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

March 1, 2016

Mr. Scott Batson
Site Vice President
Oconee Nuclear Station
Duke Energy Carolinas, LLC
7800 Rochester Highway
Seneca, SC 29672-0752

SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2 AND 3 - RELIEF REQUEST ON-GRR-01 GRACE PERIOD FOR OM CODE FREQUENCIES (CAC NOS. MF7130, MF7131, AND MF7132)

Dear Mr. Batson:

By letter dated November 23, 2015, as supplemented by letter dated February 9, 2016, Duke Energy Carolinas, LLC (the licensee) requested relief from the frequency specifications of the American Society of Mechanical Engineers, Code for Operation and Maintenance of Nuclear Power Plants (ASME OM Code) by utilizing the alternate frequencies specified in Code Case OMN-20 for the Oconee Nuclear Station, Units 1, 2 and 3 (ONS) as identified in Relief Request No. ON-GRR-01.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), the licensee proposed to use the alternative provided by ASME OM Code Case OMN-20 on the basis that compliance with the frequencies specified in the ASME OM Code would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The U. S. Nuclear Regulatory Commission (NRC) staff has concluded that the proposed alternative ON-GRR-01 provides reasonable assurance that the affected components are operationally ready. The NRC staff has also concluded that compliance with the frequencies as specified in the ASME OM Code would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Accordingly, the NRC staff concludes, as stated 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). Therefore, the NRC staff authorizes the use of Relief Request No. ON-GRR-01 at ONS, for the remainder of the fifth 10-year inservice testing interval, which began on July 1, 2012. All other ASME Code, requirements for which relief was not specifically requested and approved in this relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

If you have any questions, please contact the ONS Senior Project Manager, Mr. James R. Hall, at randy.hall@nrc.gov or 301-415-4032.

Sincerely,

Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

Enclosure:
Safety Evaluation

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REGARDING RELIEF REQUEST ON-GRR-01

USE OF ASME OM CODE CASE OMN-20

DUKE ENERGY CAROLINAS, LLC

OCONEE NUCLEAR STATION, UNITS 1, 2 AND 3

DOCKET NOS. 50-269, 50-270, AND 50-287

1.0 INTRODUCTION

By letter dated November 23, 2015,[1] as supplemented by letter dated February 9, 2016,[2] Duke Energy Carolinas, LLC (the licensee) requested relief from the frequency specifications of the American Society of Mechanical Engineers, Code for Operation and Maintenance of Nuclear Power Plants (ASME OM Code) by utilizing the alternate frequencies specified in Code Case OMN-20 for the Oconee Nuclear Station, Units 1, 2 and 3 (ONS) as identified in Relief Request No. ON-GRR-01. The licensee requested to use Code Case OMN-20, as an alternative test plan in lieu of certain inservice testing (IST) requirements of the 2004 Edition with the 2005 and 2006 Addenda of the ASME OM Code for the IST programs at ONS during the fifth 10-year IST program interval, which began on July 1, 2012.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), the licensee proposed to use the alternative provided by ASME OM Code Case OMN-20 on the basis that compliance with the frequencies specified in the ASME OM Code would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

2.0 REGULATORY EVALUATION

10 CFR 50.55a(f), "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 pursuant to paragraphs 10 CFR 50.55a(z)(1) or 10 CFR 50.55a(z)(2).

10 CFR 50.55a(z) states, in part, that alternatives to the requirements of paragraph 10 CFR 50.55a(f) may be used, when authorized by the U.S. Nuclear Regulatory Commission (NRC), if the licensee demonstrates that: (1) the proposed alternative provides an acceptable level of quality and safety, or (2) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

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[1] Agencywide Documents Access and Management System (ADAMS) Accession No. ML15335A068.
[2] ADAMS Accession No. ML16047A091.

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 alternative requested by the licensee.

3.0 TECHNICAL EVALUATION

3.1 Relief Request No. ON-GRR-01

3.1.1 ASME Code Components Affected

All Pumps and Valves contained within the IST program scope.

3.1.2 Applicable Code Edition and Addenda

The 2004 Edition with the 2005 and 2006 Addenda of the ASME OM Code.

3.1.3 Applicable Code Requirements

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 does 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.

ISTB-6200, "Corrective Action," (a) states, "Alert Range. If the measured test parameter values fall within the alert range of Table ISTB 5321-2, as applicable, the frequency of testing specified in ISTB-3400 shall be doubled until the cause of the deviation is determined and the condition is corrected."

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, starting with initial electric power generation."

Mandatory Appendix I, I-1330, "Test Frequency, Class 1 Nonreclosing Pressure Relief Devices," states, "Class 1 nonreclosing pressure relief devices shall be replaced every 5 years unless historical data indicates a requirement for more frequent replacement."

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 main steam safety valves, shall be tested every ten years, starting with initial electric power generation."

Mandatory Appendix I, I-1360, "Test Frequency, Classes 2 and 3 Nonreclosing Pressure Relief Devices," states, "Classes 2 and 3 non-reclosing 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," states, "(a) 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, unless historical data requires more frequent testing. (b) Leak tests shall be performed on all Classes 2 and 3 containment vacuum relief valves at a frequency designated by the Owner in accordance with Table ISTC-3500-1."

Mandatory Appendix I, I-1380, 'Test Frequency, Classes 2 and 3 Vacuum Relief Valves, Except for Primary Containment Vacuum Relief Valves," states, "All Classes 2 and 3 vacuum relief valves shall be tested every 2 years, unless performance data suggest the need for a more appropriate test interval."

