Recent Developments in ASME Nuclear Codes and Standards

- **Moderator:** David Rudland, Senior Level Advisor, NRR/DNRL

- **Panelists/Speakers:**
  - Michael Benson (NRC)
  - Ralph Hill (ASME)
  - Thomas Roberts (ASME)
  - Tim Lupold (NRC)
  - Thomas Scarbrough (NRC)
  - Jordan Hoellman (NRC)
  - Michelle Gonzalez (NRC)

Embark Venture Studio Project on 10 CFR 50.55a

Michael L. Benson and David Rudland
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

NRC Standards Forum
October 13, 2020

Transformation Efforts at NRC

- NRC transformation goals
  - Modern, risk-informed regulator
  - Optimize use of technology
  - Improve efficiency of NRC operations
  - Reduce unnecessary regulatory burden, while maintaining a safety focus

- Embark Venture Studio
  - Encourage innovative thinking across a broad range of NRC activities
  - Can leverage staff resources across the entire agency
  - Outside of traditional chain of command
  - Separate from implementation
  - Inspired by Silicon Valley

Embark Project on 10 CFR 50.55a

- Identified as high-priority transformation objective
- October 2019 – April 2020
- Process
  - Free-form brainstorming
  - Document initial ideas
  - Socialize initial ideas
  - Iterate on initial ideas
  - Finalize recommendations
  - Document
- Embark final report: ML20153A752

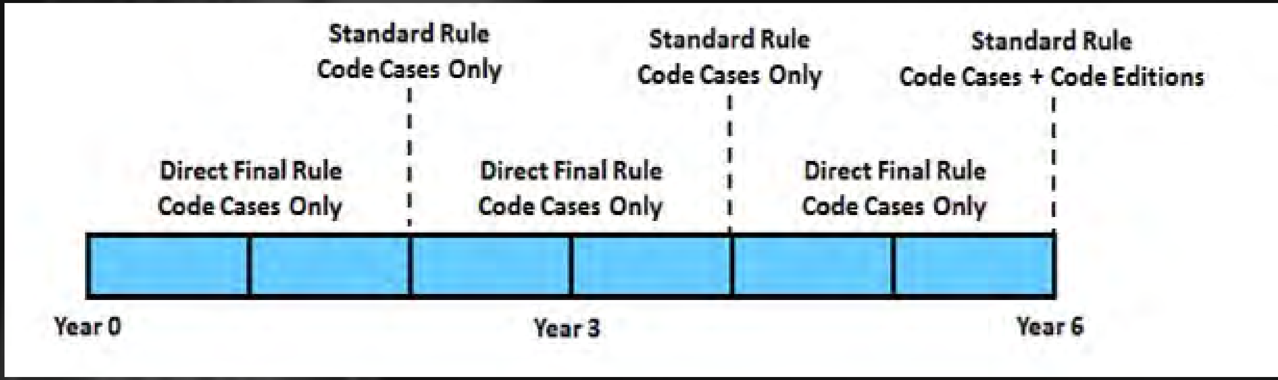
EMBARK VENTURE STUDIO

Example Stakeholder Feedback

- Increased efficiency in Code Case approvals is a win for both industry and regulator
- Requirement to update inservice inspection and inservice testing programs every 10 years is a burden with no clear safety benefit
- Efforts to clarify the rule may not yield much benefit
- Some support for removing ASME standards from 10 CFR 50.55a
- Safety concerns over removing ASME standards from 10 CFR 50.55a

Recommendations

- Institute yearly rules for Code Cases
  - Direct final rule for noncontroversial Code Cases
  - Standard rule for conditioned Code Cases
  - Alternate each year
- Relax the requirement to update inservice inspection and inservice testing programs every 10 years, provided that licensees adopt a recent version of Section XI and OM
- Optimize the frequency of Code Edition rulemakings



EMBARK VENTURE STUDIO

SETTING THE STANDARD

Overview and Status: ASME's Plant Systems Design Standard

NRC Standards Forum

October 13, 2020

Ralph S. Hill III
Chair, ASME Plant Systems Design Committee
Hill Eng Solutions, LLC

the Problem

New plants and facilities with potential for significant environmental, safety and health hazards to the worker and or public …

… may not be built in the United States unless costs to license, design and construct can be significantly reduced, while ensuring safety and health of the worker, the public and the environment.

the Solution

Plant systems Design Standard (PSD-1)

A technology neutral standard that provides a framework, including requirements and guidance, for **design organizations** to:

- Conduct plant process hazard analysis in early stages of plant design that (a) advance as the design matures and (b) provide structure to the initial development of a quantitative risk assessment.
- Incorporate systems engineering design processes, practices and tools with traditional architect engineering design processes, practices and tools.
- Incorporate risk informed probabilistic design methodologies with traditional deterministic design methods using reliability and availability targets.

