

NRR-DMPSPeM Resource

From: Galvin, Dennis
Sent: Friday, December 21, 2018 3:40 PM
To: Arthur.Zaremba@duke-energy.com
Cc: Joshua.Duc@duke-energy.com
Subject: Duke Energy Fleet Draft RAIs – Relief Request 18-GO-001 - Proposed Alternative for Depth Sizing Qualification Examination of Welds (L-2018-LLR-0117)
Attachments: Duke Energy Fleet 18-GO-001 - Depth Sizing - Draft RAI L-2018-LLR-0117 2018-12-21.pdf

Mr. Zaremba,

By letter dated September 6, 2018 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML18249A008) and as supplemented by letter dated November 12, 2018 (ADAMS Accession No. ML18316A035), Duke Energy Carolinas, LLC and Duke Energy Progress, LLC (Duke Energy or the licensee) requested relief in accordance with Title 10 of the Code of Federal Regulations (10 CFR) 50.55a(g)(5)(iii) from the requirements of American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) at Catawba Nuclear Station (Catawba), Units 1 and 2; McGuire Nuclear Station (McGuire), Units 1 and 2; Oconee Nuclear Station (Oconee), Units 1, 2, and 3; Shearon Harris Nuclear Power Plant (Harris), Unit 1; and H. B. Robinson Steam Electric Plant (Robinson), Unit 2. Specifically, the licensee submitted for the U. S. Nuclear Regulatory Commission (NRC) review and approval Relief Request Serial # 18-GO-001 to use an alternative depth sizing root mean square (RMS) error criteria for the qualification of the ultrasonic examination of welds.

To complete its review, the NRC staff has prepared the attached requests for additional information (RAIs) in DRAFT form. To arrange a clarification call for the attached draft RAIs and to discuss the due date for the RAI responses, please contact me at (301) 415-6256.

Respectfully,

Dennis Galvin
Project Manager
U.S Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Operating Reactor Licensing
Licensing Project Branch 2-2
301-415-6256

Docket Nos. 50-413, 50-414, 50-369, 50-370,
50-269, 50-270, 50-287, 50-400, and 50-261

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Recipients:

"Joshua.Duc@duke-energy.com" <Joshua.Duc@duke-energy.com>

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"Arthur.Zaremba@duke-energy.com" <Arthur.Zaremba@duke-energy.com>

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REQUEST FOR ADDITIONAL INFORMATION

RELIEF REQUEST SERIAL # 18-GO-001

PROPOSED ALTERNATIVE FOR DEPTH SIZING QUALIFICATION

EXAMINATION OF WELDS

DUKE ENERGY CAROLINAS, LLC AND DUKE ENERGY PROGRESS, LLC

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

OCONEE NUCLEAR STATION, UNITS 1, 2 AND 3

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT 2

DOCKET NOS. 50-413, 50-414, 50-369, 50-370, 50-269,

50-270, 50-287, 50-400, AND 50-261

EPID: L-2018-LLR-0117

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To complete its evaluation, the NRC staff requests the additional information as follows.

RAI-1

In the proposed relief request, the licensee discusses Code Cases N-695 and N-695-1 (or N-696 and N-696-1). For example, Section 4 of the relief request discusses ASME Code Case N-695. Section 5.1 of the relief request discusses ASME Code Case N-695-1 and N-696-1. Section 5.2 discusses Code Case N-695.

The NRC staff has approved Code Cases N-695 and N-696, but not N-695-1 and N-696-1, in Regulatory Guide 1.147, Revision 18.

The NRC staff notes that the ASME Code has limited the use of Code Cases N-695 and N-696 to the 2003 Addenda or earlier editions and addenda as stated in the Code Cases for Nuclear Components of the 2015 Edition of the ASME Code. The code of record for all the plants covered under the proposed relief request is the 2007 edition through the 2008 addenda of the ASME Code, Section XI. Regulatory Guide 1.147, Revision 18 does not have the ASME Code Edition limitation on the use Code Cases N-695 and N-696,

While the proposed relief request in Section 5, "Proposed Alternative and Basis for Use," describes the proposed alternative use of Code Cases N-695-1 and N-696-1, the proposed relief request does not describe the basis for use. As the NRC staff has not approved Code Cases N-695-1 and N-696-1 in Regulatory Guide 1.147, Revision 18, provide the basis for the use of Code Cases N-695-1 and N-696-1.

