

NRC Proposed NCVs for Failure to Remove Insulation for Containment General Visual Examinations

The NRC has communicated issuing multiple non-cited violations (NCVs) for not removing insulation from containment penetrations when conducting the ASME XI containment general visual examinations. Stations have been successfully conducting these visual examinations for decades without removing insulation, even before this Appendix J pre-ILRT (integrated leak rate test) Containment General Visual Inspection was incorporated into ASME XI, i.e., prior to the 1992 Edition. These pending violations conflict with longstanding industry practice, an official ASME Interpretation (XI-1-13-25 shown below), and a recent ASME-approved code change (record 20-2064 shown below), and the position taken by NRC in its final rulemaking addressing Subsections IWE and IWL of Section XI.¹ Such a change in NRC position from the previous approved practice would likely constitute a backfit.

One proposed NCV is the result of an unresolved issue (URI) from a 2019 ISI outage inspection. The same issue has now been raised with another licensee during the Fall 2022 NRC's outage ISI inspection and therefore, is becoming a generic industry concern. We recognize these proposed NCVs are still pre-decisional.

The issuance of violations for not removing insulation at Containment penetrations during the standard General Visual Examination is inconsistent with current ASME Section XI Code requirements. If sufficient technical basis can be shown to merit such activity and inspection, this would be a new program requirement and would necessitate appropriate Rulemaking revision, process, review, backfit, and publication. Using NCVs and/or potential future generic communications is not an appropriate vehicle for imposing new (additional) Code requirements. Further, industry does not believe that there is sufficient merit or operating experience to justify these new inspection requirements in the future.

The issue of whether removal of insulation from containment was necessary to comply with 10 CFR 50.55a(g) was addressed during the notice and comment process for the 1996 rulemaking, which incorporated the 1992 Edition of Subsections IWE and IWL of Section XI into 10 CFR 50.55a.² Specifically, during that rulemaking the NRC responded to several public comments questioning whether removal of insulation from containment was necessary to comply with 10 CFR 50.55a, as well as whether relief requests were necessary in order to avoid removing such insulation.³ In response to these public comments, the NRC stated that language in paragraph 50.55a(g)(4) essentially excepted licensees from having to comply with updates to "design and access provisions and preservice examination requirements" included in subsequent code revisions incorporated-by-reference in 10 CFR 50.55a. Thus, relief requests were unnecessary to avoid removing insulation from containment to facilitate inspections.

NEI was contacted by the Chair and members of the ASME XI Working Group on Containment (IWE) requesting support for the industry to challenge the validity of the potential NCVs due to the unnecessary and significant impact to the industry. The ASME Section XI IWE Working Group has been working to address this issue since it was raised in 2019 and developed an approved code change (record 20-2064) to be clear that these inspection areas have been and are considered inaccessible for the general visual examination, and therefore insulation removal not required. This is not a new position and is supported by the interpretation, reference in the first paragraph above, regarding current code requirements. The code change was unanimously approved (11-0-0), this includes the two NRC staff members on the committee. The change was also unanimously approved by the main ASME XI Standards Committee that includes other additional NRC staff. Again, these proposed NCVs conflict with long-standing industry practice, ASME XI interpretations, and recent approved ASME XI code changes; significantly impacting licensees' resources with no commensurate safety improvement and likely constituting a back fit.

¹ "Index of Documents Comprising the Regulatory History for Final Rule to Amend § 50.55a; ASME Section IX Subsection IWE and Subsection IWL," Sept. 9, 1996 (ML20117L472) ("1996 Comment Response Document").

² See "Codes and Standards for Nuclear Power Plants; Subsection IWE and Subsection IWL," 61 Fed. Reg. 41,303 (Aug. 8, 1996).

³ 1996 Comment Response Document, at pgs. 16, 18.

BACKGROUND

ASME Section XI IWE Interpretation:

Standard Designation:	ASME Section XI
Edition/Addenda:	1992 Ed. w/1992 Add. through the 2013 Edition
Para./Fig./Table No:	IWE-2500; IWE 1230
Subject Description:	Inquiry on IWE-2500 related to accessibility for examination
Date Issued:	03/07/2014
Record Number:	13-2137
Interpretation Number:	XI-1-13-25

Question(s) and Reply(ies):

Question (1): Is it a requirement of IWE-1230 that containment surface covered by thermal insulation be considered accessible for general visual examination in accordance with Table IWE-2500-1, Examination Category E-A?

