spina:

In its letter dated March 3, 2005, as supplemented on July 15, 2005, Calvert Cliffs Nuclear Power Plant, Inc. (the licensee) provided its 90-day response to Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors," for Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (Calvert Cliffs 1 and 2). In GL 2004-02, the NRC indicated that the primary objective of its technical assessment of Generic Safety Issue (GSI) 191, "Assessment of Debris Accumulation on PWR Sump Performance," was to assess the likelihood that the emergency core cooling system and containment spray system pumps at domestic pressurized-water reactors would experience a debris-induced loss of net positive suction head (NPSH) margin during sump recirculation. The NRC also discussed the need to complete corrective actions, including any plant modifications, to address the concerns in GL 2004-02. In addition, the NRC staff stated that all actions should be initiated during the first refueling outage after April 1, 2006, and completed by December 31, 2007. If all corrective actions will not be completed by December 31, 2007, the licensee was to describe how the regulatory requirements would be met until the corrective actions were completed.

In its March 3, 2005, letter, the licensee stated that the information responding to GL 2004-02 contained its request for an extension of the completion date for the corrective actions at Calvert Cliffs 1 from December 31, 2007, to May 31, 2008. The licensee's rationale for the extension was the complexities involved in installing a "dual train self-cleaning strainer device designed by General Electric Company" (an active strainer whose functionality is largely independent of debris load). In an August 30, 2005, response to GL 2004-02, the licensee reiterated its request but changed the extension date to February 24, 2008. In Attachment 2 to the August 30 letter, as supplemented on November 29, 2005, and February 3, 2006, the licensee provided the following justifications for the extension request at Calvert Cliffs 1:

- A calculation concluding that only small fines of suspended fibrous insulation would be transported to the sump, with the suction flow stream off of the floor where the insulation debris will have settled due to a curb;
- Applicability of the leak-before-break principle to Calvert Cliffs 1;

- The existence of uncredited containment overpressure, leading to a clear screen NPSH of approximately 20 feet during a loss-of-coolant accident (LOCA) event;
- High standards of containment cleanliness at Calvert Cliffs 1; and
- NRC Bulletin 2003-01 operator training and actions (e.g., throttling or securing pumps).

The NRC notes the licensee's statement that the existing Calvert Cliffs 1 sump screen is of relatively large size at 229 sq. ft., and that, although Calvert Cliffs 1 uses trisodium phosphate as a containment pH buffer, the calcium silicate insulation material, with which the trisodium phosphate might react to form calcium phosphate precipitate, is actually outside of LOCA zones of influence. The licensee concluded that chemical precipitate would not form, and that the calcium silicate insulation would not be dislodged and therefore, could not transport to the sump screen.

The NRC has confidence that the licensee has a plan that will result in the installation of final GSI 191 modifications that provide acceptable strainer function with adequate margin for uncertainties. Further, the NRC has concluded that the licensee has put mitigation measures in place to adequately reduce risk for the requested short extension period, and it is, therefore, acceptable to extend the completion date for the corrective actions for the issues discussed in GL 2004-02 until the completion of the Calvert Cliffs 1 spring 2008 refueling outage, scheduled to begin by February 24, 2008. Should it elect to begin the outage more than 30 days after February 24, 2008, the licensee will need to provide the NRC additional justification for further delay in completing corrective actions for GL 2004-02.

If you have any questions, please contact me at 301-415-1457.

Sincerely,

*/RA/*

Patrick D. Milano, Senior Project Manager  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-317

cc: See next page

J. Spina

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- The existence of uncredited containment overpressure, leading to a clear screen NPSH of approximately 20 feet during a loss-of-coolant accident (LOCA) event;
- High standards of containment cleanliness at Calvert Cliffs 1; and
- NRC Bulletin 2003-01 operator training and actions (e.g., throttling or securing pumps).

The NRC notes the licensee's statement that the existing Calvert Cliffs 1 sump screen is of relatively large size at 229 sq. ft., and that, although Calvert Cliffs 1 uses trisodium phosphate as a containment pH buffer, the calcium silicate insulation material, with which the trisodium phosphate might react to form calcium phosphate precipitate, is actually outside of LOCA zones of influence. The licensee concluded that chemical precipitate would not form, and that the calcium silicate insulation would not be dislodged and therefore, could not transport to the sump screen.

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Patrick D. Milano, Senior Project Manager  
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cc: Plant service list

Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2

cc:

President  
Calvert County Board of  
Commissioners  
175 Main Street  
Prince Frederick, MD 20678

Ms. Patricia T. Birnie, Esquire  
Co-Director  
Maryland Safe Energy Coalition  
P.O. Box 33111  
Baltimore, MD 21218

Mr. Carey Fleming, Esquire  
Sr. Counsel - Nuclear Generation  
Constellation Generation Group, LLC  
750 East Pratt Street, 17<sup>th</sup> floor  
Baltimore, MD 21202

Mr. Roy Hickok  
NRC Technical Training Center  
5700 Brainerd Road  
Chattanooga, TN 37411-4017

Mr. Louis Larragoite  
Calvert Cliffs Nuclear Power Plant  
1650 Calvert Cliffs Parkway  
Lusby, MD 20657-4702

Resident Inspector  
U.S. Nuclear Regulatory Commission  
P.O. Box 287  
St. Leonard, MD 20685

Mr. R. I. McLean, Manager  
Nuclear Programs  
Power Plant Research Program  
Maryland Department of Natural Resources  
580 Taylor Avenue (B wing, 3rd floor)  
Tawes State Office Building  
Annapolis, MD 21401

Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Ms. Kristen A. Burger, Esquire  
Maryland People's Counsel  
6 St. Paul Centre  
Suite 2102  
Baltimore, MD 21202-1631