

May 16, 2003

Mr. William R. Kanda
Vice President - Nuclear
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P.O. Box 97
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SUBJECT: PERRY NUCLEAR POWER PLANT - RELIEF REQUEST FOR THE IN-SERVICE
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)

Dear Mr. Kanda:

By letter dated June 10, 2002, FirstEnergy Nuclear Operating Company (FENOC), requested relief for the Perry Nuclear Power Plant (PNPP) Inservice Testing Program (IST). The relief request, VR-11, proposes implementation of American Society of Mechanical Engineers (ASME) Operations and Maintenance (OM) Code Case, OMN-2, "Thermal Relief Valve Code Case, OM Code-1995, Appendix I," at PNPP. The relief request identifies the affected components, the applicable code requirements, the description and basis of the proposed relief request, as well as the proposed alternate requirements.

In its submittal dated June 10, 2002, FENOC (licensee) requested relief from certain ASME inservice testing requirements for pressure relief valves at its PNPP. The relief request (VR-11) proposes to extend the surveillance interval for those pressure relief valves whose only overpressure function is to protect isolated components from fluid expansion caused by changes in fluid temperature.

The U.S. Nuclear Regulatory Commission staff has completed its review of the licensee's relief request VR-11. The staff finds that the proposed extension of the surveillance interval may be authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the proposed alternative provides an acceptable level of quality and safety. The alternative is authorized for relief request VR-11 for the duration of the second 10-year IST interval, which ends November 18, 2008.

Sincerely,

/RA/

Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-440

Enclosure: Safety Evaluation
cc w/encl: See next page

Perry Nuclear Power Plant, Unit 1

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Docket No. 50-440

Enclosure: Safety Evaluation
cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO RELIEF REQUEST VR-11 TO THE SECOND 10-YEAR
INTERVAL INSERVICE TESTING PROGRAM
FIRSTENERGY NUCLEAR OPERATING COMPANY,
PERRY NUCLEAR POWER PLANT, DOCKET NO. 50-440

1.0 INTRODUCTION

By letter dated June 10, 2002, FirstEnergy Nuclear Operating Company (FENOC), submitted relief request VR-11 for the Perry Nuclear Power Plant (PNPP) second 10-year interval inservice testing (IST) program for pumps and valves.

In relief request VR-11, the licensee has proposed to extend the surveillance interval for those pressure relief valves whose only overpressure function is to protect isolated components from fluid expansion caused by changes in fluid temperature.

2.0 REGULATORY EVALUATION

Title 10 Part 50.55a of the *Code of Federal Regulations* (10 CFR 50.55a) requires that IST of certain American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 pumps and valves be performed in accordance with the ASME Boiler and Pressure Vessel Code (ASME Code), Section XI and applicable addenda, except where alternatives have been authorized or relief has been requested by the licensee and granted by the Commission pursuant to paragraphs (a)(3)(i), (a)(3)(ii), or (f)(6)(i) of 10 CFR 50.55a. The Code of Record for PNPP is the 1989 Edition of the ASME Code, Section XI which references the ASME OM Standards, Parts 6 and 10 for IST of pumps and valves, respectively. However, for relief valves the PNPP Code of Record is the 1995 Edition of the ASME "Code for Operation and Maintenance of Nuclear Power Plants (OM Code)," which was previously authorized by the U. S. Nuclear Regulatory Commission (NRC) staff in Valve Relief Request, VR-6. In proposing alternatives or requesting relief, the licensee must demonstrate that: (1) the proposed alternatives provide an acceptable level of quality and safety; (2) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance is impractical for its facility. Section 55a of 10 CFR, authorizes the Commission to approve alternatives and to grant relief from ASME Code requirements upon making the necessary findings. NRC guidance contained in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provides alternatives to the code requirements which are acceptable to the staff. Further guidance is given in GL 89-04, Supplement 1, and NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants."

By letter dated June 10, 1999, FENOC, submitted its second 10-Year IST program for pumps and valves for PNPP, which began on November 19, 1998, and ends on

November 18, 2008. The program for relief valves was developed in accordance with the requirements of the 1995 Edition of ASME OM Code (Appendix I). The NRC's findings with respect to authorizing alternatives and granting or denying the IST program relief request are given below.

3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analysis in support of the request for relief from ASME OM Code IST requirements which are described in Attachment 1 of the licensee's submittal.

3.1 Relief Request No. VR-11

In relief request VR-11 to the PNPP second interval 10-Year IST program, the licensee has requested relief from the Class 2 and 3 pressure relief valve test frequency requirements of ASME OM 1995, Appendix I, Paragraphs I 1.1, I 1.3.5(a), I 1.3.5(b), and 1.3.5(c) for the relief valves listed below.

