Southern Nuclear

Regulatory Affairs

3535 Colonnade Parkway
Birmingham, AL 35243
205 992 5000 tel

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NL-24-0421

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

Edwin I. Hatch Nuclear Plant - Units 1 and 2
Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for
Pumps and Valves - Sixth Ten-Year Interval

Ladies and Gentlemen:

Pursuant to 10 CFR 50.55a(z) and 10 CFR 50.55a(f), Southern Nuclear Operating Company (SNC) hereby requests Nuclear Regulatory Commission (NRC) approval of the enclosed alternative requests and relief requests for Edwin I. Hatch Nuclear Plant (HNP) Units 1 and 2. These relief requests and alternatives are applicable to the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

SNC requests approval of the proposed relief requests and alternatives for HNP Units 1 and 2 by December 20, 2025.

This letter contains no regulatory commitments. If you have any questions, please contact Ryan Joyce at 205.992.6468.

Respectfully submitted,

Jamie Coleman

Jamie M. Coleman
Director, Regulatory Affairs
Southern Nuclear Operating Company

JMC/agq/cbg

Enclosures:

1. RR-P-1 Relief Request for RHR Pump Instrumentation
2. RR-P-2 Relief Request for RHR Pump Instrumentation
3. RR-P-3 Relief Request for E11 and P41 Vertical Line Shaft Pump Vibration
4. RR-P-4 Relief Request for Core Spray Pumps Instrumentation
5. RR-P-5 Relief Request for HPCI Pump Instrumentation
6. RR-P-6 Relief Request for HPCI Pump Instrumentation
7. RR-P-7 Relief Request for Diesel Service Water Pumps Vibration
8. RR-P-8 Relief Request for RHR and Core Spray Pump Suction Pressure
9. RR-P-9 Relief Request for Diesel Service Water SDSW Pump Flow Rate Measurement
10. RR-V-1 Relief Request for Scram Discharge Volume Vents and Drains
11. RR-V-2 Relief Request for Rupture Discs Replacement Frequency
12. RR-V-3 Relief Request for Excess Flow Check Valves Tested Per Tech Specs
13. RR-V-4 Relief Request for PIV Performance Based Testing

cc: Regional Administrator, Region ll
NRR Project Manager – Hatch 1&2
Senior Resident Inspector – Hatch 1&2
R-Type: CHA02.004

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 1

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
RR-P-1 Relief Request for RHR Pump Instrumentation

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
Alternate Provides Acceptable Level of Quality and Safety

1. ASME Code Components Affected

Component ID	Pump Description / Pump Type	ASME Class	ASME OM Code Category
1E11-C002A	Residual Heat Removal Pump 2A / Centrifugal	2	Group A
1E11-C002B	Residual Heat Removal Pump 2B / Centrifugal	2	Group A
1E11-C002C	Residual Heat Removal Pump 2C / Centrifugal	2	Group A
1E11-C002D	Residual Heat Removal Pump 2D / Centrifugal	2	Group A
2E11-C002A	Residual Heat Removal Pump 2A / Vertical Line Shaft	2	Group A
2E11-C002B	Residual Heat Removal Pump 2B / Vertical Line Shaft	2	Group A
2E11-C002C	Residual Heat Removal Pump 2C / Vertical Line Shaft	2	Group A
2E11-C002D	Residual Heat Removal Pump 2D / Vertical Line Shaft	2	Group A

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

ISTB-3500, 'Data Collection' and ISTB-3510 'General' paragraph

(a) Accuracy. Instrument accuracy shall be within the limits of Table ISTB-3510-1. If a parameter is determined by analytical methods instead of measurement, then the determination shall meet the parameter accuracy requirement of Table ISTB-3510-1 (e.g., flow rate determination shall be accurate to within ± 2% of actual). For individual analog instruments, the required accuracy is percent of full-scale. For digital instruments, the required accuracy is over the calibrated range. For a combination of instruments, the required accuracy is loop accuracy.

(b) (1) The full-scale range of each analog instrument shall not be greater than 3 times the reference value.

Table ISTB-3510-1, 'Required Instrument Accuracy' provides the accuracy requirements for gauges used for Group A Testing requirements for pumps.

4. Reason for Request

Pursuant to 10 CFR 50.55a(z)(1), relief is requested from the requirements of the ASME OM Code, 2022 Edition, Subsection ISTB-3510(b)(1) which requires that full-scale range for each analog instrument shall not be greater than three times the reference value. The Residual Heat Removal (RHR) system pump discharge pressure indicators 1(2)E11-PI-R003A, 3B, 3C and 3D, exceed this Code range limit.

This alternative request is a re-submittal of NRC approved 4th and 5th Intervals Relief Request RR-P-3, previously submitted and approved for use for these instruments. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch. (See Precedents for SERs)

The original installed instrumentation associated with the RHR pumps was not designed with the instrument range limits of OM Code ISTB-3510(b)(1) taken into consideration. The actual instrument ranges are itemized below.

Instrument	Range	Reference Value	Allowed Range*	Accuracy
1E11-PI-R003A-D	0-600 psig	171-185 psig	0-513 psig	± 0.5%
2E11-PI-R003A-D	0-600 psig	180-195 psig	0-540 psig	± 0.5%

* - Allowed Range corresponds to 3 times the lowest reference value

5. Proposed Alternative and Basis for Use

Plant Hatch proposes to use the existing installed instrumentation during Group A pump testing. Even though 1(2)E11-PI-R003A-D exceed the Code allowable range limit of three times the reference value, this additional gage range coupled with the better-than-Code-required accuracy of 0.5% results in only a 3 psi (600 x 0.005) maximum variance compared with the Code allowable variance of 10.26 psi (513 x 0.02).

Using other (temporary) instrumentation during Group A testing is not justifiable considering the difficulty and dose associated with such a requirement. The installed pressure indicators will provide data that is sufficiently accurate to allow assessment of pump condition and to detect degradation during the performance of the Group A IST pump testing. Highly accurate M&TE, which meets all Code requirements, will be installed during Comprehensive and Baseline testing.

The above proposed alternative provides an acceptable level of quality and safety since the variance in the actual test results is less than the maximum variance allowed by the Code. Based on the determination that the use of installed instrumentation provides an acceptable level of quality and safety; this proposed alternative should be authorized pursuant to 10 CFR 50.55a(z)(1).

6. Duration of Proposed Alternative

This Code alternative will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

This Relief Request was approved as RR-P-3 for the Fourth and Fifth Hatch IST Intervals, respectively:

- Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
- Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

1. NUREG-1482 Revision 3 Section 5.5.1 “Range and Accuracy of Analog Instruments”

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 2

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
RR-P-2 Relief Request for RHR Pump Instrumentation

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
Alternate Provides Acceptable Level of Quality and Safety

1. ASME Code Components Affected

Component ID	Pump Description / Pump Type	ASME Class	ASME OM Code Category
1E11-C002A	Residual Heat Removal Pump 2A / Centrifugal	2	Group A
1E11-C002B	Residual Heat Removal Pump 2B / Centrifugal	2	Group A
1E11-C002C	Residual Heat Removal Pump 2C / Centrifugal	2	Group A
1E11-C002D	Residual Heat Removal Pump 2D / Centrifugal	2	Group A
2E11-C002A	Residual Heat Removal Pump 2A / Vertical Line Shaft	2	Group A
2E11-C002B	Residual Heat Removal Pump 2B / Vertical Line Shaft	2	Group A
2E11-C002C	Residual Heat Removal Pump 2C / Vertical Line Shaft	2	Group A
2E11-C002D	Residual Heat Removal Pump 2D / Vertical Line Shaft	2	Group A

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

ISTB-3500, 'Data Collection' and ISTB-3510 'General' paragraph

(a) Accuracy. Instrument accuracy shall be within the limits of Table ISTB-3510-1. If a parameter is determined by analytical methods instead of measurement, then the determination shall meet the parameter accuracy requirement of Table ISTB-3510-1 (e.g., flow rate determination shall be accurate to within ±2% of actual). For individual analog instruments, the required accuracy is percent of full-scale. For digital instruments, the required accuracy is over the calibrated range. For a combination of instruments, the required accuracy is loop accuracy.

(b) (1) The full-scale range of each analog instrument shall not be greater than 3 times the reference value.

Table ISTB-3510-1, 'Required Instrument Accuracy' provides the accuracy requirements for gauges used for Group A Testing requirements for pumps.

4. Reason for Request

Pursuant to 10 CFR 50.55a(z)(1), relief is requested from the requirements of the ASME OM Code, 2022 Edition, Subsection ISTB-3510(b)(1) which requires that full-scale range for each analog instrument shall not be greater than three times the reference value. The Residual Heat Removal (RHR) system pump flow indicators 1(2)E11-FI-R608A and R608B, exceed this Code range limit.

This alternative request is a re-submittal of NRC approved 4th and 5th Interval(s) Relief Request RR-P-4, previously submitted and approved for use for these instruments. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch. (See Precedents for SERs)

The original installed instrumentation associated with the RHR pumps was not designed with the instrument range limits of OM Code ISTB-3510(b)(1) taken into consideration. The actual instrument ranges and loop accuracies are itemized below.