Reply(1): No.

Question(2): Is it a requirement of IWE-1230 that containment surface covered by thermal insulation be considered accessible for augmented examination in accordance with Table IWE-2500-1, Examination Category E-C, if these surfaces are subject to accelerated degradation and aging?

Reply(2) Yes

Excerpt from Resolution of Public Comments Subsection IWE (ML20117L472)

Table IWE-2500-1 Examination Category E-A, Containment Surfaces

COMMENT 4.7:

Northeast Utilities System states that, "In accordance with Item No. EI.12 "Accessible Surface Areas" and Item No. EI.20 "Vent System Accessible Surface Areas" a Visual, VT-3 examination is required at the end of each inspection interval. This examination must include the coverage requirements specified in Note (4) of this Table which references paragraph IWE-1231(a)(4). Under IWE-1231(a)(4) 80% of the containment surface area must be available for examination. At the Haddam Neck Plant this will not be possible without removing a considerable amount of asbestos insulation. In this circumstance, a relief request from this requirement would likely be filed."

RESPONSE:

It has been recognized for some time in 10 CFR 50.55a(g)(4) that some plants were built before some of the standards were written. The phrase "except design and access provisions and preservice examination requirements" was added to S 50.55a(g)(4) to address this situation where provisions of the new codes could not be met. Licensees will need to identify in their containment ISI plans where the design and access provisions cannot be met, but relief requests will not have to be submitted. However,

the NRC believes that if an area is likely to experience accelerated degradation and is covered by insulation, it would be prudent to seal the insulation to preclude moisture intrusion.

COMMENT 4.11:

Duke Power states that, "Footnote 4 is applicable to E1.12 or E1.20. This appears to require that removable insulation shall be removed to permit VT-3 inspections behind insulated areas, only if these areas are required to be accessible to satisfy the criteria of IWE-1231(a)(4). This could be a significant hardship at plants that have extensive insulation and extensive embedded portions of containment plate. It is suggested that if insulation is adequately sealed to prevent moisture intrusion or the development of condensation, these areas should also be exempted from VT-3 examinations. If these areas are accessible from one side without removing insulation, it should be acceptable to permit a random sampling of UT examinations to be conducted in lieu of the VT-3 visual examinations.

RESPONSE:

The provision in S 50.55a(g)(4) "except design and access provisions and preservice examination requirements" would address this situation where provisions of the new codes could not be met. Licensees will need to identify in their containment ISI plans where the design and access provisions cannot be met, but relief requests will not have to be submitted. However, in their comment, Duke Power makes some pertinent points. This comment has been transmitted to the ASME for their consideration. The NRC believes that insulation should be adequately sealed to prevent moisture from being trapped against the containment. S 50.55a(g)(4) would address this situation. However, these areas would need to be periodically visually examined to confirm that the seal or moisture barrier still performed its intended function. Occurrences of degradation have been reported where the insulation was not properly sealed, and water ran behind insulation and caused corrosion. Subsection IWE-2500(c)(2) addresses surface areas accessible from one side only, and UT examinations are allowed instead of a VT-3 examination.

With regard to permitting a random sampling of UT examinations to be conducted in lieu of the VT-3 visual examinations, this comment has been transmitted to the ASME for their consideration.

ASME Section XI IWE-1232 Approved Revision:

20-2064 Proposal File¶

2021 Edition¶	Proposed Changes¶
<p>IWE-1232-Inaccessible Surface Areas¶</p> <p>(c) Surface areas of Class MC containment vessels, parts and appurtenances, and surface areas of Class CC metallic shell and penetration liners are considered inaccessible if visual access by line of sight from permanent vantage points is obstructed by permanent plant structures, equipment, or components, provided these surface areas do not require examination in accordance with the inspection plan or IWE-1240.¶</p>	<p>IWE-1232-Inaccessible Surface Areas¶</p> <p>(c) Surface areas of Class MC containment vessels, parts and appurtenances, and surface areas of Class CC metallic shell and penetration liners are considered inaccessible for general visual examination if visual access by line of sight from permanent vantage points is obstructed by insulation or permanent plant structures, equipment, or components, provided these surface areas do not require examination in accordance with the inspection plan or IWE-1240.¶</p>
¶	<p>(d) Surfaces obstructed by insulation shall not be considered inaccessible for examination when examination is required by Table IWE-2500-1 Examination Category E-C.¶</p>