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March 3, 2003
L-03-035

Secretary, Office of the Secretary of the Commission
U.S. Nuclear Regulatory Commission
Attn: Rulemakings and Adjudications Staff
Washington, DC 20555-0001

**Subject: Beaver Valley Power Station, Unit No. 1 and No. 2**
**BV-1 Docket No. 50-334, License No. DPR-66**
**BV-2 Docket No. 50-412, License No. NPF-73**
**Order Establishing Interim Inspection Requirements for RPV Heads**

By letter dated February 11, 2003, the Nuclear Regulatory Commission (NRC) issued an immediately effective Order establishing interim inspection requirements for reactor pressure vessel (RPV) heads at pressurized water reactors (henceforth, the Order). The Order applied to all addressees listed in the Attachment to the Order. Beaver Valley Power Station (BVPS), Unit No. 1 and Unit No. 2 were included in the list of addressees. This letter is submitted in accordance with the requirements of 10 CFR 2.202, which require a written response within twenty days of the date of the Order.

By letter dated September 11, 2002 (L-02-095), the FirstEnergy Nuclear Operating Company (FENOC) provided a response for BVPS to NRC Bulletin 2002-02, "Reactor Pressure Vessel Head and Vessel Head Penetration Nozzle Inspection Programs," dated August 9, 2002. This letter, submitted in response to the Order, supercedes the commitments made in response to Bulletin 2002-02.

This letter identifies that BVPS will comply with the inspection frequency specified for the High, Moderate, and Low Categories described in Section IV, Paragraph B of the Order. This letter also identifies in Attachment A the proposed deviations to the Order being submitted for relaxation in accordance with Section IV, Paragraph F of the Order. Several of these issues were discussed during the NRC meeting with Industry held on February 24, 2003.

BVPS intends to comply with the Order with the noted deviations listed in Attachment A being submitted to the NRC for relaxation. By consenting to the Order, licensees waive the right to request a hearing on all or any part of the Order, pursuant to 10 CFR 2.202(a)(3). However, FENOC recognizes that this waiver of a right to a

hearing is limited to the specific language of the Order and not to any future right to a hearing, or to any other legal process, that the licensees might have concerning any other order, issuance, or determination by the NRC.

There are no new regulatory commitments contained in this letter. If there are any questions concerning this matter, please contact Mr. Larry R. Freeland, Manager, Regulatory Affairs/Performance Improvement at 724-682-5284.

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 3, 2003.

Sincerely,

Mark B. Bezilla

Attachments

c: Mr. T. G. Colburn, NRR Senior Project Manager
Mr. D. M. Kern, NRC Sr. Resident Inspector
Mr. H. J. Miller, NRC Region I Administrator
Mr. S. J. Collins, Director, Office of Nuclear Reactor Regulation
NRC Document Control Desk
NRC Assistant General Counsel for Materials Litigation and Enforcement

