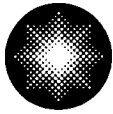


James A. Spina  
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**Constellation Energy**  
Generation Group

February 3, 2006

U. S. Nuclear Regulatory Commission  
Washington, DC 20555

**ATTENTION:** Document Control Desk

**SUBJECT:** Calvert Cliffs Nuclear Power Plant  
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318  
Supplemental Information Related to Response to NRC Generic Letter 2004-02

**REFERENCE:** (a) Letter from Mr. G. Vanderheyden (CCNPP) to Document Control Desk (NRC), dated August 30, 2005, Response to NRC Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized Water Reactors"

The purpose of this letter is to provide supplemental information for our August 30, 2005 response to Generic Letter 2004-02 (Reference a). This supplemental information addresses issues raised by the Nuclear Regulatory Commission (NRC) Staff during a phone call on January 12, 2006. Specifically, we are clarifying and resubmitting Item 3 of Attachment 2 to Reference (a) concerning containment overpressure. Below is the requested information.

3. Additional NPSH Available

Calculations are performed in accordance with NRC Safety Guide 1 ("Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal System Pumps, November 2, 1970") to determine the adequacy of the net positive suction head (NPSH) available to the ECCS pumps. These calculations do not credit containment backpressure or the vapor pressure of the sump water in calculating the NPSH. These analyses show that the margin between the available NPSH and that required to prevent pump cavitation is less than 2 feet. This calculation also assumes that the sump screen remains clear.

For purposes of evaluating the Generic Letter 2004-02 extension request, a best estimate evaluation was done. Two cases are presented, the start of containment sump recirculation and a later case. These cases look at the more realistic NPSH available to the ECCS pumps based on containment pressure and the vapor pressure of the sump water.

At the start of containment sump recirculation, the containment pressure will be at least 5 psi above atmospheric pressure and the sump temperature will be approximately 190°F (assumes all required ECCS pumps running for maximum debris transport). When the containment backpressure and the

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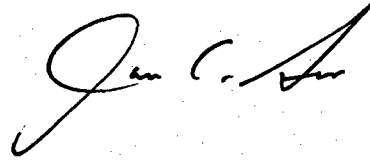
difference between atmospheric pressure and the vapor pressure of the sump water (at 190°F) are converted to feet of head using Bernoulli's theorem, an additional 24 feet of available NPSH results. The total NPSH under these conditions is 26 (24+2) feet.

As the event progresses, containment pressure will gradually lower. At some time prior to the containment pressure reaching atmospheric pressure, the containment sump temperature will be less than 170°F. When the difference between atmospheric pressure and the vapor pressure of the sump water (at 170°F) is converted to feet of head using Bernoulli's theorem, 20 feet of additional available NPSH results. The total NPSH under these conditions is 22 (20+2) feet. At atmospheric pressure the containment backpressure does not contribute to the NPSH.

The evaluations above assume that the sump screen is either submerged, or if not completely submerged, that the debris accumulation on the screen is not sufficient to cause the flow through the screen to be less than the flow requirements of the ECCS pumps. Additionally, if realistic assumptions are used in the evaluation, it can be shown that the sump screen would be completely submerged. Item 1 addresses insulation debris accumulation and shows that it is not sufficient to affect the ECCS pumps. Also, note that without insulation buildup on the sump screen, any chemical precipitants which might form will not have a fiber bed to get caught in. Therefore, we believe that any chemical precipitant present will also pass through the sump screen.

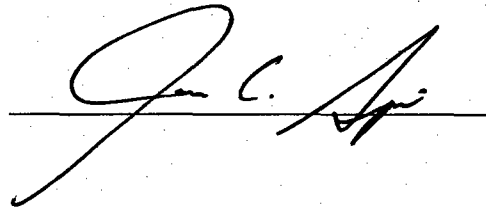
Should you have questions regarding this matter, please contact Mr. L. S. Larragoite at (410) 495-4922.

Very truly yours,



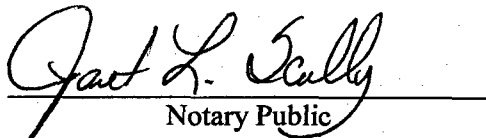
STATE OF MARYLAND :  
                                  : TO WIT:  
COUNTY OF CALVERT :

I, James A. Spina, being duly sworn, state that I am Vice President - Calvert Cliffs Nuclear Power Plant, Inc. (CCNPP), and that I am duly authorized to execute and file this response on behalf of CCNPP. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other CCNPP employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.



Subscribed and sworn before me, a Notary Public in and for the State of Maryland and County of St. Mary's, this 3<sup>RD</sup> day of February, 2006.

**WITNESS** my Hand and Notarial Seal:



Notary Public

My Commission Expires:

March 25, 2007  
Date

JAS/PSF/bjd

cc: P. D. Milano, NRC  
S. J. Collins, NRC

Resident Inspector, NRC  
R. I. McLean, DNR