Instrument	Range	Reference Value	Allowed Range	Accuracy
1E11-FI-R608A&B	0-25000 gpm	≈7700 gpm	0-23100 gpm	± 0.87%
2E11-FI-R608A&B	0-25000 gpm	≈7700 gpm	0-23100 gpm	± 0.87%

Component	Component Accuracy	Loop Accuracy Per ISTA-2000
1(2)E11-FT-N015A & B	0.5%	0.87%
1(2)E11-K600A & B	0.5%	0.87%
1(2)E11-FI-R608A & B	0.5%	0.87%

1(2)E11-FI-R608A & B exceed the Code allowable full scale range limit of three times the reference value. The design of the indicator range includes consideration for LPCI flow rate (17,000 gpm for two pumps), whereas the minimum IST pump flow rate reference value is 7,700 gpm for Unit 1 and 2. The Code maximum allowable inaccuracy in measured flow rate would be 462 gpm (i.e., .02 x 23,100) for Units 1 and 2, whereas the actual maximum inaccuracy is measured flow is 218 gpm (i.e., .0087 x 25,000) for both Unit 1 and 2. Therefore, the actual accuracy of the installed flow indicators is better than required by the Code, this the range of the indicator exceeding the Code limit of three times the reference value is of no consequence.

5. Proposed Alternative and Basis for Use

Plant Hatch proposes to use the existing installed instrumentation during Group A, Comprehensive and Baseline Testing. Even though 1(2)E11-FI-R608A & B exceed the Code allowable range limit or three times the reference value, the measured parameter is more accurately displayed than the Code requires. The above proposed alternative is acceptable since the variance in the actual test results is more conservative than that allowed by the Code.

Based on the determination that this alternative provides an acceptable level of quality and safety, this proposed alternative should be authorized pursuant to 10 CFR 50.55a(z)(1).

6. Duration of Proposed Alternative

This Code alternative will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

This Relief Request was approved as RR-P-4 for the Fourth and Fifth Hatch IST Intervals, respectively:

- Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
- Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

1. NUREG-1482 Revision 3 Section 5.5.1 “Range and Accuracy of Analog Instruments”

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 3

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)
RR-P-3 Relief Request for E11 and P41 Vertical Line Shaft Pump Vibration

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)
Compliance with the Specified Requirements Would Result in Hardship Without a Compensating Increase in Quality and Safety

1. ASME Code Components Affected

Component ID	Pump Description [Note 1]	ASME Class	ASME OM Code Category
1E11-C001A	Unit 1 RHR Service Water Pump A	3	Group A
1E11-C001B	Unit 1 RHR Service Water Pump B	3	Group A
1E11-C001C	Unit 1 RHR Service Water Pump C	3	Group A
1E11-C001D	Unit 1 RHR Service Water Pump D	3	Group A
2E11-C001A	Unit 2 RHR Service Water Pump A	3	Group A
2E11-C001B	Unit 2 RHR Service Water Pump B	3	Group A
2E11-C001C	Unit 2 RHR Service Water Pump C	3	Group A
2E11-C001D	Unit 2 RHR Service Water Pump D	3	Group A
1P41-C001A	Unit 1Plant Service Water Pump A	3	Group A
1P41-C001B	Unit 1 Plant Service Water Pump B	3	Group A
1P41-C001C	Unit 1 Plant Service Water Pump C	3	Group A
1P41-C001D	Unit 1 Plant Service Water Pump D	3	Group A
2P41-C001A	Unit 2 Plant Service Water Pump A	3	Group A
2P41-C001B	Unit 2 Plant Service Water Pump B	3	Group A
2P41-C001C	Unit 2 Plant Service Water Pump C	3	Group A
2P41-C001D	Unit 2 Plant Service Water Pump D	3	Group A

Note 1: The pumps listed are all vertical line shaft pumps.

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

ISTB-3540 Vibration

(b) On vertical line shaft pumps, measurements shall be taken on the upper motor-bearing housing in three approximately orthogonal directions, one of which is the axial direction.

4. Reason for Request

Pursuant to 10 CFR 50.55a(z)(2), relief is requested from the requirements of the ASME OM Code, 2022 Edition, Subsection ISTB-3540(b) which requires that vibration measurements on vertical line shaft pumps be taken on the upper motor-bearing housing in three approximately orthogonal directions, one of which is the axial direction.

This alternative request is a re-submittal of NRC approved 4th and 5th Interval(s) Relief Request RR-P-5, previously submitted and approved for use of the alternative method used to measure vibration for the RHRSW and PSW Pumps at Plant Hatch. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch. (See Precedents for SERs)

The Code required vibration measurements on the upper motor housing on these vertical line shaft pumps are impractical because of the following reasons.

1. Plant design did not include permanent scaffolding or ladders which provide access to the top of the motors for the subject pumps.
2. Physical layout of the pumps and interference with adjacent components does not allow for the installation of temporary scaffolding or ladders which are adequate and safe for routine use.
3. There is a thin cover plate bolted to the top-center of each motor which prevents measurements in line with the motor bearing. Measurement on the edge of the motor housing would be influenced by eccentricity and may not be representative of actual axial vibration.
4. Special tools (extension rod) for placing the vibration transducers are not practical because placement would not be sufficiently accurate for trending purposes.

5. Proposed Alternative and Basis for Use

Vibration measurements will be taken in three orthogonal directions, one of which is in the axial direction in the area of the pump to motor mounting flange when conducting Group A, Comprehensive and Baseline Testing. This is the closest accessible location to a pump bearing housing and this location is easily and safely accessible for test personnel which would ensure repeatable vibration data and should provide readings which are at least as representative of pump mechanical condition as those required by the Code. Vibration measurements have been taken in the same locations in prior intervals and have provided adequate data to monitor for degradation.

The above proposed alternative provides reasonable assurance of operational readiness since vibration measurements will be taken in three orthogonal directions at the pump to motor mounted flange which will provide information as to the mechanical integrity of the

pump. Based on the determination that compliance with the Code requirements results in hardship without a compensating increase in the level of quality and safety, this proposed alternative should be authorized pursuant to 10 CFR 50.55a(z)(2).

6. Duration of Proposed Alternative

This Code alternative will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

This Relief Request was approved as RR-P-5 for the Fourth and Fifth Hatch IST Intervals, respectively:

- Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
- Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

None

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 4

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
RR-P-4 Relief Request for Core Spray Pumps Instrumentation

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
Alternate Provides Acceptable Level of Quality and Safety

1. ASME Code Components Affected

Component ID	Pump Description / Type	ASME Class	ASME OM Code Category
1E21-C001B	Unit 1 Core Spray Pump B / Centrifugal	2	Group B

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

ISTB-3500, 'Data Collection' and ISTB-3510 'General' paragraph

(a) Accuracy. Instrument accuracy shall be within the limits of Table ISTB-3510-1. If a parameter is determined by analytical methods instead of measurement, then the determination shall meet the parameter accuracy requirement of Table ISTB-3510-1 (e.g., flow rate determination shall be accurate to within ±2% of actual). For individual analog instruments, the required accuracy is percent of full-scale. For digital instruments, the required accuracy is over the calibrated range. For a combination of instruments, the required accuracy is loop accuracy.

(b) (1) The full-scale range of each analog instrument shall not be greater than 3 times the reference value.

Table ISTB-3510-1, 'Required Instrument Accuracy' provides the accuracy requirements for gauges used for Group B Testing requirements for pumps.

4. Reason for Request

Pursuant to 10 CFR 50.55a(z)(1), relief is requested from the requirements of the ASME OM Code, 2022 Edition, Subsection ISTB-3510(b)(1) which requires that full-scale range for each analog instrument shall not be greater than three times the reference value. The Core Spray pressure indicators exceed this Code range limit.

This alternative request is a re-submittal of NRC approved 4th and 5th Interval(s) Relief Request RR-P-6, previously submitted and approved for use for these instruments. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch. (See Precedents for SERs)

Core Spray pump pressure indicators 1E21-PI-R600A(B) exceed the maximum code allowable total loop accuracy of ± 2%. The actual instrument ranges and loop accuracies are itemized below.

Instrument	Range	Reference Value	Allowed Range*	Accuracy
1E21-PI-R600B	0-500 psig	273-282.6 psig	0-847.8 psig	± 2.06%

Component/Accuracy Per ISTA-2000	Component/Accuracy	Loop Accuracy
1E21-PT-N001B 0.5%	1E21-PI-R600B 2%	2.06%

The indicators used have full scale ranges less than that allowed by the Code. The maximum code allowable variance in measurement is 16.96 psig (.02 x 847.8) for Unit 1 and 20.1 psig for Unit 2 (.02 x 1005). Even considering the lower reference values of 273 psi and 332.5 psi respectively, the code allowable variances would still be met. By using an indicator with a range less than the allowed limit, the actual maximum variance is 10.5 psig (.021 x 500) which is more accurate than required by the Code. Therefore, the actual accuracy of the instruments is within the Code allowable as specified in Table ISTB-3510-1 for a Group B pump test.

