

**STATUS OF NRC ACTIVITIES OF POTENTIAL INTEREST
TO OM MAIN COMMITTEE**

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**ASME OM Code Committee Meeting on June 15-17
at Colorado Springs, CO**

10 CFR 50.55a Rulemaking

Title 10 of the *Code of Federal Regulations* (10 CFR) in Section 50.55a, "Codes and standards," currently incorporates by reference the 2005 and 2006 Addenda of the American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code), the 2005 Addenda through 2008 Addenda of ASME *Boiler and Pressure Vessel Code* (BPV Code), Section XI, and 2005 Addenda through 2008 Addenda of the ASME BPV Code, Section III, with conditions. Section 50.55a also incorporates by reference selected previous editions and addenda of the ASME OM and BPV Codes, with conditions.

In a rulemaking issued on September 18, 2015, in the *Federal Register* (80 FR 56820), the U.S. Nuclear Regulatory Commission (NRC) proposed to amend 10 CFR 50.55a to incorporate by reference:

The 2009 Addenda, 2010 Edition, 2011 Addenda, and 2013 Edition to the ASME BPV Code, Section III, Division 1, and Section XI, Division 1, with conditions.

The 2009 Edition, the 2011 Addenda, and the 2012 Edition to Division 1 of the ASME OM Code, with conditions.

ASME Standard NQA-1, "Quality Assurance Requirements for Nuclear Facility Applications," including the 1983 Edition through the 1994 Edition, the 2008 Edition, and the 2009-1a Addenda to the 2008 Edition of ASME NQA-1, with conditions.

ASME BPV Code Case N-729-4, "Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds Section XI, Division 1," with conditions.

ASME BPV Code Case N-770-2, "Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated with UNS N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities, Section XI, Division 1," with conditions.

ASME BPV Code Case N-824, "Ultrasonic Examination of Cast Austenitic Piping Welds From the Outside Surface Section XI, Division 1."

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ASME OM Code Case OMN-20, "Inservice Test Frequency."

In the *Federal Register* notice, the NRC staff stated that the public comment period would end on December 2, 2015. The NRC staff reviewed public comments received on the proposed rulemaking beyond the specified public comment end date. A public webinar was held on March 2, 2016, to discuss the NRC staff's responses to certain public comments. Based on public comments, the NRC staff is considering adjustments to the rule language to improve the efficiency and effectiveness of the final rule. The NRC staff is in the process of preparing a final rulemaking package, which is scheduled to be published in the fall of 2016.

Specific items of interest in this ongoing rulemaking related to the OM Code include:

1. Incorporation by reference of the ASME NQA-1 Standard.
2. Conditions on the use of Appendix III, "Preservice and Inservice Testing of Active Electric Motor Operated Valve [MOV] Assemblies in Light-Water Reactor Power Plants," including MOV initial diagnostic test intervals, testing interval impact on risk, allowable categorization methods, and verification during exercising that stroke time of MOVs identified in plant technical specifications satisfies plant safety analyses.
3. New reactor conditions, including power-operated valve (POV) periodic verification, check valve bidirectional testing, flow-induced vibration monitoring, and operational readiness of pumps, valves, and dynamic restraints in high risk non-safety systems.
4. Clarification of check valve monitoring provisions with adjustments based on public comments.
5. Condition requiring proposed implementation of Subsection ISTE, "Risk-Informed Inservice Testing of Components in Light-Water Reactor Nuclear Power Plants," to be submitted for NRC staff review as an alternative pursuant to 10 CFR 50.55a(z).
6. Condition requiring implementation of Appendix V, "Pump Periodic Verification Test Program," when applying Subsection ISTF, "Inservice Testing of Pumps in Light-Water Reactor Nuclear Power Plants - Post-2000 Plants."
7. Incorporation by reference of ASME OM Code Case OMN-20.
8. Condition supplementing ISTC-3700, "Position Verification Testing," for valve position indication beginning with the 2012 OM Code edition.
9. Clarification that pumps and valves that are within the scope of the ASME OM Code must meet the IST requirements set forth in the ASME OM Code to the extent practical with allowable use of augmented IST programs for non-Code Class safety-related pumps and valves.

The NRC staff has completed the scope for the rulemaking that proposes to amend 10 CFR 50.55a to incorporate by reference:

The 2015 Edition to the ASME BPV Code, Section III, Division 1, and Section XI, Division 1, with conditions.

The 2015 Edition to Division 1 of the ASME OM Code, with conditions.

Specific items of interest in the proposed rulemaking related to the OM Code being considered include:

1. Periodic verification of the design-basis capability of high safety significant air-operated valves and hydraulic-operated valves.
2. Add NRC IST Plan submittal and reporting requirements consistent with current edition of OM Code.
3. Revise 10 CFR 50.55a(f)(4)(i) and (ii) and (g)(4)(i) and (ii) to relax the time schedule for complying with the latest edition and addenda of the ASME OM or BPV Codes for IST and ISI programs, respectively, from 12 months to 18 months before the applicable milestones in these paragraphs.

This rulemaking is currently scheduled to be published for public comment in the fall of 2016.

Regulatory Guide (RG) Update – OM Code Case Acceptability

Revision 1 of RG 1.192, Revision 36 of RG 1.84, and Revision 17 of RG 1.147 address the acceptability of code cases published in the 2003 Addenda through the 2006 Addenda of the ASME OM Code and the Sections III and XI code cases listed in Supplements 1 through 10 to the 2007 Edition of the ASME BPV Code. The current regulations in 10 CFR 50.55a incorporate by reference these specific revisions to RGs 1.192, 1.84, and 1.147.

