

# WOLF CREEK

NUCLEAR OPERATING CORPORATION

Terry J Garrett  
Vice President, Engineering

October 5, 2006

ET 06-0035

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

Reference: Letter WM 04-0004, dated March 4, 2004, from R. A. Muench,  
WCNOC to USNRC

Subject: Docket No. 50-482: Relaxation Request from the First Revised  
NRC Order EA-03-009 Regarding Requirements for Nondestructive  
Examination of Nozzles Below the J-Groove

Gentlemen:

On February 11, 2003 the NRC issued Order EA-03-009 for interim inspection requirements for reactor pressure vessel (RPV) heads at pressurized water reactor (PWR) facilities. On February 20, 2004, the NRC issued the First Revised Order EA-03-009, which superseded Order EA-03-009. Wolf Creek Nuclear Operating Corporation (WCNOC) agreed to comply with the revised order in letter WM 04-0004 (reference).

Operating experience obtained from FPL Energy Seabrook Station has shown, from examination of a spare RPV Head, that there may not be sufficient room to perform the required examination of RPV penetration nozzles 74 through 78. The design of RPV head penetration nozzles 74 through 78 includes a threaded section, approximately 1.19 inch long at the bottom of the nozzles. The dimensional configuration at the location of these nozzles is such that the distance from the lowest point at the toe of the J-groove weld to the top of the threaded region is potentially less than the 1 inch lower boundary limit specified in IV.C.5(b)(i) and IV.C.5(b)(ii) of the First Revised Order. The actual distance between the toe of the weld on the downhill side and the thread relief is not known for Wolf Creek Generating Station Unit 1 (WCGS). All available documentation indicates there should be sufficient distance to perform the testing as required but the operating experience gained by FPL Seabrook Station indicates that this dimension can vary between 0.25 inches and 0.75 inches.

This letter is submitted as a contingency in anticipation that the RPV Head at WCGS will be found to have the same configuration as the spare RPV Head at FPL Energy Seabrook Station. WCNOC requests relaxation from the requirements for nondestructive examination of the five penetration nozzles for which WCNOC may not be able to obtain coverage as specified in the Order and proposes that the lower boundary of the ultrasonic inspection extend to the

A101

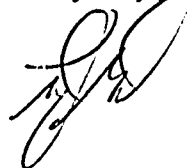
maximum extent possible but not less than 0.30 inches from the toe of the J-groove weld on the downhill side. In accordance with section IV, paragraph F of the Order, WCNOG requests relaxation from the requirements specified in section IV, paragraph C.(5)(b)(i) and C.(5)(b)(ii) for the five RPV head penetrations for which nondestructive testing cannot be performed as required. The requested relaxation meets criterion IV.F.(2) of the revised Order because compliance with the revised Order for the penetrations described in this request would result in hardship (due to dose consequences) or unusual difficulty without a compensating increase in the level of quality and safety.

Attachment I to this letter contains the relaxation request. Enclosure I, WCAP-16589-P, Revision 0, "Structural Integrity Evaluation of Reactor Vessel Upper Head Penetrations to Support Continued Operation: Wolf Creek," August 2006 (Proprietary), provides the engineering justification for this request. A non-proprietary version of WCAP-16589-P is included in enclosure III. Enclosure I contains information proprietary to Westinghouse Electric Company LLC, and is supported by an affidavit (enclosure II) signed by Westinghouse, the owner of the information. The affidavit 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 section 2.390 of the Commission's regulations. Accordingly, it is respectfully requested that the information that is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR Section 2.390 of the Commission's regulations. Correspondence with respect to the copyright or proprietary aspects of the items listed above or the supporting Westinghouse affidavit should reference CAW-06-2185 and should be addressed to J. A. Gresham, Manager Regulatory Compliance and Plant Licensing, Westinghouse Electric Company LLC, PO Box 355, Pittsburgh, Pennsylvania, 15230-0355.

WCNOG requests NRC approval of this relaxation request by October 21, 2006, to support the refueling outage scheduled to start October 7, 2006.

Attachment II to this letter identifies the commitments contained in this request. If you have any questions concerning this matter, please contact me at (620) 364-4084, or Mr. Kevin Moles at (620) 364-4126.