… and integrate these into a design organization's existing design processes and procedures.

ASME
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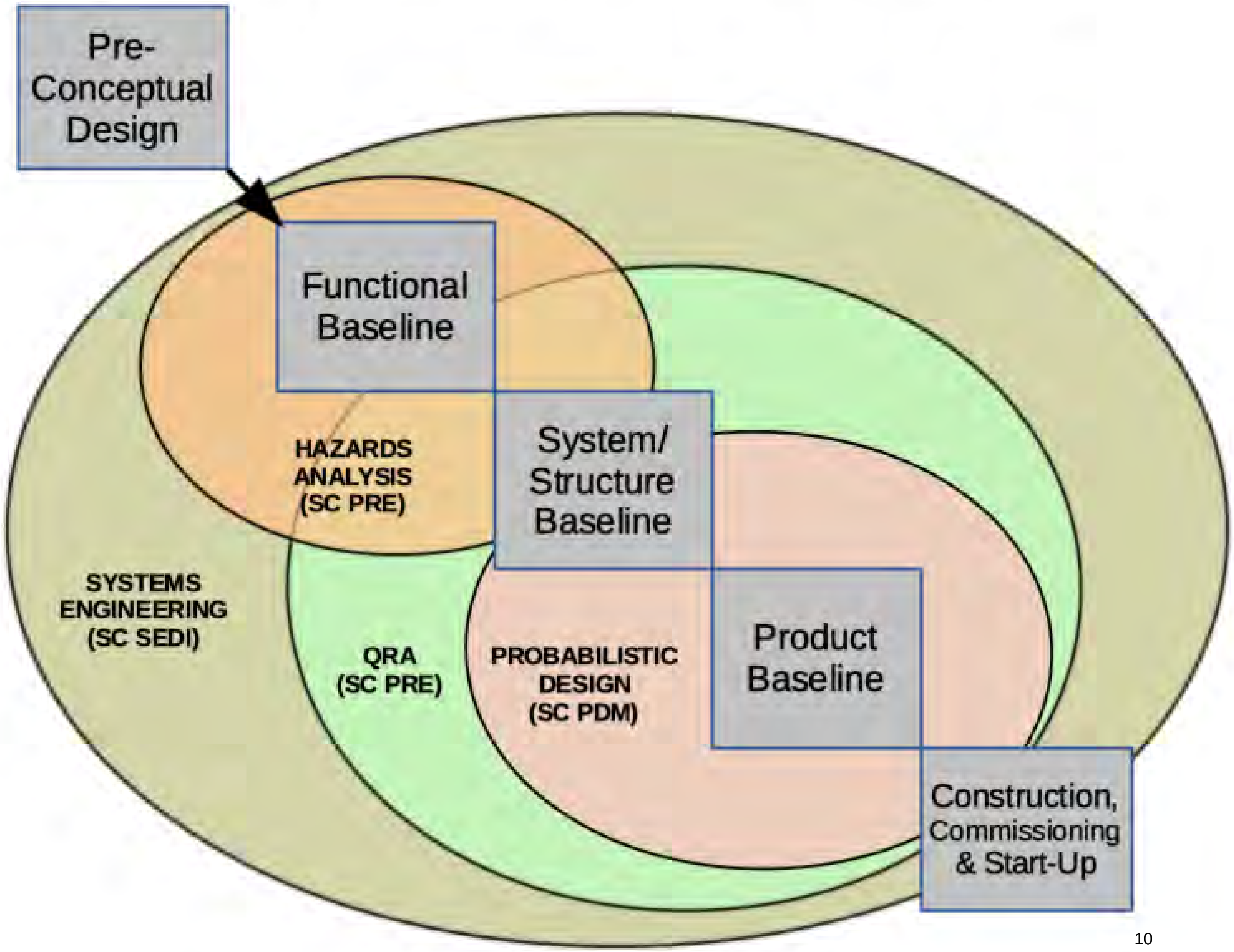
PLANT SYSTEMS DESIGN INFLUENCE DIAGRAM with QRA r2



