



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

June 7, 2010

**LICENSEE:** Calvert Cliffs Nuclear Power Plant, LLC

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

**SUBJECT:** SUMMARY OF MAY 24, 2010, MEETING WITH CALVERT CLIFFS NUCLEAR POWER PLANT, LLC TO DISCUSS SUPPLEMENTAL RESPONSES TO GENERIC LETTER 2004-02, "POTENTIAL IMPACT OF DEBRIS BLOCKAGE ON EMERGENCY RECIRCULATION DURING DESIGN BASIS ACCIDENTS AT PRESSURIZED WATER REACTORS" (TAC NOS. MC4672 AND MC4673)

On May 24, 2010, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Calvert Cliffs Nuclear Power Plant, LLC (the licensee) and their contractors. The meeting was held via a toll-free audio telephone conference call that was available to interested members of the public. [See the Meeting Notice dated May 6, 2010 (Agencywide Document Access Management System (ADAMS) Accession No. ML101190384).] The purpose of the meeting was to discuss remaining issues identified during NRC staff review of the Calvert Cliffs Nuclear Power Plant Generic Letter (GL) 2004-02 Supplemental Responses. A list of attendees is provided in the enclosure.

The NRC staff issued a Request for Additional Information (RAI) regarding GL 2004-02 to the licensee on April 12, 2010 (ADAMS Accession No. ML100950078). The letter requested the licensee to be prepared to discuss their proposed responses with the staff prior to formal submittal. The licensee provided draft responses and the staff discussed each proposed response in detail with the licensee and their contractor. The following summarizes the discussion of each proposed response:

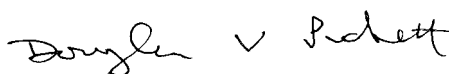
- RAI 1 – 9 The NRC staff concludes that the draft responses to questions 1 through 9 are acceptable as is and do not require further modifications.
- RAI 10 The NRC staff questioned the debris size distribution for Nukon and Thermal Wrap insulation systems. The licensee stated that its response will remain consistent with the safety evaluation for NEI-04-07, "Pressurized Water Reactor Sump Performance Evaluation Methodology," and will consider the impact on its test protocol.
- RAI 11 The licensee previously used a zone of influence (ZOI) of 9.8 pipe diameters (D) for Marinite board. As discussed in the draft response, the licensee will use a ZOI of 17.0D for Marinite board in future testing and analyses. The licensee's response should identify the "before" and "after" Marinite debris quantities when changing from 9.8D to 17.0D. With this change, the response will be acceptable.
- RAI 12 The NRC staff concludes that the draft response to question 12 is acceptable as is and does not require further modification.

- RAI 13 This was a multi-part question focusing on the single failure of a low-pressure safety injection (LPSI) pump to trip at the time of switchover from the injection phase to the recirculation phase of the postulated accident.
- RAI 13.a The licensee's response should state that if procedure changes to manually trip the LPSI pump are not made, debris addition will be made at the higher flowrate.
- RAI 13.b The NRC staff concludes that the draft response to question 13.b is acceptable as is and does not require further modification.
- RAI 13.c The licensee will provide containment basement drawings showing the sump and physical obstructions to flow. The licensee will re-evaluate their draft response to provide better support for coating transport assumptions.
- RAI 13.d The NRC staff concludes that the draft response to question 13.d is acceptable as is and does not require further modification.
- RAI 13.e The licensee's draft response stated that they evaluated the net positive suction head margin, assuming a LPSI pump failed to stop operating, in a conservative manner. The licensee's response should provide further discussion explaining the conservatisms. Specifically, the response should (1) discuss why the friction losses in Table 13-1 are considered conservative and (2) state that the pump flow rates in Table 13-1 are provided at run-out conditions. With these changes, the response will be acceptable.
- RAI 14 The licensee's response stated that coating chips were not observed to transport towards the sump. The licensee should provide containment drawings indicating the flow paths to the sump and consider providing the computational fluid dynamics results and describe the coating types. Since the NRC staff expects non-zero coatings transport, holistic arguments about why the coatings would not have a major impact on the head loss would be helpful.
- RAI 15-20 The NRC staff concludes that the draft responses to questions 15 through 20 are acceptable as is and do not require further modifications.
- RAI 21 With regard to the sump level calculations, the NRC staff asked what assumptions were made with respect to water droplets in transition from containment sprays, water holdups on vertical and horizontal surfaces, and water shrinkage due to cooling. The licensee's response should describe the modifications that will increase the containment sump level. The licensee should also state that a small break at the top of the pressurizer is not a limiting break or would not result in a significant head loss.
- RAI 22 The NRC staff concludes that the draft response to question 22 is acceptable as is and does not require further modification.

The licensee agreed to provide revised responses to RAI questions 13.c and 14 by June 4, 2010. The NRC staff agreed to review these revised responses and provide feedback to the licensee by June 11, 2010. Finally, the licensee agreed that, by the end of June 2010, they will provide their schedule for submitting final responses to all RAIs.

Members of the public were not in attendance. Therefore, Public Meeting Feedback forms were not received.

Please contact me at 301-415-1364 regarding any questions.



Douglas V. Pickett, Senior Project Manager  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosure:  
List of Attendees

cc w/encl: Distribution via Listserv

LIST OF ATTENDEES

MAY 24, 2010, MEETING WITH CALVERT CLIFFS NUCLEAR POWER PLANT, LLC

SUPPLEMENTAL RESPONSES TO GENERIC LETTER 2004-02

Calvert Cliffs Nuclear Power Plant, LLC

Pat Furio  
Mike Gahan  
Larry Smith  
Andre Drake  
Doug Lauver  
John Swalles

ALION

Crag Sellers

MPR Associates

Steve Kinsey

Washington Consulting

Steve Unikewicz

Maryland Department of Natural Resources

Susan Gray

Nuclear Regulatory Commission

Mike Scott  
John Lehning  
Steve Smith  
Matt Yoder  
Doug Pickett

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