UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 29, 2017

Site Vice President
Entergy Operations, Inc.
Waterford Steam Electric Station, Unit 3
17265 River Road
Killona, LA 70057-3093

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 – REQUESTS FOR RELIEF GRR-WF3-2017-1, PRR-WF3-2017-1, AND PRR-WF3-2017-2, ALTERNATIVES TO ASME OM CODE REQUIREMENTS FOR INSERVICE TESTING FOR THE FOURTH 10-YEAR PROGRAM INTERVAL (CAC NOS. MF9869, MF9870, AND MF9871; EPIDS L-2017-LRM-0045, L-2017-LRM-0046, AND L-2017-LRM-0047)

Dear Sir or Madam:

By letter dated June 13, 2017 (Agencywide Documents Access and Management System Accession No. ML17164A426), Entergy Operations, Inc. (Entergy, the licensee), submitted requests for relief GRR-WF3-2017-1 (GRR-1), PRR-WF3-2017-1 (PRR-1), and PRR-WF3-2017-2 (PRR-2) to the U.S. Regulatory Commission (NRC), proposing alternatives to the requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) for the fourth 10-year inservice testing (IST) program interval for Waterford Steam Electric Station, Unit 3 (Waterford 3).

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.55a(z)(2), the licensee requested to use the proposed alternatives in GRR-1 on the basis that the ASME OM Code requirements present an undue hardship without a compensating increase in the level of quality and safety. Pursuant to 10 CFR 50.55a(z)(1), the licensee requested to use the proposed alternatives in PRR-1, and PRR-2 on the basis that the alternatives provide an acceptable level of quality and safety.

The NRC staff has reviewed the subject requests, and has determined that for alternative request GRR-1, the proposed alternative provides reasonable assurance that the affected components are operationally ready. The NRC staff concludes that complying with the specified ASME OM Code requirements would result in a hardship without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes, as set forth in the enclosed safety evaluation, that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2).

For alternative requests PRR-1 and PRR-2, the NRC staff has determined that the proposed alternatives provide an acceptable level of quality and safety. Accordingly, the NRC staff concludes, as set forth in the enclosed safety evaluation, that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(1) for requests PRR-1 and PRR-2.

Therefore, the NRC staff authorizes alternative request GRR-1 for Waterford 3 for the fourth 10-year IST program interval, which is scheduled to begin on December 1, 2017, and is scheduled to end on November 30, 2027. In addition, the NRC staff authorizes alternative requests PRR-1 and PRR-2 for Waterford 3 for the fourth 10-year IST program interval, which is scheduled to begin on December 1, 2017, and is scheduled to end on November 30, 2027.

All other ASME OM Code requirements for which relief was not specifically requested and approved in the subject request remain applicable.

If you have any questions, please contact the Project Manager, April Pulvirenti at 301-415-1390 or via e-mail at April.Pulvirenti@nrc.gov.

Sincerely,

RJ Pascarelli

Robert J. Pascarelli, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosure:
Safety Evaluation

cc: Listserv

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUESTS FOR RELIEF GRR-WF3-2017-1, PRR-WF3-2017-1, AND PRR-WF3-2017-2

RELATED TO THE FOURTH 10-YEAR INTERVAL INSERVICE TESTING PROGRAM

WATERFORD STEAM ELECTRIC STATION, UNIT 3

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-382

1.0 INTRODUCTION

By letter dated June 13, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17164A426), Entergy Operations, Inc. (the licensee), submitted requests for relief GRR-WF3-2017-1 (GRR-1), PRR-WF3-2017-1 (PRR-1), and PRR-WF3-2017-2 (PRR-2) to the U.S. Regulatory Commission (NRC), proposing alternatives to the requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) for the fourth 10-year inservice testing (IST) program interval for Waterford Steam Electric Station, Unit 3 (Waterford 3).

