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September 1, 2006
L-06-098

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

Subject: Beaver Valley Power Station, Unit Nos. 1 and 2
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
Proposed Alternative to American Society of Mechanical Engineers Code System Leakage Test Requirements
(Request No. BV3-PT-2)

Pursuant to 10 CFR 50.55a(a)(3)(ii), FirstEnergy Nuclear Operating Company (FENOC) hereby requests NRC approval to use the following alternative for the Beaver Valley Power Station (BVPS) Unit No. 1 third and Unit No. 2 second ten-year interval inservice inspection programs.

The American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Section XI requires hydrostatic pressure testing of Class 1 pressure retaining piping and valves once per ten-year interval. In lieu of these requirements, FENOC plans to perform a system leakage test in accordance with ASME Code Case N-498-1, and proposes alternative visual examinations of certain Safety Injection System and Residual Heat Removal System components and piping during the system leakage test.

Compliance with the ASME Code Section XI requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The proposed alternative provides an acceptable level of quality and safety. The details of the 10 CFR 50.55a request are enclosed.

FENOC requests approval prior to the BVPS Unit No. 1 maintenance and refueling outage, scheduled for September 2007. If there is a reason to believe the alternative may not be found acceptable, please notify FENOC by December 2006 to support planning and scheduling associated with implementation of the ASME Code requirements.

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No new regulatory commitments are contained in this submittal. If there are any questions or if additional information is required, please contact Mr. Gregory A. Dunn, Manager, FENOC Fleet Licensing, at (330) 315-7243.

Sincerely,

Richard A. Maude

FOR James H. Lash

Enclosure: 10 CFR 50.55a Request - Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii)

c: Mr. T. G. Colburn, NRR Senior Project Manager
Mr. P. C. Cataldo, NRC Senior Resident Inspector
Mr. S. J. Collins, NRC Region I Administrator
Mr. D. A. Allard, Director BRP/DEP
Mr. L. E. Ryan (BRP/DEP)

Enclosure to Letter L-06-098
10 CFR 50.55A REQUEST BV3-PT-2

Proposed Alternative
In accordance with 10 CFR 50.55a(a)(3)(ii)

--Hardship or Unusual Difficulty
without a Compensating Increase in Level of Quality or Safety--

1.0 ASME CODE COMPONENTS AFFECTED

Affected Beaver Valley Power Station (BVPS) Class 1 components and piping are identified below:

BVPS Unit No. 1
1. Components and piping between check valve 1SI-48 and check valve 1SI-51 (associated with the 'A' Safety Injection Accumulator)
2. Components and piping between check valve 1SI-49 and check valve 1SI-52 (associated with the 'B' Safety Injection Accumulator), and MOV-1RH-720A (associated with the 'A' Residual Heat Removal outlet)
3. Components and piping between check valve 1SI-50 and check valve 1SI-53 (associated with the 'C' Safety Injection Accumulator), and MOV-1RH-720B (associated with the 'B' Residual Heat Removal outlet)

BVPS Unit No. 2
1. Components and piping between check valve 2SIS-148 and check valve 2SIS-151 (associated with the 'A' Safety Injection Accumulator)
2. Components and piping between check valve 2SIS-147 and check valve 2SIS-145 (associated with the 'B' Safety Injection Accumulator), and 2RHS-MOV-720A (associated with the 'A' Residual Heat Removal outlet)
3. Components and piping between check valve 2SIS-142 and check valve 2SIS-141 (associated with the 'C' Safety Injection Accumulator), and 2RHS-MOV-720B (associated with the 'B' Residual Heat Removal outlet)

2.0 APPLICABLE CODE EDITION AND ADDENDA

American Society of Mechanical Engineers Code (ASME Code) Section XI, 1989 Edition, no Addenda for BVPS Unit No. 1, and Unit No. 2.

3.0 APPLICABLE CODE REQUIREMENT

Table IWB-2500-1, Category B-P, Item B15.51 requires hydrostatic testing of Class 1 pressure retaining piping once per ten-year interval. Code Case N-498-1 (referenced in the BVPS Ten-Year Inservice Inspection Program) allows a system leakage test in lieu of the ten-year hydrostatic testing. Note 2 of Table IWB-2500-1 and Paragraph (a)(2) of N-498-1 require that the test pressurization boundary extend to all Class 1 components.