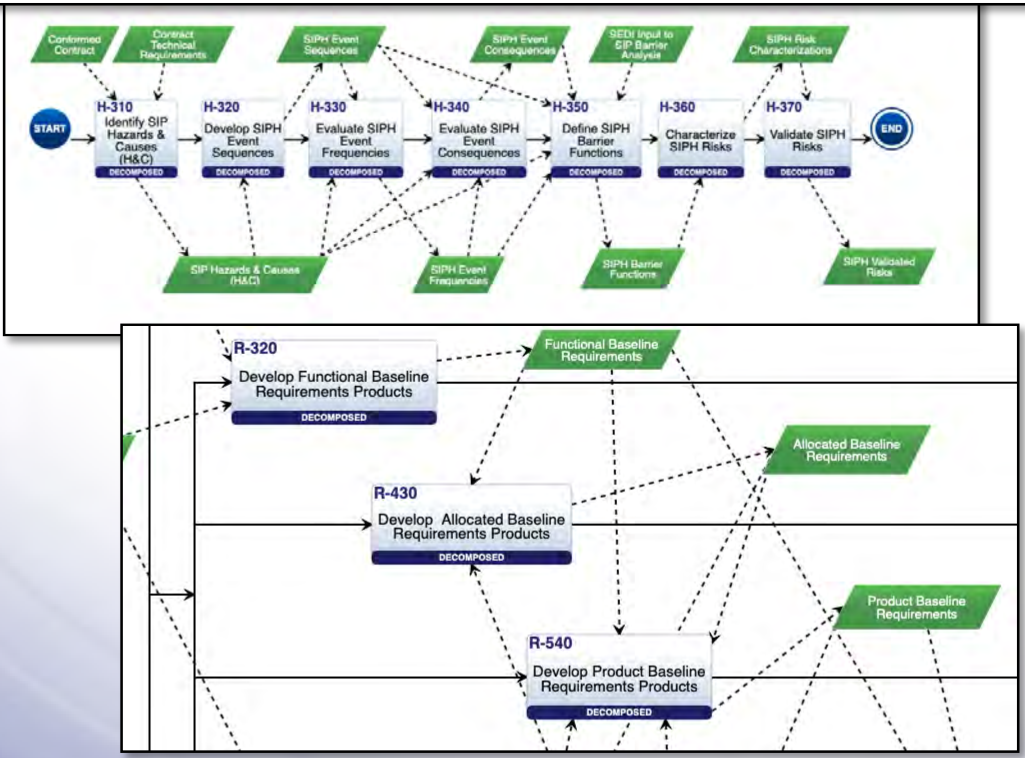
the Objectives

1. **Safer** and **more efficient** system designs and design alternatives with **quantified safety levels**
2. **More effective requirements management**
   - including assumptions, TBDs and TBVs
3. Cover the **entire life cycle** of a plant (design, construction, operation, decontamination and decommissioning)
4. Be **system based**, vs. component based, **and inclusive of multiple disciplines** (mechanical, electrical, instrumentation & control, HVAC, etc.)

