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U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Duke Energy Carolinas, LLC
Oconee Nuclear Station, Units 1, 2, and 3
Docket Numbers 50-269, 50-270, and 50-287
Renewed Facility Operating License Nos. DPR-38, DPR-47, and DPR-55

Subject: Notification of Deviation from Electric Power Research Institute (EPRI) Materials Reliability Program (MRP) 2019-008

In accordance with Appendix B, Section 8.1.c of Nuclear Energy Institute (NEI) 03-08, "Guideline for the Management of Materials Issues," Revision 4, Duke Energy Carolinas, LLC (Duke Energy) is notifying the U. S. Nuclear Regulatory Commission (NRC) that Oconee Nuclear Station (ONS), Units 1, 2, and 3 has processed a deviation from a "Needed" Interim Guidance (IG) in MRP 2019-008, "Interim Guidance for NEI 03-08 Needed Requirements for US PWR Plants for Management of Thermal Fatigue in Non-Isolable Reactor Coolant System Branch Lines." The IG elements of MRP 2019-008 are specified to be implemented within two refueling outages after August 1, 2019.

There are four "Needed" IG elements that are specified by MRP 2019-008 regarding examinations for thermal fatigue cracking. IG elements 1, 3, and 4 have been either satisfied or determined not to be applicable to ONS. IG element 2 (IG#2) of MRP 2019-008 applies to the ONS 12" Decay Heat Removal (DHR) lines near the Reactor Coolant System (RCS) Hot Leg connections for RCS loops 1B, 2A, and 3A. The guidance specifies that the IG#2 one-time examinations be performed at ONS by refueling outages O2R30 (Unit 2, Fall 2021), O3R31 (Unit 3, Spring 2022), and O1R32 (Unit 1, Fall 2022).

During planning for the required MRP 2019-008 examinations at ONS, it was identified that the IG#2 examination scope prescribed for the 12" DHR lines is not accessible in the plant's current configuration due to significant obstructions which cannot be removed without extensive fieldwork that constitutes a hardship. As a result of the plant-specific challenges identified, Duke Energy will deviate from the NEI 08-03 "Needed" requirement of IG#2 in MRP 2019-008 and implement an alternate examination approach which meets the same objective of the original IG#2 requirement, which is to determine if thermal fatigue cracking exists in the piping. Specifically, this alternate approach will be to inspect the first horizontal-to-vertical elbow from the RCS connection on the 12" DHR line at each of the ONS units in lieu of the first vertical-to-horizontal elbow. Since the first horizontal-to-vertical elbow is closer to the location where the swirl penetration thermal interface is expected to occur, the alternate examination scope will meet or exceed the level of conservatism for identifying thermal fatigue cracking in the piping.

The alternative will be implemented during refueling outages O3R31 (Unit 3, Spring 2022), O1R32 (Unit 1, Fall 2022), and O2R31 (Unit 2, Fall 2023). The schedule change for the Unit 2 examination is necessary to implement the alternate examination scope. The examination schedule for Units 1 and 3 will remain unchanged. This NEI 03-08 deviation will be in effect until the final alternate examination scope is performed for ONS Unit 2 during the O2R31 refueling outage in Fall 2023.

The justification for this deviation from MRP 2019-008 has been documented in accordance with Duke Energy's corrective action program and approved by the appropriate levels of Duke Energy Management. The justification for deviation has also been provided to the EPRI MRP Issue Program Owner in accordance with Appendix B, Sections 8.1.b and 8.2 of NEI 03-08. Enclosed is a summary of the justification for the deviation from MRP 2019-008.

In accordance with NEI 03-08, this letter is being transmitted for information only and Duke Energy is not requesting any action from the NRC staff.

This letter contains no new regulatory commitments.

If there are any questions or if additional information is needed, please contact Mr. Art Zaremba, Manager – Nuclear Fleet Licensing at 980-373-2062 or Arthur.Zaremba@duke-energy.com.

Sincerely,

Steven M. Snider
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Enclosure: Summary of Justification for the Deviation from MRP 2019-008

cc:

Ms. Laura Dudes, Administrator, Region II
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Mr. Jared Nadel
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ENCLOSURE

SUMMARY OF JUSTIFICATION FOR DEVIATION FROM MRP 2019-008

A technical justification for deviation has been developed in accordance with the NEI 03-08, "Guideline for the Management of Materials Issues," Revision 4 process and is summarized below.

During planning for the Materials Reliability Program (MRP) 2019-008, "Interim Guidance for NEI 03-08 Needed Requirements for US PWR Plants for Management of Thermal Fatigue in Non-Isolable Reactor Coolant System Branch Lines," Interim Guidance (IG) #2 examinations at Oconee Nuclear Station (ONS), it was identified that the examination scope prescribed for the 12" Decay Heat Removal lines connected to the Reactor Coolant System primary loop piping is not accessible in the plant's current configuration. As a result, a technical evaluation of the Decay Heat Removal piping was performed to determine if an alternate examination scope could be implemented which met the same objective of the original guidance. The technical evaluation included an assessment of the configuration of the ONS Decay Heat Removal piping with respect to thermal fatigue susceptibility, a comparison of the ONS piping configuration with the piping configuration associated with the industry operating experience that drove the MRP 2019-008 IG#2 guidance, industry benchmarking of MRP 2019-008 IG#2 examination results to-date from several other domestic utilities, an assessment of cross-loop flow susceptibility for the ONS Decay Heat Removal lines, and a review of an international prediction model for thermal fatigue susceptibility. The technical evaluation determined an alternate examination scope was justified for the ONS Decay Heat Removal lines which met the same objective of the original guidance. To allow adequate time for planning of the alternate examination scope, the schedule for implementation of examinations was determined to be during refueling outages O3R31 (Spring 2022), O1R32 (Fall 2022), and O2R31 (Fall 2023).