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L-10-100

10 CFR 50.55a

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

SUBJECT:
Perry Nuclear Power Plant
Docket No. 50-440, License No. NPF-58
10 CFR 50.55a Request VR-7, One-Time Replacement Frequency Extension

Pursuant to 10 CFR 50.55a(a)(3), FirstEnergy Nuclear Operating Company (FENOC) is requesting Nuclear Regulatory Commission (NRC) approval for a proposed alternative to certain requirements associated with the In-Service Testing Program for the Perry Nuclear Power Plant (PNPP). The enclosure identifies the affected components, the applicable code requirement, reasons for the one-time request, the proposed alternative, and the basis for use.

The proposed alternative would need to be implemented prior to February 28, 2011, the earliest required replacement due date of the PNPP components cited within the enclosure. Therefore, FENOC is requesting approval of the proposed alternative by February 14, 2011.

There are no regulatory commitments contained in this submittal. If there are any questions or additional information is required, please contact Mr. Thomas A. Lentz, Manager – Fleet Licensing, at (330) 761-6071.

Sincerely,

Mark B. Bezilla

Enclosure:
Perry Nuclear Power Plant, 10 CFR 50.55a Request VR-7, Revision 0

cc: NRC Region III Administrator
NRC Resident Inspector
NRC Project Manager

A047
NRR

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

--Hardship or Unusual Difficulty Without
Compensating Increase in Level of Quality and Safety--

1. American Society of Mechanical Engineers (ASME) Code Components Affected

Thermal Relief Valves	Code Class
1E12-F0005, Residual Heat Removal Shutdown Cooling Suction Relief	2
1E12-F0025C, Residual Heat Removal Loop C Injection Line Relief	2
1E21-F0031, Low Pressure Core Spray Pump Suction Line Relief	2
1E22-F0014, High Pressure Core Spray (HPCS) Waterleg Pump Suction Line Relief	2
1P45-F0517, HPCS Room Cooler Emergency Service Water Relief	3
1P45-F0543A, Emergency Service Water Loop A Line Relief	3
1P45-F0543B, Emergency Service Water Loop B Line Relief	3

2. Applicable Code Edition and Addenda

ASME OM Code-2001, Code for Operation and Maintenance of Nuclear Plants, with Addenda through OMb-2003

3. Applicable Code Requirements

Mandatory Appendix I, I-1390, "Test Frequency, Class 2 and 3 Pressure Relief Devices That Are Used for Thermal Relief Application," states that tests shall be performed on all Class 2 and 3 relief devices used in thermal relief application every 10 years, unless performance data indicate more frequent testing is necessary. In lieu of tests the Owner may replace the relief devices at a frequency of every 10 years, unless performance data indicate more frequent replacements are necessary.

4. Reason for Request

The start of the Perry Nuclear Power Plant (PNPP) 2011 refueling outage, originally scheduled to begin on February 21, 2011, was rescheduled and will now begin on April 18, 2011. As a result, seven thermal relief valves scheduled for replacement during the outage will exceed their Code mandated 10-year replacement frequency dates ranging from February 28 through March 12, 2011. Removal, replacement, and post-installation testing of these thermal relief valves directly results in removing safety systems necessary for the mitigation of design basis accidents from operable status. Furthermore, these activities would require the plant to either be in cold shutdown or refueling, or would require entry into multiple Technical Specifications limiting conditions of operation with the plant on-line.

Specifically:

Replacement of the residual heat removal (RHR) shutdown cooling suction relief valve results in the loss of shutdown cooling for both RHR Loops A and B. Though shutdown cooling is not required when the plant is on-line, post-installation testing requires the plant to be in cold shutdown (Mode 4) or refueling (Mode 5).

Replacement of the RHR Loop C injection line relief valve results in the loss of RHR Loop C, a required emergency core cooling system (ECCS) when the plant is on-line. Post-installation testing requires the plant to be in cold shutdown (Mode 4) or refueling (Mode 5).

Due to a common waterleg (keepfill) pump, replacement of the low pressure core spray (LPCS) pump suction line relief valve results in the loss of both LPCS and RHR Loop A, required emergency core cooling systems (ECCS), and feedwater leakage control system (FWLCS) Loop A when the plant is on-line. This would require entry into multiple Technical Specification limiting conditions of operation. Post-installation testing could be performed with the plant on-line; however, Technical Specification 3.5.1 requires restoration of LPCS within 72 hours. On-line valve replacement will potentially challenge the restoration window and impacts availability times for multiple safety systems.