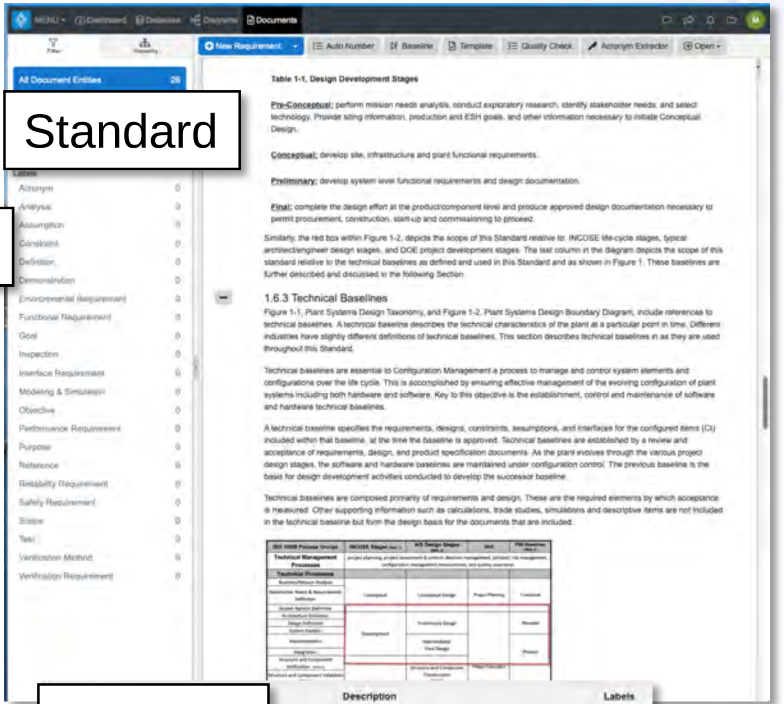
ASME SETTING THE STANDARD

Standard Development

Project Processes to be Addressed in the Standard



Standard

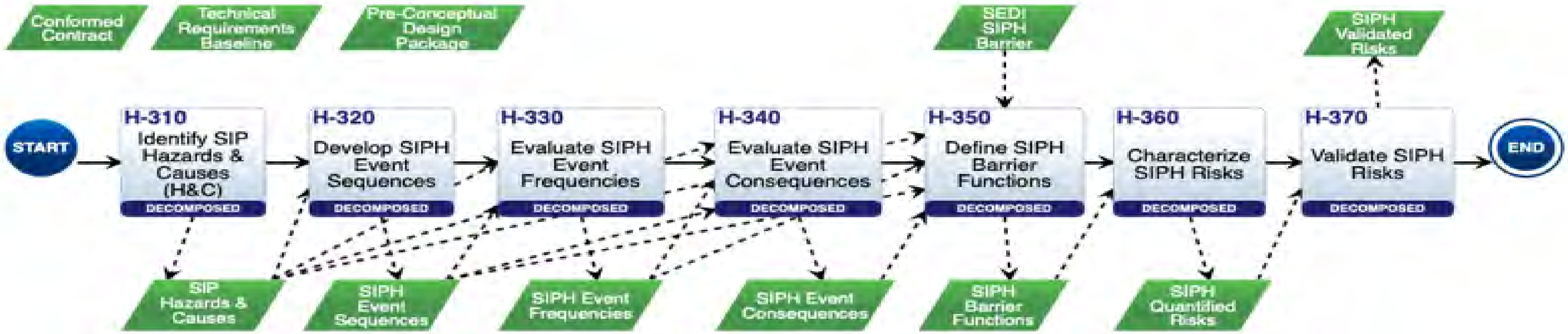


Glossary

Progress to date …

- Defined activities covered by PSD-1 using roadmaps, process flow diagrams, and WBS Data Sheets
- Developed block flow diagrams and N-square diagrams to integrate activities within each technical area and to integrate the technical areas together.
- Imported this information into Innoslate, a Model-Based Systems Engineering cloud-based software tool, to plan and organize contents.

Progress to date …



Progress to date …

In parallel with integration and scheduling activities:

- Drafted Part 1, General Principles, of the standard:
  - tailoring use of the standard
  - safety goals
  - taxonomy and boundaries
  - technical baseline descriptions
- Started writing Part 2, Design Development Process
  - both an initial writing effort and a pilot effort
  - results will provide guidance to other working groups

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Related Initiatives

The following are ongoing and include similar objectives.

- ANS & ANS 30.1
- EPRI Body of Knowledge (BoK)
- BPTCS TG Risk-Based Design
- Section XI, Div. 2, Requirements for Reliability and Integrity Management Programs for Nuclear Power Plants (RIM)

See next slide for more detail on ANS

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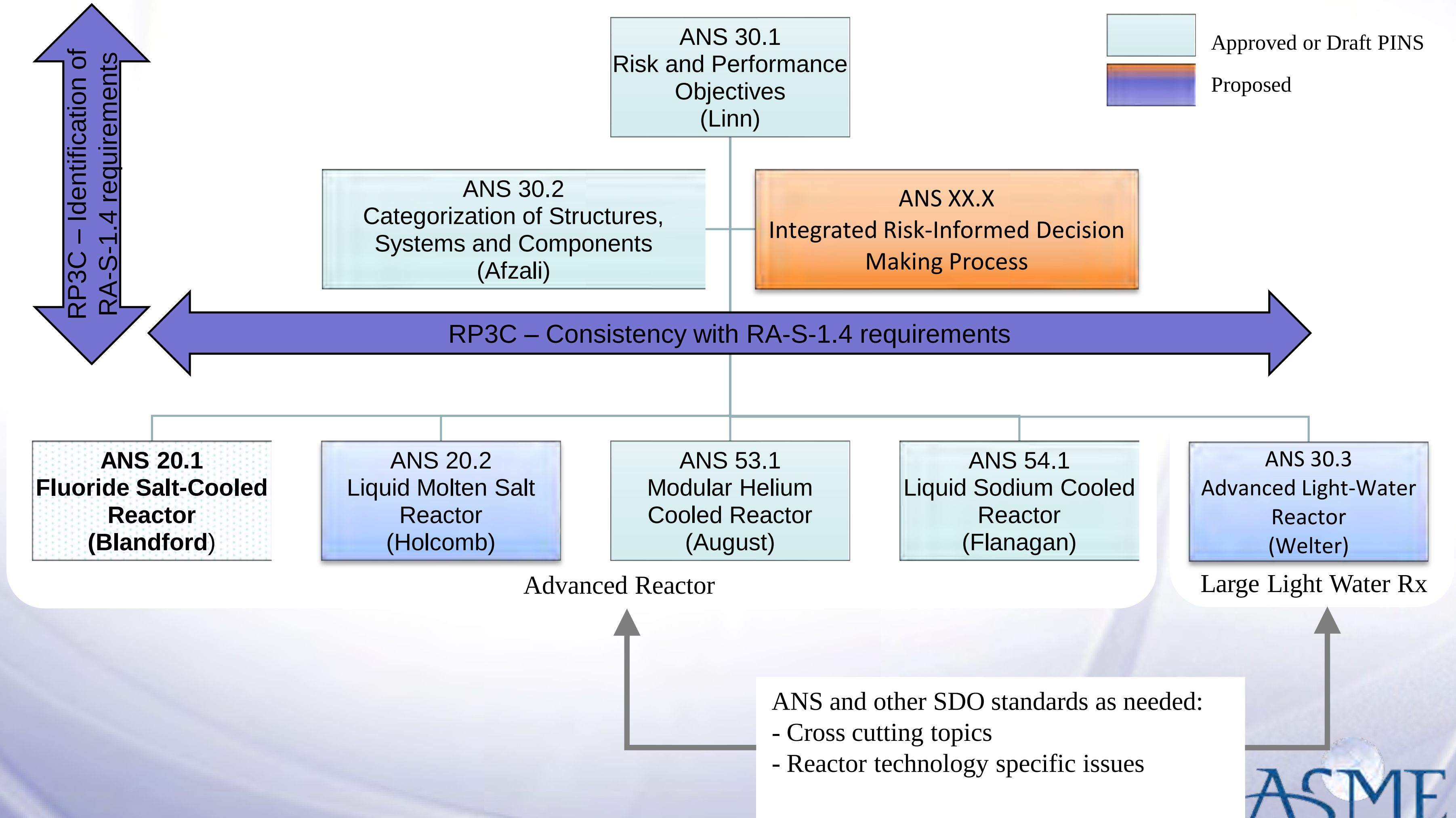
ANS New Reactor RIPB Standards Structure



