



September 6, 2002

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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  
THIRTY DAY RESPONSE TO  
NRC BULLETIN 2002-02: REACTOR PRESSURE VESSEL HEAD AND  
VESSEL HEAD PENETRATION NOZZLE INSPECTION PROGRAMS

Reference: NRC Bulletin 2002-02: Reactor Pressure Vessel Head And Vessel  
Head Penetration Nozzle Inspection Programs, dated  
August 9, 2002

The Nuclear Regulatory Commission (NRC) issued the referenced bulletin to pressurized-water reactor (PWR) licensees due to concerns about the adequacy of current inspection requirements and programs for reactor pressure vessel (RPV) heads and vessel head penetration (VHP) nozzles. The bulletin requires that within 30 days, PWR licensees provide information on any changes to their inspection programs for the RPV head and VHP nozzles and justification for relying on visual examination, if that is the primary method of inspection to detect degradation. The bulletin requests that licensees who plan to supplement their inspection programs, provide a summary discussion of inspections implemented to include RPV head effective degradation years, methods, scope coverage, frequencies, qualification requirements, and acceptance criteria. The Attachment to this letter provides the information that was requested within 30 days of the date of the bulletin.

Indiana Michigan Power Company (I&M), the licensee for Donald C. Cook Nuclear Plant Units 1 and 2, has been an industry leader in the conservative

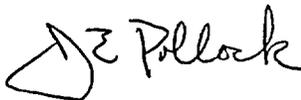
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management and evaluation of RPV head and VHP integrity. As described in the attachment to this letter, I&M has implemented supplemental inspection programs for the RPV heads and VHP nozzles, which include bare metal visual inspections and non-destructive examinations capable of detecting head wastage and nozzle cracking.

There are no new commitments identified in this document. The actions discussed in this submittal represent intended or planned actions by I&M. They are described to the NRC for the NRC's information and are not regulatory commitments.

Should you have any questions, please contact Mr. Brian A. McIntyre, Manager of Regulatory Affairs, at (269) 697-5806.

Sincerely,



J. E. Pollock  
Site Vice President

Attachments

TW/dmb

c: K. D. Curry, w/o attachments  
J. E. Dyer  
MDEQ - DW & RPD, w/o attachments  
NRC Resident Inspector  
R. Whale, w/o attachment

**AFFIRMATION**

I, Joseph E. Pollock, being duly sworn, state that I am 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.

American Electric Power Service Corporation



J. E. Pollock  
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 4 DAY OF SEPTEMBER 2002

  
Notary Public

My Commission Expires 5/24/05

**JENNIFER L. KERNOSKY**  
Notary Public, Berrien County, Michigan  
My Commission Expires May 26, 2005

ATTACHMENT 1 TO AEP:NRC:2054-05

THIRTY DAY RESPONSE TO  
NRC BULLETIN 2002-02: REACTOR PRESSURE VESSEL HEAD AND VESSEL  
HEAD PENETRATION NOZZLE INSPECTION PROGRAMS

In Nuclear Regulatory Commission (NRC) Bulletin 2002-02, the NRC requested that pressurized-water reactor licensees provide information related to changes in their inspection programs for the reactor pressure vessel (RPV) heads and vessel head penetration (VHP) nozzles and justification for relying on visual examination, if that is the primary method of inspection to detect degradation. The bulletin requests that licensees who plan to supplement their inspection programs, provide a summary discussion of the supplemental inspections to be implemented including RPV head effective degradation years (EDY), methods, scope coverage, frequencies, qualification requirements, and acceptance criteria.

Indiana Michigan Power Company (I&M), the licensee for Donald C. Cook Nuclear Plant (CNP) Units 1 and 2, does not rely on visual examinations as the primary inspection method to detect head wastage and nozzle cracking. I&M has completed inspections for Units 1 and 2 in response to NRC Bulletins 2001-01: "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles," and 2002-01: "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity." The results of these inspections were communicated to the NRC in References 1, 2, and 3.

The following provides the summary discussion of supplemental inspections that is required to be submitted within 30 days of the date of the bulletin.

I&M has implemented preplanned supplemental inspection programs with both 100% bare metal visual (BMV) and non-destructive examination methods. During refueling outages completed June 9, 2002, for Unit 1 and February 28, 2002, for Unit 2, inspections were performed that identified no indications of degradation of the RPV head and no unacceptable flaws in the VHP nozzles for both Units 1 and 2. A description of the inspections performed is provided below:

100% BMV inspection of the RPV head under the insulation using a remote crawler or manually operated remote video probes capable of observing 360 around each VHP. Level II VT-2 examiners, qualified in accordance with the American Society of Mechanical Engineers (ASME) Code, Section XI, with additional familiarization about recent industry experience with primary water stress corrosion cracking were used to perform the inspection of the vessel head and penetrations using the remote viewing systems.

