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AEP
INDIANA
MICHIGAN
POWER

April 30, 2004

AEP:NRC:4054-05
10 CFR 2.202

Docket No: 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 Unit 2
REQUEST FOR RELAXATION FROM NUCLEAR REGULATORY COMMISSION REVISED ORDER ESTABLISHING INTERIM INSPECTION REQUIREMENTS FOR REACTOR PRESSURE VESSEL HEADS AT PRESSURIZED WATER REACTORS

References:
1) Revised Nuclear Regulatory Commission Order EA-03-009, "Issuance of First Revised NRC Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," dated February 20, 2004.

2) Letter from J. N. Jensen, Indiana Michigan Power Company, to Secretary, Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, "Answer to Revised Nuclear Regulatory Commission Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," AEP:NRC:4054-03, dated March 9, 2004.

3) Electric Power Research Institute Document MRP-55, "Materials Reliability Program (MRP) Crack Growth Rates for Evaluating Primary Water Stress Corrosion Cracking (PWSCC) of Thick-Wall Alloy 600 Materials," Revision 1, dated November 2002.

This letter transmits a request for relaxation of requirements contained in the revised Nuclear Regulatory Commission (NRC) Order (Reference 1) regarding inspection of reactor pressure vessel (RPV) heads at pressurized water reactors. This request applies to Donald C. Cook Nuclear Plant Unit 2.

A101

By Reference 1, the NRC revised its previous order establishing interim inspection requirements for RPV heads at pressurized water reactors. Indiana Michigan Power Company (I&M) consented to the revised order by Reference 2, and identified requirements from which it intended to request relaxation. The requirements from which I&M intends to request relaxation involve nondestructive examination of the penetration nozzles below the J-groove welds that attach the nozzles to the head.

Section IV.F of Reference 1 states that licensees proposing to deviate from requirements contained in the order may request that the Director, NRC Office of Nuclear Reactor Regulation, relax those requirements. Section IV.F further states that requests for relaxation associated with specific nozzles will be evaluated by the NRC staff using its procedure for evaluating proposed alternatives to the American Society of Mechanical Engineers (ASME) Code in accordance with 10 CFR 50.55a(a)(3).

In accordance with Section IV.F of the revised order, I&M is requesting relaxation of requirements regarding the length of nozzle below the J-groove weld that must undergo nondestructive examination. The requested relaxation affects specific nozzles for which compliance with the order would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The requested relaxation is presented in Attachment 1 to this letter. The format of Attachment 1 is similar to that published by the Nuclear Energy Institute for proposing alternatives to the ASME Code in accordance with 10 CFR 50.55a(a)(3). Attachment 2 provides a copy of a proprietary Westinghouse document, WCAP-14118-P Revision 6, containing crack growth curves and stress curves that support the requested relaxation. As detailed in Attachment 2, I&M will submit a revision of WCAP-14118-P that does not affect its technical content, along with a non-proprietary version of that revision by June 30, 2004. Attachment 3 provides a Westinghouse application for withholding WCAP-14118-P Revision 6 from public disclosure. Attachment 4 provides an additional crack growth curve that supports the requested relaxation. Attachment 5 tabulates the regulatory commitments made in this letter.

As noted in Section 1 of WCAP-14118-P Revision 6 provided in Attachment 2, the crack growth rate used in the WCAP is that recommended in industry report MRP-55 (Reference 3). The NRC has not made a final assessment regarding the acceptability of that report. In relaxations from the original NRC Order EA-03-009, I&M and other licensees accepted a condition specifying actions to be taken if the NRC finds the crack growth formula in MRP-55 to be unacceptable. I&M accepts the same condition with respect to the relaxation from the revised order proposed in Attachment 1 to this letter. This condition is as follows:

If the NRC staff finds that the crack growth formula in industry report MRP-55 is unacceptable, the licensee shall revise its analysis that justifies relaxation of the Order within 30 days after the NRC informs the licensee of an NRC-approved crack growth formula. If the licensee's revised analysis shows that the crack growth acceptance criteria are exceeded prior to the end of the current operating cycle, this relaxation is rescinded and the licensee shall, within 72 hours, submit to the NRC written justification for continued operation. If the revised analysis shows that the crack growth acceptance criteria are exceeded during the subsequent operating cycle, the licensee shall, within 30 days, submit the revised analysis for NRC review. If the revised analysis shows that the crack growth acceptance criteria are not exceeded during either the current operating cycle or the subsequent operating cycle, the licensee shall, within 30 days, submit a letter to the NRC confirming that its analysis has been revised. Any future crack growth analyses performed for this and future cycles for RPV head penetrations must be based on an acceptable crack growth rate formula.

