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September 5, 2006
PY-CEI/NRR-2983L

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

Perry Nuclear Power Plant
Docket No. 50-440

SUBJECT: Request for In-service Inspection Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(i) for Reactor Pressure Vessel Pressure-retaining Nozzle-to-Vessel Welds and Nozzle Inner Radii

In accordance with 10 CFR 50.55a(a)(3)(i), First Energy Nuclear Operating Company (FENOC) hereby requests Nuclear Regulatory Commission (NRC) approval of a proposed alternative in-service inspection requirement at the Perry Nuclear Power Plant (PNPP) for Reactor Pressure Vessel pressure-retaining nozzle-to-vessel welds and nozzle inner radii. FENOC desires to implement the proposed alternative for the remainder of its second 120-month interval, which began November 18, 1998. The applicable details for justification of the 10 CFR 50.55a request are attached.

FENOC requests approval by February 15, 2007 for implementation prior to the March 2007 refuel outage.

As described in Attachment 1, FENOC recognizes that approval of this request is dependent upon the NRC's final safety evaluation for an Electric Power Research Institute (EPRI) Technical Report 1003557, "BWRVIP-108: BWR Vessel and Internals Project Technical Basis for the Reduction of Inspection Requirements for the Boiling Water Reactor Nozzle-to-Vessel Shell Welds and Nozzle Blend Radii," which has not yet been issued.

There are no regulatory commitments contained in this letter or its attachment. If there are any questions or if additional information is required, please contact Mr. Gregory A. Dunn, Manager – Fleet Licensing, at (330) 315-7243.

Sincerely,



L. William Pearce

Attachment: 10 CFR 50.55a Request Number IR-054

cc: NRC Project Manager
NRC Resident Inspector
NRC Region III

A047

10 CFR 50.55a Request Number IR-054

**Proposed Alternative
in Accordance with 10 CFR 50.55a(a)(3)(i)**

--Alternative Provides Acceptable Level of Quality and Safety--

1. ASME Code Components Affected

ASME Class 1 Reactor Pressure Vessel Pressure-Retaining Nozzle-to-Vessel Welds and Nozzle Inner Radii. The in-service examination identifications and descriptions are as follows:

<u>ISI Exam ID</u>	<u>Description</u>
1B13-N1A-KA	22" Recirculation Outlet Nozzle N1A to Vessel Weld
1B13-N1A-IR	22" Recirculation Outlet Nozzle N1A Inner Radius
1B13-N1B-KA	22" Recirculation Outlet Nozzle N1B to Vessel Weld
1B13-N1B-IR	22" Recirculation Outlet Nozzle N1B Inner Radius
1B13-N2A-KA	12" Recirculation Inlet Nozzle N2A to Vessel Weld
1B13-N2A-IR	12" Recirculation Inlet Nozzle N2A Inner Radius
1B13-N2B-KA	12" Recirculation Inlet Nozzle N2B to Vessel Weld
1B13-N2B-IR	12" Recirculation Inlet Nozzle N2B Inner Radius
1B13-N2C-KA	12" Recirculation Inlet Nozzle N2C to Vessel Weld
1B13-N2C-IR	12" Recirculation Inlet Nozzle N2C Inner Radius
1B13-N2D-KA	12" Recirculation Inlet Nozzle N2D to Vessel Weld
1B13-N2D-IR	12" Recirculation Inlet Nozzle N2D Inner Radius
1B13-N2E-KA	12" Recirculation Inlet Nozzle N2E to Vessel Weld
1B13-N2E-IR	12" Recirculation Inlet Nozzle N2E Inner Radius
1B13-N2F-KA	12" Recirculation Inlet Nozzle N2F to Vessel Weld
1B13-N2F-IR	12" Recirculation Inlet Nozzle N2F Inner Radius
1B13-N2G-KA	12" Recirculation Inlet Nozzle N2G to Vessel Weld
1B13-N2G-IR	12" Recirculation Inlet Nozzle N2G Inner Radius
1B13-N2H-KA	12" Recirculation Inlet Nozzle N2H to Vessel Weld
1B13-N2H-IR	12" Recirculation Inlet Nozzle N2H Inner Radius
1B13-N2J-KA	12" Recirculation Inlet Nozzle N2J to Vessel Weld
1B13-N2J-IR	12" Recirculation Inlet Nozzle N2J Inner Radius
1B13-N2K-KA	12" Recirculation Inlet Nozzle N2K to Vessel Weld
1B13-N2K-IR	12" Recirculation Inlet Nozzle N2K Inner Radius
1B13-N9A-KA	4" Jet Pump Instrumentation Nozzle N9A to Vessel Weld
1B13-N9A-IR	4" Jet Pump Instrumentation Nozzle N9A Inner Radius
1B13-N9B-KA	4" Jet Pump Instrumentation Nozzle N9B to Vessel Weld
1B13-N9B-IR	4" Jet Pump Instrumentation Nozzle N9B Inner Radius

2. Applicable Code Edition and Addenda

Perry is currently in its second 10-year inspection interval and is committed to the 1989 Edition of ASME XI. Additionally, for ultrasonic examinations Section XI, Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," of the 1995 Edition with the 1996 Addenda is implemented as required (and modified) by 10 CFR 50.55a.