Very truly yours,



Terry J. Garrett

TJG/rit

Attachments: I. Relaxation Request  
II. Commitments

Enclosures: I. WCAP 16589-P (Proprietary)  
II. Westinghouse Affidavit  
III. WCAP 16589 (Non-proprietary)

cc: J. N. Donohew (NRC), w/a, w/e  
B. S. Mallett (NRC), w/a, w/e  
G.E. Werner (NRC), w/a, w/e  
Senior Resident Inspector (NRC), w/a, w/e

## Relaxation Request

### 1. ASME Component Affected

Wolf Creek Generating Station (WCGS) Unit 1 reactor pressure vessel (RPV) head control rod drive mechanism (CRDM) penetrations 74, 75, 76, 77, and 78 (instrument port penetrations).

### 2. Applicable Examination Requirements

The WCGS Unit 1 RPV head is in the low susceptibility category as defined in Sections IV.A and IV.B of Revised NRC Order, EA-03-009<sup>1</sup>. The calculated Effective Degradation Years (EDY) for WCGS was 2.83 at the end of cycle 14. Plants with an EDY of less than 8 and no previous inspection findings are placed in the low susceptibility category. Pursuant to Section IV.C(3) of the revised Order, the RPV head penetration nozzles must undergo nondestructive examination in accordance with Section IV.C(5)(b) of the revised Order during the Fall 2006, Cycle 15 refueling outage. In accordance with Section IV.C(5)(b) of the revised order, the nondestructive examination consists of ultrasonic testing, eddy current testing, 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 required extent of the ultrasonic testing is 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 inches 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 required extent of the eddy current and dye penetrant testing is 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

---

<sup>1</sup> Revised NRC 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.

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 operation stress level (including all residual and normal operation stresses) of 20 ksi tension and greater (see figure IV-4 of the revised order).

### 3. Reason for Request

WCNOC anticipates not being able to completely comply with the requirements for UT inspection of penetration nozzles 74 through 78 below the J-groove weld, due to the physical configuration of the nozzles and the limitations of the test equipment. The bottom ends of these nozzles are externally threaded and internally tapered. Loss of UT probe coupling due to the internal taper and or disruption of the UT signal due to the external thread will prevent UT data acquisition.

WCNOC is proposing an alternative to the above requirements for the inspections at the end of cycle 15 and all future CRDM nozzle inspections, because for certain CRDM nozzles, compliance with the revised order would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The Reactor Vessel Head CRDM Penetrations at WCGS have two styles of ends, referred to as Type "X" and Type "Y" (figure 2). Penetrations 1 through 73 are Type "Y" that are essentially a smooth wall cylinder with a 0.203 radius at the outer diameter and inner diameter. Penetrations 74 through 78 have a threaded outside diameter and an internal taper.

The design of RPV head penetration nozzles 74 through 78, referred to as Type "X", (Figure 1 and Figure 2) includes a threaded section, approximately 1.19 inch in length at the bottom of the nozzles. These penetrations are located at the 48.7 degree location. The dimensional configuration at this location is such that the distance from the lowest point at the toe of the J-groove weld to the top of the threaded region is less than the 1 inch lower boundary limit specified in IV.C.5(b)(i) and IV.C.5 (b)(ii) of the First Revised Order.

The Open Housing Probe will be used on the threaded penetrations to detect circumferential flaws and axial flaws. This probe has separate transducers arranged vertically and horizontally for sending and receiving the ultrasonic signal. Both transducer configurations are qualified to detect both axial and circumferential flaws. With the vertical configuration, the lower transducer will not contact the inside wall of the nozzle unless the upper transducer has been inserted greater than approximately 1.0 inches into the nozzle above where the taper ends. The horizontal transducer configuration has to be inserted above the end of the internal taper for the transducers to make contact with the surface of the CRDM nozzle.

### 4. Proposed Alternative and Basis for Use

The design of RPV head penetration nozzles 74 through 78 (figures 1 and 2) includes a threaded section, approximately 1.19 inch at the bottom of the nozzles. These penetrations are located at the 48.7 degree location. The dimensional configuration at this location is such that

the distance from the lowest point at the toe of the J-groove weld to the top of the threaded region is potentially less than the 1 inch lower boundary limit specified in IV.C.5(b)(i) and IV.C.5(b)(ii) of the First Revised Order. Therefore, WCNOG anticipates not being able to completely comply with the requirements for UT inspection below the J-groove weld, due to the physical configuration of the nozzles. Loss of UT probe coupling due to the internal taper and/or the disruption of the UT signal due to the external thread will prevent the UT data acquisition from the ID and the threads on the OD. WCNOG proposes that the lower boundary of the ultrasonic inspection extend to the maximum extent possible but not less than 0.30 inches from the toe of the J-groove weld on the downhill side (Figure 5). The actual distance between the toe of the weld on the downhill side and the thread relief is not known for WCGS Unit 1. All available documentation indicates there should be sufficient distance to perform the testing as required. However, Operating Experience gained by FPL Seabrook from measurements of a spare RPV head indicate that this dimension can vary between 0.25 inches and 0.75 inches.