I&M requests approval of the proposed alternative by September 1, 2004, to support implementation during the Fall, 2004 Unit 2 refueling outage. Should you have any questions, please contact Mr. John A. Zwolinski, Director of Design Engineering and Regulatory Affairs, at (269) 697-5007.

Sincerely,

Joseph N. Jensen
Site Vice President

JW/rdw

Attachments:

1) Proposed Alternative to Revised NRC Order EA-03-009 Regarding Requirements for Nondestructive Examination of Nozzles Below the J-Groove Weld
2) Westinghouse WCAP-14118-P, "Structural Integrity Evaluation of Reactor Vessel Upperhead Penetrations to support Continued Operation: D. C. Cook Units 1 and 2," Revision 6, dated October 2003 (Proprietary)
3) Westinghouse Application for Withholding Proprietary Information from Public Disclosure
4) Crack Growth Prediction for Axial Through–Wall Flaw 0.68 Inches Below the Weld for Third Outermost (45.8 degree) Row Downhill Side
5) Regulatory Commitments

c: J. L. Caldwell, NRC Region III
K. D. Curry, Ft. Wayne AEP, w/o attachments
Director, Office of Nuclear Reactor Regulation
J. T. King, MPSC, w/o attachments
J. G. Lamb, NRC Washington DC
MDEQ - WHMD/HWRPS, w/o attachments
NRC Resident Inspector

AFFIRMATION

I, Joseph N. Jensen, 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

Joseph N. Jensen
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 30 DAY OF APRIL, 2004

Jennifer L Kernosky
Notary Public

My Commission Expires 5/26/05

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

ATTACHMENT 1 TO AEP:NRC:4054-05

PROPOSED ALTERNATIVE TO REVISED NRC ORDER EA-03-009 REGARDING REQUIREMENTS FOR NONDESTRUCTIVE EXAMINATION OF NOZZLES BELOW THE J-GROOVE WELD

Submitted in accordance with Revised Nuclear Regulatory Commission (NRC) Order EA-03-009, Section IV.F, Criterion (2): Compliance with the Order for Specific Nozzles Would Result in Hardship or Unusual Difficulty Without a Compensating Increase in the Level of Quality and Safety

References for this attachment are identified in Section 8 below.

1. **Components Affected**

   Donald C. Cook Nuclear Plant (CNP) Unit 2 reactor pressure vessel (RPV) head penetrations (79 penetrations).

2. **Applicable Document**

   Revised NRC Order EA-03-009, "Issuance of First Revised NRC Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel," dated February 20, 2004.

3. **Applicable Requirement**

   Section IV.C(5)(b) of revised NRC Order EA-03-009 requires ultrasonic, eddy current, or dye penetrant testing of RPV head penetration nozzle base material and J-groove weld that attaches the nozzle base material to the underside of the head.

   The requirements governing the scope of ultrasonic testing are stated in Section IV.C(5)(b)(i) of the revised order, which provides the following two options:

   > Ultrasonic testing of the RPV head penetration nozzle volume (i.e., nozzle base material) from 2 inches above the highest point of the root of the J-groove weld (on a horizontal plane perpendicular to the nozzle axis) to 2 inches below the lowest point at the toe of the J-groove weld on a horizontal plane perpendicular to the nozzle axis (or the bottom of the nozzle if less than 2 inches [see Figure IV-1] [of the revised order]);
   >
   > OR
   >
   > from 2 inches above the highest point of the root of the J-groove weld (on a horizontal plane perpendicular to the nozzle axis) to 1.0-inch below the lowest point at the toe of the J-groove weld (on a horizontal plane perpendicular to the nozzle axis) and including all RPV head penetration nozzle surfaces below the J-groove weld that have an operating

stress level (including all residual and normal operation stresses) of 20 ksi tension and greater (see Figure IV-2) [of the revised order]. ...