5. Proposed Alternative and Basis for Use

Note, the installed instruments are more accurate than required by the Code for the range of application when performing a quarterly Group B pump test. Temporary pressure instruments that meet the Code requirements will be used during Comprehensive Pump and Baseline Testing.

The above proposed alternative provides an acceptable level of quality and safety since the variance in the actual test results is less than the maximum variance allowed by the Code. Based on the determination that the use of installed instruments provides an acceptable level of quality and safety, this proposed alternative should be authorized pursuant to 10 CFR 50.55a(z)(1).

6. Duration of Proposed Alternative

This Code alternative will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

This Relief Request was approved as RR-P-6 for the Fourth and Fifth Hatch IST Intervals, respectively:

- Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
- Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

1. NUREG-1482 Revision 3 Section 5.5.1 “Range and Accuracy of Analog Instruments”

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 5

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
RR-P-5 Relief Request for HPCI Pump Instrumentation

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
Alternate Provides Acceptable Level of Quality and Safety

1. ASME Code Components Affected

Component ID	Pump Description [Note 1]	ASME Class	ASME OM Code Category
1E41-C001	Unit 1 High Pressure Injection Pump	2	Group B
2E41-C001	Unit 2 High Pressure Injection Pump	2	Group B

Note 1: The pumps listed are all centrifugal pumps.

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

ISTB-3500, 'Data Collection' and ISTB-3510 'General' paragraph

(a) Accuracy. Instrument accuracy shall be within the limits of Table ISTB-3510-1. If a parameter is determined by analytical methods instead of measurement, then the determination shall meet the parameter accuracy requirement of Table ISTB-3510-1 (e.g., flow rate determination shall be accurate to within ± 2% of actual). For individual analog instruments, the required accuracy is percent of full-scale. For digital instruments, the required accuracy is over the calibrated range. For a combination of instruments, the required accuracy is loop accuracy.

(b) (1) The full-scale range of each analog instrument shall not be greater than 3 times the reference value.

Table ISTB-3510-1, 'Required Instrument Accuracy' provides the accuracy requirements for gauges used for Group B Testing requirements for pumps.

4. Reason for Request

Pursuant to 10 CFR 50.55a(z)(1), relief is requested from the requirements of the ASME OM Code, 2022 Edition, Subsection ISTB-3510(b)(1) which requires that full-scale range for each analog instrument shall not be greater than three times the reference value. Unit 1 and 2 HPCI pump suction pressure indicators 1(2)E41-PI-R004 exceed this Code allowable range limit. This request is only applicable to the Group B pump test.

This alternative request is a re-submittal of NRC approved 4th and 5th Interval(s) Relief Request RR-P-7, previously submitted and approved for use for these instruments. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch. (See Precedents for SERs)

HPCI pump suction pressure gauges 1(2)E41-PI-R004 exceed the range limit of three times the reference value. The actual instrument ranges are itemized below.

Instrument	Range	Reference Value	Allowed Range	Accuracy
1E41-PI-R004	30″Hg-100 psig	32.2 psig	0-96.6 psig	± 1%
2E41-PI-R004	30″Hg-100 psig	26.4 psig	0-79.2 psig	± 1%

The indicators are calibrated to ± 1% of full-scale accuracy, resulting in a maximum inaccuracy of +/- 1 psig (100 * 0.01). The Code allowable inaccuracy, based on a gauge with a full scale exactly 3 x Reference value calibrated to +/- 2%, would be +/- 1.93 psig for Unit 1 (96.6 * 0.02) and +/- 1.58 psig for Unit 2 (79.2 * 0.02). The better than required accuracy of the indicators overcomes the inaccuracy created by the full-scale range being greater than 3 x the reference values.

5. Proposed Alternative and Basis for Use

Plant Hatch proposes to use the existing installed instrumentation during Group B pump tests. Even though 1(2)E41-PI-R004 exceed the Code allowable range limit of three times the reference value, the measured parameter is more accurately displayed than the Code requires. The installed pressure indicators provide measurements which are within the Code allowable accuracy specified in Table ISTB-3510-1 for quarterly Group B pump tests. Pressure instruments that meet the code requirements will be used during Comprehensive and Baseline Testing.

The above proposed alternative provides an acceptable level of quality and safety since the variance in the actual test results is less than the maximum variance allowed by the Code. Based on the determination that this alternative provides an acceptable level of quality and safety, this proposed alternative should be authorized pursuant to 10 CFR 50.55a(z)(1).

6. Duration of Proposed Alternative

This Code alternative will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

This Relief Request was approved as RR-P-7 for the Fourth and Fifth Hatch IST Intervals, respectively:

- Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
- Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

None

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 6

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
RR-P-6 Relief Request for HPCI Pump Instrumentation

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
Alternate Provides Acceptable Level of Quality and Safety

1. ASME Code Components Affected

Component ID	Pump Description [Note 1]	ASME Class	ASME OM Code Category
1E41-C001	Unit 1 High Pressure Injection Pump	2	Group B
2E41-C001	Unit 2 High Pressure Injection Pump	2	Group B

Note 1: The pumps listed are all centrifugal pumps.

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

ISTB-3500, 'Data Collection' and ISTB-3510 'General' paragraph

(a) Accuracy. Instrument accuracy shall be within the limits of Table ISTB-3510-1. If a parameter is determined by analytical methods instead of measurement, then the determination shall meet the parameter accuracy requirement of Table ISTB-3510-1 (e.g., flow rate determination shall be accurate to within ±2% of actual). For individual analog instruments, the required accuracy is percent of full-scale. For digital instruments, the required accuracy is over the calibrated range. For a combination of instruments, the required accuracy is loop accuracy.

(b) (1) The full-scale range of each analog instrument shall not be greater than 3 times the reference value.

Table ISTB-3510-1, 'Required Instrument Accuracy' provides the accuracy requirements for gauges used for Group B Testing requirements for pumps.

4. Reason for Request

Pursuant to 10 CFR 50.55a(z)(1), relief is requested from the requirements of the ASME OM Code, 2022 Edition, Table ISTB-3510-1, which requires a total instrument loop accuracy for flow indicators of ±2% of full scale for pump Inservice Testing. HPCI flow indicators 1(2)E41-FI-R612 do not meet this requirement.

This alternative request is a re-submittal of NRC approved 4th and 5th Interval(s) Relief Request RR-P-8, previously submitted and approved for use for these instruments. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch. (See Precedents for SERs)

HPCI flow indicators 1(2)E41-FI-R612 exceed the maximum Code allowable total loop accuracy. The actual instrument ranges are itemized below.

Instrument	Range	Reference Value	Allowed Range	Accuracy
1E41-FI-R612	0-5000 gpm	4250 gpm	0-12750 gpm	± 2.12%
2E41-FI-R612	0-5000 gpm	4250 gpm	0-12750 gpm	± 2.12%

Component	Component Accuracy	Loop Accuracy Per ISTA-2000
1(2)E41-FT-N008	0.5%	2.12%
1(2)E41-FI-R612	2.0%	2.12%
1(2)E41-K601	0.5%	2.12%

The indicator used has full scale range less than the allowed. The maximum variance allowable by the Code is 255 gpm (.02 x 12750), whereas the actual maximum variance is 106 gpm (.0212 x 5000). Therefore, the actual accuracy of the instrument loop is better than the allowable by the Code.

5. Proposed Alternative and Basis for Use

Plant Hatch to use the installed flow indicators, which provide measurements which are within the Code allowable accuracy as specified in Table ISTB-3510-1 for flow testing. These flow indicators will be used during the Group B, Comprehensive, and Baseline Testing.

The above proposed alternative provides an acceptable level of quality and safety since the variance in the actual test results is less than the maximum variance allowed by the Code. Based on the determination that this alternative provides an acceptable level of quality and safety, this proposed alternative should be authorized pursuant to 10 CFR 50.55a(z)(1).

6. Duration of Proposed Alternative

This Code alternative will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

This Alternative Request was approved as RR-P-8 for the Fourth and Fifth Hatch IST Intervals, respectively:

- Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
- Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

None

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 7

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)
RR-P-7 Relief Request for Diesel Service Water Pumps Vibration

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)
Compliance with the specified requirements would result in hardship without a compensating increase in quality and safety

1. ASME Code Components Affected

Component ID	Pump Description / Pump Type	ASME Class	ASME OM Code Category
2P41-C002	Unit 2 Standby Diesel Service Water Pump / Vertical Line Shaft	3	Group B

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

ISTB-3540 Vibration,

(b) On vertical line shaft pumps, measurements shall be taken on the upper motor-bearing housing in three approximately orthogonal directions, one of which is the axial direction.

4. Reason for Request

Pursuant to 10 CFR 50.55a(z)(2), relief is requested from the requirements of the ASME OM Code, 2022 Edition, Subsection ISTB-3540(b) which requires that vibration measurements on vertical line shaft pumps be taken on the upper motor-bearing housing in three approximately orthogonal directions, one of which is the axial direction.