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

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, or if this analysis is inconclusive, 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," (1)(e), states, "Identify the interval of each activity. Interval extensions shall be limited to one fuel cycle per extension. Intervals shall not exceed the maximum intervals shown in Table II-4000-1. All valves in a group sampling plan must be tested or examined again, before the interval can be extended again, or until the maximum interval would be exceeded. The requirements of ISTA-3120, Inservice Test Interval, do not apply."

ASME OM Code Cases listed in Regulatory Guide 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code"

3.1.4 Reason for Request

By letter dated November 23, 2015, the licensee stated, in part, that:

> Pursuant to 10 CFR 50.55a, "Codes and standards", paragraph (z)(2), relief is requested from the frequency specifications of the ASME OM Code. The basis of the relief request is that the Code requirement presents an undue hardship without a compensating increase in the level of quality or safety.
>
> ASME OM Code, 2004 Edition, with 2005 and 2006 Addenda, establishes the inservice test frequency for all components within the scope of the Code. The frequencies (e.g., quarterly) have historically been interpreted as "nominal" frequencies (generally as defined in the Table 3.2 of NUREG 1482) and Owners routinely applied the surveillance extension time period (i.e., grace period) prescribed by the plant Technical Specifications (TS). The TS (SR 3.0.2) allows for a 25 [percent] extension of the surveillance test frequency facilitate scheduling, and to accommodate plant conditions that may not be suitable for conducting the surveillance. However, regulatory issues have been raised with regard to the applicability of the TS "grace period" to ASME OM Code required inservice test frequencies irrespective of allowances provided under TS Administrative Controls (e.g., Oconee's TS 5.5.9, "Inservice Testing Program," invokes the application of SR 3.0.2 to OM Code frequencies that are 2 years or less).
>
> Without a tolerance band on the ASME OM Code IST frequency, operational flexibility is restricted and introduces a conflict where a surveillance test would be required due to the expiration of its frequency period, but where the test is not possible or practical to be performed until a plant condition is resolved, or until a Limiting Condition for Operation (LCO) is restored. This is the basis for why the NRC allows a frequency tolerance as described in TS SR 3.0.2. Without a similar provision for applying operational flexibility to OM Code testing frequencies, an unusual hardship is created for the plant to adequately schedule

work tasks and possibly cause the plant to enter into higher risk operating scenarios.

Thus, just as with TS required surveillance testing, tolerance is needed for OM Code testing intervals to assure operational and scheduling flexibility to accommodate maintenance and testing activities to optimize safe operating conditions.

3.1.5 Proposed Alternative and Basis

By letter dated November 23, 2015, the licensee stated, in part, that:

Oconee Nuclear Station proposes to use the ASME OM Code Case OMN-20 as published in the ASME OM Code 2012 Edition. The 2012 edition of the ASME OM Code was approved by the ASME Board on Nuclear Codes and Standards. ASME OM-2012 was also approved by the American National Standards Institute on December 21, 2012.

Code Case OMN-20 will be used for determining acceptable tolerances for pump and valve testing frequencies. The code case as published in ASME OM Code, 2012 Edition, is repeated below.

Published OMN-20 Code Case

ASME OM Division 1: Section IST and earlier editions and addenda of ASME OM Code specify component test frequencies that are based either on elapsed time periods (e.g., quarterly, two 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 Table 1 (below). The specified time period between tests may be reduced or extended as follows:

1) For periods specified as less than two years, the period may be extended by up to 25% 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).

Period extension is 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 less than two year test frequencies not specified in Table 1 (below).

Period extensions may not be applied to the test frequency requirements specified in 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.

Table 1

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

(b) Components whose test frequencies are based on the occurrence of plant conditions or may not have their period between tests extended except as allowed by the ASME OM, Division 1, Section IST, 2009 Edition through OMa-2011 Addenda and all earlier editions and addenda.

3.1.6 Duration of Proposed Alternative

The proposed alternative is requested to be utilized for the remainder of the Oconee Fifth 10-year IST interval, which began on July 1, 2012.

3.2 NRC Staff Evaluation

Historically, licensees have applied 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 31, 2013.[3] Recently, the NRC staff reconsidered the allowance of using TS testing intervals and interval extensions for IST not associated with TS SRs. As noted in Regulatory Issue Summary (RIS) 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,[4] the NRC determined that programmatic test frequencies cannot be extended in accordance with the TS SR 3.0.2. This includes all IST described in the ASME OM Code not specifically required by the TS SRs.

Following this development, 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

[3] ADAMS Accession No. ML13295A020.
[4] ADAMS Accession No. ML12079A393.

and interval extension criteria. The resultant Code Case OMN-20, as shown above, 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 and applicable adopted ASME OM Code Cases, 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 NRC 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.

4.0 CONCLUSION

As set forth above, the NRC staff concludes that the proposed alternative ON-GRR-01 provides reasonable assurance that the affected components are operationally ready. The NRC staff also concludes that compliance with the frequencies as specified in the ASME OM Code would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Accordingly, the NRC staff concludes, as stated above, 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 the use of Relief Request No. ON-GRR-01 at ONS, for the remainder of the fifth 10-year inservice testing interval, which began on July 1, 2012.

All other ASME Code, requirements for which relief was not specifically requested and approved in this relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: Michael Farnan, NRR

Date: March 1, 2016

If you have any questions, please contact the ONS Senior Project Manager, Mr. James R. Hall, at randy.hall@nrc.gov or 301-415-4032.

Sincerely,

/RA/

Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

Enclosure:
Safety Evaluation

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