The requirements governing the scope of eddy current and dye penetrant testing are stated in Section IV.C(5)(b)(ii) of the revised order, which provides the following two options:

Eddy current testing or dye penetrant testing of the entire wetted surface of the J-groove weld and the wetted surface of the RPV head penetration nozzle base material from at least 2 inches above the highest point of the root of the J-groove weld (on a horizontal plane perpendicular to the nozzle axis) to 2 inches below the lowest point at the toe of the J-groove weld on a horizontal plane perpendicular to the nozzle axis (or the bottom of the nozzle if less than 2 inches [see Figure IV-3] [of the revised order]);

OR

from 2 inches above the highest point of the root of the J-groove weld (on a horizontal plane perpendicular to the nozzle axis) to 1.0-inch below the lowest point at the toe of the J-groove weld (on a horizontal plane perpendicular to the nozzle axis) and including all RPV head penetration nozzle surfaces below the J-groove weld that have an operating stress level (including all residual and normal operation stresses) of 20 ksi tension and greater (see Figure IV-4) [of the revised order].

4. **Reason for Request**

Indiana Michigan Power Company (I&M) is proposing an alternative to the above requirements because, for some nozzles, compliance with the revised order would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

As shown on the sketch provided at the end of this attachment, the outside surface of the bottom of all control rod drive mechanism nozzles is threaded (with a chamfer at the top of the threads) for approximately 0.75 inches. Ultrasonic testing of the chamfered and threaded portions of the nozzle with the PCS24 probe that has been used in previous inspections could produce multiple reflections and tip diffraction signals, resulting in scans that are difficult or impossible to read. To the best of I&M's knowledge, an ultrasonic probe capable of obtaining readable scans of chamfered and threaded portions of the nozzle is not available. Development, qualification, and implementation of an eddy current probe capable of examining the chamfered and threaded surfaces of nozzles would result in a significant testing period and significant expense. Although dye penetrant testing of chamfered and threaded surfaces is possible, I&M estimates that dye penetrant testing these surfaces would involve approximately 400 person-millirem per nozzle.

Due to the geometry involved in the vertical nozzles penetrating the hemispherical RPV head, the minimum distance between the toe on the bottom of the J-groove weld and the top

of the chamfer and threads occurs on the "downhill" side of each nozzle, i.e., the side opposite the RPV vertical centerline. The toe on the bottom of the J-groove weld on the "uphill" side of the three outer rows is at least 4 inches above the toe on the bottom of the J-groove weld on the downhill side. Estimates from the previous inspection of Unit 2 nozzles indicate that, for seven nozzles, the distance below the toe on the bottom of the J-groove weld on the downhill side of the nozzle that is inspectable by ultrasonic or eddy current testing is less than the 1.0 inch criterion specified in the second options of Section IV.C(5)(b)(i) and Section IV.C(5)(b)(ii) of the revised order. These seven nozzles are located on the outer three rows (45.8 degrees, 47.0 degrees, and 50.5 degrees from the RPV head vertical centerline). For six of these nozzles (Penetrations 63, 66, 68, 70, 72, and 76), this distance is less than 1.0 inch but greater than 0.5 inches, with the distance on the most limiting of the six nozzles (Penetration 63) estimated as 0.68 inches. This nozzle is located in the 45.8 degree row. The seventh nozzle (Penetration 73) has an estimated distance of 0.36 inches between the toe on the bottom of the J-groove weld and the top of the chamfer and threads on the downhill side. This nozzle is located in the 47.0 degree row. The tolerance on the above stated distances is estimated to be plus or minus 10 percent.

As described below, CNP-specific crack growth curves and stress curves demonstrate that a flaw could be as close as 0.5 inches below the toe of the J-groove weld on the downhill side of the nozzles in the outer three rows, without growing to reach the weld during the period between inspections, and that tensile stresses in the nozzle are less than 20 ksi at distances greater than approximately 0.6 inches below the toe of the J-groove weld. Therefore, the expenditure of additional time, resources, and personnel radiation exposure to inspect chamfered and threaded areas in order to comply with the 1.0 inch criterion specified in the second options of Section IV.C(5)(b)(i) and Section IV.C(5)(b)(ii) of the revised order would not provide a compensating increase in the level of quality and safety.

5. Proposed Alternative and Basis

I&M proposes the following alternative:

For RPV control rod drive mechanism head penetration nozzles in the 45.8, 47.0, and 50.5 degree rows that have a downhill side distance of less than 1.0 inch but greater than 0.5 inches between the lowest point on the toe of the J-groove weld (on a horizontal plane perpendicular to the nozzle axis) and the top of the chamfer and threads, the portion of the nozzle below the J-groove weld shall be examined, using ultrasonic testing of the volume and/or eddy current testing or dye penetrant testing of the wetted surfaces, down to the top of the chamfer and threads.