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ASME Section XI, Division 2 Reliability and Integrity Management (RIM) Programs for Nuclear Power Plants

USNRC Standards Forum

October 13th, 2020

Session Speaker

A. Thomas Roberts
POMO18 Consult LLC

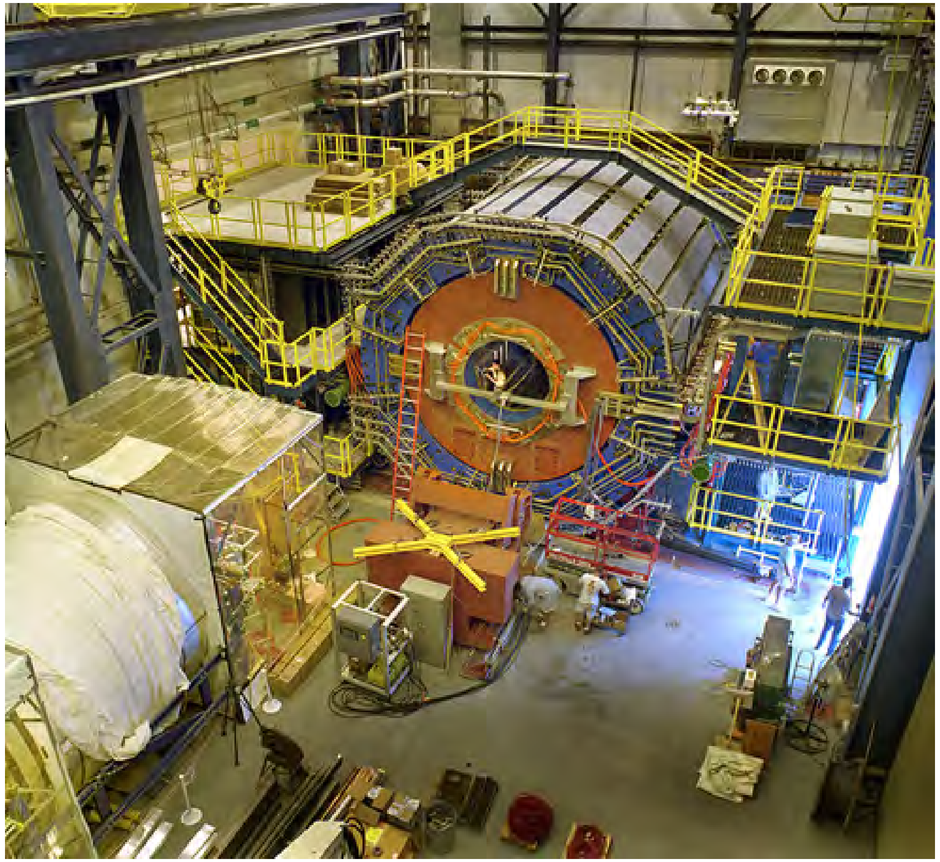
Chairman of ASME Section XI Division 2 - Reliability Integrity Management (RIM)

New standards are needed to accommodate Advanced Design Reactors

- Presently, ASME Section XI Division 1, and similar international inservice inspection standards, are not well suited for many advanced design reactors currently in development.

- ASME Division 1, like other international inservice inspection standards, were developed and evolved primarily for light water reactor technology (e.g., BWRs & PWRs).

- An ASME Section XI Sub-Group – developed a new Standard - ASME XI Division 2 to address this gap.
    - It is entitled Reliability Integrity Management (RIM)



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Reliability Integrity Management (RIM)

- RIM is a methodology to establish focused Inservice Inspection criteria regardless of technology employed (e.g., Molten Salt, HTGR, Liquid Metal, etc.) or size (e.g., Conventional size, Small Modular Reactor, Micro Reactor, etc.)

