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General Comment

See attached file(s)

Attachments

NDE 20181030-Regulatory Guide DG-1342 the Proposed Rule Incorporating the Final Revision of Regulatory Guides 1 147

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Nondestructive Evaluation (NDE) 20181030-001

October 26, 2018

Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attn: Rulemakings and Adjudications Staff

Subject: EPRI Comments on Draft Regulatory Guide DG-1342 the Proposed Rule Incorporating the Final Revision of Regulatory Guides 1.147 into 10 CFR 50.55a, Docket ID NRC–2017–0024

Dear Sir or Madam:

This letter provides comments to the subject proposed rulemaking titled *"Approval of American Society of Mechanical Engineers' Code Cases"* on behalf of the Nuclear Nondestructive Evaluation (NDE) Program at the Electric Power Research Institute (EPRI). Comments for consideration on Draft Guide, DG-1342 and the proposed rule are provided below.

1. Code Case N-696-1: Qualification Requirements for Mandatory Appendix VIII Piping Examinations Conducted from the Inside Surface Section XI, Division 1

NRC Condition:

Inspectors qualified using the 0.25 RMS error for measuring the depths of flaws using N-696-1 are not qualified to depth-size inner diameter (ID) surface breaking flaws greater than 50% through-wall in welds 2.1 inches or greater in thickness. When an inspector qualified using N-696-1 measures a flaw as greater than 50% through-wall in a weld from the ID, the flaw shall be considered to have an indeterminate depth.

EPRI Comment:

While performing the review, EPRI staff recognized the discussion of the condition as found in the Federal Register/Vol. 83, No. 159 focused mainly on dissimilar metal welds (DMW) whereas the condition defined in DG-1342 applies to the coordinated implementation of Supplements 2, 3, & 10 from the inside diameter (ID) surface. Section 3.3 of the Code Case require users to follow Supplement 10 (Alt. CC N-695-1) for DMW and Supplement 3 for ferritic welds. As conditioned, Code Case N-695-1, includes depth sizing acceptance criteria of 0.25 RMS and Supplement 3 depth sizing acceptance criteria remains unchanged at 0.125. As written, the proposed condition on Code Case N-696-1

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would require examiners qualified to depth size flaws in ferritic and austenitic welds, from the ID surface, to report flaws greater than 50% through wall as having an indeterminate depth, which is inconsistent with discussion included in the Federal Register/Vol. 83, No. 159 and in the Regulatory Analysis for the Propose Rule NRC-2017-0024. This condition should be eliminated due to the proposed condition applied to Code Case N-695-1.

2. Code Case N-711-1: Alternative Examination Coverage Requirements for Examination Category B–F, B–J, C–F–1, C–F–2, and R–A Piping Welds.

NRC Condition:

Code Case N-711-1 shall not be used to redefine the required examination volume for preservice examinations or when the postulated degradation mechanism for piping welds is PWSCC, Intergranular Stress Corrosion Cracking (IGSCC) or crevice corrosion (CC) degradation mechanisms.

EPRI Comment 1:

There should be no degradation present at the time of the pre-service examination (PSI). PSI examinations are conducted to provide a baseline for future in-service inspections (ISI). As the volume of primary interest provided by N-711-1 may be different than the traditional Section XI examination volume, it may be more effective to allow the N-711-1 volumes to be used for PSI purposes. That is, capturing the volume of primary interest plus the best effort examination of the expanded "inspection for cause / risk-informed" volume (e.g. Figure 2 of N-711-1) would be sufficient to provide reasonable assurance of adequate protection.

EPRI Comment 2:

While N-711-1 does not provide a volume of primary interest for IGSCC in boiling water reactor (BWR) plants, it does provide a volume of primary interest for IGSCC in pressurized water reactor (PWR) plants. As such, the Code Case should be allowed to be used for PWR plants for IGSCC.

3. Code Case N-754-1: Optimized Structural Dissimilar Metal Weld Overlay for Mitigation of PWR Class 1 Items, Section XI, Division 1

NRC Condition:

The optimized weld overlay in this code case can only be installed on an Alloy 82/182 weld where the outer 25 percent of weld wall thickness does not contain indications that are greater than 1/16 inch in length or depth.

EPRI Comment:

The use of optimized weld overlays is most beneficial in applications with large bore components where the outer 25% can represent a significant volume of weld metal. Drawing from years of experience looking at ultrasonic data collected on DMWs installed across the world; it is not unreasonable to expect that fabrication flaws that meet the original pre-service acceptance standards defined in IWB-3514 to be present within the volume of a weld.

Currently Code Case N-754-1 references Code Case N-770 for the acceptance standards for optimized weld overlays. Code Case N-770 states that the preservice examination acceptance standards of IWB-3514 shall be met for flaws in the weld overlay material and the outer 25% of the original weld/base material, which is consistent with the original ASME Section XI acceptance standards of the original structural butt weld.

Additionally, the current condition refers to "indications" that are greater than 1/16" (1.5 mm) in length or depth. It is important to note that indications are not always synonymous with flaws. Indications can be attributed to geometric features, metallurgical responses of other non-flaw attributes. EPRI suggests replacing the word "indications" with the word "flaws".

In summary, the condition limiting the use of this Code Case to welds with no "indications" greater than 1/16" (1.5 mm) in depth or length exceeds the original ASME Section XI, acceptance standards of the weld when it was initially put in-service. This condition would lead to increased examination time and unnecessary radiation exposure due to numerous repairs to remove benign, previously acceptable fabrication flaws or other non-relevant indications. These repairs could also result in undesirable residual stress profiles in the post overlaid weldment that can reduce the functional properties (compressive stresses) of the installed overlay. For these reasons, EPRI staff recommends the elimination of this condition.

4. Code Case N-831: Ultrasonic Examination in Lieu of Radiography for Welds in Ferritic Pipe, Section Xl, Division 1

   NRC Condition:

   Code Case N-831 is prohibited for use in new reactor construction.

   EPRI Comment:

   Paragraph (a) of this Code Case specifies it is limited to Section XI repair/replacement activities which excludes its use in new construction applications, which is performed under Section III. EPRI recommends the elimination of this condition since it is already included in the code case.

We appreciate the opportunity to provide comments to this proposed rulemaking. Should you have any questions pertaining to the comments provided in this letter, please contact Carl Latiolais for clarification.

Sincerely,

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