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February 27, 2009

AEP-NRC-2009-26
10 CFR 50.55a

Docket No.: 50-316

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

SUBJECT: Donald C. Cook Nuclear Plant Unit 2
Request to Extend the Inservice Inspection Interval for Reactor Vessel Weld
Examination – Relief Request ISIR-30

Dear Sir or Madam:

Pursuant to 10 CFR 50.55a(a)(3)(ii), Indiana Michigan Power Company (I&M), the licensee for Donald C. Cook Nuclear Plant Unit 2, hereby requests Nuclear Regulatory Commission approval of the following request for the third ten-year interval inservice inspection testing program.

I&M is requesting approval of Relief Request ISIR-30 which will extend the inservice inspection interval for visual examinations of the reactor pressure vessel interior attachments beyond the beltline region and core support structure. In accordance with 10 CFR 50.55a(a)(3)(ii), the proposed relief is requested because compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The hardship or unusual difficulty that would result from compliance consists of significant personnel radiation exposure, an increased outage duration, and an additional removal of the reactor vessel lower internals with the potential for damage to the vessel. The details of the 10 CFR 50.55a request are attached.

I&M requests approval of the relief request by April 3, 2009, to allow use of the alternative during the Unit 2 Cycle 18 refueling outage.

This letter contains no new or revised commitments. Should you have any questions, please contact John A. Zwolinski, Manager of Regulatory Affairs, at (269) 466-2478.

Sincerely,

A handwritten signature in dark ink, appearing to read "R.A. Hraby, Jr.".

Raymond A. Hraby, Jr.
Site Support Services Vice President

RSP/rdw

Attachment: ISIR-30

A447
NRR

c: T. A. Beltz – NRC Washington, DC
J. L. Caldwell – NRC Region III
K. D. Curry – AEP Ft. Wayne
J. T. King – MPSC
MDEQ – WHMD/RPS
NRC Resident Inspector

10 CFR 50.55a Relief Request ISIR-30

Proposed Alternative
In accordance with 10 CFR 50.55a(a)(3)(ii)

American Society of Mechanical Engineers (ASME) Code Component(s) Affected

The affected component is the Donald C. Cook Plant (CNP) Unit 2 reactor pressure vessel (RPV), specifically the following ASME Boiler and Pressure Vessel (BPV) Code, Section XI, (Reference 1) examination categories and item numbers covering examinations of the RPV. These examination categories and item numbers are from IWB-2500 and Table IWB-2500-1 of the ASME BPV Code, Section XI.

Examination

<u>Category</u>	<u>Item No.</u>	<u>Description</u>
B-N-2	B13.60	Interior Attachments Beyond Beltline Region
B-N-3	B13.70	Core Support Structure

(Throughout this request the above examination categories are referred to as "the subject examinations" and the ASME BPV Code, Section XI, is referred to as "the Code.")

Applicable Code Edition and Addenda

ASME Code Section XI, "Rules and Inservice Inspection of Nuclear Power Plant Components," 1989 Edition (no Addenda).

Applicable Code Requirement

Table IWB-2500-1, examination categories B-N-2 and B-N-3, item numbers B13.60 and B13.70 require a visual examination of the accessible interior attachment welds beyond the beltline region, and a visual examination of the accessible core support structure surfaces of the RPV once each ten-year interval. The CNP Unit 2 Third Ten-Year Inservice Inspection (ISI) interval is scheduled to end February 28, 2010.

Reason for Request

In Westinghouse Topical Report WCAP-16168-NP-A, Revision 2 (Reference 2), the Pressurized Water Reactor Owners Group provided the technical and regulatory basis for decreasing the frequency of inspections by extending the ASME Code Section XI ISI interval from the current 10 years to 20 years for ASME Code Section XI examination categories B-A and B-D RPV welds. The Nuclear Regulatory Commission (NRC) approved the topical report by letter dated May 8, 2008 (Reference 3). To implement the change presented in Reference 2, CNP previously submitted ISIR-29, in accordance with the Safety Evaluation (Reference 3) to request an alternative from the Code requirements pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the alternative inspection interval (20 years) provides an acceptable level of quality and safety. In ISIR-29 (Reference 4) CNP identified 2019 and 2039 as the years in which future inspections of the examination categories B-A and B-D RPV welds will be performed. The intent of this relief request (ISIR-30) is to allow deferral of the subject examinations to the same time (2019 and 2039 refueling outages) as the examination categories B-A and B-D RPV welds described in ISIR-29.

During the ten-year ISI of the RPV shell, lower head, and nozzle welds in 1996, CNP also performed visual examinations of the RPV interior attachments and the core support structure.

Since the core support structure (called lower internals on Westinghouse designed plants) requires removal to facilitate examination of the RPV shell, lower head, and nozzle welds, the visual examinations of ASME examination categories B-N-2 and B-N-3 have historically been performed during the same outage at the end of the ISI interval.