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.55a(z)(2), the licensee requested to use the proposed alternative GRR-1 on the basis that the ASME OM Code requirements present an undue hardship without a compensating increase in the level of quality and safety. Pursuant to 10 CFR 50.55a(z)(1), the licensee requested to use the proposed alternatives in PRR-1 and PRR-2 on the basis that the alternatives provide an acceptable level of quality and safety.

2.0 REGULATORY EVALUATION

Section 50.55a(f) of 10 CFR, "Preservice and Inservice Testing Requirements," requires, in part, that IST of certain ASME Code Class 1, 2, and 3 components must meet the requirements of the ASME OM Code and applicable addenda, except where alternatives have been authorized by the NRC pursuant to paragraphs 50.55a(z)(1) or 50.55a(z)(2) of 10 CFR.

In proposing alternatives or requesting relief, a licensee must demonstrate that: (1) the proposed alternative provides an acceptable level of quality and safety (10 CFR 50.55a(z)(1)); (2) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety (10 CFR 50.55a(z)(2)). Section 50.55a of 10 CFR allows the NRC to authorize alternatives to ASME OM Code requirements upon making necessary findings.

The Waterford 3 fourth 10-year IST interval is scheduled to being on December 1, 2017. The applicable ASME Code Edition and Addenda for the CNS fourth 10-year IST program interval is the 2004 Edition through 2006 Addenda of ASME OM Code.

Based on the above, and subject to the following technical evaluation, the NRC staff finds that regulatory authority exists for the licensee to request and the Commission to authorize the alternatives requested by the licensee.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Alternative Request GRR-1

This request applies to the frequency specifications of the ASME OM Code. The frequencies for tests given in the ASME OM Code include the following, but do not include a tolerance band:

ISTA-3120, "Inservice Test Interval," (a) states, "The frequency for inservice testing shall be in accordance with the requirements of Section IST."

ISTB-3400, "Frequency of Inservice Tests," states, "An inservice test shall be run on each pump as specified in Table ISTB-3400-1."

Table ISTB-3400-1, "Inservice Test Frequency," notes that Group A and Group B pump tests are to be conducted quarterly and comprehensive pump tests are to be conducted biennially.

ISTC-3510, "Exercising Test Frequency," states, "Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3570, ISTC-5221, and ISTC-5222. Power-operated valves shall be exercise tested once per fuel cycle."

ISTC-3540, "Manual Valves," states, "Manual valves shall be full-stroke exercised at least once every 2 years, except where adverse conditions may require the valve to be tested more frequently to ensure operational readiness. Any increased testing frequency shall be specified by the Owner. The valve shall exhibit the required change of obturator position."

ISTC-3630, "Leakage Rate for Other Than Containment Isolation Valves," (a) "Frequency," states, "Tests shall be conducted at least once every 2 years."

ISTC-3700, "Position Verification Testing," states, in part, "Valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated."

ISTC-5221, "Valve Obturator Movement," (c)(3), states, "At least one valve from each group shall be disassembled and examined at each refueling outage; all valves in each group shall be disassembled and examined at least once every 8 years."

Mandatory Appendix I, "Inservice Testing of Pressure Relief Devices in Light-Water Reactor Nuclear Power Plants," I-1320, "Test Frequencies, Class 1 Pressure Relief Valves," (a), "5-Year Test Interval," states, in part, "Class 1 pressure relief valves shall be tested at least once every 5 years...."

Mandatory Appendix I, I-1330, "Test Frequency, Class 1 Nonreclosing Pressure Relief Devices," states, in part, that "Class 1 nonreclosing pressure relief devices shall be replaced every 5 years...."

Mandatory Appendix I, I-1340, "Test Frequency, Class 1 Pressure Relief Valves That Are Used for Thermal Relief Application," states, "Tests shall be performed in accordance with I-1320, Test Frequencies, Class 1 Pressure Relief Valves."