Examinations of control rod drive mechanisms (CRDM) and thermocouple VHPs consisting of either:

1. Surface examination, either eddy current test (ECT) or liquid penetrant, of the wetted surfaces on and near the "J-groove" weld on the outside and inside diameter, supplemented by ultrasonic testing (UT) as necessary for weld locations that were not accessible by eddy current probes; or
2. UT examination from the inside diameter of the penetration capable of detecting circumferential cracks on the outside diameter above and in the vicinity of the J-groove weld.

ASME certified personnel performed the examinations using procedures that were developed in accordance with CNP's or the vendor's quality assurance program. Indications were evaluated for acceptability using the criteria contained in the vendor's flaw data handbook (Reference 4).

The calculated EDY, effective full power years (EFPY), and RPV head operating temperatures for CNP Units 1 and 2 are provided in the table below:

	<b>EDY</b>	<b>EFPY</b>	<b>Operating Temperature</b>	<b>Remarks</b>
<b>Unit 1</b>	10.3	17.98	578.0 Fahrenheit	EDY and EFPY are projected to refueling outage U1C19
<b>Unit 2</b>	14.6	14.79	600.7 Fahrenheit	EDY and EFPY are projected to refueling outage U2C14

I&M will continue to perform the appropriate testing, monitoring, analysis, and repair activities necessary to provide reasonable assurance of RPV head and VHP integrity. I&M intends to comply with the EPRI-MRP Inspection Plan currently under development, when agreed upon by the NRC. Until these requirements are in place, I&M intends to comply with the basis for continued operation as described in the previous bulletin responses.

As described above, inspections performed during the last refueling outages for Units 1 and 2, have confirmed no indications of degradation of the RPV head and no unacceptable flaws exist in the VHP nozzles. Reference 4, which contains CNP Unit specific crack growth predictions, updated in January 2002, provides reasonable assurance that at least 6 EFPYs would elapse before a through-wall crack would develop. Based on this information, the following table provides I&M supplemental inspection plans. Absent new industry guidance, the inspection methods, scope, qualification requirements, and acceptance criteria will meet the same criteria as the previously performed inspections.

Inspections	Frequency	
	Unit 1	Unit 2
100% BMV inspection of the RPV head capable of observing 360 around each VHP.	Every refueling Outage	Every refueling Outage
Examinations of CRDM and thermocouple VHPs consisting of either: 1. Surface examination, either ECT or liquid penetrant, of the wetted surfaces on and near the "J-groove" weld on the outside and inside diameter, supplemented by UT as necessary for weld locations that are not accessible by eddy current probes; OR, 2. UT examination from the inside diameter of the penetration capable of detecting circumferential cracks on the outside diameter above and in the vicinity of the J-groove weld.	Every third refueling Outage	Every third refueling Outage

#### References

1. Letter from M. W. Rencheck, I&M, to NRC Document Control Desk, "Additional Information Requested By Nuclear Regulatory Commission Bulletin 2001-01 (TAC NOS. MB2624 and MB2625)," submittal AEP:NRC:2054, dated March 28, 2002.
2. Letter from J. E. Pollock, I&M, to NRC Document Control Desk, "Nuclear Regulatory Commission Bulletin 2001-01 Circumferential Cracking Of Reactor Pressure Vessel Head Penetration Nozzles Thirty-Day Response (TAC NO. MB2625)," submittal AEP:NRC:2054-04, dated July 3, 2002.
3. Letter from J. E. Pollock, I&M, to NRC Document Control Desk, "Response To Nuclear Regulatory Commission Bulletin 2002-01 Reactor Pressure Vessel Head Degradation And Reactor Coolant Pressure Boundary Integrity," submittal AEP:NRC:2054-03, dated July 3, 2002.
4. WCAP-14118, Revision 5, "Structural Integrity Evaluation of Reactor Vessel Upper Head Penetrations to Support Continued Operation: D.C. Cook Units 1 and 2," transmitted in a letter from Scot A. Greenlee, I&M, to NRC Document Control Desk, "Proposed Alternatives To The Requirements Of Section XI Of The American Society Of Mechanical Engineers Code – Request For Additional Information (TAC NOS. MB3551 and MB3552)," dated April 25, 2002, submittal AEP:NRC:2055.