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10 CFR 50.55a

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

OCONEE NUCLEAR STATION, UNIT NOS. 1, 2 AND 3
DOCKET NOS. 50-269, 50-270, AND 50-287 / RENEWED LICENSE NOS. DPR-38, DPR-47, AND DPR-55

SUBJECT: Response to Request for Additional Information (RAI) Regarding Relief Request to Utilize an Alternative Acceptance Criteria for Code Case N-853, "PWR Class 1 Primary Piping Alloy 600 Full Penetration Branch Connection Weld Metal Buildup for Material Susceptible to Primary Water Stress Corrosion Cracking, Section XI, Division 1"

REFERENCES:

1. Duke Energy letter, *Relief Request to Utilize an Alternative Acceptance Criteria for Code Case N-853, "PWR Class 1 Primary Piping Alloy 600 Full Penetration Branch Connection Weld Metal Buildup for Material Susceptible to Primary Water Stress Corrosion Cracking, Section XI, Division 1"*, dated May 4, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21124A170)
2. NRC email, *Oconee Nuclear Station, Units 1, 2, and 3 - Request for Additional Information RE: Alternative Request (RA-20-0334) Regarding use of an Alternative to the ASME Code Case N-853 Acceptance Criteria (EPID L-2021-LLR-0032)*, dated August 5, 2021 (ADAMS Accession No. ML21217A191)

Ladies and Gentlemen:

In Reference 1, Duke Energy Carolinas, LLC (Duke Energy) requested U.S. Nuclear Regulatory Commission (NRC) approval to use an alternative volumetric inspection acceptance criteria for American Society of Mechanical Engineers (ASME) Code Case N-853, "PWR Class 1 Primary Piping Alloy 600 Full Penetration Branch Connection Weld Metal Buildup for Material Susceptible to Primary Water Stress Corrosion Cracking, Section XI, Division 1" at Oconee Nuclear Station Units 1, 2, and 3 (ONS). Specifically, in lieu of the ASME Code, Section III, NB-5330 acceptance criteria for Fabrication, Duke Energy proposed to use the preservice examination acceptance criteria of ASME Code, Section XI, IWB-3514. In Reference 2, the NRC staff requested additional information regarding Reference 1. Enclosure 1 provides Duke Energy's response to the Reference 2 RAIs.

No new regulatory commitments have been made in this submittal. If you have additional questions, please contact Mr. Art Zaremba, Manager – Regulatory Affairs, at 980-373-2062.

Sincerely,

Steven M. Snider
Site Vice President
Oconee Nuclear Station

Enclosures:
1. Response to Request for Additional Information

cc:
L. Dudes, Regional Administrator USNRC Region II
J. Nadel, USNRC Senior Resident Inspector – ONS
S. A. Williams, NRR Project Manager – ONS

Enclosure 1
Response to Request for Additional Information

NRC RAI-1

The NRC staff notes that ASME Code Case N-853 requires that the UT [ultrasonic testing] utilized for the fabrication inspection of Alloy 52M weld-pad and HAZ [heat-affected-zone] be demonstrated in accordance with the ASME Code, Section V, and any detected flaws be dispositioned in accordance with acceptance criteria of Section III, NB-5330. The licensee requested to use acceptance criteria of ASME Code, Section XI, IWB-3514 in lieu of Section III, NB-5330, but did not provide a discussion on the UT performance demonstration and qualification. As a basis for RA-20-0334, the licensee discussed the NRC's previous safety evaluation dated August 6, 2007 (ADAMS Accession ML071280781), in which the NRC approved use of acceptance criteria of IWB-3514 in lieu of NB-5330 for UT of Alloy 690 full structural weld overlays (FSWO) at Oconee, Units 1, 2, and 3. The licensee stated that the technical basis used for the past approval is directly applicable for the current request.

Furthermore, the NRC staff notes that ASME Code, Section XI, Appendix VIII, Supplement 11, "Qualification Requirements for Full Structural Overlaid Wrought Austenitic Piping Welds," includes overlays in piping. The proposed weld-pad is similar to an overlay and is intended to provide a full structural primary pressure boundary.

Clarify whether the UT utilized for the fabrication inspection of Alloy 52M weld-pad and HAZ will be performance demonstrated and qualified in accordance with ASME Code, Section XI, Appendix VIII, Supplement 11. If the answer is no, provide justification and discuss the difference between RA-20-0334 and the NRC's previous safety evaluation dated August 6, 2007.

Duke Energy Response to NRC RAI-1

No, demonstration and qualification will not be in accordance with ASME Code, Section XI, Appendix VIII, Supplement 11. Demonstration and qualification will meet the requirements of Code Case N-853 paragraph (a) for demonstration and paragraph (b) for personnel qualification. A Manual Phased Array UT Procedure will be used that meets the demonstration requirements of ASME Code, Section V. This procedure will employ technical elements of Performance Demonstration Initiative (PDI) qualified Supplement 11 procedures, which will be implemented by PDI-qualified Supplement 11 weld overlay examiners. In addition, the Electric Power Research Institute (EPRI) does not currently have any sample flaw sets available (based on weld pad thickness and branch connection configuration) to perform qualified Manual PDI UT on the proposed branch connection weld repair pad. Meeting the Code Case N-853 requirements for nondestructive examination (NDE) will provide an acceptable level of quality and safety.

NRC RAI-2

Section 5 of RA-20-0334 stated, in part,

> "In using the rules in IWB-3514 for evaluation of flaws in the weld pad, the thickness of only the weld pad will be used."

Clarify whether the examination volume specified in Figure 6, "Surface and Volumetric Acceptance Examination for BCWMB [Branch Connection Weld Metal Buildup] Prior to Nozzle Welding," of ASME Code Case N-853 for Alloy 52M weld-pad and HAZ will be scanned by the UT during fabrication inspection. If the answer is no, provide justification.

Duke Energy Response to NRC RAI-2

Yes, the examination volume specified in Figure 6, "Surface and Volumetric Acceptance Examination for BCWMB Prior to Nozzle Welding," of ASME Code Case N-853 for Alloy 52M weld-pad and HAZ will be scanned by the UT during fabrication inspection.