Because of the possibility that sufficient distance to perform the testing as required may not exist WCNOG proposes to define the lower boundary of the inspection volume for the five affected RPV head penetration nozzles as:

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 the maximum extent practical but not less than 0.30 inches 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 for Penetrations 74, 75, 76, 77, and 78.

It is WCNOG's intent to perform the examination to the maximum extent possible for all penetrations. WCNOG will achieve examination coverage from 2 inches above the J-groove weld down to the lowest elevation that can be practically examined with the Open Housing Probe, as shown in Figure 5, but not less than 0.30 inches below the toe of the weld on the downhill side for penetrations 74 through 78.

Testing of portions of the nozzle significantly below the J-groove is not significant to the phenomena of concern. The phenomena that are of concern are leakage through the pressure boundary and circumferential cracking in the nozzle above the J-groove weld. The nozzle is essentially an open-ended tube and the nozzle wall below the J-groove weld is not part of the reactor coolant (RCS) pressure boundary.

In the event that a circumferential crack existed in the region that could not be inspected by the Open Housing Probe, it would not be safety significant.

WCNOG anticipates fully complying with the requirements for the UT inspections in Penetration 1 through 73. These penetrations are a smooth cylinder in shape and pose no known impediments for compliance with the Order.

The NRC has identified 20 ksi operating stress level as a threshold necessary to initiate Primary Water Stress Corrosion Cracking (PWSCC). The threshold stress is incorporated into the First Revised Order by reducing the inspection area below the J-groove weld from 2 inches to 1 inch if the operating stresses are below 20 ksi. The assumption of any PWSCC crack initiation in the region of the penetration nozzle with a stress level of 20 ksi or less is very conservative.

To support the submittal of the relaxation request, in the event that the required 1 inch inspection coverage below the weld cannot be achieved, a series of operational stress plots and axial through-wall crack growth charts for below the weld on the downhill side were prepared using a flaw tolerance approach<sup>2</sup>. The plots for the 48.7 degree penetrations applicable to this relaxation request are shown in figures 3 and 4. Figure 4 shows the distance below the weld on the downhill side at which the stresses drop below 20 ksi. The distance on the ID surface is at the weld toe and the distance on the OD surface is at 0.30 inches. Therefore examination to a minimum of 0.30 inches below the weld for these penetrations would satisfy the 20 ksi stress criteria of the Order, thereby minimizing the potential for cracking to exist in the undisputed areas of the nozzle.

The time duration required for the upper extremity of a postulated axial through-wall flaw to reach the bottom of the weld can be determined from Figure 3. For example, for CRDM nozzles 74 through 78, a axial through wall flaw that has its upper extremity located at 0.15 inches below the weld would take over 6 effective full power years to reach the weld. The results of the flaw propagation calculation indicate that, even if a through wall axial flaw were to occur in the region of the penetration nozzle not being inspected, there would be adequate opportunity for crack detection in the subsequent inspection, per the frequency stated in the Order, prior to reaching the RCS pressure boundary. If a circumferential flaw were to occur in the region of the nozzle that was not inspected, it is not a safety concern since it would not result in pressure boundary leakage.

To reduce personnel radiation exposure, the nozzles are typically inspected using remotely operated ultrasonic or eddy current equipment. Although dye penetrant testing of threaded surfaces is possible, it is not practical. The threaded OD makes a dye penetrant examination on the lower section of the penetration impractical because of excessive bleed out from the threads. In addition the radiation levels under the reactor vessel head are estimated to be 5000mR/hr at the bottom of the CRDM nozzles resulting in an exposure of approximately 1250mR per nozzle. Actual dose measurements taken under the Reactor Vessel Head in 2003 are between 2000 and 5000 mR/hour with the higher dose rates being found close to the guide funnel locations. Similar exposure of this magnitude has been documented in the Florida Power and Light submittal for St. Lucie Unit 2 with manual PT of 9 nozzles resulting in 2.45 man Rem exposure<sup>3</sup>. In addition there is no readily available remotely deliverable NDE technology that can inspect the threaded region.