This alternative request is a re-submittal of NRC approved 4th and 5th Interval(s) Relief Request RR-P-9, previously submitted and approved for use of the alternative method used to measure vibration for the Plant Hatch Unit 2 Diesel Service Water Pump. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch. (See Precedents for SERs)

The Code required vibration measurements on the upper motor housing on this Unit 2 Standby Diesel Generator Service Water vertical line shaft pump are impractical because of the following condition:

> The motor has a cooling fan mounted at the top which is attached to the rotating shaft. The fan is protected by a relatively thin cover plate which prevents access to the motor housing for vibration measurements. Removing the cover does not provide for transducer placement since the rotating fan would still be in the way.

5. Proposed Alternative and Basis for Use

Vibration measurements will be taken in three orthogonal directions, one of which is in the axial direction around the pump to motor mounting flange. This is the closest accessible location to a pump bearing housing and this location is easily and safely accessible for test personnel which would ensure repeatable vibration data and should provide readings which are at least as representative of pump mechanical condition as those required by the Code. Vibration measurements have been taken in the same locations in prior intervals and have provided adequate data to monitor for degradation.

Therefore, application of the OM Code hydraulic testing criteria along with radial and axial vibration monitoring around the pump to motor mounting flange should provide adequate data for assessing the condition of the Standby Diesel Generator Service Water Pump. This request is only applicable to Comprehensive and Baseline Pump Testing. The above proposed alternative provides reasonable assurance of operational readiness since vibration measurements will be taken in three orthogonal directions at the pump to motor mounted flange which will provide information as to the mechanical integrity of the pump. Based on the determination that compliance with the Code requirements results in hardship without a compensating increase in the level of quality and safety, this proposed alternative should be authorized pursuant to 10 CFR 50.55a(z)(2).

6. Duration of Proposed Alternative

This relief will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

This Alternative Request was approved as RR-P-9 for the Fourth and Fifth Hatch IST Intervals, respectively:

- Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
- Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

None

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 8

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)
RR-P-8 Relief Request for RHR and Core Spray Pump Suction Pressure

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)
Compliance with the specified requirements would result in hardship without a compensating increase in quality and safety

1. ASME Code Components Affected

Component ID	Pump Description / Pump Type	ASME Class	ASME OM Code Category
1E11-C002A	Unit 1 Residual Heat Removal Pump A / Centrifugal	2	Group A
1E11-C002B	Unit 1 Residual Heat Removal Pump B / Centrifugal	2	Group A
1E11-C002C	Unit 1 Residual Heat Removal Pump C / Centrifugal	2	Group A
1E11-C002D	Unit 1 Residual Heat Removal Pump D / Centrifugal	2	Group A
1E21-C001B	Unit 1 Core Spray Pump B / Centrifugal	2	Group B
2E11-C002A	Unit 2 Residual Heat Removal Pump A / Vertical Line Shaft	2	Group A
2E11-C002B	Unit 2 Residual Heat Removal Pump B / Vertical Line Shaft	2	Group A
2E11-C002C	Unit 2 Residual Heat Removal Pump C / Vertical Line Shaft	2	Group A
2E11-C002D	Unit 2 Residual Heat Removal Pump D / Vertical Line Shaft	2	Group A

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

ISTB-3520, ‘Pressure’

ISTB-3520(b) *Differential Pressure.* When determining differential pressure across a pump, a differential pressure transmitter that provides direct measurement of the pressure

difference or the difference between the pressure at a point in the inlet and pressure at a point in the discharge pipe shall be used.

4. Reason for Request

Pursuant to 10 CFR 50.55a(z)(2), relief is requested from the requirements of the ASME OM Code, 2022 Edition, Subsection ISTB-3520(b) which requires differential pressure be determined by the difference between the pressure at a point in the inlet pipe and the pressure at a point in the discharge pipe if a direct indicating instrument is not provided.

This alternative request is a re-submittal of NRC approved 4th and 5th Interval(s) Relief Request RR-P-11, previously submitted and approved for use for these instruments. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch. (See Precedents for SERs)

The RHR pumps are aligned to the suppression pool (torus) during all modes of normal plant operation. The installed suction pressure gauges do not meet Code requirements. Suction pressure to these pumps is primarily a function of suppression pool level, which is controlled within a 4-inch range, and this results in a virtually constant suction pressure. IST is performed utilizing a full flow test line which circulates water to and from the suppression pool.

The Plant's Technical Specifications require that the suppression pool be maintained within a narrow range of level, temperature, and internal pressure during plant operation which results in a suction pressure of approximately 5 psig. The Unit 1 and 2 Technical Specification operability limits for the suppression pool are itemized below.

Level	≥ 146″ & ≤ 150″
Internal Pressure	≤ 1.75 psig
Water Temperature	≤ 100° F

These Technical Specification operability limits for the suppression pool result in a maximum difference in calculated pump suction pressure of < 2 psig. This 2 psig variance (ΔPi) is insignificant in relation to nominal discharge pressure and he calculation of differential pressure (ΔP = Po-Pi) when considering the Group A pump test acceptable operating range (i.e., 93 – 110% for vertical line shaft pumps from Table ISTB-5221-1) and the allowable ± 2% instrument accuracy from Table ISTB-3510-1. Therefore, direct suction pressure measurement for differential pressure derivation provides no added benefit for determining pump operational readiness or for monitoring pump degradation.

PUMP	LOWEST REFERENCE DISCHARGE PRESSURE (Po)	MAXIMUM VARIANCE (ΔPi/Po)
Unit 1 RHR	171 psig	1.17% max
Unit 2 RHR	180 psig	1.11% max

The following table summarizes several years' worth of IST pump suction pressure data. This summary confirms that the RHR pump's suction pressures are consistent and are relatively insignificant in comparison with the pumps' discharge pressure. Applying an average suction pressure of 5 psig, when calculating differential pressure, will provide data that is meaningful for assessing operational readiness and for monitoring pump degradation.

Pump MPL No.	Minimum Pressure (psig)	Maximum Pressure (psig)	Average Pressure Note 1 (psig)	Reference Values
1E11-C002A	4.5	5.0	4.9 (31)	Qr = 8000 gpm ΔPr = 166 psid
1E11-C002B	4.9	5.6	5.0 (33)	Qr = 7700 gpm ΔPr = 175 psid
1E11-C002C	4.9	5.2	5.0 (31)	Qr = 7700 gpm ΔPr = 176 psid
1E11-C002D	4.7	5.2	4.9 (33)	Qr = 7700 gpm ΔPr = 180 psid
1E21-C001B	1.7 Note 2	5.0	4.8 (33)	Qr = 4300 gpm ΔPr = 268 psid
2E11-C002A	5.0	5.8	5.0 (32)	Qr = 7700 gpm ΔPr = 184.6 psid
2E11-C002B	4.3	5.0	4.9 (36)	Qr = 7700 gpm ΔPr = 184.9 psid
2E11-C002C	5.0	5.7	5.0 (32)	Qr = 7700 gpm ΔPr = 184.9 psid
2E11-C002D	4.2	5.0	4.9 (35)	Qr = 7700 gpm ΔPr = 175 psid
Average	4.3	5.3	4.9	N/A

Notes :

1. Number in parenthesis "( )" indicates the number of test values averaged to get the indicated value.
2. One time occurrence only.

The permanently installed pump suction pressure gauges encompass a wider range of pressures than does IST and thus exceed the OM Code allowable range limit (3 times the reference value). The installed RHR pump gauges must account for the pressure experienced with the RHR loop in the shutdown cooling mode of operation. Therefore, a temporary test gauge which satisfies the Code range limits would have to be installed each time the IST test is required.

Applying a constant pump suction pressure, when calculating differential pressure, will allow the Group A testing to be performed with the installed pressure gauges, thus lessening the burden on operations personnel responsible for the testing. Since temporary test gauges are required to be calibrated both prior to and after usage, is also eliminates the possibility of invalidating test data due to a gauge being damaged during transportation, installation or removal.

Mechanical degradation of centrifugal pumps which experience significant differences in suction (inlet) pressure would be indicated by changes in the differential pressure. However, for these pumps, the suction pressure variance is insignificant in comparison to the developed head (pressure).

Therefore, monitoring discharge pressure and calculating differential pressure assuming a constant 5 psig suction pressure provides an adequate method to determine operational readiness and detect potential degradation.

5. Proposed Alternative and Basis for Use

Pump suction pressure will be assumed to be 5 psig based on the review of several years of IST data which support suction pressure being virtually constant when performing Group A testing. During these tests pump differential pressure will be calculated by measuring pump discharge pressure and subtracting 5 psig. This value will then be compared to the corresponding reference value. The acceptance criteria of Table ISTB-5121-1 will be applied for assessing pump operational readiness and for monitoring potential pump degradation during the applicable Group A pump test. This testing method meets the intent of the Code for monitoring pump operational readiness and degradation and relieves the Licensee of the burden associated with the use of temporary test gauges.

This request is not applicable to Comprehensive Pump or Baseline Testing. The above proposed alternative provides an acceptable means of evaluating pump performance without a substantial decrease in the ability to monitor operational readiness. Based on the determination that compliance with the Code requirements, results in a hardship or unusual difficulty without a compensating increase in the level of quality and safety, this proposed alternative should be authorized pursuant to 10 CFR 50.55a(z)(2).