The NRC staff has completed a review of the new and revised code cases published in the 2009 Edition, 2011 Addenda, and 2012 Edition of the ASME OM Code. The proposed rulemaking and RGs for these code cases was published for public comment in the *Federal Register* (81 FR 10780) on March 2, 2016. The public comment period closed on May 16, 2016. Each code case in RG 1.192 will be identified by the number assigned by the OM Code and the applicable edition or addendum of the OM Code with which it is first published.

The final RG rulemaking is currently scheduled to be published in the fall of 2016.

Main Steam Isolation Valve (MSIV) Failures

On December 10, 2015, the NRC staff issued Information Notice 2015-13, "Main Steam Isolation Valve Failure Events," to inform nuclear power plant licensees and applicants of recent operating experience involving MSIV failures. The NRC established Generic Safety Issue 158, "Performance of Safety-Related Power-Operated Valves Under Design Basis Conditions," after reactor operating experience and research results on power-operated valves (POVs) indicated that testing methods in use at the time were insufficient to demonstrate consistent performance of these valves under design-basis conditions. In Regulatory Issue Summary (RIS) 2000-003,

“Resolution of Generic Safety Issue 158: Performance of Safety-Related Power-Operated Valves under Design Basis Conditions,” the NRC staff provided a summary of the NRC’s historical concerns associated with POV performance. In RIS 2000-003, the NRC staff stated that it would continue to work with industry groups on an industry-wide approach to the POV issue and to provide timely, effective, and efficient resolution of the concerns regarding POV performance. The NRC continues to monitor licensees’ activities and operating experience to ensure that POVs are capable of performing their specified safety-related functions under design-basis conditions. The information notice on MSIV failures is an example of the NRC staff’s continuing attention to POV performance.

Service Life of Nuclear Power Plant Components

Operating experience has identified failures of safety-related equipment at nuclear power plants caused by age-related degradation. The NRC documented its review of component age-related failures in “IOEB Analysis Team Study on Component Aging-Insights from Inspection Findings and Reportable Events” (ADAMS Accession No. [ML13044A469](#)). A key observation from the IOEB study is the increasing trend of safety-related structures, systems, and components (SSCs) in service beyond their documented service life without proper engineering evaluations. The NRC staff is continuing its review of operating experience related to component service life.

Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services

On March 16, 2016, the NRC staff issued RIS 2016-01, “Nuclear Energy Institute Guidance for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services,” to notify nuclear power plant applicants and licensees, and contractors, vendors and suppliers, of one method found acceptable by the NRC staff for procurement of calibration and testing services performed by domestic and international laboratories for use in safety-related applications. Both domestic and international laboratories are required to be accredited by accreditation bodies (ABs) that are signatories to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) (referred to as the ILAC accreditation process) in order for licensees and suppliers of basic components to use these services in lieu of performing commercial-grade surveys. The NRC has found that Revision 0 of Nuclear Energy Institute (NEI) Topical Report 14-05A, “Guidelines for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services,” presents an acceptable accreditation methodology provided by ILAC in lieu of performing a commercial-grade survey when procuring calibration and testing services from domestic and international laboratories. RIS 2016-01 states that the NRC staff will monitor the industry oversight of the ILAC accreditation process.

Embedded Digital Devices in Safety-Related Systems

On April 29, 2016, the NRC issued RIS 2016-05, “Embedded Digital Devices in Safety-Related Systems,” to clarify the NRC’s technical position on existing regulatory requirements for the quality and reliability of safety-related equipment with embedded digital devices (EDDs). The NRC’s intent in issuing this RIS is to heighten awareness that EDDs might exist in procured equipment used in safety-related systems without the devices having been explicitly identified in procurement documentation. Inadequate consideration of these devices in digital technology system upgrades, component replacements, and new equipment applications could lead to an adverse safety consequence. Therefore, nuclear power plant applicants and licensees should

implement early efforts to identify these devices. The RIS identifies valve actuators and pumps as equipment that might include EDDs.

Dedication of Commercial-Grade Items for Use in Nuclear Power Plants

The NRC staff is developing a draft regulatory guide (DG-1292) to address dedication of commercial-grade items for use in nuclear power plants. The intent of the regulatory guide is to provide the NRC staff position on guidance developed by the Electric Power Research Institute (EPRI) for the commercial-grade dedication of parts for use in nuclear power plants. This draft regulatory guide should be issued soon.

ASME-Related Generic Communications

ASME-related generic communications issued by (or in the process of being issued by) the NRC Office of Nuclear Reactor Regulation (NRR) and Office of New Reactors (NRO) since the last report (December 2015) to the OM Standards Committee are listed below:

Bulletins (BLs)

None

Generic Letters (GLs)

None

Information Notices (INs)

IN 2015-13 (12/10/2015) Main Steam Isolation Valve Failure Events

Regulatory Issue Summaries (RISs)

RIS 2016-01 (3/16/2016) Nuclear Energy Institute Guidance for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services

RIS 2016-03 (4/13/2016) 10 CFR 50.59 Issues Identified in NRC's San Onofre Steam Generator Tube Degradation Lessons Learned Report

RIS 2016-05 (4/29/2016) Embedded Digital Devices in Safety-Related Systems

The full text of any of these NRC generic communications can be accessed by visiting the NRC's public website at <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/index.html>.