Mandatory Appendix I, I-1350, "Test Frequency, Classes 2 and 3 Pressure Relief Valves," (a), "10-Year Test Interval," states, in part, "Class 2 and 3 pressure relief valves, with the exception of PWR [pressurized-water reactor] main steam safety valves, shall be tested every 10 years...."

Mandatory Appendix I, I-1360, "Test Frequency, Classes 2 and 3 Nonreclosing Pressure Relief Devices," states, "Classes 2 and 3 nonreclosing pressure relief devices shall be replaced every 5 years, unless historical data indicates a requirement for more frequent replacement."

Mandatory Appendix I, I-1370, "Test Frequency, Classes 2 and 3 Primary Containment Vacuum Relief Valves," (a) states, in part, that "Tests shall be performed on all Classes 2 and 3 containment vacuum relief valves at each refueling outage or every 2 years, whichever is sooner...."

Mandatory Appendix I, I-1380, "Test Frequency, Classes 2 and 3 Vacuum Relief Valves, Except for Primary Containment Vacuum Relief Valves," states, in part, that "All Classes 2 and 3 vacuum relief valves shall be tested every 2 years...."

Mandatory Appendix I, I-1390, "Test Frequency, Classes 2 and 3 Pressure Relief Devices That Are Used for Thermal Relief Application," states, in part, that "Tests shall be performed on all Classes 2 and 3 relief devices used in thermal relief application every 10 years...."

Mandatory Appendix II, "Check Valve Condition Monitoring Program," II-4000, "Condition-Monitoring Activities," (a), "Performance Improvement Activities," (1), states, in part, "If sufficient information is not currently available to complete the analysis required in II-3000, ... then, the following activities shall be performed at sufficient intervals over an interim period of the next 5 years or two refueling outages, whichever is less, to determine the cause of failure or the maintenance patterns."

Mandatory Appendix II, II-4000, (b), "Optimization of Condition-Monitoring Activities," subparagraph (1)(e), states, in part, "Identify the interval for each activity."

Relief is requested for all pumps and valves contained in the Waterford 3 IST Program scope.

Reason for Request

In its letter dated June 13, 2017, the licensee states, in part, that:

> The ASME OM Code Section IST establishes the inservice test frequencies for all components within the scope of the Code. The frequencies (e.g., quarterly) have always been interpreted as "nominal" frequencies... and Owners routinely applied the surveillance extension time period (i.e., grace period) contained in the plant Technical Specifications (TS) Surveillance Requirements (SRs). The TS

typically allow for a less than or equal to 25 percent extension of the surveillance test interval to accommodate plant conditions that may not be suitable for conducting [a TS] surveillance (SR 4.0.2).

The lack of a tolerance band on the ASME OM Code IST frequencies restricts operational flexibility.

The NRC recognized this potential issue in the TSs by allowing a frequency tolerance as described in TS SR 4.0.2. The lack of a similar tolerance applied to the ASME OM Code testing places an unusual hardship on the plant to adequately schedule work tasks without operational flexibility.

Thus, just as with TS-required surveillance testing, some tolerance is needed to allow adjusting ASME OM Code testing intervals to suit the plant conditions and other maintenance and testing activities. This assures operational flexibility when scheduling [IST] that would minimize the conflicts between the need to complete the testing and plant conditions.

Proposed Alternative

The licensee proposed to use ASME OM Code Case OMN-20, repeated below, for determining acceptable tolerances for pump and valve test frequencies. The proposed alternative will apply to the various frequency requirements noted above.

ASME OM Code Case OMN-20 "Inservice Test Frequency"

ASME OM, Division 1, Section IST and earlier editions and addenda of ASME OM Code specify component test frequencies based either on elapsed time periods (e.g., quarterly, 2 years, etc.) or on the occurrence of plant conditions or events (e.g., cold shutdown, refueling outage, upon detection of a sample failure, following maintenance, etc.).

a) Components whose test frequencies are based on elapsed time periods shall be tested at the frequencies specified in Section IST with a specified time period between tests as shown in the table below.