RAI-2

Paragraph 4.3 of the relief request states that the vendors have demonstrated RMS errors between 0.179 inches and 0.212 inches. Paragraph 5.2.2 of the relief request states that a correction factor equal to the difference between the procedure qualification RMS error and 0.125 inches shall be added to the depths of any measured flaws. It is not evident the exact RMS error that will be used to calculate the correction factor.

Discuss whether different vendors will be used to examine welds at different plants in the fleet. If yes, confirm that the vendor-specific RMS error will be used to calculate the correction factor for the specific plant in the fleet that the vendor performs weld examinations.

RAI-3

Note 1 to Table 1E of the relief request states that "...Oconee Unit 1 is in the process of implementing Code Case N-716-1. Category B-F, Item B5.10 will be replaced by the applicable Category R-A, Item Numbers for welds 1-RPV-WR-53 and 1-RPV-WR-53A when the inservice inspection plan and schedule are revised to implement this case...."

Note 2 of Table 1F of the relief request states that "...Robinson Unit 2 is in the process of implementing Code Case N-716-1. Category B-F, Item B5.10 will be replaced by the applicable Category R-A, Item Numbers for the welds listed in Table 1F when the inservice inspection plan and schedule are revised to implement this case..."

Paragraph 3.3 of the relief request states that "...For Category R-A welds (Oconee only), examinations are performed in accordance with ASME Code Case N-716-1. This code case does not provide alternative requirements to those specified in IWA-2232, so the requirements of IWA-2232 apply..."

The NRC staff understands that paragraph 3.3 currently applies to Oconee Unit 2 and 3 and would apply to Oconee Unit 1 when Code Case N-716-1 is implemented. However, since paragraph 3.3 states "(Oconee Only)", it would not apply to Robinson when Code Case N-716-1 is implemented. Therefore, the proposed relief request does not address the applicable Code requirement for when Code Case N-716-1 is implemented at Robinson.

Identify the applicable Code requirement upon implementing Code Case N-716-1 at Robinson regarding the proposed relief request.

RAI-4

Paragraph 5.3 of the relief request states that "...For all welds listed in this relief request, if any ID surface-breaking flaw is detected and measured (from the ID surface) as 50 percent through-wall depth or greater, the flaw shall be considered to be of indeterminate depth. The licensee shall repair the component, or shall perform a volumetric examination from the OD surface of the component to determine the flaw depth and shall evaluate the component for continued service in accordance with the ASME Code, Section XI, IWB-3132.3..."

Paragraph 5.5 of the relief request states that "The proposed alternative for welds less than 2.1 in. (54 m[m]) in thickness is essentially identical to that approved for use during the Catawba Unit 1 Third Inservice Inspection Interval (Precedent 7.4)..."

By letter dated December 17, 2014 (ADAMS Accession No. ML14352A261), Duke Energy submitted a similar relief request 1-14-CN-003, for Catawba Nuclear Station Unit 1. In the submittal, Duke Energy stated "If any inner diameter (ID) surface-breaking flaws are detected and measured as 50% through-wall depth or greater, Duke Energy shall repair the indications or shall perform flaw evaluations and shall submit the evaluations to the NRC for review and approval prior to reactor startup." Duke Energy stated that the submitted flaw evaluation will include: (a) information concerning the mechanism that caused the flaw, (b) information concerning the surface roughness and/or profile in the area of the examined pipe and/or weld, and (c) an estimate of the percentage of potential surface areas with UT probe "lift off" from the surface of the pipe and/or weld. By letter dated October 26, 2015 (ADAMS Accession No. ML15286A326), the NRC approved the relief request at Catawba.

Further, previous approval of relief requests with the alternative use of Code Cases N-695-1 and N-696-1, for Salem Nuclear Generating Station, Unit Nos. 1 and 2 (Salem) (ADAMS Accession No. ML17219A186) and Beaver Valley Power Station, Unit No. 2 (Beaver Valley) (ADAMS Accession No. ML18075A096) included the submittal of flaw evaluations for NRC review and approval prior to reactor startup for detected flaws to be left in service with depths measured greater than or equal to 50 percent through wall thickness.

However, the proposed relief request Serial # 18-GO-001, paragraph 5.3, does not discuss submitting the flaw evaluation to the NRC or what information will be involved in the flaw evaluation as discussed above and specified in the aforementioned Catawba, Salem, and Beaver Valley relief requests.

Discuss whether a flaw evaluation will be submitted to the NRC for review and approval prior to reactor startup and if it will include the aforementioned information if the detected flaw is 50 percent through-wall depth or greater and the flaw is not repaired. If not, provide justification.