As part of License Renewal, CNP has also committed to the development and implementation of a plant-specific Reactor Vessel Internals (RVI) inspection program and subsequent submittal of the program to the NRC three years prior to the period of extended operation. CNP may elect to perform the enhanced examinations for the RVI inspection program coincident with the lower internals removal in 2019. To complete the full scope of the RVI examination it is expected to require a complete core offload and removal of all internals to facilitate implementation of the examinations. Portions of the RVI inspection may be performed prior to this time as may be prescribed in that program.

Performing all core barrel removed related examinations during the same refueling outage will result in significant savings in dose and outage duration since the same equipment and personnel used for visual and volumetric examination of the RPV shell welds and nozzle welds from the RPV interior can be used to implement the required RVI examinations. Additionally, removing the RPV internals only once to accommodate all the examinations discussed in this relief request would result in significant savings in radiation exposure.

Proposed Alternative and Basis for Use

The third ten-year ISI interval for CNP began on July 1, 1996, and is scheduled to conclude on February 28, 2010.

CNP proposes to perform the subject examinations for the fourth ten-year ISI interval on or before February 28, 2020. The subject examinations are currently scheduled to be performed during the Spring 2009 refueling outage. The proposed alternative inspection would enable the subject examinations to be performed during the 2019 refueling outage with the risk-informed extension of the RV ISI. In accordance with 10 CFR 50.55a(a)(3)(ii), this interval extension is requested on the basis that performing the examination of the RPV interior attachments and core support structure separate in time from the RPV shell, head, and nozzle welds would result in hardship or unusual difficulty without a compensating increase in quality or safety.

The full scope examination required by ASME examination categories B-N-2 and B-N-3 requires the removal of all the fuel and the core barrel from the RPV. An unnecessary risk is created by removal of the core barrel to perform a visual examination without a compensating increase in quality or safety. Further, the radiation exposure to establish the conditions for, and perform, the ASME examination categories B-N-2 and B-N-3 examinations would essentially double if the subject examinations were performed separate in time from the RPV shell, lower head, and nozzle weld examinations.

The visual examinations of the RPV interior attachments and the core support structure have been performed several times at CNP with no relevant indications noted during the examinations. The examinations were last performed during the 1996 refueling outage with acceptable results. Additionally, review of industry surveys indicate that these examinations have been performed many times by the industry without any significant findings relevant to the CNP RV design.

As stated in Reference 2, *"...it must be recognized that all reactor coolant pressure boundary failures occurring to date have been identified as a result of leakage, and were discovered by visual examination. The proposed RV ISI interval extension does not alter the visual examination interval. The reactor vessel would undergo, as a minimum, the Section XI Examination Category B-P pressure tests and visual examinations conducted at the end of each refueling before plant start-up, as well as leak tests with visual examinations that precede each start-up following maintenance or repair activities."* The minimum visual examinations discussed in Reference 2 are not the subject examinations (i.e., B-N-2 and B-N-3) of this relief request. During the 2009 refueling outage, CNP will be performing the ASME examination category B-N-1 visual examination. This examination will include the space that is made accessible for examination by the removal of components during normal refueling outages. This examination is required once each period and will provide reasonable assurance of structural integrity. As discussed further in Reference 2, defenses against human errors are preserved with the increase in inspection interval. Specifically, the increase in the inspection interval reduces the frequency for which the RV lower internals need to be removed, thereby, reducing the possibility for human error and damage to the RV.

Therefore, in accordance with 10 CFR 50.55a(a)(3)(ii), this interval change from 10 to 20 years for the subject examinations is requested on the basis that compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Duration of Proposed Alternative

This proposed alternative is applicable to the third and fifth ten-year ISI for the examination categories B-N-2 and B-N-3, Item Numbers B13.60 and B13.70 visual examinations.

Precedent

Calvert Cliffs Nuclear Power Plant, Docket No. 50-318, "Revised Request to Extend the Inservice Inspection Interval for Reactor Vessel Weld Examinations – Relief Request (ISI-020 and ISI-021)" dated October 1, 2008 (ML082760282).

References

1. ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition with no Addenda.
2. WCAP-16168-NP-A, Revision 2, "Risk-Informed Extension of Reactor Vessel In-Service Inspection Interval," June 2008.
3. Final Safety Evaluation for Pressurized Water Reactor Owners Group (PWROG) Topical Report (TR) WCAP-16168-NP, Revision 2, "Risk-Informed Extension Of The Reactor Vessel In-Service Inspection Interval," (TAC No. MC9768), dated May 8, 2008.
4. Letter from L. J. Weber, I&M, to NRC Document Control Desk, "Donald C. Cook Nuclear Plant Unit 2 – Request for Relief to Extend the Unit 2 Inservice Inspection Interval for the Reactor Vessel Weld Examination (ISIR-29) and Request for License Amendment for Submittal of ISI Information and Analysis, AEP-NRC-2008-41, dated October 9, 2008 (ML082980354).