UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 14, 2015

Mr. Ralph Hill III, Vice President
Nuclear Codes and Standards
American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

Dear Mr. Hill,

By letter dated March 23, 2015, you described activities initiated by the American Society of Mechanical Engineers (ASME) Section XI Executive Committee for addressing leakage integrity of pressure retaining components. The NRC and ASME have exchanged a number of letters on this topic going back to June 2006, as indicated in the references. These letters document NRC's concerns regarding the lack of formal ASME Code rules on operational leakage in nuclear power plants. In 2008, the ASME Code Executive Committee formed a joint committee to address integrity issues (including the aspect of leakage integrity) comprised of members from ASME's Section XI Working Group on Pressure Testing and the Working Group on Operating Plant Criteria. The joint committee worked toward closing existing gaps in Section XI of the ASME Code regarding leakage integrity in Class 2 and 3 components. The following list summarizes the accomplishments of the joint committee.

- ASME Code paragraphs that address visual examinations throughout Subsections IWB, IWC, and IWD of Section XI were revised.
- Non-mandatory Appendix U to Section XI of the ASME Code was added, incorporating Code Cases N-513-3 and N-705.
- A change to IWB-3142.4 of Section XI of the ASME Code was made to clarify that through-wall leakage cannot be accepted by evaluation in Class 1 components.
- Code Case N-513-3 was revised to include components other than straight pipe and tanks.

In your letter, you informed the NRC that these actions conclude ASME's work on the topic of Pressure Boundary Leakage. The NRC appreciates the ASME Section XI code committee's hard work in dealing with the operational leakage issue within the ASME code.

Currently, leakage in all reactor coolant system components is governed by plant Technical Specifications and ASME Code Section XI requirements. Code Cases N-513-3 and N-705 (and Non-mandatory Appendix U starting with the 2013 Edition of Section XI) address leakage in low and moderate energy (temperature less than or equal to 200°F and pressure less than or equal to 275 psig) Class 2 and 3 systems. Current ASME Code, Section XI rules provide requirements when leakage is found during a pressure test in all components. However, it does not provide requirements, other than for repair/replacement activities, when a leak is found at a time not associated with a code required pressure test. Therefore, in view of ASME's Pressure Boundary Leakage project team's conclusions, the NRC will evaluate the necessity of additional regulatory activities to address operational leakage. We thank ASME for its support in this matter.

Please feel free to contact me regarding this matter.

Sincerely,

/RA/

Brian E. Thomas
Codes and Standards Executive

References:

1. Letter from Kenneth R. Balkey to John A Grobe, "ASME Actions to Address 82/182/600 Materials and to Define Role of ASME Code in Ensuring Integrity of Pressure Retaining Components," June 10, 2006 (ML061780064).
2. Letter from John A Grobe to Kenneth R. Balkey, "Inspection Requirements for Managing Primary Water Stress Corrosion Cracking in Butt Weld Connections in Reactor Coolant Pressure Boundary Piping," June 26, 2006 (ML062080708).
3. Letter from Kenneth R. Balkey to Michele G. Evans, "Role of ASME Code in Ensuring the Integrity of Pressure Retaining Components Associated with Operational Commercial Nuclear Power Plants," March 22, 2008 (ML081280920).
4. Letter from Michele G. Evans to Bryan A. Erler, "Operational Leakage," June 27, 2008 (ML081830454).
5. Letter from Bryan A. Erler to Michele G. Evans, "American Society of Mechanical Engineers Position on Leakage," November 26, 2008 (ML14338A296).
6. Letter from Ralph S. Hill to Patrick Hiland, "Evaluation and Acceptance of Pressure Boundary Leakage – ASME Section XI," June 24, 2014 (ML14350A193).
7. Letter from Ralph S. Hill to Brian E. Thomas, "ASME Code, Section XI Actions to Address Integrity of Pressure Retaining Components," March 23, 2015 (ML15099A624).

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