In conclusion WCNOC believes the inspection coverage is adequate because the cited inspection limitation of the nozzles does not preclude the full UT examination coverage of the portions of these nozzles that are of primary interest because:

- o UT of the most highly stressed portion of the nozzle (the weld heat affected zone) is unaffected by this limitation.
- o UT of the interference fit zone above the weld is unaffected by this limitation, and cracks initiating in the unexamined bottom portion (non pressure boundary) of the nozzle would be of minimal safety significance with respect to pressure boundary leakage or nozzle ejection, since this portion of the nozzle is below the pressure boundary and any cracks would have to grow through a significant examined portion to reach the pressure boundary.

---

<sup>2</sup> WCAP 16589-P, "Structural Integrity Evaluation of Reactor Vessel Upper Head Penetrations to Support Continued Operation Wolf Creek," Westinghouse Electric Co. LLC, Revision 0, August 2006.

<sup>3</sup> Letter from William Jefferson, FP&L to USNRC Document Control Desk, "Request for Additional Information Response, Relaxation Request No. 3", Dated November 3, 2004.

- o UT of the area that could contain safety significant flaws will be fully inspected.
- o UT for axial and circumferential indications will be done to the maximum extent possible to the point of lift off at the start of the internal taper, which is below 0.30 inches.

Additional efforts to achieve the Order required examination area below the weld would result in considerable increased dose, estimated to be approximately 1250 mR per nozzle, without a compensating increase in the level of quality and safety.

#### 5. Duration of Relaxation

WCNOC requests relaxation of this requirement for end of cycle fifteen refueling outage inspection and all future inspections where ultrasonic examination techniques are used to inspect the five affected RPV head penetration nozzles in Response to the requirements of the First Revised NRC Order EA-03-009, or until inspection technology is developed to a state where the examination volume can be extended to full compliance with the Order, or information is received from the NRC regarding non-acceptance of the crack growth formula in MRP-55.

The crack-growth rate formula in the structural integrity evaluation for WCNOC is the same as reported in industry report MRP-55. If the NRC Staff finds that the crack growth formula in industry report MRP-55 is unacceptable, WCNOC will revise its analysis that justifies relaxation of the order within thirty days after NRC informs WCNOC of an NRC approved crack-growth rate formula. If WCNOC's revised analysis shows that the crack growth acceptance criteria are exceeded prior to the end of the current operating cycle, this relaxation request will be rescinded and WCNOC will, within 72 hours, submit to the NRC written justification for continued operation. If the revised analysis shows that the crack-growth acceptance criteria are not exceeded during either the current or the subsequent operating cycle, WCNOC will, within 30 days, submit a letter to the NRC confirming that its analysis has been revised.

