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December 7, 2009

AEP-NRC-2009-80
10 CFR 50.54(f)

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

Subject: Donald C. Cook Nuclear Plant Units 1 and 2
Docket No. 50-315 and 50-316
Response to Request for Additional Information Regarding Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems" (TAC Nos. MD7817 and MD7818)

References:
1. Letter from L. J. Weber, Indiana Michigan Power Company (I&M), to Nuclear Regulatory Commission (NRC) Document Control Desk, "Donald C. Cook Nuclear Plant, Units 1 and 2, Docket Nos. 50-315, and 50-316, Nine-Month Response to NRC Generic Letter 2008-01," dated October 14, 2008 (ADAMS Accession No. ML082950467).
2. Letter from R. A. Hruby, I&M, to NRC Document Control Desk, "Donald C. Cook Nuclear Plant, Units 1 and 2, Docket Nos. 50-315, and 50-316, Nine-Month Supplemental (Unit 2 Post Outage) Response to Generic Letter 2008-01," dated July 24, 2009 (ADAMS Accession No. ML092170084).
3. Letter from T. A. Beltz, NRC, to J. N. Jensen, I&M, "Donald C. Cook Nuclear Plant, Units 1 and 2 – Requests for Additional Information Regarding Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems" (TAC Nos. MD7817 and MD7818), dated October 23, 2009 (ADAMS Accession No. ML092890051).

Dear Sir or Madam:

In References 1 and 2, Indiana Michigan Power Company (I&M) provided responses to Nuclear Regulatory Commission (NRC) Generic Letter 2008-01 for Donald C. Cook Nuclear Plant, Units 1 and 2. Reference 3 transmitted an NRC request for additional information (RAI) regarding the provided responses.

Enclosure 1 provides an affirmation statement pertaining to this letter. Enclosure 2 provides I&M's response to the RAI.

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There are no new or revised commitments in this letter. Should you have any questions, please contact Mr. James M. Petro, Jr., Regulatory Affairs Manager, at (269) 466-2489.

Sincerely,

Lawrence J. Weber
Site Vice President

RSP/jen

Enclosures:

1. Affirmation
2. Response to Request for Additional Information Regarding Generic Letter 2008-01, Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems

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

**AFFIRMATION**

I, Lawrence J. Weber, being duly sworn, state that I am Site Vice President 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

Lawrence J. Weber
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME
THIS 7th DAY OF December, 2009

Notary Public

My Commission Expires 11-5-2011

Enclosure 2 to AEP-NRC-2009-80

Response to Request for Additional Information Regarding Generic Letter 2008-01, Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems

In References 1 and 2, Indiana Michigan Power Company (I&M) provided responses to Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2008-01 for Donald C. Cook Nuclear Plant (CNP), Units 1 and 2. Reference 3 transmitted an NRC request for additional information (RAI) regarding the GL 2008-01 information provided in References 1 and 2. The requested additional information is provided below.

**NRC RAI 1**

*In Reference 4 [Reference 1 in this letter], the licensee states that "CNP (Donald C. Cook Nuclear Plant) procedures and operating practices provide reasonable assurance that the volume of gas in the pump suction piping for the various systems is limited such that pump gas ingestion is within the above PWROG (Pressurized-Water Reactor Owners Group) program established interim criteria."*

*Please clarify the procedures and design features, and discuss how they are used to determine gas volume. Compare the PWROG interim criteria to Reference 6 [Reference 4 in this letter] and justify the differences.*

**I&M Response to NRC RAI 1**

Plant procedures establish system configuration such that systems are maintained filled with water; no identifiable void is acceptable. The CNP Gas Accumulation Condition Monitoring Program (GACM) identifies the administrative requirements for the GACM in the Emergency Core Cooling System (ECCS), Decay Heat Removal (DHR) System, and Containment Spray System (CTS). The purpose of the GACM is to ensure that these fluid systems, which could be susceptible to gas accumulation, are maintained in a state within their design basis and capable of performing their intended safety function. If a void is identified, the condition is entered into CNP's corrective action program for evaluation and actions are identified to correct the condition. CNP's corrective action program is used to evaluate any potential impact to operability of a deviation from the filled condition. CNP's GACM uses the PWROG interim criteria for determining system operability. There is no threshold set on void size for entry into CNP's corrective action program.