Replacement of the high pressure core spray (HPCS) waterleg pump suction line relief valve results in the loss of HPCS, a required emergency core cooling system (ECCS) when the plant is on-line. Post-installation testing could be performed with the plant on-line; however, Technical Specification 3.5.1 requires restoration of HPCS within 14 days. On-line valve replacement impacts this safety system's availability time.

Replacement of the HPCS room cooler emergency service water (ESW) relief valve results in the loss of HPCS, a required emergency core cooling system (ECCS) when the plant is on-line. Post-installation testing could be performed with the plant on-line; however, Technical Specification 3.5.1 requires restoration of HPCS within 14 days. On-line valve replacement impacts this safety system's availability time.

Replacement of the ESW Loop A line relief valve results in the loss of ESW Loop A and the systems/sub-systems directly supported by ESW Loop A. This would require entry into multiple Technical Specification limiting conditions of operation. Post-installation testing could be performed with the plant on-line; however, Technical Specification 3.7.1 requires restoration of ESW Loop A within 72 hours. On-line valve replacement will potentially challenge the restoration window and impacts availability times for multiple safety systems.

Replacement of the ESW Loop B line relief valve results in the loss of ESW Loop B and the systems/sub-systems directly supported by ESW Loop B. This would require entry into multiple Technical Specification limiting conditions of operation. Post-installation testing could be performed with the plant on-line; however, Technical Specification 3.7.1 requires restoration of ESW Loop B within 72 hours. On-line valve replacement will potentially challenge the restoration window and impacts availability times for multiple safety systems.

There are no planned plant shutdowns or system-specific outages of sufficient duration prior to the start of the rescheduled 2011 refueling outage to complete the necessary thermal relief valve replacements. Requiring a plant shutdown or system-specific outage of sufficient duration solely to replace these valves within their Code-mandated

10-year replacement frequency results in an adverse impact on plant operation (unplanned plant shutdown) or requires entry into multiple Technical Specifications limiting conditions of operation (loss of safety system); hardships or unusual difficulty without a compensating increase in the level of quality or safety.

5. Proposed Alternative and Basis for Use

In lieu of the 10-year replacement frequency requirements of I-1390, FENOC proposes the replacement frequency of the listed valves be extended one time to account for the rescheduled start of PNPP's refueling outage. The short duration extension through the end of the refueling outage would allow PNPP to avoid implementing an unplanned plant shutdown or system-specific outage of sufficient duration solely to replace these valves within their Code-mandated 10-year replacement frequency.

Upon NRC approval of 10 CFR 50.55a Request VR-11 on May 16, 2003, PNPP re-categorized these valves from pressure relief valves to thermal relief valves and extended their replacement intervals to 10 years. Since re-categorization of these valves in 2003, more frequent replacement frequencies (less than 10 years) has not been necessary. Prior to the re-categorization of these valves, starting from initial plant operation in 1987, 15 of 29 as-found set pressure tests were satisfactory with as-found values within ± 3 percent of the valve's nameplate set pressure. Additionally, 28 of 29 as-found set pressure tests were satisfactory with as-found set pressures within ASME Code Section III, Subsections NC/ND-3612.3, "Allowance for Variations from Design Conditions," criteria for their respective systems. As such, based on past performance the short duration replacement frequency extensions for these valves (approximately 3 months or 2.5 percent beyond 10 years) does not significantly impact acceptable levels of quality and safety.

Consistent with the guidance of NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants," Revision 1, Section 2.5, this one-time extension request will allow PNPP to avoid undue hardship or unusual difficulty. At the conclusion of the rescheduled 2011 refueling outage and the proposed replacement extensions, all seven thermal relief valves will have been replaced with suitable pretested valves.

6. Duration of Proposed Alternative

To provide optimal flexibility in scheduling the seven thermal relief valve replacements, the proposed alternative is requested through the end of the 2011 refueling outage, currently scheduled to conclude on May 22, 2011.

7. Precedents

NRC letter to PSEG Nuclear, March 10, 2010, Subject: Safety Evaluation of Relief Request V-06 for the Third 10-year Interval of the Inservice Testing Program for Hope Creek Generating Station (TAC No. ME2158).

8. References

Nuclear Regulatory Commission (NRC) letter to FENOC, May 16, 2003, Subject: Perry Nuclear Power Plant – Relief Request for the Inservice Testing Program for Implementation of American Society of Mechanical Engineers Boiler and Pressure Vessel Code Operations and Maintenance Code Case OMN-2 (TAC No. MB7513).