6. Duration of Proposed Alternative

This Code alternative will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

This Relief Request was approved as RR-P-11 for the Fourth and Fifth Hatch IST Intervals, respectively:

- Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
- Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

None

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 9

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
RR-P-9 Relief Request for Diesel Service Water SDSW Pump Flow Rate Measurement

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
Alternate Provides Acceptable Level of Quality and Safety

1. ASME Code Components Affected

Component ID	Pump Description / Pump Type	ASME Class	ASME OM Code Category
2P41-C002	Unit 2 Standby Diesel Service Water Pump / Vertical Line Shaft	3	Group B

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

ISTB-3500, 'Data Collection' and ISTB-3510 'General' paragraph

(a) Accuracy. Instrument accuracy shall be within the limits of Table ISTB-3510-1. If a parameter is determined by analytical methods instead of measurement, then the determination shall meet the parameter accuracy requirement of Table ISTB-3510-1 (e.g., flow rate determination shall be accurate to within ± 2% of actual). For individual analog instruments, the required accuracy is percent of full-scale. For digital instruments, the required accuracy is over the calibrated range. For a combination of instruments, the required accuracy is loop accuracy.

(b) (1) The full-scale range of each analog instrument shall not be greater than 3 times the reference value.

Table ISTB-3510-1, 'Required Instrument Accuracy' provides the accuracy requirements for gauges used for Group B Testing requirements for pumps.

4. Reason for Request

Pursuant to 10 CFR 50.55a(z)(1), relief is requested from the requirements of the ASME OM Code, 2022 Edition, Subsection ISTB-3510(b)(1) which requires that the full-range of analog instruments shall not be greater than three times the reference value, and Table ISTB-3510-1, which requires an accuracy of ± 2% full scale.

This alternative request is a re-submittal of NRC approved 4th and 5th Interval(s) Relief Request RR-P-12, previously submitted and approved for use of the alternative method used to measure vibration for the Plant Hatch Unit 2 Diesel Service Water Pump. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch. (See Precedents for SERs).

The flowrate for the Unit 2 Standby Diesel Generators Service Water (SDSW) pump is determined by measuring the differential pressure (dp), in inches of water, across a flow

element and then using the vendor correlation chart to convert dp to flowrate in gallons per minute (gpm). The dp indicator (2P41-R383) has a full-scale range of - 178 inches of water to + 178 inches of water (356 inches total range), which is greater than 3 times the reference value, and is calibrated to ± 4 inches of water (i.e., ± 1.125% of full scale). The indicator has a range which allows measurement of the flowrate in either direction across the flow element, thus the negative and positive scale ranges. The vendor supplied dp to flow correlation chart has a range of 50 – 145 inches of water which corresponds to a flowrate range of 500 – 850 gpm.

The reference flow for this pump is 707 gpm which corresponds to 100 inches of water. The OM Code would allow a full-scale range of 0 – 300 inches of water (i.e., 3 X 100) and a calibration accuracy of ± 6.0 inches of water (i.e., 0.02 X 300).

The combined range and accuracy of the installed instruments is within the maximum allowable of ISTB-3510(b)(1) and Table ISTB-3510-1. The maximum Code allowable dp variance would be ± 6.0 inches of water, whereas the actual dp variance is ± 4.0 inches of water. Therefore, use of the existing dp indicators and the vendor correlation chart provides flowrate measurements for IST that are least as accurate as required by the OM Code.

5. Proposed Alternative and Basis for Use

The installed instrumentation will be utilized to determine the flowrate for the SDSW pump test. The use of this instrumentation is supported by the guidance contained in NRC NUREG-1482, Revision 3, Section 5.5.1, since the combined range and accuracy variance of the installed instrumentation is within the maximum allowable variance of the OM Code. This request applies to flowrate measurements for Group B, Comprehensive and Baseline Testing.

The above proposed alternative provides reasonable assurance of operational readiness since the accuracy of the instrumentation is better than the absolute accuracy required by the Code. Based on the determination that compliance with the Code requirements provides an acceptable level of quality and safety, this proposed alternative should be authorized pursuant to 10 CFR 50.55a(z)(1).

6. Duration of Proposed Alternative

This Code alternative will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

This Relief Request was approved as RR-P-12 for the Fourth and Fifth Hatch IST Intervals, respectively:

- Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
- Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

1. NUREG-1482 Revision 3 Section 5.5.1 “Range and Accuracy of Analog Instruments”

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 10

Relief Request In Accordance with 10 CFR 50.55a(f)(6)(i)
RR-V-1 Relief Request for Scram Discharge Volume Vents and Drains

Relief Request In Accordance with 10 CFR 50.55a(f)(6)(i)
Relief from impractical IST requirements

1. ASME Code Components Affected

Component ID	Pump Description	ASME Class	ASME OM Code Category
1C11-F010A	Unit 1 Scram Discharge Volume Vent	2	B
1C11-F010B	Unit 1 Scram Discharge Volume Vent	2	B
1C11-F011	Unit 1 Scram Discharge Volume Drain	2	B
1C11-F035A	Unit 1 Scram Discharge Volume Vent	2	B
1C11-F035B	Unit 1 Scram Discharge Volume Vent	2	B
1C11-F037	Unit 1 Scram Discharge Volume Drain	2	B

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

IV-3420 Stroke Testing

(b) Stroke testing includes stroke time measurements as follows:

(1) The limiting value(s) of full-stroke time of each valve shall be specified by the Owner.

(2) The stroke time of all valves shall be measured to, at least the nearest second.

(3) Any abnormality or erratic action shall be recorded (see IV-9000), and an evaluation shall be made regarding a need for corrective action.

(4) Where IV-3410(e) is used to validate valve functions, a stroke test shall be performed quarterly.

(c) Stroke testing should be performed prior to performance assessment testing when these tests are scheduled concurrently. This action ensures that the stroke test and its associated trendable parameters are performed under repeatable conditions to the extent practicable.

(d) Valve obturator movement shall be determined in accordance with ISTC-3530.

(e) See IV-7100 for acceptance criteria.

4. Reason for Request

Pursuant to 10 CFR 50.55a(f)(6)(i), relief is requested from the requirements of the ASME OM Code, 2022 Edition, Mandatory Appendix IV Subsection IV-3420 which requires the establishment of limiting values of valve stroke time testing and measurement of individual valve stroke time per IV-3420.

This alternative request is a re-submittal of NRC approved 4th and 5th Interval(s) Relief Request RR-V-1, previously submitted and approved for alternative testing required by ISTC-5131. ISTC-5130 for Pneumatically Operated Valves invokes Mandatory Appendix IV for Active AOVs testing requirements. This Relief Request is for relief from Appendix IV, Subsection IV-3420. The requirements of IV-3420 are similar to the original ISTC-5131 requirements in that stroke time testing is to be performed quarterly and the valve is to be timed to the nearest second. The previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch should also apply to these Scram Discharge Volume Vent and Drain Valves. (See Precedents for SERs)

A limiting value of stroke time cannot be specified for the air operated scram discharge volume vent and drain valves and they cannot be individually stroked and timed. In order to prevent water hammer induced damage to the system during a full CRD scram, plant Technical Specifications require that system valve operation is adjusted so that the outboard vent and drain valves (F035A and B, F037) full close at least five seconds after each respective inboard vent and drain valve (F010A and B, F011). All valves must be fully closed in less than forty-five (45) seconds.

Additionally, the system is adjusted so that the inboard vent and drain valves (F010A and B, F011) start to open at least five seconds after each respective outboard vent and drain valves (F035A and B, F037) upon reset of a full core scram. The valves are not equipped with individual valve control switches and cannot be individually stroke timed. Because of the adjustable nature of the valve control system, individual valve stroke timing would not provide any meaningful information for monitoring valve degradation. System design prevents stroke timing these valves during normal operation without disabling the Reactor Protection System Scram Signal to the valves. Disabling this signal requires the installation of electrical jumpers and the opening of links in energized control circuits which increase the potential for a Reactor Scram.

5. Proposed Alternative and Basis for Use

Verifying that the scram time for each control rod to notch position 06 is ≤ 7 seconds provides reasonable assurance that the control rod will insert when required during a DBA or transient, thereby completing its shutdown function. This Technical Specifications Surveillance Requirement (SR 3.1.3.4) is performed in conjunction with the control rod scram time testing of SR 3.1.4.1, SR 3.1.4.2, SR 3.1.4.3, and SR 3.1.4.4. The LOGIC SYSTEM FUNTIONAL TEST in LCO 3.3.1.1, “Reactor Protection System (RPS) Instrumentation,” and the functional testing of SDV vent and drain valves in LCO 3.1.8, “Scram Discharge Volume (SDV) Vent and Drain Valves,” overlap this Surveillance to provide complete testing of the assumed safety function. The associated Frequencies are acceptable, considering the more frequent testing performed to demonstrate other aspects of control rod OPERABILITY and operating experience, which shows scram times do not significantly change over an operating cycle.

The valves will be exercised quarterly but not timed. Additionally, the total valve sequence response time will be verified to be less than Technical Specification requirements during each refueling outage when a complete stroke time test is performed. The above proposed relief provides a reasonable assurance of operational readiness since the valves will be exercised quarterly and total valve response time will be tested each refueling outage to Technical Specification requirements. Based on the impracticality of performing testing in accordance with the Code requirements, and in consideration of the burden on SNC if the Code requirements were imposed, this proposed relief should be granted pursuant to 10 CFR 50.55a(f)(6)(i).

