



FirstEnergy Nuclear Operating Company

Davis-Besse Nuclear Power Station  
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Oak Harbor, Ohio 43449-9760

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Docket Number 50-346

Contains Proprietary and  
Confidential Information  
Pursuant to 10CFR2.790.

License Number NPF-3

Serial Number 2761

February 14, 2002

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555-0001

Subject: Reactor Pressure Vessel Head Penetration Examination Plans for the Davis-Besse Nuclear Power Station

Ladies and Gentlemen:

The purpose of this letter is to document the examination plans for the Reactor Pressure Vessel (RPV) head penetrations to be conducted during the Davis-Besse Nuclear Power Station, Unit 1 (DBNPS) 13<sup>th</sup> Refueling Outage (13RFO) scheduled to begin on February 16, 2002. These examination plans were presented by the DBNPS staff to the NRC staff on January 23, 2002, in further response to NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles," and satisfied a commitment made in FirstEnergy Nuclear Operating Company (FENOC) letter Serial Number 2746, dated November 30, 2001. An overview of the discussion is provided in Attachment 1.

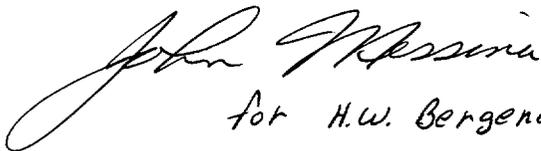
Attachment 2 provides a proprietary version of the detailed examination information as was discussed during the January 23, 2002, meeting. Attachment 3 provides the Framatome-ANP affidavit complying with the requirements of 10 CFR 2.790 citing the rationale for this information to be withheld from public disclosure.

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If you have any questions, or require further information, please contact Mr. David H. Lockwood, Manager – Regulatory Affairs, at (419) 321-8450.

Very truly yours

  
for H.W. Bergendahl

/s

Enclosure and Attachments

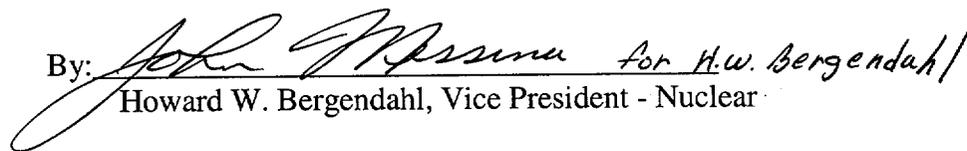
cc: J. E. Dyer, Regional Administrator, NRC Region III  
S. P. Sands, DB-1 NRC/NRR Project Manager  
C. S. Thomas, DB-1 Senior Resident Inspector  
Utility Radiological Safety Board

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SUPPLEMENTAL INFORMATION  
IN RESPONSE TO  
NRC BULLETIN 2001-01  
FOR  
DAVIS-BESSE NUCLEAR POWER STATION  
UNIT NUMBER 1

This letter is submitted pursuant to 10 CFR 50.54(f) and contains supplemental information concerning the response (Serial 2731, dated September 4, 2001) to NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles," for the Davis-Besse Nuclear Power Station, Unit Number 1.

I, Howard W. Bergendahl, state that (1) I am Vice President - Nuclear of the FirstEnergy Nuclear Operating Company, (2) I am duly authorized to execute and file this certification on behalf of the Toledo Edison Company and The Cleveland Electric Illuminating Company, and (3) the statements set forth herein are true and correct to the best of my knowledge, information and belief.

By:  for H.W. Bergendahl/  
Howard W. Bergendahl, Vice President - Nuclear

Affirmed and subscribed before me this fourteenth day of February, 2002.

  
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Notary Public, State of Ohio

YVONNE M. HALL  
Notary  
State of Ohio  
My Commission Expires  
July 25, 2004

## Overview of DBNPS Reactor Pressure Vessel Head Penetration Inspection Plans 13<sup>th</sup> RFO

The DBNPS 13<sup>th</sup> RFO is scheduled to begin on February 16, 2002. The Reactor Pressure Vessel (RPV) head removal to the RPV head inspection stand should be completed on February 21, 2002, and RPV head penetration nozzle examinations are scheduled to begin on February 22, 2002.

The RPV head will undergo a remote qualified visual examination of the Control Rod Drive Mechanism (CRDM) nozzles. The qualified visual examination will be video-taped and will inspect the full 360° around each nozzle. The results of the visual examination will determine what type of subsequent ultrasonic testing (UT) will be performed on the individual nozzles. This is illustrated in Figure 1 and is summarized below:

1. If the visual examination results indicate there is no leakage from the RPV head to CRDM nozzle annulus area and there is no CRDM flange leakage present around the affected CRDM nozzle, the nozzle will be subjected to a subsequent "bottom up" blade probe UT.
2. If the visual examination is obscured such that the full 360° cannot be observed, but there is no indication of leakage from the RPV head to CRDM nozzle annulus area, and there is no CRDM flange leakage, the affected CRDM nozzle will be subjected to a subsequent "bottom up" blade probe UT.
3. If the visual examination indicates potential leakage from the RPV head to CRDM nozzle annulus area, or if a CRDM flange exhibits leakage requiring repair, the affected CRDM will be removed and the CRDM nozzle will be subjected to a "top down" rotating probe UT.

