ADAMS Accession No.: ML090720704

From:	Terry Beltz
Sent:	Friday, March 13, 2009 1:22 PM
To:	mkscarpello@aep.com
Cc:	'jazwolinski@aep.com'; 'rsptacek@aep.com'; Matthew Mitchell; Lois James; Dan Widrevitz
Subject:	Donald C. Cook Nuclear Plant, Unit 2 - Verbal Authorization for Relief Requests ISIR-29 and ISIR-30

Dear Mr. Scarpello:

On March 13, 2009, the U.S. Nuclear Regulatory Commission (NRC) provided verbal authorization for Relief Requests ISIR-29 and ISIR-30 for the Donald C. Cook Nuclear Plant, Unit 2, as requested in your letters of October 9, 2008 and February 27, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML082980354 and ML090630055).

Authorizing the approval was Matthew Mitchell, Chief of the Vessels & Internals Integrity Branch (CVIB) in the Division of Component Integrity, and Lois James, Chief of Plant Licensing Branch III-1 in the Division of Operating Reactor Licensing. Also on the call were Daniel Widrevitz of CVIB, and myself.

I am including the script that Mr. Mitchell read for your information and as part of documenting the verbal authorization. This e-mail will also be made publicly available in ADAMS.

The NRC letters transmitting the written safety evaluations will be issued in the near future.

Please let me know if you have any questions.

Sincerely,

Terry A. Beltz, Senior Project Manager
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By letters dated October 9, 2008 and February 27, 2009 (ADAMS Accession Nos. ML082980354 and ML090630055), the licensee for Indiana Michigan Power Company requested NRC approval to use alternatives to certain requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) for the Donald C. Cook Nuclear Plant, Unit 2 (CNP-2).

The first alternative (ISIR-29) was requested under the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(a)(3)(i). Specifically, the licensee requested approval for

the use of an alternative to the requirements of the ASME Code to extend the third and fourth inservice inspection (ISI) intervals from 10 years to 20 years for the examination of the Category B-A reactor vessel (RV) welds and Category B-D nozzle-to-vessel welds and nozzle inner radius sections.

The second alternative (ISIR-30) was requested under the provisions of 10 CFR 50.55a(a)(3)(ii). Specifically, the licensee requested approval for the use of an alternative to the requirements of the ASME code, Section XI to align the ISI interval for Category B-N-2 and B-N-3 Item Nos. 13.60 and 13.70, interior attachments beyond beltline and core support structure with that of the Category B-A and B-D welds, thus extending the interval for those inspections to 20-years as well.

In June 2008, the NRC approved topical report WCAP-16168-NP, Revision 2, which provides the risk-informed technical basis for the proposed ISI interval extensions. The analyses in WCAP-16168-NP, Revision 2, used probabilistic fracture mechanics (PFM) analyses and inputs from the work described in the pressurized thermal shock (PTS) risk re-evaluation documented in NRC NUREG-1806 and NUREG-1874. The effects of ISI were modeled to demonstrate the impact of ISI on RV failure frequency due to PTS events. From the results of the studies, the PWR Owners Group (PWROG) concluded that the ASME Code, Section XI 10-year inspection interval for Examination Category B-A and B-D welds and nozzle inner radii in PWR RVs can be extended to up to 20 years. Their conclusion was considered to apply to any operating PWR as long as critical, plant-specific parameters (defined in Appendix A of WCAP-16168-NP, Revision 2) were bounded by values used in the WCAP-16168-NP, Revision 2, analyses.

In the NRC safety evaluation (SE) for WCAP-16168-NP, Revision 2, several requirements were laid out for the acceptance of a plant-specific application of WCAP-16168-NP, Revision 2, to support the granting of an alternative to the requirements of the ASME Code. The requirements from this SE relevant to CNP-2 were:

1. The ISI interval dates identified in the request for alternative must adhere to the proposed inspection schedules documented in PWROG letter OG-06-356 dated October 31, 2006.

2. Calculations of ΔT_{30} for the purpose of demonstrating plant-specific consistency with material property values cited in WCAP-16168, Revision 2, must be carried out via an NRC approved methodology.