6. Duration of Relief Request

This relief will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

This Relief Request was approved as RR-V-1 for the Fourth and Fifth Hatch IST Intervals, respectively:

- Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
- Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

1. Technical Specification Surveillance Requirement BASES 3.1.3.4, Control Rod OPERABILITY B 3.1.3
2. NUREG-1482, “Guidelines for Inservice Testing at Nuclear Power Plants,” Revision 3, Published July 2020

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 11

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
RR-V-2 Relief Request for Rupture Discs Replacement Frequency

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
Alternate Provides Acceptable Level of Quality and Safety

1. ASME Code Components Affected

Component ID	Pump Description	ASME Class	ASME OM Code Category
1E41-D003	Unit 1 HPCI Turbine Exhaust Rupture Disc	2	D
1E41-D004	Unit 1 HPCI Turbine Exhaust Rupture Disc	2	D
2E41-D003	Unit 2 HPCI Turbine Exhaust Rupture Disc	2	D
2E41-D004	Unit 2 HPCI Turbine Exhaust Rupture Disc	2	D

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

I-1360 Test Frequency, Classes 2 and 3 Nonreclosing Pressure Relief Devices.

Classes 2 and 3 nonreclosing pressure relief devices shall be replaced every 5 yr, unless historical data indicates a requirement for more frequent replacement.

4. Reason for Request

Pursuant to 10 CFR 50.55a(z)(1), relief is requested from the requirements of the ASME OM Code, 2022 Edition, Appendix I, Subsection I-1360 which requires that Class 2 and 3 Rupture Discs (Nonreclosing pressure relief devices) be replaced every 5 years.

This alternative request is a re-submittal of NRC approved 4th and 5th Interval(s) Relief Request RR-V-5, previously submitted and approved for replacement of these rupture discs on a 72-month frequency based on vendor testing. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch. (See Precedents for SERs).

The subject rupture discs are supplied by Continental Disc Corporation. Southern Nuclear Operating Company requested the supplier to perform cyclic testing, to destruction, of a disc that had previously been installed in the HPCI system at Plant Hatch. The test disc was installed in an appropriate disc holder and flange assembly which simulated the installed configuration. The rupture disc assembly was cycled for full vacuum at 70% of the ambient burst pressure (219 psig). The cycle testing was conducted at ambient room temperature. Since the rupture disc is a differential pressure relief device, cycling

conditions were achieved by placing a constant 15 psig pressure on the downstream side of the rupture disc and cycling the upstream pressure from zero to 70% of the ambient burst pressure plus 15 psig. The psig was added to the upstream cycling pressure which compensates for the constant 15 psig pressure on the downstream side. An electronic counter recorded each cycle. The test disc completed 2,788 cycles before failure occurred. The rupture disc burst in the normal fashion as with disc of this design.

The HPCI system is typically tested every 3 months, but for conservatism a test frequency of each month will be assumed. Monthly testing would result in approximately 72 tests during 3 operating cycles (i.e., 72 months). To meet the Code 5-year replacement frequency, the disc must be replaced every 2nd refueling outage (48 months) or after approximately 48 HPCI system tests. Therefore, a change from replacement every 48 months to every 78 months is insignificant when compared to the expected life of the disc as proven by the number of cycles required for disc rupture by vendor testing.

Plant Hatch operates on a 24-month fuel cycle. Replacement every 6 years results in replacement every 3rd refueling outage, whereas a 5-year replacement results in replacement every 2nd refueling outage. Extension of the replacement frequency by 1-year will coincide with the fuel cycle for Plant Hatch.

5. Proposed Alternative and Basis for Use

The subject rupture discs will be replaced at least once every 3rd refueling outage, corresponding to once every 6 years.

As proven by the vendor testing, the subject rupture discs have adequate margin for operation well beyond the requested 6-year replacement frequency. Therefore, the proposed alternative provides an acceptable level of quality and safety and should be authorized pursuant to 10 CFR 50.55a(z)(1).

6. Duration of Proposed Alternative

This Code alternative will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

This Relief Request was approved as RR-V-5 for the Fourth and Fifth Hatch IST Intervals, respectively:

- Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
- Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

None

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 12

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
RR-V-3 Relief Request for Excess Flow Check Valves Tested Per Tech Specs

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
Alternate Provides Acceptable Level of Quality and Safety

1. ASME Code Components Affected

Component ID	Valve Description	ASME Class	ASME OM Code Category
1B21-F015A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015C	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015D	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015E	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015F	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015G	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015H	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015J	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015K	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015L	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015M	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015N	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015P	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015R	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F015S	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F041	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F043A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F043B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F045A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C

Component ID	Valve Description	ASME Class	ASME OM Code Category
1B21-F045B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F047A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F047B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F049A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F049B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F051A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F051B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F051C	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F051D	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F053A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F053B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F053C	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F053D	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F055	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F057	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059C	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059D	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059E	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059F	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059G	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059H	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059L	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C

Component ID	Valve Description	ASME Class	ASME OM Code Category
1B21-F059M	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059N	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059P	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059R	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059S	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059T	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F059U	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B21-F061	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F003A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F003B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F004A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F004B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F009A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F009B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F009C	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F009D	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F010A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F010B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F010C	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F010D	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F011A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F011B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F011C	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F011D	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C

Component ID	Valve Description	ASME Class	ASME OM Code Category
1B31-F012A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F012B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F012C	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F012D	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F040A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F040B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F040C	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1B31-F040D	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1E21-F018A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1E21-F018B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1E21-F018C	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1E41-F024A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1E41-F024B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1E41-F024C	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1E41-F024D	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1E51-F044A	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1E51-F044B	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1E51-F044C	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
1E51-F044D	Unit 1 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F041	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F043A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F043B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F045A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F045B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C

Component ID	Valve Description	ASME Class	ASME OM Code Category
2B21-F047A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F047B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F049A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F049B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F051A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F051B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F051C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F051D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F053A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F053B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F053C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F053D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F055	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F057	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059E	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059F	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059G	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059H	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059L	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059M	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C

Component ID	Valve Description	ASME Class	ASME OM Code Category
2B21-F059N	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059P	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059R	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059S	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059T	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F059U	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F061	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F070A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F070B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F070C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F070D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F071A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F071B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F071C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F071D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F073A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F073B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F073C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B21-F073D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F003A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F003B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F004A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F004B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F009A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C

Component ID	Valve Description	ASME Class	ASME OM Code Category
2B31-F009B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F009C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F009D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F010A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F010B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F010C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F010D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F011A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F011B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F011C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F011D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F012A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F012B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F012C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F012D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F040A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F040B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F040C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2B31-F040D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2E21-F018A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2E21-F018B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2E21-F018C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2E41-F024A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2E41-F024B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C

Component ID	Valve Description	ASME Class	ASME OM Code Category
2E41-F024C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2E41-F024D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2E51-F044A	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2E51-F044B	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2E51-F044C	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C
2E51-F044D	Unit 2 Instrumentation Excess Flow Check Valve	1	A/C

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

ISTC-3522, ‘Category C Check Valves’

(a) During operation at power, each check valve shall be exercised or examined in a manner that verifies obturator travel by using the methods in ISTC-5221.

(c) If exercising is not practicable during operation at power and cold shutdown outages, it shall be performed during refueling outages.

ISTC-3700, ‘Position Verification Testing’

Valves with remote position indicators shall be observed locally at least once every 2 yr to verify that valve operation is accurately indicated. Where practicable, this local observation should be supplemented by other indications such as use of flow meters or other suitable instrumentation to verify obturator position. These observations need not be concurrent. Where local observation is not possible, other indications shall be used for verification of valve operation. Position verification for active MOVs shall be tested in accordance with Division 1, Mandatory Appendix III.

10 CFR 50.55a(b)(3)(xi) OM Condition: Valve Position Indication

When implementing paragraph ISTC–3700, ‘‘Position Verification Testing,’’ in the ASME OM Code, 2012 Edition through the latest edition of the ASME OM Code incorporated by reference in paragraph (a)(1)(iv) of this section, licensees must verify that valve operation is accurately indicated by supplementing valve position indicating lights with other indications, such as flow meters or other suitable instrumentation to provide assurance of proper obturator position for valves with remote position indication within the scope of Subsection ISTC including its mandatory appendices and their verification methods and frequencies.

4. Reason for Request

Pursuant to 10 CFR 50.55a(z)(1), relief is requested from the requirements of the ASME OM Code, 2022 Edition, ISTC-3522(a), ISTC-3522(c), ISTC-3700 and NRC Condition 10 CFR 50.55a(b)(3)(xi) for Supplemental Position Indication.

This alternative request is a re-submittal of NRC approved 4th and 5th Interval(s) Relief Request RR-V-9, previously submitted and approved for testing of Excess Flow Check Valves (EFCV) at Plant Hatch per Technical Specifications. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch. (See Precedents for SERs).