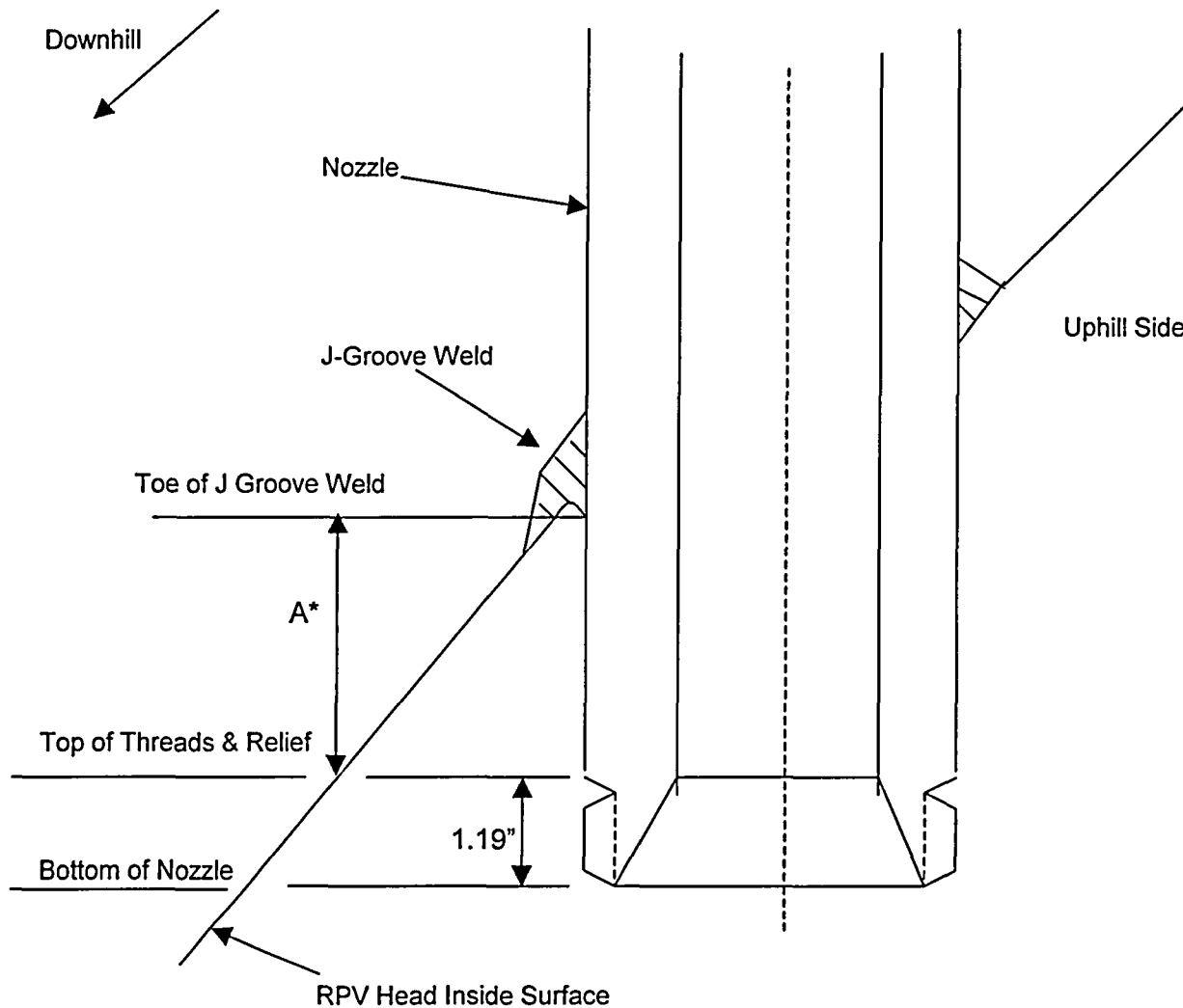
#### 6. Precedents

Letter from Gene St. Pierre, FPL Energy Seabrook to NRC, Document Control Desk, "Relaxation Request from the First Revised NRC Order EA-03-009 Regarding Requirements for Nondestructive Examination of Nozzles Below the J-Groove" dated May 30, 2006.



