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AEP:NRC:6055-18

Docket Nos.: 50-315  
50-316

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Stop O-P1-17  
Washington, DC 20555-0001

Donald C. Cook Nuclear Plant Units 1 and 2

REVISED REQUEST TO USE A SUBSEQUENT EDITION OF  
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) CODE FOR  
INSERVICE INSPECTION REQUIREMENTS IN ACCORDANCE WITH  
10 CFR 50.55a(g)(4)(iv)

- References:
1. U. S. Nuclear Regulatory Commission (NRC) Regulatory Issue Summary 2004-16, "Use of Later Editions and Addenda to the ASME Code Section XI for Repair/Replacement Activities," dated October 19, 2004, ADAMS Accession No. ML042590067.
  2. Letter from J. N. Jensen, Indiana Michigan Power Company (I&M), to U. S. NRC Document Control Desk, "Request to Use a Subsequent Edition of the American Society of Mechanical Engineers (ASME) Code for Inservice Inspection Requirements in Accordance with 10 CFR 50.55a(g)(4)(iv)," dated August 23, 2006, AEP:NRC:6055-14, ADAMS Accession No. ML062430325.
  3. Letter from M. C. Murphy, NRC, to M. K. Nazar, I&M, "Donald C. Cook Nuclear Plant, Units 1 and 2 (DCCNP-1 and DCCNP-2) - Use of a Subsequent Edition of American Society of Mechanical Engineers (ASME) Code for Inservice Inspection Requirements (TAC Nos. MD2885 and MD2886)," dated September 20, 2006, ADAMS Accession No. ML062480470.

Pursuant to 10 CFR 50.55a(g)(4)(iv), and consistent with Regulatory Issue Summary 2004-16 (Reference 1), Indiana Michigan Power Company (I&M) is submitting a revised request for approval to use an edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code which is subsequent to that required by 10 CFR 50.55a(g)(4)(ii).

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I&M previously requested (Reference 2), and received (Reference 3), Nuclear Regulatory Commission (NRC) approval to use ASME Code Section XI, 2001 Edition, no Addenda, Paragraphs IWA-4461.3, "P-Nos. 8 and 43 Materials," IWA-4461.4, "Alternatives to Mechanical Processing," and IWA-4461.4.1, "Qualification of Thermal Metal Removal Process." The 2001 Edition of ASME Code Section XI is subsequent to that required by 10 CFR 50.55a(g)(4)(ii). The subsequent ASME Code edition is being used at Donald C. Cook Nuclear Plant Unit 1 and Unit 2 for plant modifications to remove the existing resistance temperature detectors (RTDs) and associated reactor coolant loop bypass piping, and install thermowell-mounted RTDs located in the reactor coolant loop piping. Since the reactor vessel level indication system (RVLIS) and the mid-loop level indication system connect to the RTD bypass piping that is being removed, the modification includes creation of new piping connections to the reactor coolant loop piping for these level indication systems. The "ASME Code Component(s) Affected" section of Reference 2 included the "new 3/4-inch diameter piping nozzles" planned for these connections. This was reflected in the NRC approval transmitted by Reference 3.

However, I&M has determined that a design change will be necessary to increase the diameter of the pipe which will connect the mid-loop level indication system to the reactor coolant loop. Since the thermal metal removal process, which is the subject of the proposed subsequent ASME Code edition, may be used on various diameter pipe connections, I&M has revised the request such that it will apply to any small-bore (nominal 2-inch diameter or less) piping. The change does not affect any other aspect of the use of the subsequent ASME Code, and the basis for use of the subsequent ASME Code will remain valid.

I&M is therefore submitting a revised request for approval to use an edition of ASME Code which is subsequent to that required by 10 CFR 50.55a(g)(4)(ii). The revised request identifies "new 3/4-inch and 1-inch diameter piping nozzles" in the "ASME Code Component(s) Affected" section. The attachment to this letter provides the revised request. The affected text is indicated by revision bars in the right margin. I&M requests approval of the revised request by October 25, 2006, to support the Unit 1 Fall 2006 refueling outage schedule.

There are no new regulatory commitments in this letter. Should you have any questions, please contact Ms. Susan D. Simpson, Regulatory Affairs Manager, at (269) 466-2428.

