



STANDARDS & CERTIFICATION

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March 23, 2015

Mr. Brian Thomas
Codes and Standards Executive
U.S. Nuclear Regulatory Commission
Mail Stop CSB-05-A06
Washington, DC. 20555-0001

Subject: ASME Code, Section XI Actions to Address Integrity of Pressure Retaining Components

References:

1. NRC letter from Mr. John A. Grobe Director, Division of Component Integrity, Office of Nuclear Reactor Regulation to Mr. Kenneth R. Balkey, Vice President, ASME Nuclear Codes and Standards, dated July 26, 2006.
2. ASME letter from Mr. Kenneth R. Balkey, Vice President, ASME Nuclear Codes and Standards to Mr. John A. Grobe Director, Division of Component Integrity, Office of Nuclear Reactor Regulation, dated June 10, 2006.
3. ASME letter from Mr. Ralph Hill, Vice President, ASME Nuclear Codes and Standards to Mr. Patrick Hiland Director, Division of Engineering, Office of Nuclear Reactor Regulation, dated July 24, 2014.

Dear Sir:

The purpose of this letter is to communicate actions taken by ASME to address the integrity of pressure retaining components, as discussed in our letter dated June 10, 2006.

In 2006, the ASME Section XI Executive Committee formed a project team to develop an ASME position on the role of the ASME in ensuring the integrity of pressure retaining components, including the aspect of ensuring leakage integrity. During 2007 and 2008, this project team developed a guidance document on this topic, and in 2008, a joint committee comprised of members of the Section XI Working Group Pressure Testing and the Working Group Operating Plant Criteria was formed.

The charter of the joint committee included evaluating possible actions that could be taken within the jurisdiction of Section XI to address rules and requirements for evaluation and acceptance of through wall leakage. The charter specifically excluded any actions related to system or component operability. A multi-phased project was developed to update code rules to close existing gaps in Class 2 and 3 evaluation paragraphs, to consider the scope of components and leakage subject to evaluation, and to review and enhance evaluation

techniques. These actions are described below.

1. In 2011, code paragraphs addressing evaluation and acceptance of visual examinations throughout IWB, IWC, and IWD were revised, and Appendix U was added, incorporating Code Cases N-513-3 and N-705.
2. In 2014, two additional actions were approved. The first action was a code change to clarify that through-wall leakage could not be accepted by evaluation in Class 1 components. The second action approved Code Case N-513-4, expanding the scope of this case to include components other than straight pipe and tanks. Code Case N-513-4 also included time limitations until repair/replacement is required following detection of component leakage. These actions provide appropriate requirements for evaluation, acceptance, and correction of through-wall leakage discovered during visual examinations.

Code Case N-513, published in 1997, provided rules and criteria for evaluation and temporary acceptance of flaws, including through-wall flaws, in moderate energy piping. Since then, there have been three published revisions to augment and clarify the evaluation requirements and acceptance criteria of the case. All previous revisions of Code Case N-513 have been approved or conditionally approved by the NRC in Regulatory Guide 1.147 Revisions 13 - 17.

The most significant improvement introduced by Code Case N-513-4 is the expansion of the scope of the case to include additional piping components. Specifically, new flaw evaluation procedures are provided for through-wall flaws in elbows, bent pipe, reducers, expanders, and branch tees. These procedures evaluate flaws in the piping components as if in straight pipe by adjusting hoop and axial stresses to account for the geometry differences. The technical basis for Code Case N-513-4 is presented in the 2014 ASME Pressure Vessels and Piping Conference paper PVP2014-28355.

Code Case N-705, published in 2006, provides similar evaluation rules and criteria for temporary acceptance of degradation in moderate energy Class 2 or 3 vessels and tanks. The scope of this case is limited to vessels, tanks, and heat exchangers whose maximum operating temperature does not exceed 200°F (93°C) and whose maximum operating pressure does not exceed 275 psig (1.9 MPa). Code Case N-705 is approved by the NRC in Table 1 of Regulatory Guide 1.147. There have been no revisions to this Code Case.

Nonmandatory Appendix U establishes evaluation criteria for temporary acceptance of flaws in moderate energy piping and Class 2 or 3 vessels and tanks. ASME plans to update Appendix U to include provisions of Code Case N 513-4, as well as updating this case as future enhancements and techniques merit.

This history of activity from 2006 – 2014 was also recently summarized at a Joint ASME Executive/Industry/Regulator stakeholder meeting held August 19, 2014. The meeting was well attended with many representatives from each of the three primary stakeholder groups. Equal opportunity was provided for each group to give their perspective on the success of the code actions to date and any additional needs for the committees to consider. Following the joint meeting, the ASME Standards Committee Section XI Executive Committee met to consider all input received at the stakeholder meeting.

The Section XI Executive Committee decided that Section XI should continue to provide tools for plant owners for evaluating component integrity when through-wall leakage is found. The Executive Committee also determined that the actions passed from 2011 – 2014 complete the multi-phased Pressure Boundary Leakage action established in November 2008, and as such, ended the joint WG Pressure Testing and WG Operating Plant Criteria project team. This letter

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serves as summary to the regulatory authority of the actions taken by ASME to close this important action, noting that continued assessment of further Code Cases and tools will remain part of the ongoing charter of the Standards Committee Section XI.

If you have any questions, please contact me or direct them to Mr. Kevin Ennis, ASME Director, Nuclear Codes and Standards by telephone at (212) 591-7075 or by e-mail (ennisk@asme.org) and thank you for consideration of our comments regarding this draft regulatory issue summary.

Very Truly Yours,

A handwritten signature in black ink, appearing to read "R. Hill III", with a stylized flourish at the end.

Ralph Hill III, Vice President
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