



FirstEnergy Nuclear Operating Company

5501 North State Route 2
Oak Harbor, Ohio 43449

Lew W. Myers
Chief Operating Officer

419-321-7599
Fax. 419-321-7582

10 CFR 50.54(f)

Docket Number 50-346

License Number NPF-3

Serial Number 2804

September 12, 2002

United States Nuclear Regulatory Commission
Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

Subject: Thirty Day Response to NRC Bulletin 2002-02, "Reactor Pressure Vessel Head and Vessel Head Penetration Nozzle Inspection Programs"

Ladies and Gentlemen:

On August 9, 2002, the Nuclear Regulatory Commission (NRC) issued NRC Bulletin 2002-02, "Reactor Pressure Vessel Head and Vessel Head Penetration Nozzle Inspection Programs." The Bulletin requested information about licensee plans for future inspections and programs for Reactor Pressure Vessel (RPV) heads and Vessel Head Penetration (VHP) nozzles. In Attachment A to this letter, FirstEnergy Nuclear Operating Company (FENOC) hereby supplies the information requested by the Bulletin with respect to the Davis-Besse Nuclear Power Station (DBNPS).

The Bulletin originally requested a response within 30 days, however, the 30 day response was subsequently extended to September 12, 2002, as a result of discussions with the NRC by the Nuclear Energy Institute.


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

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I declare under penalty of perjury that the foregoing is true and correct. Executed on
September 12, 2002.

Very truly yours,

A handwritten signature in black ink, appearing to read "Lew W. Myers". The signature is fluid and cursive, with a large loop at the end.

FWK/s

Attachments:

- A. Response to NRC Bulletin 2002-02
- B. Commitment List

cc: James E. Dyer, NRC Region III Administrator
Jon B. Hopkins – NRC/NRR DB-1 Senior Project Manager
C. S. Thomas, NRC DB-1 Senior Resident Inspector
Utility Radiological Safety Board

Response to NRC Bulletin 2002-02 "Reactor Pressure Vessel Head and Vessel Head Penetration Nozzle Inspection Programs" for the Davis-Besse Nuclear Power Station

On August 9, 2002, the NRC issued Bulletin 2002-02, "Reactor Pressure Vessel Head and Vessel Head Penetration Nozzle Inspection Programs." FirstEnergy Nuclear Operating Company (FENOC) hereby supplies the information requested by the Bulletin with respect to the Davis-Besse Nuclear Power Station (DBNPS).

(1) The Bulletin required that within 30 days of the date of the Bulletin:

- A. PWR addressees who plan to supplement their inspection programs with non-visual NDE methods are requested to provide a summary discussion of the supplemental inspections to be implemented. The summary discussion should include EDY, methods, scope, coverage, frequencies, qualification requirements, and acceptance criteria.***

Response:

FENOC is currently replacing the DBNPS Reactor Pressure Vessel (RPV) head with a RPV head previously designated for use at the canceled Midland Plant. Information regarding this RPV head replacement was provided to the NRC in the FENOC letter (Serial Number 1-1281) to Mr. James E. Dyer, NRC Region III Administrator, dated August 9, 2002. This included a discussion of the NDE methods used on the replacement RPV head and VHP nozzles, also known as the Control Rod Drive Mechanism nozzles. This RPV head has never been used and therefore has an Effective Degradation Year (EDY) equal to zero.

This replacement RPV head received the following relevant examinations supplementing those of the original American Society of Mechanical Engineers Boiler and Pressure Vessel (ASME) Code data package: Visual examinations, radiograph technique (RT) and liquid penetrant technique (PT) examination of the Control Rod Drive Mechanism (CRDM) stainless steel flange-to-alloy 600 nozzle welds and PT of the CRDM nozzle J-groove welds. CRDM nozzle baseline ultrasonic technique examination (UT) and eddy current (EC) testing were also performed from below the J-groove weld through the full thickness of the reactor head, with full circumferential coverage of all nozzles. A listing of the documentation included in the ASME Code Section III (construction) and Section XI (pre-service inspection) data packages was provided in the previously mentioned letter to Mr. James E. Dyer (Letter Serial Number 1-1281).

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The details of the proposed inspections that address the request of NRC Bulletin 2002-02 item (1) A. are provided below:

Effective Degradation Years (EDY): The EDY of the replacement RPV head is zero because the head has never been used.

Methods, Scope and Coverage:

Supplemental Inspection Methods: The supplemental inspection methods will include Ultrasonic Testing of CRDM nozzle base material; Eddy Current Testing or Dye Penetrant Testing of the wetted surfaces of the J-groove welds and CRDM nozzle material wetted surfaces (UT may be used for inspections of the J-groove welds if demonstrated as reliable and effective); and Bare Metal Visual Inspection of the CRDM nozzle to RPV head junction on top of the head (non-visual examination will be used to make a determination of whether leakage is from a through-wall or through-weld crack, if boron deposits or other indications of leakage are present).

Scope: The scope of inspection will include all of the CRDM nozzles, J-groove welds, and CRDM nozzle to RPV head junctions.

Coverage: Planned UT inspection radial coverage will include 100% of each CRDM nozzle circumference from inside the RPV head at least one inch above the J-groove weld to as close to the bottom of the nozzle as the inspection equipment will allow. UT inspection axial coverage will include the portion of each CRDM nozzle from inside the RPV head at least one inch above the J-groove weld to as close to the bottom of the nozzle as the inspection equipment will allow. Eddy Current Testing or Dye Penetrant Testing will be performed on the wetted surfaces of the J-groove weld and the CRDM nozzle from a location at least one inch above the J-groove weld to as close to the bottom of the nozzle as the inspection equipment will allow. The Bare Metal Visual Inspection will include 100% of the CRDM nozzle to RPV head junctions on the exterior surface of the head.