The licensee submitted information necessary to show that the CNP-2 was bounded by the analyses in WCAP-16168-NP, Revision 2. This information included:

1. ISI interval dates consistent with the information in PWROG letter OG-06-356.

2. Information regarding the results of prior ISIs which demonstrated no known flaws which would not comply with the requirements in the draft PTS rule flaw distributions.

3. Information regarding input parameters for CNP-2 RV beltline materials (including unirradiated material properties, chemical compositions, neutron fluence levels, relevant RV surveillance data, etc.) necessary for the staff to verify that the material properties of the CNP-2 RV are consistent with, or bounded by, those used in the WCAP-16168-NP, Revision 2, analyses.

4. Information regarding the construction of the CNP-2 RV and operation of the CNP-2 plant which demonstrated the facility's compliance with assumptions made in the WCAP-16168-NP, Revision 2, analyses.

The staff verified the information and calculations provided and found that CNP-2 was bounded by the analyses in WCAP-16168-NP, Revision 2, and that all the requirements of the SE to WCAP-16168-NP, Revision 2, were fulfilled. Hence, in accordance with 10 CFR 50.55a(a)(3)(i), the licensee provided information to demonstrate that the proposed alternative would maintain an acceptable level of quality and safety with regard to ensuring the integrity of the subject CNP-2 RV. However, at this time, the staff approves the requested alternative for only for the third CNP-2 ISI interval.

Regarding the second proposed alternative, the visual inspections of Category B-N-2 and B-N-3 welded core support structures, removable core support structures and interior attachment welds are required to be done on the same 10-year interval as the inspections for Category B-A and B-D components. The visual inspections of Category B-N-2 and B-N-3 components can only be done after the fuel and reactor internals are removed from the RV. The removal of these items is also done to accommodate B-A and B-D component inspections. If B-N-2 and B-N-3 inspections were required on a 10-year interval, the effect would be an increase in dose due to additional offloading of the fuel and reactor internals creating a hardship for the licensee relative to inspecting on a 20-year interval.

In justifying a 20-year interval for B-N-2 and B-N-3 inspections, the licensee noted that previous inspections of Category B-N-2 and B-N-3 components, performed most recently in 1996, found no unacceptable indications. Likewise, no significant findings have been identified in other RVs comparable to the CNP-2 RV design. Based on this information, and given the staff's approval of the Category B-A and B-D ISI interval extension, the staff concludes that performing the Category B-N-2 and B-N-3 inspections on a 10-year interval as required by Section XI of the ASME Code would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Therefore, the alternative proposed which would permit the licensee to perform the Category B-N-2 and B-N-3 component inspections on a 20-year interval, along with the ISI of Category B-A and B-D components, is acceptable for the third ISI interval for CNP-2.

The NRC has completed its review of the information provided in the licensee's submittals. The NRC has concluded that the licensee provided adequate information regarding CNP-2 compliance with the requirements of the WCAP-16168-NP, Revision 2, SE, and the extension of Category
B-N-2 and B-N-3 inspections to 20-years. The staff concluded that it is acceptable to approve the proposed alternatives for extending the third D.C Cook ISI interval for these components.

Hence, Matthew Mitchell, Chief of the Office of Nuclear Reactor Regulation's Vessel and Internals Integrity Branch recommends authorization of the licensee's implementation of the proposed alternatives, as amended in this verbal agreement. Lois James, Chief of Plant Licensing Branch III-1 in the Division of Operating Reactor Licensing, verbally authorizes the proposed reliefs.

As final clarification regarding the exact interval that was extended, this extension applies to the current interval scheduled to end on or before February 28, 2010, now extended to 2019, for the listed components.

E-mail Properties

Mail Envelope Properties (BB882299B277DB4C9C9A613B507A6F60078BB4162B)

Subject: Donald C. Cook Nuclear Plant, Unit 2 - Verbal Authorization for Relief Requests ISIR-29 and ISIR-30
Sent Date: 3/12/2009 9:36:33 AM
Received Date: 3/13/2009 1:22:00 PM
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Files	Size	Date & Time
MESSAGE	28992	3/12/2009

Options
Expiration Date:
Priority: olImportanceNormal
ReplyRequested: False
Return Notification: False

Sensitivity: olNormal
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