For the RPV control rod drive mechanism head penetration nozzle in the 47.0 degree row that has a downhill side distance of less than 0.5 inches between the lowest point on the toe of the J-groove weld (on a horizontal plane perpendicular to the nozzle axis) and the top of the chamfer and threads, the portion of the nozzle below the J-groove weld shall be examined using ultrasonic testing of the volume and/or eddy current testing or dye

penetrant testing of the wetted surfaces down to 0.6 inches below the lowest point at the toe of the J-groove weld (on a horizontal plane perpendicular to the nozzle axis).

Basis

CNP specific calculations demonstrate that, for the outer three rows, more than one operating cycle would elapse before a postulated 100 percent through-wall axial flaw, with its upper tip 0.5 inches below the toe of the J-groove weld, would propagate into the pressure boundary formed by the weld. The results of these calculations are illustrated by the crack growth curves in Figures 6-36, 6-38, and 6-40 of WCAP-14118-P, Revision 6, which is provided as Attachment 2 to this letter. These curves show that it would take more than 2.3 effective full power years (EFPY) for the postulated flaw to propagate from an uninspected area to the toe of the weld. The under-head nozzle inspection interval for Unit 2 required by revised NRC Order EA-03-009 is one operating cycle, approximately 1.5 years. Assuming a 90 percent unit capacity factor, one operating cycle would result in approximately 1.35 EFPY of operation. Therefore, an examination that extended only 0.5 inches below the toe of the J-groove weld would provide almost 1 EFPY of margin against flaw propagation to the toe of the J-groove weld.

For nozzles with an estimated downhill side distance of less than 1.0 inch but greater than 0.5 inches between the toe on the bottom of the J-groove weld and the top of the chamfer and threads, the proposed alternative provides additional margin by requiring that the examination extend to the top of the chamfer and threads. The curve provided as Attachment 4 to this letter shows that it would take approximately 6.4 effective full power years for a flaw in the most limiting of these nozzles (the nozzle with an estimated 0.68 inch downhill distance) to propagate from the uninspected area to the J-groove weld. The curve provided as Attachment 4 to this letter was developed using the same methodology as the curves provided in Figures 6-36, 6-38, and 6-40 of WCAP-14118-P, Revision 6. Additionally, the stress curves provided in Figures B-5, B-7, and B-9 of WCAP-14118-P, Revision 6 show that the stress 0.68 inches below the toe on the bottom of the J-groove weld is below the 20 ksi criterion specified in the revised order. Since tensile stress is a significant contributor to the phenomena of concern, primary water stress corrosion cracking (PWSCC), the proposed alternative ensures that the portions of the nozzle subject to PWSCC are examined.

For the nozzle with an estimated minimum distance of less than 0.5 inches between the toe on the bottom of the J-groove weld and the top of the chamfer and threads, the proposed alternative ensures that the nozzle is examined to at least 0.5 inches (plus a margin for the estimated 10 percent measurement tolerance) below the weld, and ensures that portions of the nozzle subject to stress greater than 20 ksi are examined. The proposed alternative provides these assurances without requiring personnel radiation exposure to penetrant test portions of the nozzle that are not subject to tensile stress greater than 20 ksi, and therefore are not susceptible to PWSCC that could reach the J-groove weld between inspections.

Finally, by allowing the option of using ultrasonic, eddy current, or dye penetrant testing, or a combination thereof, the proposed alternative provides flexibility to address unexpected conditions, such as difficulty examining repaired areas, while ensuring that the specified scope of the examinations is maintained.

In addition to the assurances provided by crack growth and stress curves, the results of previous inspections provide assurance that Unit 2 RPV head penetrations have not experienced significant primary water stress corrosion cracking. The bare-metal visual examinations of the Unit 2 RPV head upper surface conducted during the refueling outage that ended in June 2003 identified no indications of leakage. Although nondestructive examination of the nozzles identified two indications that were repaired, the repairs were conservative actions since the indications were not expected to exhibit significant growth during the subsequent operating cycle. Two much smaller indications of no appreciable depth were identified but were not considered as needing repair. Reference 1 provides details of these examinations.