5. Proposed Alternative and Basis for Use

Functional testing with verification that flow is checked will be performed per Technical Specification 3.6.1.3.8 during refueling outages. Surveillance Requirement 3.6.1.3.8 allows a “representative sample” of EFCVs to be tested every refueling outage, such that each EFCV will be individually tested approximately every ten years. The sample groups are representative of the various plant configurations, models, sizes, and operating environments.

The EFCVs have position indication in the control room. Check valve remote position is excluded from Regulatory Guide 1.97 as a required parameter for evaluating containment isolation. However, the NRC has imposed NRC Condition (b)(3)(xi) for any valves equipped with remote position indication, requiring supplemental position indication. The remote position indication will be verified accurate at the same frequency as the functional test prescribed in Technical Specification Surveillance Requirement 3.6.1.3.8. Although inadvertent actuation of an EFCV during operation is highly unlikely due to the spring poppet design, Plant Hatch monitors the EFCVs indications on a daily basis as part of the Operations routine. Corrective Action documents are initiated for any EFCVs with abnormal position indication displays and repairs are scheduled for the next refueling outage.

Excess flow check valves are provided in each instrument process line that is part of the reactor coolant pressure boundary. The excess flow check valve is designed so that it will not close accidentally during normal power operation, but will close if a rupture of the instrument line occurs downstream of the valve, and can be reopened, when appropriate, after the closure.

As detailed in Unit 1 FSAR Section 5.2.2.5.4 and Unit 2 FSAR Section 6.2.5.3.3, Plant Hatch has incorporated into the design of each instrument source line a 0.25-inch restricting orifice as close to the RPV as possible. This is a redundant design feature which, along with the EFCV, will limit leakage to a level where the integrity and functional performance of the secondary containment and its associated air treatment systems (e.g., filters and standby gas treatment system) are maintained. The coolant loss is well within the capabilities of the reactor coolant makeup system, and the potential offsite exposure is substantially below the guidelines of 10CFR100.

Additionally, the design and installation of the excess flow check valves at Plant Hatch follow the guidance of Regulatory Guide 1.11.

Testing the subject valves quarterly or during cold shutdown is not practicable, based on plant conditions. These valves have been successfully tested throughout the life of Plant Hatch and they have shown no degradation or other signs of aging.

The technology for testing these valves is simple and has been demonstrated effectively during the operating history of Plant Hatch. The basis for this alternative is that testing a sample of EFCVs each refueling outage provides a level of safety and quality equivalent to that of the Code-required testing.

Excess flow check valves are required to be tested in accordance with ISTC-3522, which requires exercising the check valves nominally every three months to the positions required to perform their safety functions. ISTC-3522(c) permits deferral of this requirement to every reactor refueling outage. Excess flow check valves are also required to be tested in accordance with ISTC-3700, which requires remote position indication verification at least once every 2 years. The NRC has also imposed NRC Condition 10 CFR 50.55a(b)(3)(xi) on ISTC-3700 requiring supplemental position indication for these valves also.

10 CFR 50 Appendix J testing is only applicable to EFCVs if they perform a containment isolation function. EFCSs are not required to close in response to a containment isolation signal and not required to operate under post-LOCA conditions. As discussed in Reference 2, the functioning of EFCVs is not necessary to remain within 10CFR100 limits. Consequently, for purpose of 10CFR50 Appendix J, CIV testing, EFCVs do not provide containment isolation function and are exempt from consideration under Appendix J. However, a leak test is performed to verify the closed safety function for these valves.

The testing described above requires removal of the associated instrument or instruments from service. Since these instruments are in use during plant operation, removal of any of these instruments from service may cause a spurious signal, which could result in a plant trip or an unnecessary challenge to safety systems. Additionally, process liquid will be contaminated to some degree, requiring special measures to collect flow from the vented instrument side and also will contribute to an increase in personnel radiation exposure.

Testing on a cold shutdown frequency is impractical considering the large number of valves to be tested and the locations which the test fixtures must be located. Considering the number of valves to be tested and the conditions required for testing, it is also a hardship to test all of these valves during a refueling outage. Improvements in refueling outage schedules have minimized the time that is planned for refueling and testing activities during the outages.

The excess flow check valve is a simple and reliable device. The major components are a poppet and a spring. The spring holds the poppet open under static conditions. The valve will close upon sufficient differential pressure across the poppet.

Functional testing of the valve is accomplished by venting the instrument side of the valve. The resultant increase in flow imposes a differential pressure across the poppet, which compresses the spring and decreases flow through the valve. Industry experience as documented in GE Nuclear Energy topical report NEDO-32977-A, “Excess Flow Check Valve Testing Relaxation,” indicates the EFCVs have a very low failure rate. The report indicates similarly that many reported test failures at other plants were related to test methodologies and not actual EFCV failures. In addition, the SER for the report assumed a 5-fold increase in failure rate to account for any potential aging influence and the resultant

failure potential over 10 years was still found to not be significant. Test history at Plant Hatch shows very low failure rate and no evidence of common mode failure, which is consistent with the findings of the NEDO report. The EFCVs at Plant Hatch, consistent with the industry, have exhibited a high degree of reliability, availability, and provide an acceptable level of quality and safety.

Plant Hatch Technical Specifications detail what frequency is required to maintain a high degree of reliability and availability and as an alternative will provide an acceptable level of quality and safety. Therefore, Southern Nuclear Co. requests relief pursuant to 10CFR50.55a(z)(1) to test excess flow check valves on a representative sample basis at the frequency specified in Plant Hatch Technical Specification Surveillance Requirements (SR) 3.6.1.3.8.

6. Duration of Proposed Alternative

This Code alternative will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

1. Fermi 2 Relief Request VRR-011(SER September 2010 ML102360570)
2. Susquehanna Steam Electric Station Unit 2 – SER dated 4/11/2001 (ML010960041).
3. Nine Mile Point Nuclear Station – SER dated 9/17/2001 (ML012340462).
4. This Relief Request was approved as RR-V-9 for the Fourth and Fifth Hatch IST Intervals, respectively:
   - Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
   - Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

1. NRC Regulatory Guide 1.11, “INSTRUMENT LINES PENETRATING THE PRIMARY REACTOR CONTAINMENT”
2. GE Nuclear Energy topical report NEDO-32977-A, “Excess Flow Check Valve Testing Relaxation” as evaluated in SER dated 3/14/2000 (ML003729011)
3. Unit 1 FSAR 5.2.2.5.4 / Unit 2 FSAR 6.2.5.3.3

NL-24-0421

Edwin I. Hatch Nuclear Plant - Units 1 and 2

Submittal of the Inservice Testing Program Alternative Requests and Relief Requests for Pumps and Valves - Sixth Ten-Year Interval

Enclosure 13

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
RR-V-4 Relief Request for PIV Performance Based Testing

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
Alternate Provides Acceptable Level of Quality and Safety

1. ASME Code Components Affected

Equip ID	Description	Type	LLRT Type	Test Media	Comments
1E11-F008	RHR SDC Suction Outboard Isolation Valve	CIV/PIV	C	Air	Class 1
1E11-F009	RHR SDC Suction Inboard Isolation Valve	PIV	ASME	Water	Class 1
1E11-F015A	LPCI Inboard Isolation Valve	CIV/PIV	C	Air	Class 2
1E11-F015B	LPCI Inboard Isolation Valve	CIV/PIV	C	Air	Class 2
1E11-F050A	LPCI Injection Check Valve	PIV	ASME	Water	Class 1 – Tested with 1E11-F122A
1E11-F050B	LPCI Injection Check Valve	PIV	ASME	Water	Class 1 – Tested with 1E11-F122B
1E11-F122A	RHR F050A Bypass Valve	PIV	ASME	Water	Class 1 – Tested with 1E11-F050A
1E11-F122B	RHR F050B Bypass Valve	PIV	ASME	Water	Class 1 – Tested with 1E11-F050B
1E21-F005A	CS Injection Inboard Valve	CIV/PIV	C	Air	Class 1
1E21-F005B	CS Injection Inboard Valve	CIV/PIV	C	Air	Class 1
1E21-F006A	CS Injection Check Valve	PIV	ASME	Water	Class 1 – Tested with 1E21-F037A
1E21-F006B	CS Injection Check Valve	PIV	ASME	Water	Class 1 – Tested with 1E21-F037B
1E21-F037A	CS F006A Bypass Valve	PIV	ASME	Water	Class 1 – Tested with 1E21-F006A
1E21-F037B	CS F006B Bypass Valve	PIV	ASME	Water	Class 1 – Tested with 1E21-F006B
1E41-F005	HPCI Injection Check Valve	PIV	ASME	Water	Class 1
1E41-F006	HPCI Injection Outboard Isolation Valve	CIV/PIV	C	Water	Class 1 – Not 0.6 La – Tested with Outboard FWCV
1E51-F013	RCIC Injection Outboard Isolation Valve	CIV/PIV	C	Water	Class 1 – Not 0.6 La – Tested with Outboard FWCV
1E51-F014	RCIC Injection Check Valve	PIV	ASME	Water	Class 2

