U.S.NRC
United States Nuclear Regulatory Commission
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Public Meeting on Draft Regulatory Issue Summary for Operational Leakage

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Federal Register Public Comments

- https://www.federalregister.gov/documents/2022/01/14/2022-00686/operational-leakage
- Draft RIS – https://www.nrc.gov/docs/ML2116/ML21166A122.pdf

Acronyms

- American Society of Mechanical Engineers (ASME)
- Boiler and Pressure Vessel Code (Code)
- Committee to Review Generic Requirements (CRGR)
- Generic Letter (GL)
- Operational Leakage (OL)
- Regulatory Issue Summary (RIS)
- Risk Informed Safety Class (RISC)
- Systems, Structures and Components (SSC)
- Technical Specifications (TS)
- Title 10 of the Code of Federal Regulations (10 CFR)

Outline

- Draft RIS Background
- Draft RIS Summary of Issue
  - Regulation
  - Options to address leakage
  - 10 CFR 50.69
- RIS Review Process
- How To Make Public Comments on Draft RIS
- Discussion and Questions

Draft RIS Layout - Background

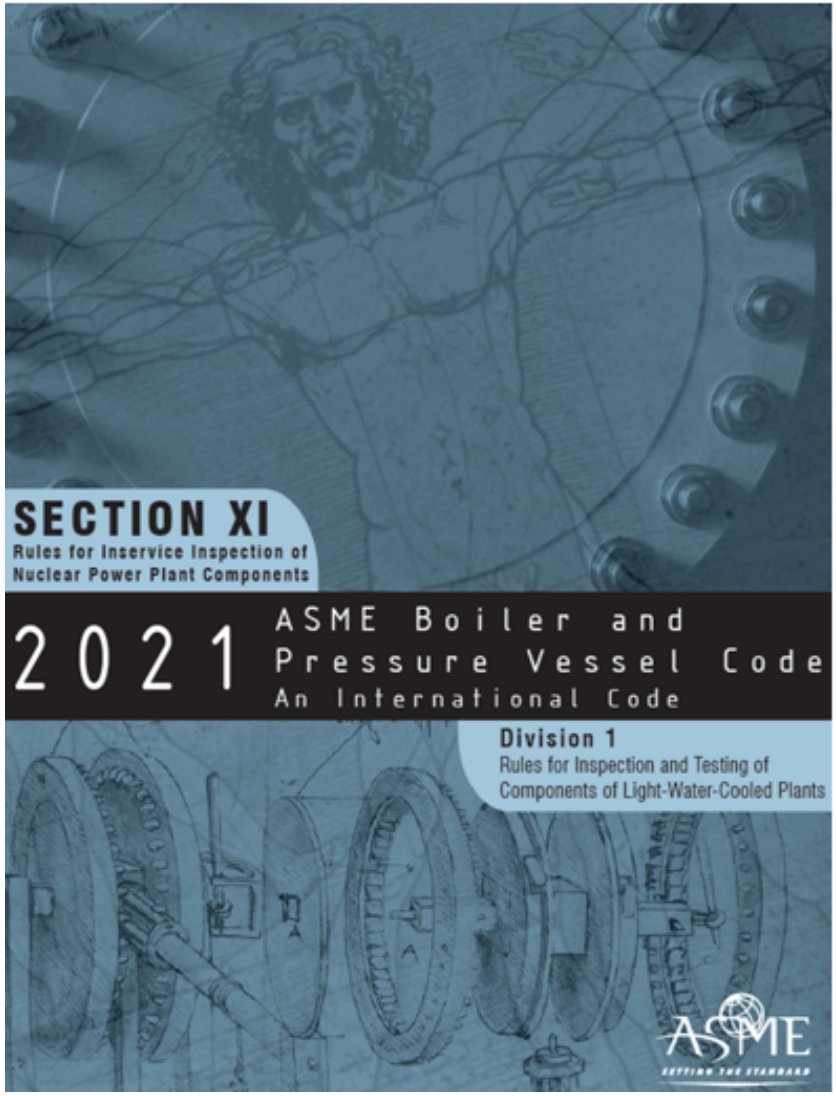
- Operational leakage and relation to TS
  - Operational leakage is a safety concern due to the unknown condition of the component when leakage is identified
- Explain purpose of 10 CFR 50.55a(g) and TS
  - The regulatory requirement of 10 CFR 50.55a(g) and TS are clarified by this RIS to explain that structural integrity must be ensured for an ASME BPV Code Class 1, 2, or 3 component that is required to be operable according to the TS