6. **Application and Duration of Proposed Alternative, Use of Stress Curves**

This section describes the application of the proposed alternative, the use of the stress curves in WCAP-14118-P, Revision 6 to demonstrate compliance with the revised order for those nozzles not subject to the proposed alternative, and the duration of the proposed alternative. As noted above, the stated inspectable lengths are based on estimates by personnel reviewing results from the previous inspection of Unit 2 nozzles. Additional measurements or changes in measurement accuracy may slightly alter the actual number of nozzles in each category.

Nozzles With Less than 1.0 Inch Between the Toe on the Bottom of the J-groove Weld and Top of the Threads and Chamfer

The six control rod drive mechanism head penetration nozzles that have a distance of less than 1.0 inch but greater than 0.5 inches between the lowest point on the toe of the J-groove weld and the top of the chamfer and threads, would be examined (likely using ultrasonic or eddy current testing) below the J-groove weld to the maximum extent possible, i.e., to the top of the chamfer and threads. The nozzle that has less than 0.5 inches between the lowest point on the toe of the J-groove weld and the top of the chamfer and threads would be examined (likely using ultrasonically or eddy current testing) below the J-groove weld down to the top of the chamfer and threads, and would be penetrant tested to at least 0.6 inches below the lowest point at the toe of the J-groove weld (on a horizontal plane perpendicular to the nozzle axis) distance. I&M expects that the only nozzle in this category will continue to be the nozzle for Penetration 73.

Nozzles With More than 1.0 Inch but Less than 2.0 Inches Between the Toe on the Bottom of the J-groove Weld and Top of the Threads and Chamfer

Previous inspection results indicate that the presence of chamfer and threads on the bottom end results in 35 control rod drive mechanism nozzles with minimum inspectable lengths of more than 1.0 inch but less than 2.0 inches below the toe on the bottom of the J-groove weld. These nozzles are in the nine outer rows (27.0 degrees through 50.5 degrees from the RPV head vertical centerline). These nozzles will be inspected in accordance with the second options in Section IV.C(5)(b)(i) and Section IV.C(5)(b)(ii) of the revised order. These options require that the examinations extend beyond 1.0 inch below the toe on the bottom of the J-groove weld as necessary to include portions of the nozzle having an operating stress of 20 ksi and greater. Although stress curves and tables are not available in Appendix B of WCAP-14118-P, Revision 6 for all nine rows, the stress curves for the 27.0 degree and 50.5 degree rows show that, for the downhill (most limiting) side of the nozzles, the 20 ksi criteria is reached at approximately 0.8 inches and 0.5 inches below the toe of the J-groove weld, respectively. For the rows between 27.0 degrees and 50.5 degrees that do not have stress curves, it is conservatively assumed that the distance below the toe of the J-groove weld at which the 20 ksi criteria is reached is bounded by the 0.8 inch value.

Nozzles With More than 2.0 Inches Between the Toe on the Bottom of the J-groove Weld and Top of the Threads and Chamfer

Previous inspection results indicate that the presence of chamfer and threads on the bottom end results in 37 control rod drive mechanism nozzles having minimum inspectable lengths of more than 2.0 inches. These nozzles are in the ten inner rows (0.0 degrees through 36.2 degrees from the RPV head vertical centerline). Note that these ten inner rows overlap the nine outer rows discussed above. These nozzles in the ten inner rows will be inspected in accordance with either the first or second options in Section IV.C(5)(b)(i) and Section IV.C(5)(b)(ii) of the revised order. If the second option is used, the stress curves and tables in Appendix B of WCAP-14118-P, Revision 6 will be used as described above to determine a bounding value for the distance below the toe of the J-groove weld at which the 20 ksi criteria is reached for nozzles in rows that do not have stress curves.

Duration of the Proposed Alternative

The proposed alternative will apply only during the period in which the revised NRC Order EA-03-009 is in effect.

7. Precedents

The reason for this request, the proposed alternative, and its basis, including the above referenced curves provided in Attachment 2 and Attachment 4, are similar to those for relaxations from the original NRC Order EA-03-009 (Reference 2) that were approved by Reference 3.