3. Applicable Code Requirements

Class 1 nozzle-to-vessel weld and nozzle inner radii examination requirements are given in Subsection IWB, Table IWB-2500-1, Examination Category B-D Full Penetration Welds of Nozzles in Vessels - Inspection Program B, Item Numbers B3.90 and B3.100 respectively. The method of examination is volumetric. All nozzles with full penetration welds to the vessel shell (or head) and integrally cast nozzles are examined each interval.

4. Reason for Request

The identified nozzle assemblies are scheduled for examination prior to the end of Perry's current inspection interval. The proposed alternative provides an acceptable level of quality and safety, and the reduction in scope could provide a dose savings of as much as 12,000 mrem.

5. Proposed Alternative and Basis for Use

Proposed Alternative:

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested from performing the required examinations on 100% of the identified nozzle assemblies. Alternatively, in accordance with Code Case N-702 a minimum of 25% of the nozzle inner radii and nozzle-to-shell welds, including at least one nozzle from each system and nominal pipe size, would be performed. For the identified nozzle assemblies, this would mean one of the 22" Recirculation Outlet, three of the 12" Recirculation Inlet, and one of the 4" Jet Pump Instrumentation nozzle assemblies will be selected for examination.

Code Case N-702 stipulates that VT-1 visual examination may be used in lieu of volumetric examination for the inner radii (Item B3.100). Note that Perry is already using Code Case N-648-1 in accordance with the conditions placed upon the code case by Regulatory Guide 1.147, which allows VT-1 visual examination for nozzle inner radii. As Code Case N-648-1 is already approved for use at Perry, the specific function of utilizing VT-1 visual examinations as allowed by Code Case N-702 is not part of this request. Volumetric examinations of the nozzle inner radii of the selected Recirculation Inlet and Jet Pump Instrumentation nozzles will still be performed as their nozzle inner radii are not fully accessible from inside the vessel.

Basis for Use:

EPRI Technical Report 1003557, "BWRVIP-108: BWR Vessel and Internals Project Technical Basis for the Reduction of Inspection Requirements for the Boiling Water Reactor Nozzle-to-Vessel Shell Welds and Nozzle Blend Radii," provides the basis for Code Case N-702. The evaluation found that failure probabilities at the nozzle blend radius region and nozzle-to-vessel shell weld due to a Low Temperature Overpressure event are very low (i.e., $< 1 \times 10^{-6}$ for 40 years) with or without in-service inspection. The report concludes that inspection of 25% of each nozzle type is technically justified. It is recognized that BWRVIP-108, which was submitted to the NRC by the Boiling Water Reactor Vessel and Internals Project (BWRVIP) via BWRVIP letter 2002-323 on November 25, 2002, has not yet received a final safety evaluation from the NRC. However, the NRC and the BWRVIP have been working to resolve open issues, and the

response to the NRC's most recent request for additional information, dated September 14, 2005, was recently provided to the NRC via BWRVIP letter 2006-349, dated July 25, 2006. It is recognized that approval of this request depends on NRC acceptance of the BWRVIP responses and issuance of the final safety evaluation report for BWRVIP-108.

6. Duration of Proposed Alternative

Upon approval by the NRC Staff, this request will be utilized through the remainder of Perry's second 10-year inspection interval (November 18, 1998 – November 17, 2008) or until Code Case N-702 is published in a future revision of Regulatory Guide 1.147.

7. References

1. EPRI Technical Report 1003557, "BWRVIP-108: BWR Vessel and Internals Project Technical Basis for the Reduction of Inspection Requirements for the Boiling Water Reactor Nozzle-to-Vessel Shell Welds and Nozzle Blend Radii," October 2002.
2. ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plants," 1989 Edition with no Addenda.
3. ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plants," 1995 Edition with the 1996 Addenda.
4. ASME Boiler and Pressure Vessel Code, Code Case N-648-1, "Alternative Requirements for Inner Radius Examinations of Class 1 Reactor Vessel Nozzles, Section XI, Division 1," September 7, 2001.
5. ASME Boiler and Pressure Vessel Code, Code Case N-702, "Alternative Requirements for Boiling Water Reactor (BWR) Nozzle Inner Radius and Nozzle-to-Shell Welds Section XI, Division 1, February 20, 2004.
6. BWRVIP letter 2002-323, Carl Terry, BWRVIP Chairman, to NRC Document Control Desk, "Project No. 704 – BWRVIP-108: BWR Vessel and Internals Project, Technical Basis for the Reduction of Inspection Requirements for the Boiling Water Reactor Nozzle-to-Vessel Shell Welds and Nozzle Blend Radii," November 25, 2002.
7. Matthew A. Mitchell, Office of Nuclear Reactor Regulation, to Bill Eaton, BWRVIP Chairman, "Revised Request for Additional Information – BWRVIP-108: BWR Vessel and Internals Project, Technical Basis for the Reduction of Inspection Requirements for the Boiling Water Reactor Nozzle-to-Vessel Shell Welds and Nozzle Blend Radii," September 14, 2005.
8. BWRVIP letter 2006-349, Bill Eaton, BWRVIP Chairman, to NRC Document Control Desk, "BWRVIP Response to RAI on BWRVIP-108", July 25, 2006.
9. Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1," Revision 14, August 2005.