Frequency	**Specified Time Period Between Tests**
Quarterly (or every 3 months)	92 days
Semiannually (or every 6 months)	184 days
Annually (or every year)	366 days
x Years	x calendar years where 'x' is a whole number of years ≥ 2

The licensee stated that the specified time period between tests may be reduced or extended as follows:

1) For periods specified as fewer than 2 years, the period may be extended by up to 25 percent for any given test.

2) For periods specified as greater than or equal to 2 years, the period may be extended by up to 6 months for any given test.

3) All periods specified may be reduced at the discretion of the Owner (i.e., there is no minimum period requirement).

The licensee further states that:

> Period extension is used to facilitate test scheduling and considers plant operating conditions that may not be suitable for performance of the required testing (e.g., performance of the test would cause an unacceptable increase in the plant risk profile due to transient conditions or other ongoing surveillance, test or maintenance activities). Period extensions are not intended to be used repeatedly merely as an operational convenience to extend test intervals beyond those specified.
>
> Period extensions may also be applied to accelerated test frequencies (e.g., pumps in Alert Range) and other fewer than two-year test frequencies not specified in [the table above].
>
> Period extensions may not be applied to the test frequency requirements specified in [ASME OM Code] Subsection ISTD, ["]Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants,["] as Subsection ISTD contains its own rules for period extensions.

b) Components whose test frequencies are based on the occurrence of plant conditions or events may not have their period between tests extended except as allowed by the ASME OM Code.

Note that a similar alternative request (i.e., to adopt Code Case OMN-20, has been authorized for Waterford 3 third 10-year IST program by the NRC in a letter dated December 9, 2016 (ADAMS Accession No. ML16235A228).

NRC Staff Evaluation

Historically, licensees have applied for and the NRC staff has accepted the standard TS definitions for IST intervals (including allowable interval extensions) to ASME OM Code-required testing (see Section 3.1.3 of NUREG-1482, Revision 2, "Guidelines for Inservice Testing at Nuclear Power Plants: Inservice Testing of Pumps and Valves and Inservice Examination and Testing of Dynamic Restraints (Snubbers) at Nuclear Power Plants," October 2013, (ADAMS Accession No. ML13295A020)). The NRC staff has reconsidered the allowance of using TS testing intervals and interval extensions for IST. As noted in NRC Regulatory Issue Summary 2012-10, "NRC Staff Position on Applying Surveillance Requirements 3.0.2 and 3.0.3 to Administrative Controls Program Tests," dated August 23, 2012 (ADAMS Accession

No. ML12079A393), the NRC determined that programmatic test frequencies cannot be extended to all IST described in the ASME OM Code in accordance with the TS SR 4.0.2.

The lack of a tolerance band on the ASME OM Code IST frequency restricts operational flexibility. The NRC staff recognized that, just as with TS required surveillance testing, some tolerance is needed to allow adjusting ASME OM Code testing intervals to suit the plant conditions and other maintenance and testing activities. To provide operational flexibility when scheduling IST that minimize the conflicts between the need to complete the testing and plant conditions, the NRC staff sponsored and co-authored an ASME OM Code inquiry and Code Case to modify the ASME OM Code to include TS-like test interval definitions and interval extension criteria. The resultant Code Case OMN-20 was approved by the ASME Operation and Maintenance Standards Committee on February 15, 2012, with the NRC representative voting in the affirmative. Code Case OMN-20 was subsequently published in conjunction with the ASME OM Code, 2012 Edition. The licensee proposes to adopt Code Case OMN-20.

Requiring the licensee to meet the ASME OM Code requirements, without an allowance for defined frequency and frequency extensions for IST of pumps and valves, results in a hardship without a compensating increase in the level of quality and safety. Based on the prior acceptance by the NRC staff of the similar TS test interval definitions and interval extension criteria, the staff concludes that implementation of the test interval definitions and interval extension criteria contained in ASME OM Code Case OMN-20 is acceptable. Allowing usage of Code Case OMN-20 provides reasonable assurance of operational readiness of pumps and valves subject to the ASME OM Code IST.