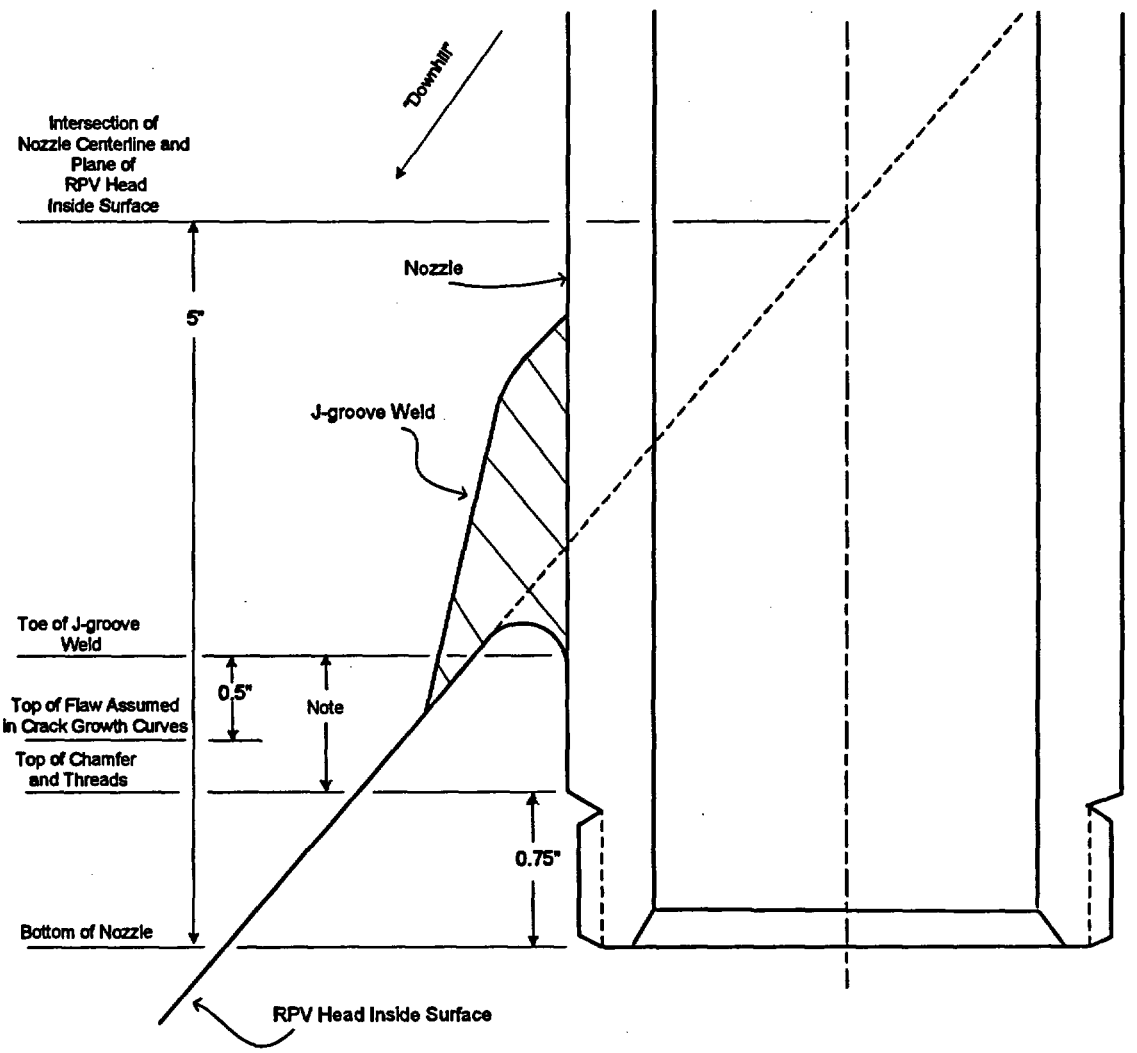
8. References

1. Letter from J. A. Zwolinski, I&M, to U. S. NRC Document Control Desk, "Unit 2 Vessel Head Inspection Results," AEP:NRC:3054-13, dated August 19, 2003.

2. U. S. NRC Order EA-03-009, "Issuance of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," dated February 11, 2003.

3. Letter from W. H. Ruland, NRC, to A. C. Bakken III, I&M, "Donald C. Cook Nuclear Plant Unit 2 – Relaxation of the Requirements of Order (EA-03-009) Regarding Reactor Pressure Vessel Head Inspections (TAC Nos. MB8205 and MB 8206)," dated June 17, 2003.