License Requirements

- The License identifies SSC necessary for safety
- Design of SSC by Construction Code is based on maintaining structural integrity for license duration
- Technical specifications
  - Specify the SSC required for safe operation
  - Operability requirements for safety
  - Structural integrity is a fundamental basis for SSC to perform their specified safety function
- 10 CFR 50.55a(g) mandates inservice requirements to provide reasonable assurance of structural integrity

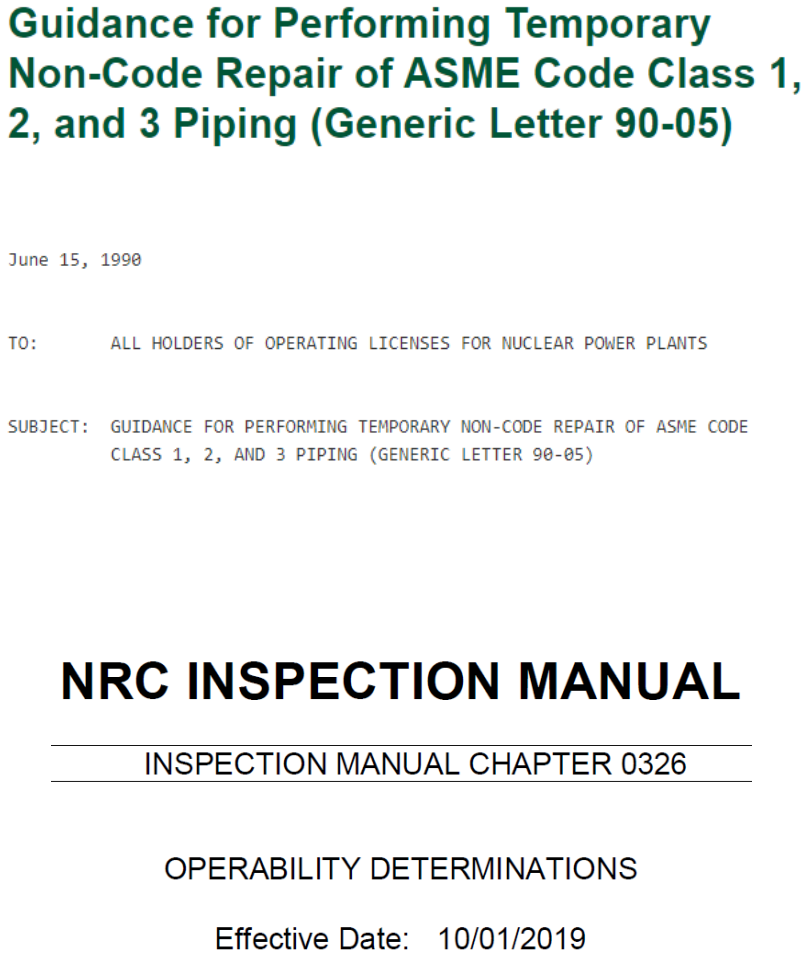
10 CFR 50.55a(g)

- 10 CFR 50.55a(g)(4) Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) that are classified as ASME Code Class 1, Class 2, and Class 3 must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of editions and addenda of the ASME BPV Code (or ASME OM Code for snubber examination and testing) that become effective subsequent to editions specified in paragraphs (g)(2) and (3) of this section



Draft RIS Layout - Background

- History of NRC communications regarding this requirement
  - GL 90-05, RIS 2005-20 and NRC Inspection manual updates
- Explain confusion with ASME Code interpretation
  - ASME Code interpretations are not regulations
  - Essentially, regardless of when and how leakage is detected in these SSCs, the same ASME BPV Code methods for evaluating structural integrity must be used



Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping (Generic Letter 90-05)

June 15, 1990

TO: ALL HOLDERS OF OPERATING LICENSES FOR NUCLEAR POWER PLANTS

SUBJECT: GUIDANCE FOR PERFORMING TEMPORARY NON-CODE REPAIR OF ASME CODE CLASS 1, 2, AND 3 PIPING (GENERIC LETTER 90-05)