3.2 Licensee's Alternative Request PRR-1

The licensee requested an alternative to the requirements of ISTB-3510(b)(1), "Data Collection, General, Range." ISTB-3510(b)(1) requires that "the full-scale range of each analog instrument shall be not greater than three times the reference value."

The alternative is requested for charging pumps CVC-MPMP-0001A, CVC-MPMP-0001AB, and CVC-MPMP-0001B are ASME Code Class 2, positive displacement, motor driven, OM Code Group A pumps.

Reason for Request

In its letter dated June 13, 2017, the licensee states in part:

> Pursuant to 10 CFR 50.55a, "Codes and standards," paragraph (z)(1), an alternative is requested when using the requirements of ASME OM Code ISTB-3510(b)(1).
>
> The Charging Pumps' discharge flow indicator... does not comply with [ISTB-3510(b)(1)]. Specifically, each of the three pumps has a reference flow, for both Group A and Comprehensive pump tests, of approximately 44 gallons per minute (gpm) and the flow gauge has a full-scale range of 150 gpm in order to accommodate three-pump flow, such as during safety injection operations. The full-scale range is approximately 3.4 times the reference value.

Proposed Alternative

In its letter dated June 13, 2017, the licensee states in part:

> The existing, installed flow indicator will be used for the Group A and Comprehensive pump testing per the ASME OM Code 2004 Edition through OMb 2006 Addenda ISTB requirements.
>
> According to Revision 2 of NUREG 1482, Section 5.5.1, when the range of a permanently installed analog instrument is greater than three times the reference value, but the accuracy of the instrument is more conservative than that required by the [ASME OM] Code, the [NRC] staff may grant approval to use an alternative when the combination of the range and accuracy yields a reading that is at least equivalent to that achieved using instruments that meet the [ASME OM] Code requirements....
>
> The full-scale accuracy of the instrument loop used for measuring the charging pump discharge flow is ± 1.7% or 2.6 gpm. This accuracy is more conservative than the ± 2.0% required by Subsection ISTB-3510 of the ASME OM Code....

NRC Staff Evaluation

Despite the fact that the flow indicator for charging pumps CVC-MPMP-0001A, CVC-MPMP-0001AB, and CVC-MPMP-0001B does not meet the ASME OM Code requirement for range, it is capable of providing an indicated accuracy at the reference value that is superior to the minimum indicated accuracy that would be required by the ASME OM Code. Based on the least accurate instrument that would theoretically be allowed by the ASME OM Code, the minimum required indicated accuracy is ± 6 percent for Group A tests and comprehensive pump tests (as documented by NUREG-1482 Revision 2, Section 5.5.1). The licensee has demonstrated that the indicated accuracy of the flow indicator for charging pumps CVC-MPMP-0001A, CVC-MPMP-0001AB, and CVC-MPMP-0001B is better than the minimum accuracy required by the ASME OM Code. The accuracy achieved from the installed flow indicator meets the intent of the ASME OM Code and yields an acceptable level of quality and safety for performing Group A tests and comprehensive tests.

3.3 Licensee's Alternative Request PRR-2

ASME OM Code Requirements:

ISTB-5120, "Inservice Testing."

ISTB-5121 "Group A Test Procedure," (b), states that "The resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value."

ISTB-5122 "Group B Test Procedure," (c), states that "System resistance may be varied as necessary to achieve the reference point."

ISTB-5123 "Comprehensive Test Procedure," (b), states that "For centrifugal and vertical line shaft pumps, the resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value."

