



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

January 29, 2014

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

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

**SUBJECT:** SUMMARY OF NOVEMBER 13, 2013, MEETING WITH CONSTELLATION ENERGY GROUP, INC., TO CONTINUE DISCUSSIONS ON THE PROPOSED RISK-INFORMED APPROACH TO THE RESOLUTION OF GENERIC LETTER 2004-02, "POTENTIAL IMPACT OF DEBRIS BLOCKAGE ON EMERGENCY RECIRCULATION DURING DESIGN BASIS ACCIDENTS AT PRESSURIZED-WATER REACTORS" WITH A FOCUS ON ONGOING CHEMICAL EFFECTS TESTING AND EARLY RESULTS (TAC NOS. MC4672 AND MC4673)

On November 13, 2013, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Constellation Energy Group, Inc., the licensee, at NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to discuss the licensee's proposed risk-informed approach to the resolution of Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors" with a focus on ongoing chemical effects testing and early results for Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2. The meeting notice and agenda, dated November 1, 2013, is available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML13304B403. A list of attendees is provided in the Enclosure, but may not be all inclusive.

The licensee discussed (1) preliminary autoclave test results; (2) chemical effects phenomena identification and ranking table issues; (3) chemical effects testing: Alkyd Autoclave Test Plan – CCNPP-CHLE-007, Zinc Consideration – CCNPP-CHLE-008, Marinite Consideration – CCNPP-CHLE-009, and Integrated Chemical Effects Head Loss Loop Design; (4) Small-Scale Bypass Test Plan–CCNPP-BPPlan-002; and (5) future periodic meetings. (See ADAMS Accession No. ML13319A939).

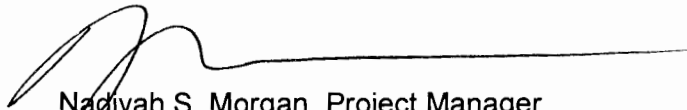
- The licensee clarified to the staff that the objective of the meeting is to obtain a common understanding on the test parameters for the chemical effects testing. The staff suggested to the licensee that the determination on whether test results are successful should be based on clearly defined acceptance criteria.
- Slide 5: The licensee noted that the preliminary test results from "CCNPP-CHLE-006 – Metals" testing showed high concentrations of calcium and zinc at levels of approximately 20 parts per million (ppm) and 6 ppm, respectively. The licensee stated that it is re-evaluating how it will scale Marinite insulation and inorganic zinc (IOZ) coatings to produce more realistic amounts of debris in the tests. The licensee indicated that the "CCNPP-CHLE-006 – Metals" testing is mainly being conducted to determine what metals to include or exclude from large scale testing. The licensee stated that the primary focus of the

"CCNP-CHLE-005 – High Temperature" test is to compare test data from tests that are initiated at 286 °F with data from testing initiated at 195 °F. The intent is to determine if testing using a lower temperature profile, potentially over a longer time period, can adequately simulate the dissolution of materials that would occur at the plant's limiting temperature profile.

- Slide 7: The licensee noted that during preparation of the alkyd coating coupons, application of the primer coating on the stainless steel coupon was challenging.
- Slide 8: The licensee clarified that plates of zinc will be used to simulate unqualified IOZ coatings located in the zone of influence during accident conditions. It was further stated that stainless steel coupons coated with IOZ will simulate degraded qualified IOZ coating.
- Slide 9: The licensee indicated that it is removing excessive conservatism from the calculation of Marinite surface area by using more realistic particle diameters. The licensee stated that this change will reduce the amount of Marinite by approximately 95 percent from the initial screening test.
- The licensee stated that it plans to begin preliminary large scale testing in early 2014 at the Alden Labs. The licensee expressed interest in meeting with NRC staff during the December-January time frame to discuss results of further testing.
- The licensee procedure for performing sensitivity testing for fiber bypassing the sump strainer was discussed. The licensee provided an updated procedure for the NRC staff review. The procedure is for small-scale testing and will be used to direct sensitivity testing for water temperature, water chemistry, and debris mix. A larger facility is planned to be used to determine sensitivity to flow velocity and debris quantity/concentration. The NRC staff stated that debris preparation and introduction should be controlled to ensure that realistic fibrous debris reaches the strainer during testing.

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

Please direct any inquiries to me at 301-415-1016, or [Nadiyah.Morgan@nrc.gov](mailto:Nadiyah.Morgan@nrc.gov).



Nadiyah S. Morgan, 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

NOVEMBER 13, 2013, MEETING WITH CONSTELLATION ENERGY GROUP, INC.

ONGOING CHEMICAL EFFECTS TESTING IN RISK-INFORMED GL 2004-02 RESOLUTION

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2

NAME	ORGANIZATION
Nadiyah Morgan	NRC
Paul Klein	NRC
Matt Yoder	NRC
Stephen Smith	NRC
Aloysius Obodoako	NRC
Gloria Kulesa	NRC
John Swailes	Work Management Inc.
Craig Sellers	Enercon Services, Inc.
Ken Greene	CENG
Josh Wargo	MPR Associates, Inc.
Tom Konerth	CENG
Steve Kinsey	MPR Associates, Inc.
Bob Peterson	Sargent & Lundy, LLC
Blake Stair	Enercon Services, Inc.
Kip Walker	Enercon Services, Inc.
Dave Blanchard	AREI
Jon Cavallo	Underwater Engineering Services, Inc.
Maurice Dingler	Wolf Creek Nuclear Operating Corporation
Tim Sande	Enercon Services, Inc.
Arianna Plont	Enercon Services, Inc.

Enclosure

"CCNP-CHLE-005 – High Temperature" test is to compare test data from tests that are initiated at 286 °F with data from testing initiated at 195 °F. The intent is to determine if testing using a lower temperature profile, potentially over a longer time period, can adequately simulate the dissolution of materials that would occur at the plant's limiting temperature profile.

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/ra/

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Plant Licensing Branch I-1  
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DATE	1/15/2014	1/15/2014	1/27/2014	1/29 /2014	1/29 /2014

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