Equip ID	Description	Type	LLRT Type	Test Media	Comments
2E11-F008	RHR SDC Suction Outboard Isolation Valve	CIV/PIV	C	Air	Class 1
2E11-F009	RHR SDC Suction Inboard Isolation Valve	PIV	ASME	Water	Class 1
2E11-F015A	LPCI Inboard Isolation Valve	CIV/PIV	C	Air	Class 2
2E11-F015B	LPCI Inboard Isolation Valve	CIV/PIV	C	Air	Class 2
2E11-F050A	LPCI Injection Check Valve	PIV	ASME	Water	Class 1 – Tested with 2E11-F122A
2E11-F050B	LPCI Injection Check Valve	PIV	ASME	Water	Class 1 – Tested with 2E11-F122B
2E11-F122A	RHR F050A Bypass Valve	PIV	ASME	Water	Class 1 – Tested with 2E11-F050A
2E11-F122B	RHR F050B Bypass Valve	PIV	ASME	Water	Class 1 – Tested with 2E11-F050B
2E21-F005A	CS Injection Inboard Valve	CIV/PIV	C	Air	Class 1
2E21-F005B	CS Injection Inboard Valve	CIV/PIV	C	Air	Class 1
2E21-F006A	CS Injection Check Valve	PIV	ASME	Water	Class 1 – Tested with 2E21-F037A
2E21-F006B	CS Injection Check Valve	PIV	ASME	Water	Class 1 – Tested with 2E21-F037B
2E21-F037A	CS F006A Bypass Valve	PIV	ASME	Water	Class 1 – Tested with 2E21-F006A
2E21-F037B	CS F006B Bypass Valve	PIV	ASME	Water	Class 1 – Tested with 2E21-F006B
2E41-F005	HPCI Injection Check Valve	PIV	ASME	Water	Class 1
2E41-F006	HPCI Injection Outboard Isolation Valve	CIV/PIV	C	Water	Class 1 – Not 0.6 La – Tested with Outboard FWCV
2E51-F013	RCIC Injection Outboard Isolation Valve	CIV/PIV	C	Water	Class 1 – Not 0.6 La – Tested with Outboard FWCV
2E51-F014	RCIC Injection Check Valve	PIV	ASME	Water	Class 2

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants (OM) Code, 2022 Edition.

3. Applicable Code Requirement

ISTC-3630, 'Leakage Rate for Other Than Containment Isolation Valves'. Category A valves with a leakage requirement not based on an Owner's 10 CFR 50 Appendix J program, shall be tested to verify their seat leakages within acceptable limits. Valve closure before seat leakage testing shall be by using the valve operator with no additional closing force applied.

(a) *Frequency*. Tests shall be conducted at least once every 2 yr

4. Reason for Request

Pursuant to 10 CFR 50.55a(z)(1), relief is requested from the requirements of the ASME OM Code, 2022 Edition, ISTC-3630(a). While the valves are not in Series, they are not individually tested, due to essentially being in the same flow path.

ISTC-3630(a) requires that leakage rate testing for pressure isolation valves be performed at least once every 2 years. Pressure Isolation Valves (PIVs) are not specifically included in the scope of performance-based testing as provided for in 10 CFR 50 Appendix J Option B. However, OM Code Case OMN-23, "Alternative Rules for Testing Pressure Isolation Valves", does allow for performance-based testing of Pressure Isolation Valves. Additionally, NEI 94-01 describes the risk-informed basis for extended test intervals under Option B. That justification shows that for valves which have demonstrated good performance by passing their leak rate tests for two consecutive cycles, further failures appear to be governed by the random failure rate of the component. NEI 94-01 also presents the results of a comprehensive risk analysis, including the statement that "risk impact associated with the increasing [leakrate] test intervals is negligible (less than 0.1% of total risk)." The valves identified in this relief request are all in water applications, CIV valves are tested in accordance with Appendix J Requirements using air. PIV testing is typically performed at lower pressures, such as for Appendix J Requirements, are acceptable provided the results are extrapolated to system functional differential pressure. Plant Hatch applies the extrapolated values to both PIV and CIV values. This relief request is intended to provide for a performance-based scheduling of PIV tests at Hatch. The reason for requesting this relief is dose reduction / ALARA. Recent historical data was used to identify that PIV testing alone each refuel outage incurs a total dose of approximately 400 millirem. Assuming all of the PIVs remain classified as good performers the extended test intervals would provide for a savings of 800 mR over a 6 year period per unit.

NUREG 0933 Issue 105 (Interfacing Systems LOCA at LWRs) discussed the need for PIV leakage rate testing primarily based on the 3 pre-1980 historical failures of applicable valves industry-wide. These failures all involved human errors in either operations or maintenance. None of these failures involved inservice equipment degradation. The performance of PIV leak rate testing provides assurance of acceptable seat leakage with the valve in the closed condition. Typical PIV testing does not identify functional problems which may inhibit the valves' ability to reposition from open to close. For check valves, such functional testing is accomplished per ASME OM Code ISTC-3522. Power-operated valves are routinely full stroke tested per ASME OM Code to ensure their functional capabilities. At Plant Hatch, these functional tests for PIVs are performed only at Cold Shutdown or Refuel Outage frequencies.

Such testing is not performed online in order to prevent any possibility of an inadvertent ISLOCA condition. The 24 month functional testing of the PIVs is adequate to identify any abnormal condition that might affect closure capability. Performance of the separate 24 month PIV leak rate testing does not contribute any additional assurance of functional capability, it only determines if seat tightness of the closed valves.

This alternative request is a re-submittal of NRC approved 4th and 5th Interval(s) Relief Request RR-V-10, previously submitted and approved for testing of CIVs and PIVs at Plant Hatch per Technical Specifications. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions for previous IST Intervals for Plant Hatch. (See Precedents for SERs).

5. Proposed Alternative and Basis for Use

Hatch proposes to perform PIV testing at intervals ranging from every refuel to every third refuel. Hatch also proposes to use Air Tests for valves that are CIVs and PIVs. Some CIVs will be tested with Water and all PIVs that only perform a PIV function will be tested with Water. The specific interval for each valve would be a function of its performance and would be established in a manner consistent with the Containment Isolation Valve (CIV) process under 10 CFR 50 Appendix J Option B. 12 of the 36 valves listed are classified as CIVs and are currently leak tested with air according to 10 CFR 50 Appendix J methodology every 2 years to satisfy their PIV leakage test requirement (with acceptance criteria correlated to water at function maximum pressure differential). Whether the valve is a CIV/PIV or PIV only, the valve must have two consecutive leakage tests which meet its acceptance criteria to be considered a good performer. That is, the test interval may be extended to every third refuel outage upon completion of two consecutive periodic PIV tests with results within the prescribed acceptance criteria. The test interval will be extended to a specific value in a range of frequencies from 30 months up to a maximum of 75 months (as described in NEI 94-01 Revision 3-A). The test interval shall not exceed 75 months with a 3 month grace period (i.e., a total of 78 months). Any test failure will require a return to initial (every RFO) interval until good performance can again be established.

The primary basis for this relief request is historically good performance of the PIVs and desire to reduce personnel exposure dose (ALARA). With the testing being performed every refueling outage has resulted in approximately 180 tests with 2 failures, which yields a failure rate of approximately 1 percent.

Additional basis for this relief request is provided below:

- Separate functional testing of power-operated PIVs and Condition Monitoring of Check Valve PIVs per ASME OM Code.
- Low likelihood of valve mispositioning during power operations (procedures, interlocks).
- Air test vs. water test – degrading seat conditions tend to be identified with air testing.
- Relief valves in the low pressure (LP) piping – these relief valves may not provide Inner-System Loss of Coolant Accident (ISLOCA) mitigation for inadvertent PIV mispositioning but their relief capacity can accommodate conservative PIV seat leakage rates.

- Alarms that identify high pressure (HP) to LP leakage – Operators are highly trained to recognize symptoms of a present ISLOCA and to take appropriate actions.

6. Duration of Proposed Alternative

This Code alternative will be implemented during the Code of Record Interval that uses the 2022 Edition of the ASME OM Code.

7. Precedents

1. This Relief Request as approved as RR VR-013 for Fermi 2 as documented in SER dated 10/28/2010 (TAC ME2558, ME2557 and ME2556)
2. Approved Quad Cities Relief Request RV03 – NRC SER Dated February 14, 2013 (ML13042A348).
3. This Relief Request was approved as RR-V-10 for the Fourth and Fifth Hatch IST Intervals, respectively:

   - Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - RE: Request for Relief from the Requirements of the American Society of Mechanical Engineered Boiler and Vessel Code (ASME Code) (TAC NOS. MC6837, MC6838, MC7626, AND MC7627) February 14, 2006 [ML060450286].
   - Edwin I. Hatch Nuclear Plant, Units 1 and 2 - Inservice Testing Program Relief Request and Alternatives for Pumps and Valves - Fifth Ten-Year Interval (CAC NOS. MF6238, MF6239, MF6240, MF6241, MF6242, MF6243, MF6244, MF6245, MF6246, and MF6247) December 30, 2015 [ML15310A406].

8. References

1. NUREG 0933, Issue 105 (Interfacing Systems LOCA at LWRs)
2. NEI 94-03, Revision 3-A