

ASME Code Updates

Industry Priorities Now and Going Forward



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Contents

- This presentation provides an overview of ASME Code activities supported by Industry Materials Issues Programs
- Activities are categorized as:
 - In-Progress – Currently being considered by Code Committee(s)
 - Short-Term – Technical efforts are underway with plans to introduce to Code committees
 - Long-Term – Technical work is underway that may be introduced as Code actions or influence other Code activities
- Activities that have also been identified by ASME Section XI as a “top” priority are marked by an asterisk(*)

BWRVIP

- In-Progress
 - Updates to Code Case N-702 to expand applicability to extended operations and feedwater nozzles (Record #19-1520)
- Short Term
 - Z-factors for simplified elastic-plastic analysis in BWRVIP guidance are being updated to reflect BWRVIP-100, Revision 2 fracture toughness correlations
 - Scheduled to be published early 2025
 - Will be shared with appropriate Code committees for their consideration
- Long Term
 - BWRVIP has initiated efforts to update BWRVIP-14-A crack growth rates for stainless steel.
 - Updated CGRs could eventually serve as a basis for updates to CGRs in Non-mandatory Appendix Y

MRP (1/3)

■ In-Progress

- Proposed Code Case for Fatigue Crack Growth Reference Curves for Alloys 600 and 690* (Record #24-1024, formerly #20-2696).
- Proposed Code Case for PWR stainless steel SCC Growth Rate (Record #24-46)
- Proposed Code Case for Alternative Volumetric Examination Requirements for Class 1 PWR Piping and Vessel Nozzle Circumferential Butt Welds with Cast Austenitic Stainless Steel Base Materials (Record #23-2033)
- Proposed Code Case for Alternative Circumferential Flaw Evaluation Requirements for Class 1 PWR Piping and Vessel Nozzles with Cast Austenitic Stainless Steel Base Materials (Record #24-1062)
- Section XI, Appendix L Update (Record #23-1821)
- Revise Code Case N-729 to clarify bare metal visual examination (VE) acceptance criteria (Record #23-1677)
- Revise Code Case N-722 Table 1, Note (10) extent of condition requirements and clarify Case scope (Record #23-2738)
- Removal of HAZ language from Section III and XI per MRP-475 (Record #22-2304)

MRP (2/3)

- In Progress (continued)
 - Updates to ASME Code, Section XI, Appendix E, “Evaluation of Unanticipated Events,” to account for PWR RPV Nozzles, as well as verify the validity of Appendix E for RPV shells (Record #21-1575).
 - Technical basis, MRP-489, to be published in June 2024; ballot to restart this Summer
 - Code Case N-914 on accounting for the effects of neutron irradiation embrittlement in flaw evaluations for pressure boundary materials in Class 1 ferritic steel components (Record #19-1113)
 - Technical basis, MRP-462, Revision 1 to be published in mid-2025
- Short Term
 - Flaw Evaluation of Pipe-to-Elbow Weld – Investigate the applicability of straight pipe solutions currently in the Code (Report to be published early 2025)
 - Propose changes from “10 years”-type language to “interval”-type language to support implementing Code Case N-921 12-year intervals to N-722, N-729, and N-770
 - Update N-729 and N-770 to incorporate requirements for peening from MRP-335-3A, 10CFR50.55a, and lessons learned from plant specific relief requests, as appropriate
 - Revise Code Case N-830-1 to be further applicable to Section XI, Appendix E pending completion of general updates as noted herein
 - Technical basis, MRP-418, Revision 2 to be published in early 2025

MRP (3/3)

▪ Long Term

- Code Case N-900 Update - Alternative Rules for Level D Service Limit of Class 1, 2 and 3 Piping System
- Develop technical basis to credit A690/52/152 FOIs and temperature dependencies for N-729 PWSCC-resistant RPV head examination periodicities
- Develop technical basis to address PWSCC flaws found outside of peened areas in Code Case N-729
- Continue efforts to develop a direct ΔT_0 ETC which will enhance and support the CC N-914 approach
 - MRP report to be published in late 2025

IMR

- In-Progress and Short Term

- IMR currently does not have any In-Progress or Short-Term ASME Code Activities

- Long Term

- IMR is overseeing a project related to furthering the understanding of rapid crack growth in certain IASCC testing results.
- IMR staff are also participating in the SMILE harvesting project, which will develop IASCC crack propagation data in highly irradiated (>40 dpa) material.
- Both projects have the objective of supporting Code Case N-889, which currently has an NRC-imposed limit of applicability of <20 dpa.

NDE

- In-Progress

- Proposed Code Case: Alternative inspection requirements for Category B-G-1, Item B6.20 Reactor Vessel Closure Studs* (Record #23-1183)
- Proposed Code Case for extension of Category B-G-1, Item B6.180 examination frequency* (Record #23-1851)
- Proposed Code Case for Alternative Examination Requirements for PWR Pressurizer Welds* (Record #23-916)

- Short Term

- None currently

- Long Term

- None currently

WRTC

■ In-Progress

- New Case for welding on irradiated materials (Record #23-343)*
- Revision of N-931 to clarify use of Surface Stress Improvement (SSI) for storage containments (Record #24-1133)
- New Case for external repair of Class 2 & 3 piping by carbon fiber composite materials including provisions for elevated temperature applications based on ASME PCC-2 (Record #17-2543)*

■ Short Term

- Section IX - Verification of heat input and power ratio for manual GTAW by calorimetry experiments in support of penitential Section IX Code change
- Revision of N-740-3 to incorporate updated provisions in N-754 (OWOL), N-847 (EWR), and N-894 (thermal fatigue WOL) (Record #12-1640)

■ Long Term

- Address PSI/baseline examination requirements (Record #23-113)*

PWROG

- In-Progress
 - Support MRP lead Code Case N-914 – Methods to account for embrittlement (Record #19-1113)
- Short Term
 - None currently
- Long Term
 - Development of ASME Code Case for Half Nozzle Repairs
 - Update to ASME Section XI Appendix E to help address occasional Pressure-Temperature limit violations for plants that exceed their minimum boltup requirements



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