The licensee proposes to implement Code Case OMN-2, "Thermal Relief Valve Code Case, OM Code-1995, Appendix I," which allows either testing or replacement of certain relief valves every 10 years. The following list are the components affected by this relief request:

Component ID	Component ID	Component ID	Component ID	Component ID	Component ID
1E12-F005	1E12-F017A	1E12-F017B	1E12-F017C	1E12-F025A	1E12-F025B
1E12-F025C	1E21-F031	1E22-F014	1E22-F035	1E51-F017	0G41-F548A
0G41-F548B	1G33-F646	1G50-F823	1P42-F540	1P42-F566A	1P42-F566B
1P42-F566C	1P42-F570	1P43-F851	1P43-F852	1P45-F517	1P45-F520
1P45-F543A	1P45-F543B	1P45-571A	1P45-F571B	0P47-F574A	0P47-F574B
0P47-F574C	1P50-F606	1P54-F5604	1P87F277		

3.1.1 Licensee's Basis For Requesting Relief

In its request for relief, the licensee states that the ASME OM Code Committee performed a review of the Nuclear Plant Reliability Database System (NPRDS) database and determined that the failure rates of thermal relief valves was limited. As a result, the Code Committee developed Code Case OMN-2.

A review of applicable PNPP system design specifications and over pressure protection analysis generated this list of relief valves.

3.1.2 Alternative Testing

The licensee has proposed to implement the requirements of Code Case OMN-2 "Thermal Relief Valve Code Case, OM Code-1995, Appendix I." Testing of pressure relief valves whose only function is to protect isolated components from fluid expansion caused by changes in fluid temperature will be performed once every 10 years on each device unless performance data indicates more frequent testing is needed to assure device function. In lieu of testing, PNPP proposes an option to replace these devices every 10 years unless performance data indicates more frequent replacement is needed to assure device function.

3.1.3 Evaluation

The licensee has proposed to implement the requirements of Code Case OMN-2 "Thermal Relief Valve Code Case, OM Code-1995, Appendix I." Thermal relief valves are defined in the Code case as relief valves whose only overpressure protection function is to protect isolated components from fluid expansion caused by changes in fluid temperature. In lieu of the testing requirements of ASME OM Code-1995, Appendix I, Paragraphs 1.3.5(a), 1.3.5(b), and 1.3.5(c), relief valves which are considered to be thermal relief valves may be replaced once every 10 years unless performance data indicates more frequent replacement is needed to assure device function. Paragraph 1.3.5(a) requires that each Class 2 and 3 relief valve be tested every 10 years with a minimum of 20 percent of the valves tested within any 48-month period which have not been previously tested. Paragraph 1.3.5(b) specifies requirements for replacing valves with pretested valves. Paragraph 1.3.5(c) establishes requirements for test acceptance criteria and requirements for testing additional valves. Code Case OMN-2 was intended to be used at facilities where their IST program was developed in accordance with ASME OM Code-1995. With regard to acceptability of the Code Case to the NRC, the staff reviewed activities of the Code Committee related to the development of this Code Case. In making its determination to reduce the testing requirements for thermal relief valves, the Code committee performed a review of the NPRDS database to assess the quantity and type of thermal relief valve failures. The Code committee determined that the failure rates of thermal relief valves are limited. The Code committee concluded that the low number of failure rates support the 10-year test interval or replacement frequency and the elimination of sample expansion if the failures were discovered during testing. In its evaluation of the Code Case for approval and inclusion in its new Regulatory Guide 1.192, the NRC has concluded that there are no outstanding issues with the proposed testing for thermal relief valves.

The NRC has completed an evaluation of Code Case OMN-2, which allows relaxation of testing requirements for relief valves identified as thermal reliefs. The evaluation did not identify any limitations or modifications necessary for the acceptability of this Code case to be used in conjunction with the OM Code-1995, Appendix I. Thermal relief valves are not defined in Appendix I. No related requirements have been identified in OM Code-1995 that would be related to thermal relief valves. On this basis, the staff finds that the licensee's alternative provides an acceptable level of quality and safety.

4.0 CONCLUSION

The staff concludes that the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55(a)(3)(i) on the basis that it provides an acceptable level of quality and safety. This alternative is authorized for the remainder of the second 10-year IST interval, which ends on November 18, 2008.

5.0 REFERENCES

- 5.1 10 CFR 50.55a(a)(3)(i).
- 5.2 10 CFR 50.55a(3)(i).
- 5.3 ASME Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition.
- 5.4 ASME OMN-2, Thermal Relief Valve Code Case, OM Code-1995, Appendix I.
- 5.5 Generic Letter 89-04, Guidance on Developing Acceptable Inservice Testing Programs, thru Supplement 1, April 4, 1995.
- 5.6 NUREG 1482, Guidelines for Inservice Testing at Nuclear Power Plants, Rev 0.
- 5.7 NRR Office Instruction LIC-102, Relief Request Reviews.
- 5.8 Perry Nuclear Power Plant, Inservice Testing (IST) Program, Second 10-Year Inspection Program, Docket Nos. 50-440.

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