NRC INSPECTION MANUAL

INSPECTION MANUAL CHAPTER 0326

OPERABILITY DETERMINATIONS

Effective Date: 10/01/2019

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Draft RIS Layout – Summary of Issue

- What is operational leakage?
  - Operational leakage is leakage through a flaw in the pressure-retaining boundary of an ASME BPV Code Class 1, 2, or 3 SSC discovered during the operational life of the nuclear power plant except when leakage is identified during an ASME BPV Code-required pressure test

Draft RIS Layout – Summary of Issue

- If through-wall operational leakage is observed from an ASME BPV Code Class 1, 2, or 3 SSC and the structural integrity of the SSC must be established to conclude that the system remains operable, then the methods described in the provisions of the applicable inservice inspection requirements, as specified in 10 CFR 50.55a(g), must be used

NATIONAL ARCHIVES

Code of Federal Regulations

A point in time eCFR system

https://www.ecfr.gov/

Draft RIS Layout – Summary of Issue

- These methods require analysis in accordance with the original construction code; implementation of an NRC-approved ASME BPV Code Case or Appendix U to ASME BPV Code, Section XI, to verify structural integrity; or performance of a repair/replacement activity

Generic Letter 90-05

- Purpose is to provide a method for regulatory relief to address OL for ASME Class 3 piping if a repair or replacement action would require shutdown of the plant
- Introduction statement of GL 90-05
  - Section XI of the ASME Boiler and Pressure Vessel Code (hereafter called the code) specifies code-acceptable repair methods for flaws that exceed code acceptance limits in piping that is in service. A code repair is required to restore the structural integrity of flawed ASME Code piping, independent of the operational mode of the plant when the flaw is detected

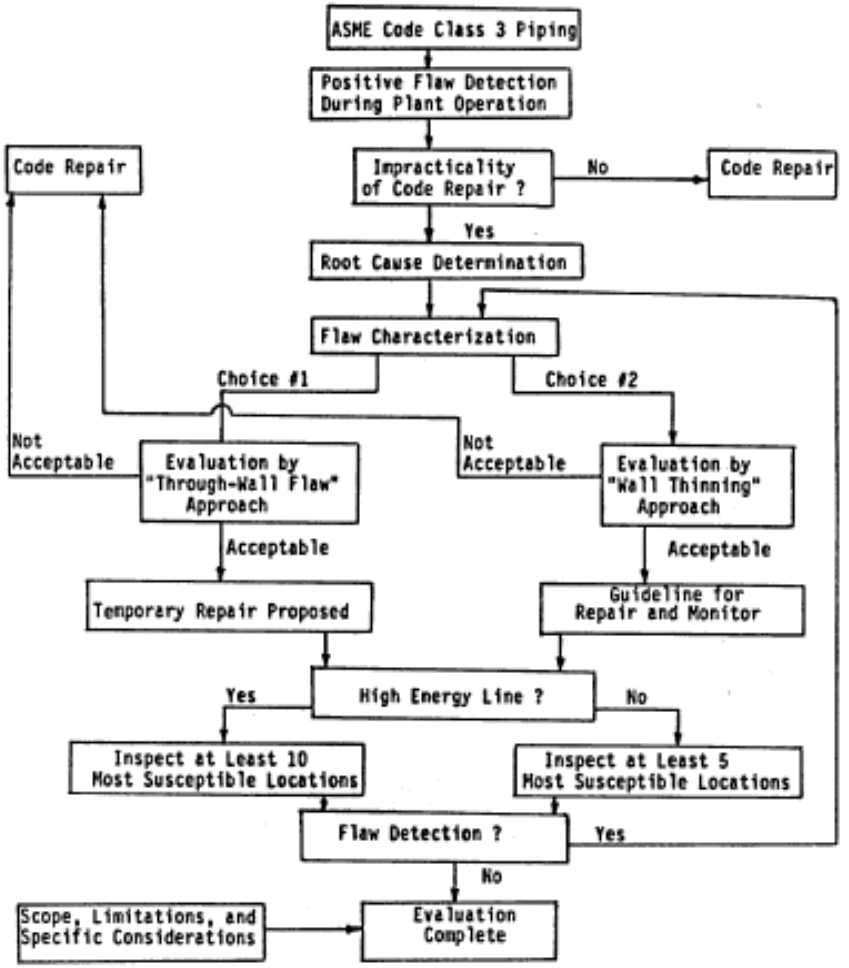

Fig. 1 Flow chart of staff guidance in evaluating relief requests for temporary non-code repair of ASME Code Class 3 piping.