# ATTACHMENT A

| Order Section | Description of Requirement | Alternative Proposed | Reason for Deviation Request | Justification and Safety Impact of Alternative |
|---|---|---|---|---|
| A | $EFPY_j$ = operating time in years at $T_{head,j}$ | $EFPY_j$ = $(MWh/MWe_{100\%})x(1/8760)$ time in years at $T_{head,j}$ | To utilize the same definition of EFPY as was used to develop the EDY equation originally and to be consistent with the definitions in the proposed ASME Code work. | Since all rankings to date use the alternative definition there would be no change in the Safety Assessment currently applied by the Industry. |
| A | Calculate the susceptibility category of each reactor vessel head in terms of EDY for the end of each operating cycle. | Calculate the susceptibility category of each reactor vessel head in terms of EDY for the end of each operating cycle until the High susceptibility category is reached. | Calculating the EDY for a reactor vessel head once the High susceptibility category is reached will not affect the frequency since the threshold was reached. | The elimination of the continued EDY calculation once the High category is reached does not affect the safety assessment or inspection commitments. |
| C | Footnote 1 – Use of NRC flaw evaluation criteria in November 21, 2001 letter. | Flaw evaluation and repair criteria to be used will be the NRC approved techniques at the time of evaluation. | Allows for the use of the latest approved evaluation and repair criteria when addressing plant findings. | This provides for improved assessment and repair criteria to be applied since the latest approved approaches can be utilized. |
| C (1)(a) and C(2)(a) and C(3)(a) | Bare metal visual examination of 100% of the RPV head surface (including 360° around each RPV head penetration nozzle) | Visual examination of the top of the RPV head will be conducted for evidence of leakage from the RPV flange area to the top center of the head. A bare metal visual examination of the top of the RPV head surface within the ventilation shroud area where penetrations are present will be conducted. This includes 360° around each RPV head penetration. Any limitations to 100% inspection when | The area of interest is the top surface of the RPV head where leakage from above or from the RPV head penetrations may occur. Areas on the RPV flange and RPV stud holes are not in the area of interest for the bare metal visual examination. While inspection coverage is specified as 100% of the surface, some obstructions from permanently welded structures exist. Therefore literal compliance to | There is no change in safety assessment since all relevant areas will be examined. All bare metal areas between penetrations as well as 360° around each RPV head penetration will be examined. Any presence of boric acid corrosion damage or leakage would be identified. |

| Order Section | Description of Requirement | Alternative Proposed | Reason for Deviation Request | Justification and Safety Impact of Alternative |
|---|---|---|---|---|
| | | conducting the bare metal visual shall be documented and identified to the NRC. | 100% coverage may not be attainable. | |
| C(1)(b)(i) and C(2)(b)(i) and C(3)(b)(i) | Ultrasonic testing of each RPV head penetration nozzle … from 2" above the J-weld to the bottom of the nozzle. | Volumetric examination of each RPV head penetration nozzle … from 2" above the J-weld to the extent practical near the bottom of the nozzle. | Ultrasonic testing is the current technique applied, other volumetric techniques may developed in the future and should not be precluded. The examination extent specifying to the 'bottom of the nozzle' may not be attainable due to local geometry (threaded areas or tapers) | No change in the safety assessment is anticipated since the area of high stresses is being examined. The area at the bottom of the nozzle is not pressure boundary and any indication in that area would take a significant amount of time to grow into a flaw that would reach the pressure boundary areas and would be detected in future examinations. |
| C(1)(b)(i) and C(2)(b)(i) and C(3)(b)(i) | Ultrasonic testing of each RPV head penetration nozzle … and an assessment to determine if leakage has occurred into the interference fit zone. | Eliminate the determination of leakage into the interference fit zone by ultrasonic methods. | Currently this approach has not been demonstrated as effective or reliable in detecting the presence of leakage or leakage damage in the interference fit zone. Until such techniques are proven reliable, a commitment to use them is not appropriate. | The use of ultrasonic testing does not reliably determine if leakage into the interference fit zone has occurred. Volumetric testing along with the bare metal visual provides reasonable assurance that leakage into the interference zone has not occurred that would cause a safety concern. |
| C(1)(b)(ii) and C(2)(b)(ii) and C(3)(b)(ii) | Eddy current testing or dye penetrant testing of the wetted surface of each J-Groove weld and RPV penetration nozzle base material to at least two (2) inches above the J-Groove weld | Eddy current testing or dye penetrant testing of the wetted surface of each J-Groove weld and RPV penetration nozzle base material to at least two (2) inches above the J-Groove weld excluding areas at the bottom of the RPV nozzle penetration where geometry (threaded areas and tapers) would make testing a hardship. | The areas of coverage would include the surface of the J-Groove weld and areas in the region of the pressure boundary. 100% of the surface area of the nozzle that is wetted may not be accessible for meaningful examination. | No change in the safety assessment is anticipated since the area of high stresses is being examined. The area at the bottom of the nozzle is not pressure boundary and any indication in that area would take a significant amount of time to grow into a flaw that would reach the pressure boundary areas and would be detected in future examinations. |