Alternative testing is requested for the following pumps:

Table 1

Pump ID	Function	ASME Code Class	ASME OM Code Group
ACC-MPMP-0001A	Auxiliary Component Cooling Water Pump	3	A
ACC-MPMP-0001B	Auxiliary Component Cooling Water Pump	3	A
BAM-MPMP-0001A	Boric Acid Pump	3	A
BAM-MPMP-0001B	Boric Acid Pump	3	A
CC-MPMP-0001A	Component Cooling Water Pump	3	A
CC-MPMP-0001AB	Component Cooling Water Pump	3	A
CC-MPMP-0001B	Component Cooling Water Pump	3	A
CHW-MPMP-0001A	Chilled Water Pump	3	A
CHW-MPMP-0001AB	Chilled Water Pump	3	A
CHW-MPMP-0001B	Chilled Water Pump	3	A
CMU-MPMP-0004A	Component Cooling Water Makeup Pump	3	B
CMU-MPMP-0004B	Component Cooling Water Makeup Pump	3	B
CS-MPMP-0001A	Containment Spray Pump	2	B
CS-MPMP-0001B	Containment Spray Pump	2	B
EFW-MPMP-0001A	Emergency Feedwater Pump	3	B
EFW-MPMP-0001AB	Emergency Feedwater Pump	3	B
EFW-MPMP-0001B	Emergency Feedwater Pump	3	B
SI-MPMP-0001A	Low Pressure Safety Injection Pump	2	A
SI-MPMP-0001B	Low Pressure Safety Injection Pump	2	A
SI-MPMP-0002A	High Pressure Safety Injection Pump	2	B
SI-MPMP-0002AB	High Pressure Safety Injection Pump	2	B
SI-MPMP-0002B	High Pressure Safety Injection Pump	2	B

Reason for Request

In its letter dated June 13, 2017, the licensee states in part, that:

> For pump testing, there is difficulty adjusting system throttle valves with sufficient precision to achieve exact flow reference values during subsequent IST tests. Section ISTB of the ASME OM Code does not allow for variance from a fixed reference value for pump testing.
>
> However, NUREG-1482, Revision 2, Section 5.3, acknowledges that certain pump system designs do not allow for the licensee to set the flow at an exact

value because of limitations in the instruments and controls for maintaining steady flow.

ASME OM Code Case OMN-21, "Alternative Requirements for Adjusting Hydraulic Parameters to Specified Reference Points," provides guidance for adjusting reference flow or differential pressure (ΔP) to within a specified tolerance during pump inservice testing. The Code Case states:

> It is the opinion of the Committee that when it is impractical to operate a pump at a specified reference point and adjust the resistance of the system to a specified reference point for either flow rate, differential pressure or discharge pressure, the pump may be operated as close as practical to the specified reference point with the following requirements. The Owner shall adjust the system resistance to as close as practical to the specified reference point where the variance from the reference point does not exceed +2% or -1% of the reference point when the reference point is flow rate, or +1% or -2% of the reference point when the reference point is differential pressure or discharge pressure.

The NRC also discusses this ASME Code change in NUREG-1482, Revision 2, Section 5.3.

Proposed Alternative

In its letter dated June 13, 2017, the licensee states in part, that:

> [Waterford 3] seeks to perform future inservice pump testing in a manner consistent with the requirements as stated in ASME OM Code Case OMN-21. Specifically, testing of all pumps identified in [Table 1, above] will be performed such that the flow rate is adjusted as close as practical to the reference value and within proceduralized limits of +2% / -1% of the reference flow rate or alternatively the differential pressure or discharge pressure is adjusted as close as practical to the reference value and within procedure limits of +1% / -2% of the reference pressure or differential pressure.
>
> [Waterford 3] plant operators will continue to strive to adjust as close as practical to the reference values (flow or differential pressure) during testing. Typical test guidance will be to adjust the reference parameter (i.e., flow or differential pressure) to the specific reference value with additional guidance that if the reference value cannot be achieved with reasonable effort, the test will be considered valid if the steady state flow rate is within the proceduralized limits of +2% / -1% of the reference value or the steady state pressure or differential pressure is within the proceduralized limits of +1% / -2% of the reference value.
>
> Using the provisions of this request as an alternative to the specific requirements of ISTB-5121, ISTB-5122, and ISTB-5123 as described above, will provide adequate indication of pump performance and continue to provide an acceptable level of quality and safety.