  - RIM is "technology neutral“ – applicable to all reactor designs.

  - RIM program criteria may be established by deterministic, probabilistic or a combination of these methods.

  - RIM requires Monitoring and NDE **(MANDE)** to be assigned to SSC, based on credible degradation mechanisms in conjunction with an individual SSCs contribution to risk significance for safe plant operation.

Reliability Integrity Management Process Concepts

1. RIM scope definition and SSC selection based on PRA
2. Degradation Mechanism Assessment
3. Plant and SSC Reliability Target Allocation
4. Identification and establishment of RIM strategies and MANDE

Reliability Integrity Management Process Concepts

5. Evaluation of Uncertainties

6. RIM Program implementation

7. Continuous monitoring and RIM Program and MANDE updates

RIM Process Description: Part I

- All SSCs deemed risk significant, must be scoped into the RIM Program.
  - This determination is established by the RIM Expert Panel (RIMEP)
  - RIMEP uses accepted PRA standards to make this determination at the system, structure and component level.
  - RIM applies to “passive components” that may not be normally considered in traditional PRA evaluations.
- A ranking of relative risk, known as a **Reliability Target Value**, is assigned to each SSC.

RIM Process Description: Part I (continued)

- **Any SSC** that could affect plant reliability must be scoped into the RIM program.
  - Non-Safety Related SSCs, traditionally under the historic SSC classification guidance, but are **deemed risk significant**, must be included in a RIM program.

- This contrasts with the existing ASME XI Div. 1 Class 1, Class 2, Class 3, Class MC, Class CC, etc. ISI approach, with each class having different graduated criteria based on the Class of an SSC rather than risk significance.

RIM Process Description: Part I (continued)

- An SSC's **<u>Reliability Target Value</u>** is the assigned numerical index that must be maintained for each SSC within the program to assure it will:
    - Perform its required function over its life cycle
    - Not challenge safe plant operation
- As part of the design process, the RIMEP and a second RIM prescribed expert panel are required to perform an SSC Degradation Mechanism Assessment (DMA)
    - This establishes what credible degradation mechanisms might apply to an SSC over its life (e.g., Creep, Stress Corrosion Cracking, Flow Induced Vibration, etc.).

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RIM Process Description: Part I (continued)

- This second expert panel is entitled as the Monitoring and NDE Expert Panel (MANDEEP)

  - The RIMEP and MANDEEP are responsible for determining and assigning appropriate MANDE

  - Any MANDE selected must be **"performance demonstrated"** before being employed.

  - This assures that any MANDE chosen is effective in detecting the onset of a degradation mechanism(s)

  - RIM is not focused exclusively on weld examinations.
    - ✓ Any credible degradation mechanism must be accounted for in MANDE selection (e.g., general corrosion).

Advanced Reactor Designer Considerations:

- Integrating RIM considerations during conceptual and detailed design efforts is essential and should include:
  - Determining risk significant SSC via the RIM process and design specific PRA.
  - Defining credible degradation mechanisms for those SSC
  - Establishing Reliability Target Values for SSC
  - Demonstrating MANDE that is selected for SSC within the RIM Program