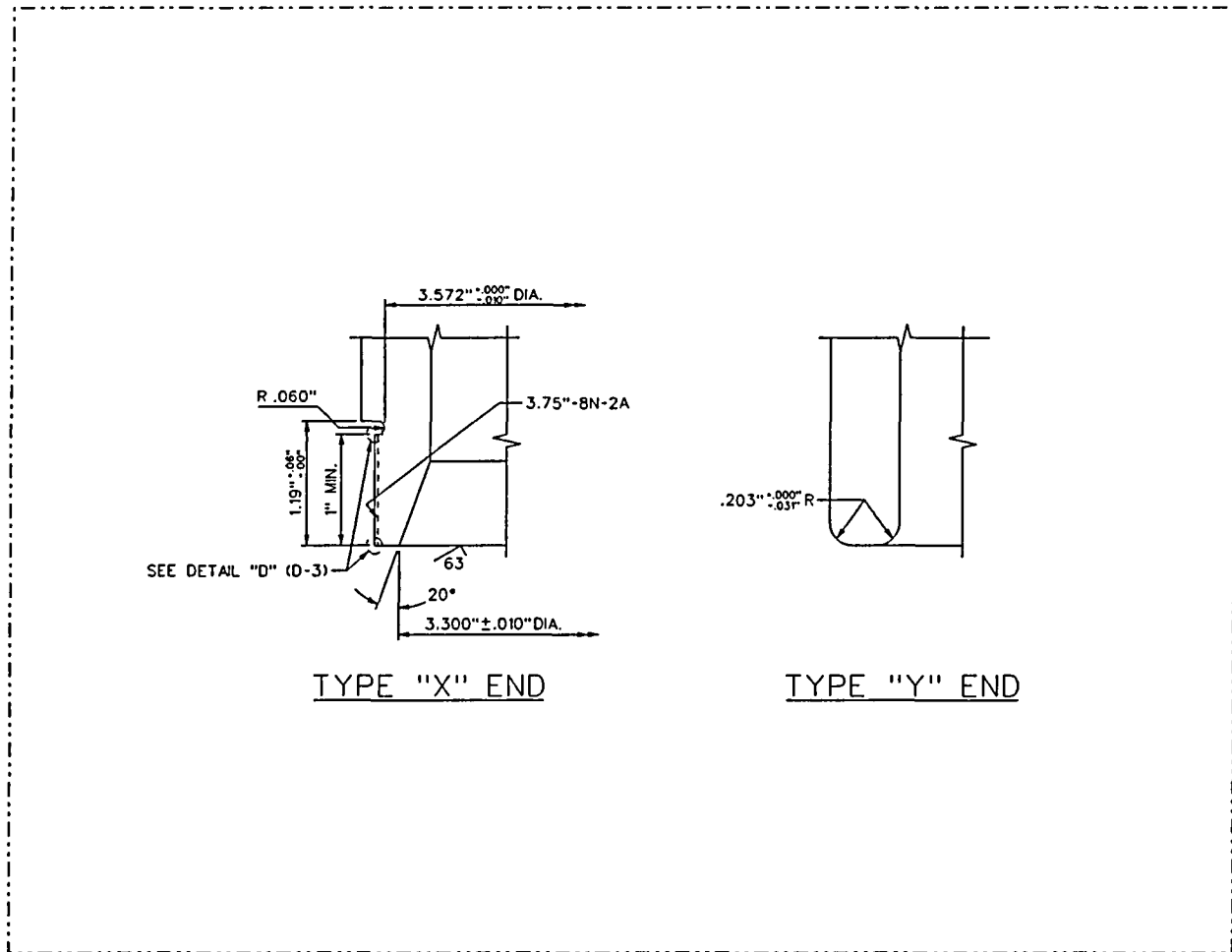
Figure 1

Reactor Vessel Head Penetration Nozzle  
(Not to Scale)



\* The distance "A" on Penetrations 74,75, 76, 77, and 78 may vary between 0.25 inch and 0.75 inch based on measurements taken on the Seabrook spare RPV head. Actual measurements have not been taken on the Wolf Creek Generating Station head.

Figure 2



Details of the threaded and tapered portions of Penetrations 74,75,76, 77, and 78 referred to as "Type X" and the end of Penetrations 1 through 73, referred to as "Type Y."

