

June 16, 2011

AEP-NRC-2011-35
10 CFR 50.90

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

SUBJECT: Donald C. Cook Nuclear Plant Unit 2
Docket No. 50-316
Errors in Containment Backpressure Calculation in Large Break Loss-of-Coolant
Accident Analysis

- References:
- 1) Letter from L. J. Weber, Indiana Michigan Power Company (I&M), to U. S. Nuclear Regulatory Commission (NRC) Document Control Desk, "Donald C. Cook Nuclear Plant Unit 2, Docket No. 50-316, License Amendment Request Regarding Large Break Loss-of-Coolant Accident Analysis Methodology," AEP-NRC-2009-23, dated March 19, 2009 (ADAMS Accession No. ML090930453).
 - 2) Letter from J. P. Gebbie, I&M, to NRC Document Control Desk, "Donald C. Cook Nuclear Plant Unit 2, Docket No. 50-316, Response to Second Request for Additional Information Regarding a License Amendment Request Associated With the Large-Break Loss-of-Coolant Accident Analysis Methodology (TAC No. ME1017)," AEP-NRC-2011-15, dated February 24, 2011 (ADAMS Accession No. ML110680210).
 - 3) Letter from P. S. Tam, NRC, to L. J. Weber, I&M, "Donald C. Cook Nuclear Plant, Unit 2 (CNP-2) — Issuance of Amendment to Adopt a New Large-Break Loss-Of-Coolant Accident Analysis (TAC No. ME1017)," dated March 31, 2011 (ADAMS Accession No. ML110730783).

This letter provides a description of Indiana Michigan Power Company's (I&M's) current plans for addressing two errors in the containment backpressure calculation that is part of an NRC approved large break loss-of-coolant accident analysis for Donald C. Cook Nuclear Plant (CNP) Unit 2.

By Reference 1, I&M requested U. S. Nuclear Regulatory Commission (NRC) approval of a license amendment to adopt a new analysis of a large break loss-of-coolant accident and associated Technical Specification changes for CNP Unit 2. Reference 2 provided I&M's response to an NRC request for additional information (RAI) regarding the proposed amendment. In Enclosure 9 to Reference 2, I&M informed the NRC of two errors that had been identified in the calculation used to determine a containment backpressure boundary condition for the computer program used to calculate the peak cladding temperature (PCT). I&M stated that it would provide the NRC a description of the resolution of these two errors within 90 days of the date of the letter. I&M also

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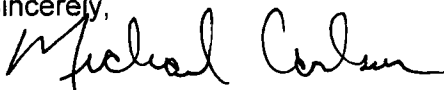
stated that it would inform the NRC Licensing Project Manager if there were significant changes to that schedule. By Reference 3, the NRC issued the amendment requested by Reference 1. On May 25, 2011, and June 3, 2011, I&M verbally informed the NRC Licensing Project Manager of changes in its schedule for providing the description of plans for resolving the errors identified in Reference 2. A description of the errors and I&M's plan for their resolution is provided below.

The new Unit 2 large break loss-of-coolant accident analysis was performed using a plant-specific adaptation of the NRC-approved methodology set forth in Westinghouse Topical Report WCAP-16009-P-A, "Realistic Large Break LOCA Evaluation Methodology Using the Automated Statistical Treatment of Uncertainty Method (ASTRUM)." The ASTRUM evaluation model utilizes the LOTIC2 computer code to determine a containment backpressure boundary condition for the WCOBRA/TRAC computer program used to calculate the PCT. As described in Reference 2, two errors were identified in the LOTIC2 calculation. The first error involved failure to include, in the containment backpressure calculation, the effects of the injected Emergency Core Cooling System (ECCS) mass and energy that spill from the Reactor Coolant System pipe break. Accounting for the addition of the relatively cooler ECCS water to the containment would cause the LOTIC2 predicted containment backpressure to decrease below that assumed in the WCOBRA/TRAC calculations. The second error involved use of an incorrect, non-conservative, energy conversion factor for mass and energy releases into containment.

To provide the analytical margin needed to offset the impact of these two errors, the minimum containment spray temperature assumed in the LOTIC2 calculation has been revised. With this revised assumption, the LOTIC2 calculated containment backpressure adequately bounds the containment backpressure that was input to the ASTRUM evaluation model, while accounting for both the above identified errors. I&M plans to support the revised containment spray temperature assumption by changing the procedures that govern operation and testing of the Essential Service Water (ESW) system which provides cooling water to the Containment Spray System (CTS) heat exchanger. I&M plans to implement these changes prior to implementation of the amendment approved by Reference 3. Reference 3 requires that the amendment be implemented within 90 days of issuance, i.e. no later than June 29, 2011.

The enclosure to this letter provides an Affirmation regarding this information. Copies of this letter and its enclosure are being transmitted to the Michigan Public Service Commission and the Michigan Department of Environmental Quality, in accordance with the requirements of 10 CFR 50.91. This letter contains no new or modified regulatory commitments. Should you have any questions, please contact Mr. Michael K. Scarpello, Regulatory Affairs Manager, at (269) 466-2649.

Sincerely,



Michael H. Carlson
Vice President, Site Support Services

JRW/jen

Enclosure: Affirmation

c: J. T. King, MPSC
S. M. Krawec, AEP Ft. Wayne, w/o enclosure
MDEQ – WHMD/RPS
NRC Resident Inspector
M. A. Satorius, NRC Region III
P. S. Tam, NRC, Washington DC

AFFIRMATION

I, Michael H. Carlson, being duly sworn, state that I am Vice President, Site Support Services, of Indiana Michigan Power Company (I&M), that I am authorized to sign and file this request with the Nuclear Regulatory Commission on behalf of I&M, and that the statements made and the matters set forth herein pertaining to I&M are true and correct to the best of my knowledge, information, and belief.

Indiana Michigan Power Company



Michael H. Carlson
Vice President, Site Support Services

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 16 DAY OF June, 2011



Notary Public

My Commission Expires 6/10/2013