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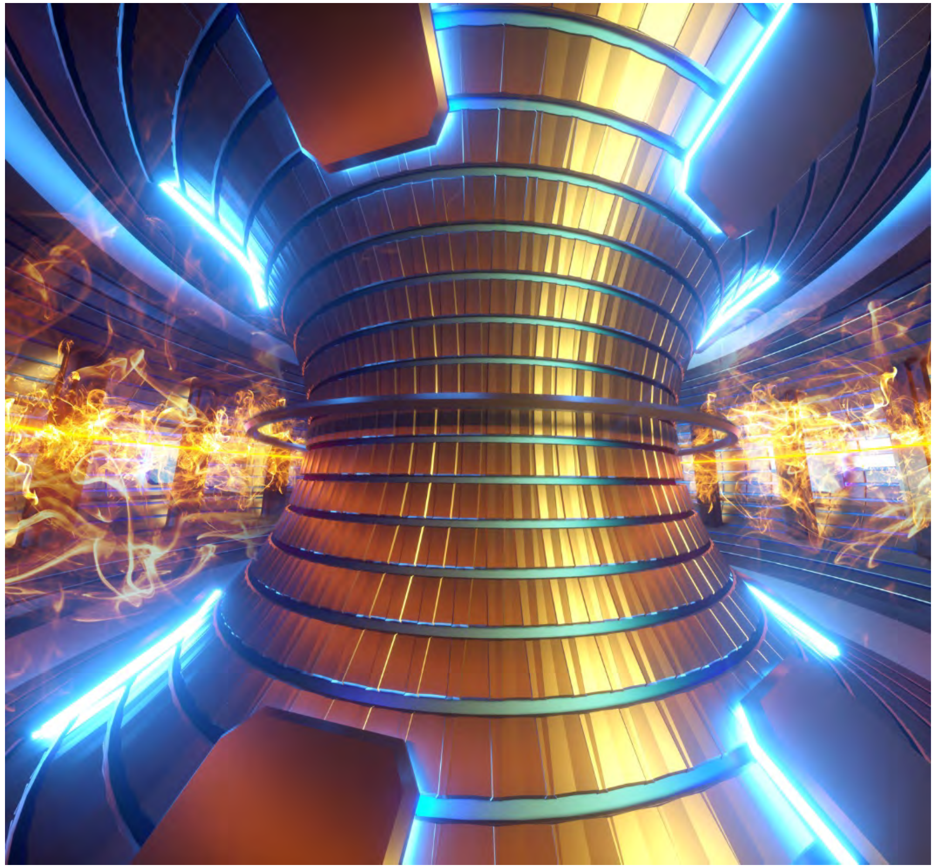
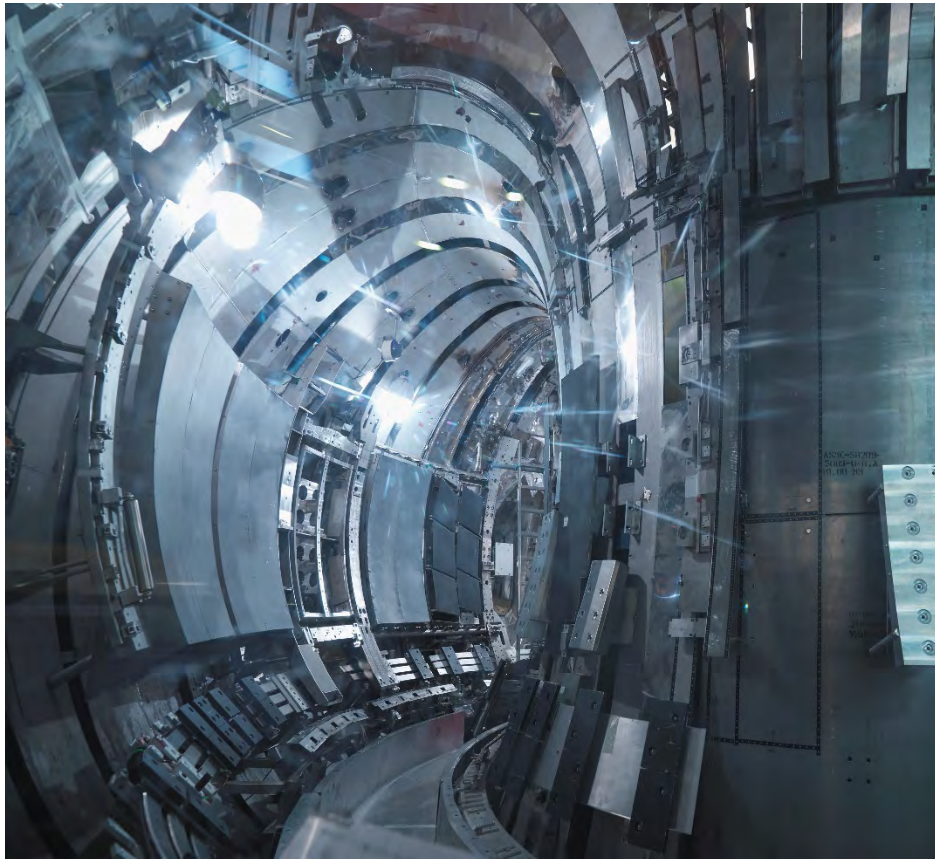
RIM Process During Operational Life

- RIM is an on-going "*Living Program*" that applies over the entire plant life cycle:
  - Periodicity for any prescribed MANDE is based on SSC's:
    - Active degradation mechanisms
    - Reliability Target Value and
    - Operating conditions (e.g., longer fuel cycles than PWR or BWR)
  - As operating experience is gained, the RIM Program and associated MANDE must be reviewed updated and if needed, adjusted.
    - RIM can therefore be thought of as an ongoing age management program



Summary

- Advanced nuclear reactors have varied designs.
- Technology is moving to designs other than traditional LWRs
- Alternative approaches to ISI activities are needed to accommodate these varied technologies and applications.
  - Some proposed reactors are for other than power production (e.g., medical isotope production, desalination, experimental test reactors, etc.)
- RIM is a process that can be used:
  - For any reactor design or application.
  - To provide directed MANDE criteria for any designs.
  - As a living program to monitor aging effects on risk significant SSC over the life of the nuclear facility.
- RIM was developed to address and accommodate these new designs.