Sketch of Bottom End of Nozzle
(Not to Scale)



Note: For all nozzles except Penetration 73, the minimum distance from the toe of the J-groove weld to the top of the chamfer and threads is 0.68 in. This occurs on the downhill side of Penetration 63. For Penetration 73, the minimum distance from the toe of the J-groove weld to the top of the chamfer and threads is 0.36 in. This occurs on the downhill side.

Distances from the toe of the J-groove weld to the top of the chamfer and threads are based on best estimates of previous ultrasonic inspection results.

ATTACHMENT 3 TO AEP:NRC:4054-05

WESTINGHOUSE APPLICATION FOR
WITHHOLDING PROPRIETARY INFORMATION FROM
PUBLIC DISCLOSURE

Westinghouse Electric Company
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Our ref: CAW-04-1825

April 22, 2004

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: WCAP-14118-P, Revision 6, "Structural Integrity Evaluation of Reactor Vessel Upper Head Penetrations to Support Continued Operation: D. C. Cook Units 1 and 2," October, 2003 (Proprietary)

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-04-1825 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. The affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying affidavit by American Electric Power Company.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse affidavit should reference this letter, CAW-04-1825, and should be addressed to J. A. Gresham, Manager, Regulatory Compliance and Plant Licensing, Westinghouse Electric Company LLC, P.O. Box 355, Pittsburgh, Pennsylvania 15230-0355.

Very truly yours,

J. A. Gresham, Manager
Regulatory Compliance and Plant Licensing

Enclosures

cc: G. Shukla
W. Macon
E. Peyton

CAW-04-1825

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF ALLEGHENY:

Before me, the undersigned authority, personally appeared J. A. Gresham, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC (Westinghouse), and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:

J. A. Gresham, Manager
Regulatory Compliance and Plant Licensing

Sworn to and subscribed
before me this 22nd day
of April, 2004

Sharon L. Fiori
Notary Public

Notarial Seal
Sharon L. Fiori, Notary Public
Monroeville Boro, Allegheny County
My Commission Expires January 29, 2007
Member, Pennsylvania Association Of Notaries

(1) I am Manager, Regulatory Compliance and Plant Licensing, in Nuclear Services, Westinghouse Electric Company LLC (Westinghouse), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.

(2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Commission's regulations and in conjunction with the Westinghouse "Application for Withholding" accompanying this Affidavit.

(3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.

(4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.

(i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.

(ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitutes Westinghouse policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

(a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of

Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

(b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.

(c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.

(d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.

(e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.

(f) It contains patentable ideas, for which patent protection may be desirable.

There are sound policy reasons behind the Westinghouse system which include the following:

(a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.

(b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.

(c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

(d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.

(e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.

(f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.

(iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, it is to be received in confidence by the Commission.

(iv) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.

(v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in WCAP-14118-P, Revision 6, "Structural Integrity Evaluation of Reactor Vessel Upper Head Penetrations to Support Continued Operation: D. C. Cook Units 1 and 2," October 2003 (Proprietary) being transmitted by the American Electric Company letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted for use by Westinghouse for D. C. Cook Units 1 and 2 is expected to be applicable for other licensee submittals in response to certain NRC requirements for justification of the use of fracture mechanics analyses to support continued safe operation of D. C. Cook Unit 1 or 2 with the presence of a crack in a control rod drive head penetration.

This information is part of that which will enable Westinghouse to:

(a) Determine the allowable time of safe operation if cracks are found.

(b) Assist the customer to obtain NRC approval.

Further this information has substantial commercial value as follows:

(a) Westinghouse plans to sell the use of similar information to its customers for purposes of meeting NRC requirements for licensing documentation.

(b) Westinghouse can sell support and defense of continued safe operation with the presence of cracks in a control rod drive head penetration.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar support documentation and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

PROPRIETARY INFORMATION NOTICE

Transmitted herewith are proprietary and/or non-proprietary versions of documents furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