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Options to Address Operational Leakage

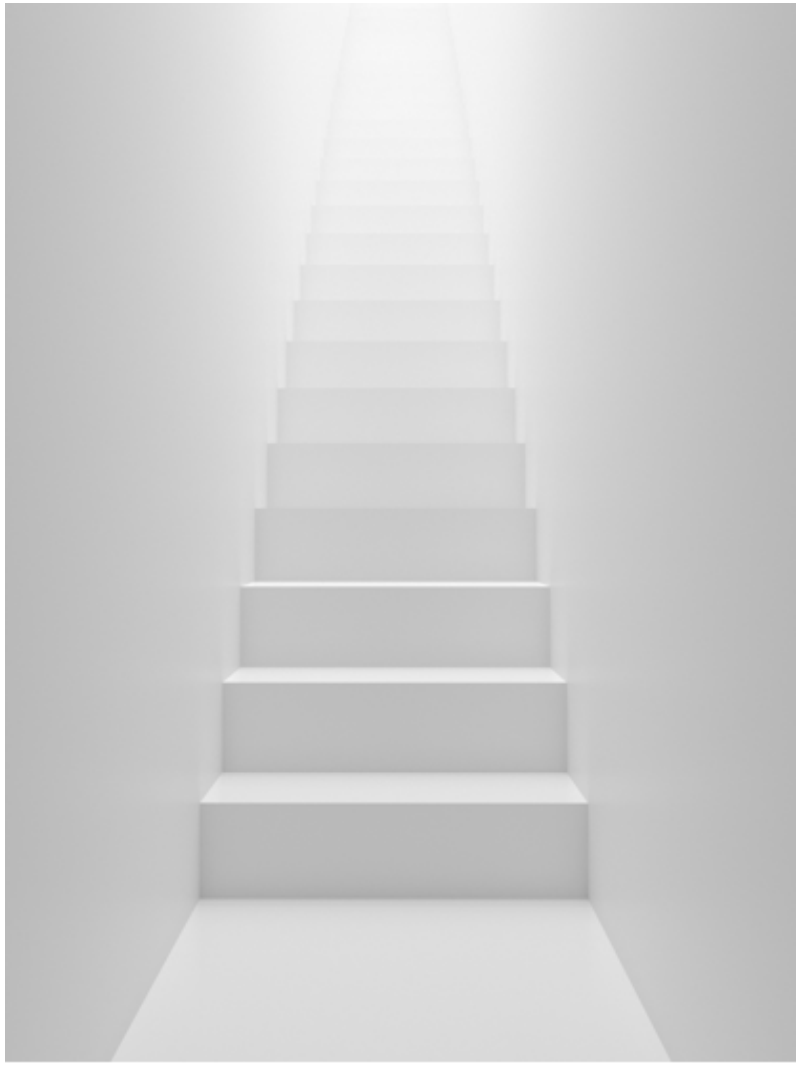
- Draft RIS language
  - RIS clarifies that operational leakage must be addressed in the same manner as leakage detected during an ASME BPV Code, Section XI, pressure test
    - Allows the same options to address leakage
    - Repair/Replacement is an option for any SSC
    - RIS clarifies proposed alternative options to the regulations through 10 CFR 50.55a(z)
- NRC will continue to support review of ASME or licensee actions to cover additional areas of concern both plant specifically or generically

10 CFR 50.69 Applicability

- 10 CFR 50.69 allows a risk-informed categorization and treatment of SSCs for nuclear power reactors
- 10 CFR 50.69(b)(v) permits removing 10 CFR 50.55a(g) inservice inspection, and repair and replacement (except for fracture toughness), requirements for ASME Code Class 2 and Class 3 SSCs that are classified as RISC-3 or -4
- Draft RIS clarifies that 10 CFR 50.55a(g) continues to apply
  - ASME Code Class 1 SSCs in all RISC categories
  - All RISC-1 and 2 SSCs for all ASME Code Classes

RIS Process Next Steps

- Issue Draft RIS for public comment (60 days)
- Public Meeting two weeks into public comment period
- Address public comments and finalize RIS
- Final RIS Concurrences
- Request CRGR Review of final RIS
- Obtain final signatures, issue the final RIS and send notifications



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Discussion

Questions?

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