If any flaws are discovered during the subsequent UT, they will be resolved as indicated on Figure 2 and summarized below:

1. Flaws that are discovered below the J-weld and do not challenge the integrity of the reactor coolant system (RCS) pressure boundary will be evaluated using the Electric Power Research Institute (EPRI) Materials Reliability Program (MRP) 95% confidence curve to determine if crack growth during the next cycle (Cycle 14) will challenge the integrity of the RCS pressure boundary or if crack growth during Cycle 14 may result in potential loose parts generation. If the evaluation reveals that crack growth is such that the RCS pressure boundary may be

challenged or that loose parts may be generated, the flaws will be repaired. Otherwise, the flaws will be allowed to remain during Cycle 14.

2. Flaws discovered in the J-weld or in the pressure boundary area of the CRDM nozzle outer diameter that are circumferential or axial will be repaired.
3. Flaws discovered in the CRDM nozzle inner diameter that are circumferential will be repaired.
4. Flaws discovered in the CRDM nozzle inner diameter that are axial will be evaluated in accordance with ASME Section XI for acceptability. If the flaw is acceptable pursuant to the ASME Code, then further evaluation will be conducted to determine if the crack growth, using the EPRI MRP 95% confidence curve, during Cycle 14 may challenge RCS pressure boundary integrity. If either the ASME Section XI evaluation determines the flaw to be unacceptable or the crack growth evaluation determines the RCS pressure boundary integrity may be challenged, the flaw will be repaired.
5. Any flaw that results in a verified leak path will be subjected to a dye penetrant test (PT) prior to any repairs being performed.

Because remote machining technology is not available, the flaws detected may not be destructively characterized nor will laboratory samples be obtained. This is consistent with ALARA principles, as stated in FENOC letter Serial Number 2747, in that manually characterizing the flaws and obtaining samples could result in an accumulated dose for this effort (based on the dose experienced in a similar effort at another utility) that is approximately 40% above the projected dose for the repair effort outlined above.

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Framatome ANP Affidavit for January 23, 2002 Presentation Slides (Attachment 2)

(3 Pages Follow)



6. The following criteria are customarily applied by FRA-ANP to determine whether information should be classified as proprietary:

- (a) The information reveals details of FRA-ANP's research and development plans and programs or their results.
- (b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or service.
- (c) The information includes test data or analytical techniques concerning a process, methodology, or component, the application of which results in a competitive advantage for FRA-ANP.
- (d) The information reveals certain distinguishing aspects of a process, methodology, or component, the exclusive use of which provides a competitive advantage for FRA-ANP in product optimization or marketability.
- (e) The information is vital to a competitive advantage held by FRA-ANP, would be helpful to competitors to FRA-ANP, and would likely cause substantial harm to the competitive position of FRA-ANP.

7. In accordance with FRA-ANP's policies governing the protection and control of information, proprietary information contained in this Document has been made available, on a limited basis, to others outside FRA-ANP only as required and under suitable agreement providing for nondisclosure and limited use of the information.

8. FRA-ANP policy requires that proprietary information be kept in a secured file or area and distributed on a need-to-know basis.

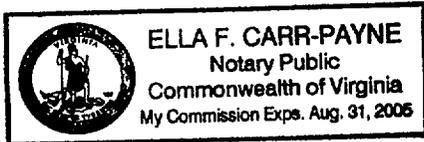
9. The foregoing statements are true and correct to the best of my knowledge, information, and belief.

  
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SUBSCRIBED before me this 4<sup>th</sup>  
day of February, 2002.

  
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Ella F. Carr-Payne  
NOTARY PUBLIC, STATE OF VIRGINIA  
MY COMMISSION EXPIRES: 08/31/05



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**COMMITMENT LIST**

The following list identifies those actions committed to by the Davis-Besse Nuclear Power Station (DBNPS) in this document. Any other actions discussed in the submittal represent intended or planned actions the DBNPS. They are described only for information and are not regulatory commitments. Please notify the Manager - Regulatory Affairs (419-321-8450) at the DBNPS of any questions regarding this document or associated regulatory commitments.

COMMITMENTS

DUE DATE

None

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Framatome ANP January 23, 2002 Presentation Slides  
UT Inspection Approach for Davis-Besse CRDM Nozzle Examinations

THE FOLLOWING DOCUMENT CONTAINS PROPRIETARY INFORMATION

(30 pages follow)