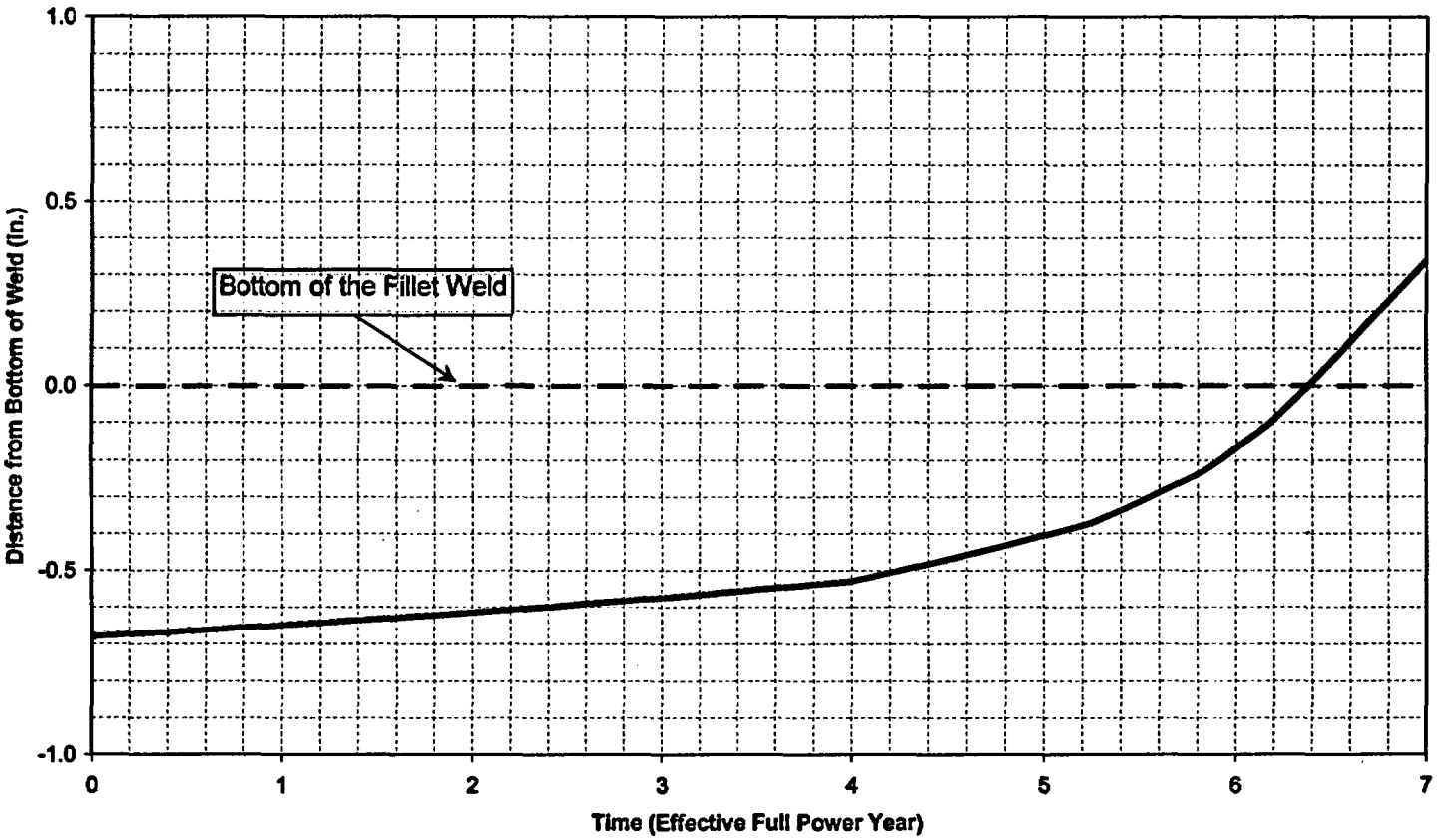
In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

COPYRIGHT NOTICE

ATTACHMENT 4 TO AEP:NRC:4054-05

CRACK GROWTH PREDICTION FOR AXIAL THROUGH –WALL FLAW
0.68 INCHES BELOW THE WELD FOR
THIRD OUTERMOST (45.8 DEGREE) ROW
DOWNHILL SIDE

Crack Growth Prediction for Axial Through-Wall Flaw 0.68" Below the Weld for the Third Outermost Penetration (Downhill Side)



ATTACHMENT 5 TO AEP:NRC:4054-05

REGULATORY COMMITMENTS

The following table identifies those actions committed to by Indiana Michigan Power Company (I&M) in this document. Any other actions discussed in this submittal represent intended or planned actions by I&M. They are described to the Nuclear Regulatory Commission (NRC) for the NRC's information and are not regulatory commitments.

Commitment	Date
I&M will submit a revision to proprietary WCAP-14118, Revision 6, with the proprietary designation removed from Tables 4-1 and 4-2, and will submit a non-proprietary version of the revised WCAP.	June 30, 2004