6-24

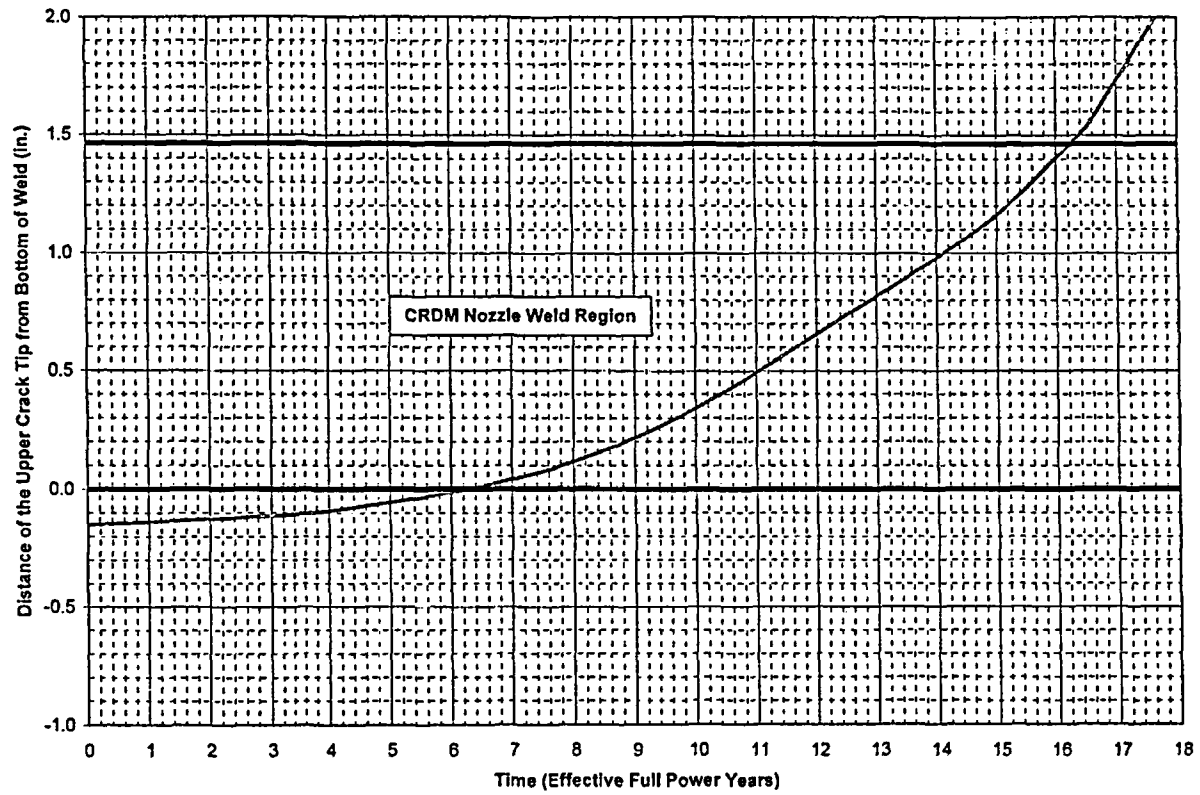


Figure 3

Figure 6-16 Through-Wall Longitudinal Flaws Located in the 48.7 Degree CRDM Row of Penetrations, Downhill Side - Crack Growth Predictions for Wolf Creek

Figure 4

A-12

Figure A-9  
Hoop Stress Distribution Downhill Side  
(48.7° CRDM Penetration Nozzle)

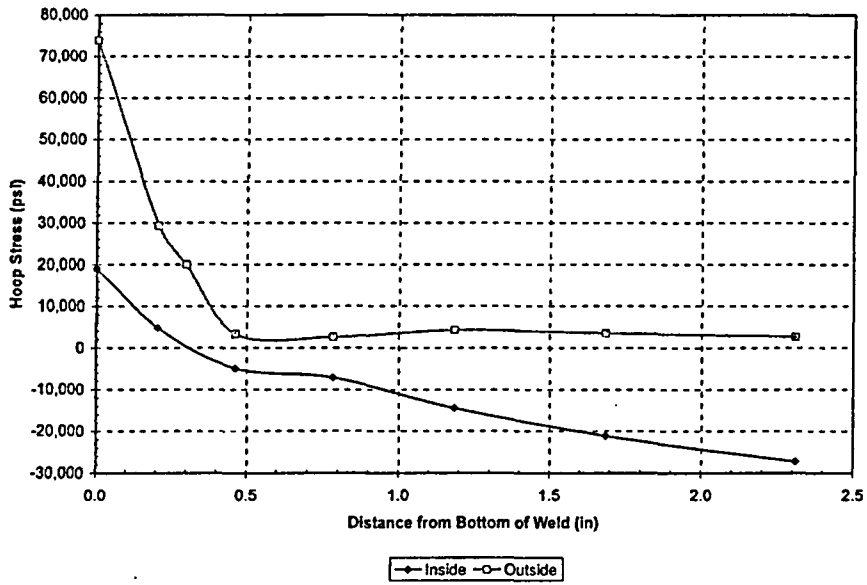
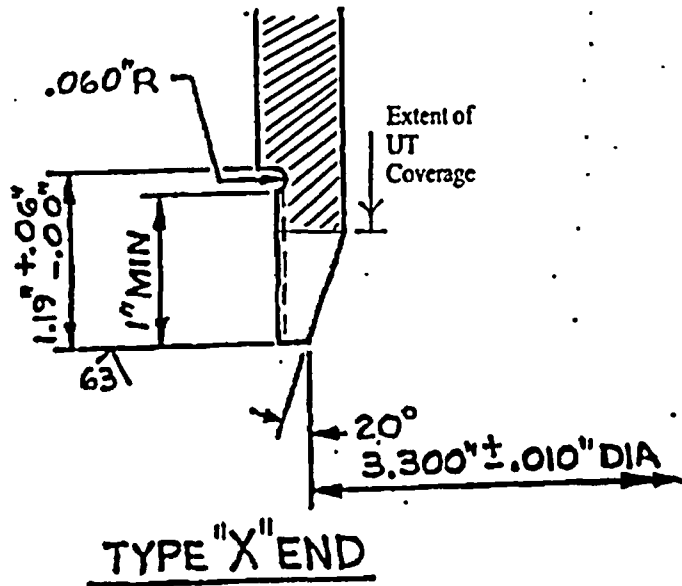


Figure 5



The shaded area shows the extent of the nozzle end that would be inspected for axial indications with the Open Housing Probe.