Paragraph IWB-5221(a) states, "The system leakage test shall be conducted at a test pressure not less than the nominal operating pressure associated with 100% rated power."

4.0 REASON FOR REQUEST

Background Information

Normal reactor coolant pressure at 100 percent rated power is approximately 2235 psig. The piping noted above is separated from the reactor coolant pressure by a check valve and therefore, is not exposed to a pressure of 2235 psig. This piping is pressurized to approximately 660 psig for BVPS Unit No. 1 and approximately 640 psig for BVPS Unit No. 2 during normal plant operation from the passive safety injection accumulators.

Hardship or Unusual Difficulty

Two alternatives for meeting the applicable code requirement were considered as described below.

One alternative involves the use of an external pressurization source that would be necessary to meet the test pressure requirement. Since the first check valve from the reactor coolant system would be part of the test boundary, a pressure differential would be required between the reactor coolant system and the test boundary to ensure check valve closure. Maintaining the differential pressure and ensuring no test fluid intrusion into the reactor coolant system (reactivity control issue) is considered unusually difficult with no compensating increase in the level of quality and safety.

Another alternative considered is the use of temporary hoses to connect the reactor coolant pressure boundary to the identified sections of piping by bypassing the first check valve. Temporary hoses are not qualified to meet all aspects of plant design, (for example, pressure, temperature, materials, seismic, and deadload). Also, bypassing the first check valve contradicts the double isolation principle noted in 10CFR50.55a(c)(2)(ii). The use of temporary hoses poses both nuclear and safety concerns and is therefore not considered a viable option.

Based on the reasons noted above, FirstEnergy Nuclear Operating Company believes that compliance with the specified code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

5.0 PROPOSED ALTERNATIVE AND BASIS FOR USE

Proposed Alternative

The piping segments noted above are visually examined (VT-2) for leakage each refueling outage as part of the normal Class 1 system leakage test with the valves in their normal system alignment. This examination is proposed as an alternative to the applicable code requirement identified above.

Basis for Use

The noted piping segments are pressurized to approximately 660 psig for BVPS Unit No. 1 and approximately 640 psig for BVPS Unit No. 2 during normal operation. During the operating cycle, these segments are part of the safety injection accumulator pressure boundary. Safety injection accumulator level and pressure have annunciator alarms in the control room. If through-wall leakage were to occur in these segments, the resulting decrease in accumulator pressure and level would be evident in the control room. Operating procedures exist that direct control room response to the pressure and level alarms. The procedural actions include dispatch of an operator to the area to check for leakage. Current Technical Specifications require verification that accumulator water volume and nitrogen cover pressure is within limits at least once per 12 hours.

These pipe segments contain stainless steel pipe, valves and weld material. There are no alloy 600/82/182 materials in these pipe segments. There are no known active degradation mechanisms at work in these pipe segments.

The downstream extensions of these pipe segments, beyond the first check valves, are constructed using the same material specifications. These extensions are exposed to the higher reactor coolant pressure and are included in the Class 1 system leakage test performed every refueling outage.

6.0 DURATION OF PROPOSED ALTERNATIVE

The proposed alternative is requested to be implemented during the final 40-month period of the third ten-year inservice inspection interval at BVPS Unit No. 1 and the second ten-year inservice inspection interval at BVPS Unit No. 2.

7.0 PRECEDENT

The NRC has previously approved a similar request, as demonstrated in the correspondence listed below. The relief request for Beaver Valley Power Station is similar to this precedent in that FENOC proposes to visually examine the noted piping segments for leakage each refueling outage as part of the normal Class 1 system leakage test with valves in their normal system alignment. In this configuration the noted piping segments would remain at the normal operating pressure of the safety injection accumulators instead of the nominal reactor coolant system operating pressure. As stated in the correspondence listed below, the NRC staff concluded that pressurizing the subject piping segments in accordance with the ASME Code requirements would require significant plant modifications and would subject the licensee to an undue burden with no compensating increase in quality or safety.

- Surry Power Station, Unit Nos. 1 and 2, Docket Nos. 50-280 and 50-281, American Society of Mechanical Engineers, Section XI Fourth 10-Year Inservice Inspection Program (TAC Nos. MC5600 and MC5586, Relief Request Nos. SPT-004 for Unit No. 2 and SPT-005 for Unit No. 1), dated November 1, 2005.