Frequencies:

Frequency: A Bare Metal Visual Inspection will be performed every refueling outage after startup from the present outage (13 RFO). For the replacement RPV head from the Midland Plant, the Ultrasonic Testing and the Eddy Current or Dye Penetrant testing will be performed at 15 RFO, then again during 17 RFO, 19 RFO, 20 RFO and each refueling thereafter. (Note: FENOC plans to replace this RPV head with a new fabricated head using VHP nozzles constructed of Alloy 690 which will allow for re-baselining this schedule). The DBNPS is on a twenty-four month fuel cycle, with refueling outages occurring approximately every twenty-four months.

Qualification Requirements:

Qualification Requirements: Personnel and procedures will be qualified in accordance with the applicable sections of ASME Code Section V, "Nondestructive Examination," and XI, "Rules for Inservice Inspection of Nuclear Power Plant Components." The visual qualification requirements will be in accordance with the requirements of the most recent revision of EPRI Technical Report 1006899, "Visual Examination for Leakage of PWR Reactor Head Penetrations on Top of RPV Head."

Acceptance Criteria:

Acceptance Criteria: Acceptance criteria will conform to the recommendations provided in the letter from Mr. Jack Strosnider, Director, Division of Engineering, Office of Nuclear Reactor Regulation, NRC, to Mr. Alex Marion, Director Engineering, Nuclear Energy Institute, dated November 21, 2001, with the exception that flaw growth rate will be calculated in accordance with the guidance provided by MRP-55, "Crack Growth Rates for Evaluating Primary Water Stress Corrosion Cracking (PWSCC) of Thick-Wall Alloy 600 Material."

(1) The Bulletin required that within 30 days of the date of the bulletin:

B. PWR addressees who do not plan to supplement their inspection programs with non-visual NDE methods are requested to provide a justification for continued reliance on visual examinations as the primary method to detect degradation.

Response:

The DBNPS has responded to item (1).A., therefore a response to item (1).B is not required.

(2) The Bulletin required that within 30 days after plant restart following the next inspection of the RPV head and VHP nozzles to identify the presence of any degradation, all PWR addressees are required to provide:

A. The inspection scope and results, including the location, size, extent, and nature of any degradation that was detected; details of the NDE used; and criteria used to determine whether an indication, "shadow," or "backwall anomaly" is acceptable or

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rejectable.

B. The corrective actions taken and the root cause determinations for any degradation found.

Response:

The DBNPS will supply a summary report of the RPV head inspection to provide the results and conclusions of the inspections performed during the applicable outages within 30 days following the outage. All other documentation, personnel qualifications and certifications, and all procedures will be maintained on site in a manner consistent with the reporting and records maintenance requirements of ASME Code Section XI.

COMMITMENT LIST

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

COMMITMENTS

DUE DATE

The supplemental inspection methods will include Ultrasonic Testing, Eddy Current Testing or Dye Penetrant Testing, and Bare Metal Visual Inspection	See refueling schedule discussion on Page 2 of this letter.
The scope of inspections will include all of the nozzles, J-groove welds, and CRDM nozzle to RPV head junctions, as described on page 2 of this letter.	Same as above.
Planned UT inspection radial coverage will include 100% of each CRDM nozzle circumference from inside the RPV head at least one inch above the J-groove weld to as close to the bottom of the nozzle as the inspection equipment will allow. UT inspection axial coverage will include the portion of each CRDM nozzle from inside the RPV head at least one inch above the J-groove weld to as close to the bottom of the nozzle as the inspection equipment will allow. Eddy Current Testing or Dye Penetrant Testing will be performed on the wetted surfaces of the J-groove weld and the CRDM nozzle from a location at least one inch above the J-groove weld to as close to the bottom of the nozzle as the inspection equipment will allow. The Bare Metal Visual Inspection will include 100% of the CRDM nozzle to RPV head junctions on the exterior surface of the head.	Same as above.
A Bare Metal Visual Inspection will be performed every refueling after startup from 13 RFO.	Every Refueling Outage
Ultrasonic Testing and the Eddy Current or Dye Penetrant testing will be performed.	15 RFO, 17 RFO, 19 RFO, 20RFO and each refueling thereafter (for

the existing
replacement RPV head)

Acceptance Criteria will conform to the recommendations provided in the letter from Mr. Jack Strosnider, Director, Division of Engineering, Office of Nuclear Reactor Regulation, NRC, to Mr. Alex Marion, Director Engineering, Nuclear Energy Institute, dated November 21, 2001, with the exception that flaw growth rate will be calculated in accordance with the guidance provided by MRP-55, "Crack Growth Rates for Evaluating Primary Water Stress Corrosion Cracking (PWSCC) of Thick-Wall Alloy 600 Material."

At time of inspections.

The visual qualification requirements will be in accordance with the requirements of the most recent revision of EPRI Technical Report 1006899, "Visual Examination for Leakage of PWR Reactor Vessel Penetrations on Top of RPV Head."

Prior to inspection in 14
RFO

Provide a summary report of the RPV head inspection to the NRC providing the results and conclusions of the inspections performed during the applicable outages within 30 days following the outage.

Within 30 days
following the
applicable outage