Sincerely,



Mark A. Peffer  
Site Vice President

JRW/jen

Attachment: Revised Proposed Use of a Subsequent Edition of the American Society of Mechanical Engineers (ASME) Code in Accordance with 10 CFR 50.55a(g)(4)(iv)

- c: R. Aben – Department of Labor and Economic Growth  
J. L. Caldwell – NRC Region III  
K. D. Curry – AEP Ft. Wayne  
J. T. King – MPSC  
MDEQ – WHMD/RPMWS  
NRC Resident Inspector  
P. S. Tam – NRC Washington, DC

Attachment to AEP:NRC:6055-18

Revised Proposed Use of a Subsequent Edition of the  
American Society of Mechanical Engineers (ASME) Code in Accordance with  
10 CFR 50.55a(g)(4)(iv)

**1. ASME Code Component(s) Affected**

The ASME Code components affected are new small bore (nominal 2-inch diameter or less) piping nozzles and resistance temperature detector (RTD) thermowell bosses to be installed on the Donald C. Cook Nuclear Plant (CNP) Unit 1 and Unit 2 Reactor Coolant System (RCS) ASME Class 1 hot leg and cold leg pipes, and the existing RCS hot leg bypass piping system scoops, which will be modified to accommodate new thermowell-mounted RTDs. Indiana Michigan Power Company (I&M) will be using a thermal metal removal process to install the new nozzles and modify the hot leg scoops. The RCS piping is P-No. 8 material.

**2. Applicable Code Edition and Requirements**

The current ASME Section XI Code of record for CNP Unit 1 and Unit 2 is the 1989 Edition (no Addenda). The applicable requirements in the 1989 Edition (no Addenda) for thermal metal removal processes are as follows:

IWA-4322, "Process Requirements for P-No. 8 and P-No. 43 Materials"

"If thermal removal processes are used on P-No. 8 and P-No. 43 materials, a minimum of 1/16 in. material shall be removed from the thermally processed area."

**3. Proposed Subsequent Code Edition and Requirements**

The proposed subsequent code is the 2001 Edition of ASME Code Section XI, no Addenda. This Code edition is approved for use pursuant to 10 CFR 50.55a(b)(2). The use of the 2001 Edition, no Addenda, will allow I&M to qualify the thermal metal removal process to be used, electro-discharge machining, as an alternative to mechanical removal of additional material from the processed areas. The applicable requirements from the 2001 Edition of the ASME Code Section XI are as follows:

"IWA-4461.3, "P-Nos. 8 and 43 Materials"

"If thermal removal processes are used on P-No. 8 and P-No. 43 materials, at least 1/16 in. (1.6 mm) of material shall be mechanically removed from the thermally processed area."

“IWA-4461.4, "Alternatives to Mechanical Processing”

“Mechanical processing of thermally cut surfaces for materials identified in IWA-4461.1 through IWA-4461.3 is not required when the alternative of either IWA-4461.4.1 or IWA-4461.4.2 is used.” (I&M has elected to use the alternative of IWA-4461.4.1.)

“IWA-4461.4.1, “Qualification of Thermal Metal Removal Process”

“Mechanical processing of thermally cut surfaces is not required when the thermal metal removal process is qualified as follows:

- (a) The qualification test shall consist of two coupons of the same P-No. material to be cut in production.
- (b) The qualification coupons shall be cut using the maximum heat input to be used in production.
- (c) The thermally cut surface of each coupon shall be visually examined at 10X and shall be free of cracks. The Owner shall specify surface roughness acceptable for the application and shall verify that the qualification coupon meets that criterion.
- (d) Each qualification coupon shall be cross sectioned, and the exposed surfaces shall be polished, etched with a suitable etchant, and visually examined at 10X. All sectioned surfaces shall be free of cracks.
- (e) Corrosion testing of the thermally cut surface and heat affected zone shall be performed if the cut surface is to be exposed to corrosive media. Alternatively, corrosion resistance of the thermally cut surface may be evaluated. The Owner shall specify the acceptance criteria.”

These requirements are subject to the limitations and modifications identified in 10 CFR 50.55a(b)(2) as stated in Section 4 below.

**4. Related Requirements**

In accordance with the limitations identified in 10 CFR 50.55a(b)(2), Section IWA-4461.4.2, "Evaluation of Thermally Cut Surfaces," of the 2001 Edition will not be used. 10 CFR 50.55a(b)(2) states:

"As used in this section, references to Section XI of the ASME Boiler and Pressure Vessel Code refer to Section XI, and include the 1970 Edition through the 1976 Winter Addenda, and the 1977 Edition (Division 1) through the 2003 Addenda (Division 1), subject to the following limitations and modifications:"

“(xxiii) *Evaluation of Thermally Cut Surfaces.* The use of the provisions for eliminating mechanical processing of thermally cut surfaces in IWA-4461.4.2 of Section XI, 2001

Edition through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section are prohibited."

There are no other related requirements that apply to the thermal metal removal processes using the above identified portions of the 2001 Edition of ASME Code Section XI, no Addenda.

**5. Duration of Use of Proposed Subsequent Code Edition and Requirements**

This request is applicable to the remainder of the Third 10-year Inservice Inspection Interval which ends in 2010.