The following table identifies those actions committed to by WCNOG in this document. Any other statements in this submittal are provided for information purposes and are not considered to be commitments. Please direct questions regarding these commitments to Mr. Kevin Moles at (620) 364-4126.

COMMITMENT	Due Date/Event
If the NRC Staff finds that the crack growth formula in industry report MRP-55 is unacceptable, WCNOG will revise its analysis that justifies relaxation of the order within thirty days after NRC informs WCNOG of an NRC approved crack-growth rate formula.	Within 30 days of notification of an NRC approved formula.
If WCNOG's revised analysis shows that the crack growth acceptance criteria are exceeded prior to the end of the current operating cycle, this relaxation request will be rescinded and WCNOG will, within 72 hours, submit to the NRC written justification for continued operation.	Within 72 hours of discovery that acceptance criteria will be exceeded.
If the revised analysis shows that the crack-growth acceptance criteria are not exceeded during either the current or the subsequent operating cycle, WCNOG will, within 30 days, submit a letter to the NRC confirming that its analysis has been revised.	Within 30 days of analysis revision

WCAP 16589-P (Proprietary)

Enclosure II to ET 06-0035

Westinghouse Affidavit





Westinghouse Electric Company  
Nuclear Services  
P.O. Box 355  
Pittsburgh, Pennsylvania 15230-0355  
USA

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

Direct tel: (412) 374-4643  
Direct fax: (412) 374-4011  
e-mail: greshaja@westinghouse.com

Our ref: CAW-06-2185

August 11, 2006

**APPLICATION FOR WITHHOLDING PROPRIETARY  
INFORMATION FROM PUBLIC DISCLOSURE**

**Subject: WCAP-16589-P, Revision 0, "Structural Integrity Evaluation of Reactor Vessel Upper Head Penetrations to Support Continued Operation: Wolf Creek," August 2006 (Proprietary)**

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-06-2185 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 Wolf Creek Nuclear Operating Corporation.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse affidavit should reference this letter, CAW-06-2185, 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,

A handwritten signature in black ink, appearing to read 'J. A. Gresham', written over a horizontal line.

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

Enclosures

cc: G. Shukla

bcc: J. A. Gresham (ECE 4-7A) 1L  
R. Bastien, 1L (Nivelles, Belgium)  
C. Brinkman, 1L (Westinghouse Electric Co., 12300 Twinbrook Parkway, Suite 330, Rockville, MD 20852)  
RCPL Administrative Aide (ECE 4-7A) 1L, 1A (letter and affidavit only)

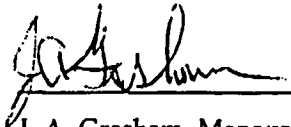
AFFIDAVIT

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:

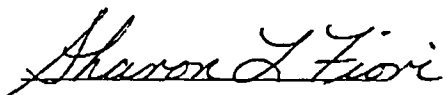


---

J. A. Gresham, Manager

Regulatory Compliance and Plant Licensing

Sworn to and subscribed before  
me this 11<sup>th</sup> day of August, 2006



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-16589-P, Revision 0, "Structural Integrity Evaluation of Reactor Vessel Upper Head Penetrations to Support Continued Operation: Wolf Creek," August 2006 (Proprietary) being transmitted by the Wolf Creek Nuclear Operating Corporation 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 Wolf Creek 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 Wolf Creek 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**

The reports transmitted herewith each bear a Westinghouse copyright notice. The NRC is permitted to make the number of copies of the information contained in these reports which are necessary for its internal use in connection with generic and plant-specific reviews and approvals as well as the issuance, denial, amendment, transfer, renewal, modification, suspension, revocation, or violation of a license, permit, order, or regulation subject to the requirements of 10 CFR 2.390 regarding restrictions on public disclosure to the extent such information has been identified as proprietary by Westinghouse, copyright protection notwithstanding. With respect to the non-proprietary versions of these reports, the NRC is permitted to make the number of copies beyond those necessary for its internal use which are necessary in order to have one copy available for public viewing in the appropriate docket files in the public document room in Washington, DC and in local public document rooms as may be required by NRC regulations if the number of copies submitted is insufficient for this purpose. Copies made by the NRC must include the copyright notice in all instances and the proprietary notice if the original was identified as proprietary.



Enclosure III to ET 06-0035

WCAP 16589 (Non-proprietary)