The proposed alternative will be utilized for the fourth IST interval, which is currently scheduled to begin on December 1, 2017, and end on November 30, 2027.

NRC Staff Evaluation

An inquiry was submitted to the ASME OM Code Committee to determine what alternatives may be used when it is impractical to operate a pump at a specified reference point for flow rate, differential pressure, or discharge pressure. In response to the inquiry, ASME Code Case OMN-21 was developed to provide guidance on alternatives. The guidance in Code Case OMN-21 states that when it is impractical to operate a pump at a specified reference point for flow rate, differential pressure or discharge pressure, the pump may be operated as close as practical to the specified reference point with the following requirements. Code Case OMN-21 specifies that the variance from the reference point shall not exceed +2 percent or -1 percent of the reference point when the reference point is flow rate, or +1 percent or -2 percent of the reference point when the reference point is differential pressure or discharge pressure.

Code Case OMN-21 was approved by the ASME Operation and Maintenance Standards Committee on April 20, 2012, with the NRC representative voting in the affirmative. The licensee proposes to adopt Code Case OMN-21. The applicability of Code Case OMN-21 is the ASME OM Code 1995 Edition through the 2011 Addenda. The language from Code Case OMN-21 has been included in the ASME OM Code, 2012 Edition.

The NRC staff notes that in certain situations, it is not possible to operate a pump at a precise reference point. The NRC staff has reviewed the alternatives proposed in ASME OM Code Case OMN-21 and found that the proposed alternatives are reasonable and appropriate when a pump cannot be operated at a specified reference point. Operation within the tolerance bands specified in ASME OM Code Case OMN-21 provides reasonable assurance that licensees will be able to utilize the data collected to detect degradation of the pumps. Based on the NRC staff's review of ASME OM Code Case OMN-21 and the licensee's commitment to use the bands specified in ASME OM Code Case OMN-21 for flow rate, the NRC staff concludes that implementation of the alternatives contained in ASME OM Code Case OMN-21 is acceptable for the pumps listed in Table 1 above. Therefore, the NRC staff concludes that the licensee's proposed alternative provides an acceptable level of quality and safety.

4.0 CONCLUSION

The NRC staff has reviewed the subject request and, as set forth above, has determined that for alternative request GRR-1, the proposed alternative provides reasonable assurance that the affected components are operationally ready. The NRC staff concludes that complying with the specified ASME OM Code requirements would result in a hardship without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2). Therefore, the NRC staff authorizes alternative request GRR-1 for Waterford 3 for the fourth 10-year IST program interval, which is scheduled to begin on December 1, 2017, and is scheduled to end on November 30, 2027.

The NRC staff has reviewed the subject requests and, as set forth above, has determined that for alternative requests PRR-1 and PRR-2, the NRC staff has determined that the proposed alternatives provide an acceptable level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(1) for requests PRR-1 and PRR-2. Therefore, the NRC staff

authorizes alternative requests PRR-1 and PRR-2 for Waterford 3 for the fourth 10-year IST program interval, which is scheduled to begin on December 1, 2017, and is scheduled to end on November 30, 2027.

All other ASME OM Code requirements for which relief was not specifically requested and approved in the subject requests remain applicable.

Principal Contributors: J. Huang, NRR
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Date: November 29, 2017

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 – REQUESTS FOR RELIEF GRR-WF3-2017-1, PRR-WF3-2017-1, AND PRR-WF3-2017-2, ALTERNATIVES TO ASME OM CODE REQUIREMENTS FOR INSERVICE TESTING FOR THE FOURTH 10-YEAR PROGRAM INTERVAL (CAC NOS. MF9869, MF9870, AND MF9871; EPIDS L-2017-LRM-0045, L-2017-LRM-0046, AND L-2017-LRM-0047) DTAED NOVEMBER 29, 2017

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