I&M acknowledges there are differences between the PWROG interim criteria and the draft NRC criteria identified in Reference 4. CNP has participated in the Nuclear Energy Institute (NEI) Gas Accumulation Team and the respective PWROG activities focused on developing suitable guidance for licensees in the evaluation of voids in the piping systems of our plants. These groups have engaged recognized industry experts, and Nuclear Steam Supply System (NSSS) vendors to determine the most appropriate criteria applicable to current reactor designs. The assessment of voids on the suction side, through the pump, on the discharge, and the effects on downstream piping and the reactor has been considered for the ECCS, DHR System, and CTS. The PWROG

interim criteria are documented in eight reports generated to support this effort. All of these reports have been made available to the NRC staff for their information. The PWROG interim criteria were the criteria that formed the basis of CNP's response.

In order to summarize and focus these industry efforts, NEI issued Reference 5 on May 18, 2009. Reference 5 and its enclosure reference these industry reports and provide insight on their application to evaluation of operability. I&M continues to monitor industry efforts in this area to develop new or revised acceptance criteria. Prior to application of new or revised criteria, an evaluation shall be performed. Upon performing such an evaluation, I&M will apply new or revised acceptance criteria as appropriate.

As described in the response to NRC RAI 2, the design features are used to locate the most susceptible piping.

**NRC RAI 2**

*In Reference 4 [Reference 1 in this letter], the licensee stated that "to ensure continued operability, piping segments connected to the safety injection (SI) and coolant charging pump (CCP) suction headers most susceptible to gas accumulation are examined via ultrasonic testing (UT) at six month intervals to identify any voids."*

*Please clarify the criteria used to locate the piping that is "most susceptible" to gas accumulation.*

**I&M Response to NRC RAI 2**

The criteria used to locate the piping that is "most susceptible" to gas accumulation is as follows:

- CNP SI and CCP system design – highest elevation in a piping section based on system walkdowns and isometric drawings;
- CNP SI and CCP system interface with RHR – piping with only one isolation valve separating each of the SI and CCP suction headers from the Residual Heat Removal system known to transport fluids containing non-condensable gases in solution during a refueling outage.

Gas intrusion into the SI and CCP suction header piping sections will migrate to the highest points, thus making these locations the "most susceptible" to gas accumulation.

REFERENCES

1. Letter from L. J. Weber, Indiana Michigan Power Company (I&M), to Nuclear Regulatory Commission (NRC) Document Control Desk, "Donald C. Cook Nuclear Plant, Units 1 and 2, Docket Nos. 50-315, and 50-316, Nine-Month Response to NRC Generic Letter 2008-01," dated October 14, 2008 (ADAMS Accession No. ML082950467).

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3. Letter from T. A. Beltz, NRC, to J. N. Jensen, I&M, "Donald C. Cook Nuclear Plant, Units 1 and 2 – Requests for Additional Information Regarding Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems" (TAC Nos. MD7817 and MD7818), dated October 23 2009 (ADAMS Accession No. ML092890051).

4. Memoranda from M. C. Lyon, NRC, "Revision 2 to NRC Staff Criteria for Gas Movement in Suction Lines and Pump Response to Gas," dated March 26, 2009 – Marked DRAFT (ADAMS Accession No. ML090900136).

5. Letter from J. H. Riley, Nuclear Energy Institute, to Administrative Points of Contact, "Generic Letter (GL) 2008-01, 'Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems' – Evaluation of Unexpected Voids or Gas Identified in Plant ECCS and Other Systems," dated May 18, 2009.