ASME SETTING THE STANDARD

NRC Standards Forum 2020

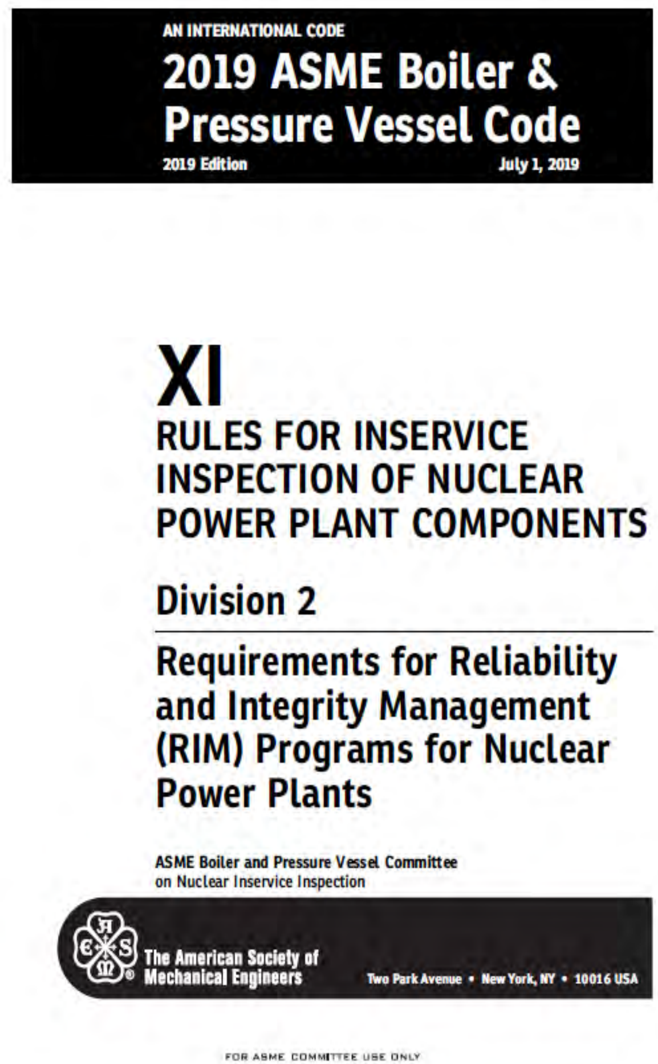
October 13, 2020

ASME Section XI, Div. 2: Reliability Integrity Management (RIM)

Tim Lupold

NRC Perspective on RIM

- RIM is meant to be a program that is in place during the design stage of a plant to establish a balance between design and inspection to ensure component performance meets the plant risk and reliability goals throughout the life of the plant
- RIM allows flexibility for Owners to implement alternative strategies from Section XI, Division 1 requirements
- RIM is "technology neutral“ – applicable to all reactor designs
- RIM has technology-specific appendices e.g. degradation mechanisms, flaw evaluation and acceptance criteria


AN INTERNATIONAL CODE

2019 ASME Boiler & Pressure Vessel Code

2019 Edition July 1, 2019

XI

RULES FOR INSERVICE INSPECTION OF NUCLEAR POWER PLANT COMPONENTS

Division 2

Requirements for Reliability and Integrity Management (RIM) Programs for Nuclear Power Plants

ASME Boiler and Pressure Vessel Committee on Nuclear Inservice Inspection

The American Society of Mechanical Engineers Two Park Avenue • New York, NY • 10016 USA

FOR ASME COMMITTEE USE ONLY

Section XI, Division 2 Endorsement Review Considerations

- ASME submitted a letter requesting NRC take action to endorse Section XI, Div.2 via 10 CFR 50.55a (ML19312B650)
- NRC evaluated the request internally and wanted to understand the interest in the use of the code prior to committing resources to review of endorse the code.
- During a periodic advanced reactor stakeholder’s meeting in May the NRC solicited input on the desire to use the code from stakeholders
- At a recent NEI/ANS Advanced Reactors Codes & Standards workshop, several presentations noted the use of ASME Code, Section XI Division 2 was of interest

Section XI, Division 2 Endorsement Review Decision

- Based on input from these venues, the NRC decided to commit resources to the review of ASME Code, Section XI Division 2.
- NRC responded to the ASME letter (ML20219A150)

Section XI, Division 2 Endorsement Process

- ASME requested NRC endorse Section XI, Division 2 in 10 CFR 50.55a
- 10 CFR 50.55a has been used to
  - Document Editions and Addenda of the ASME Code sections III and XI the NRC staff has reviewed and found acceptable for use
  - Mandate for use in the design for quality group A, B, and C for Light Water Reactors
  - Mandate for use in the IST program for Light Water Reactors
  - Mandate for use in the ISI program for Light Water Reactors
- 10 CFR 50.55a also contains requirements for protection and safety systems
  - Mandate the use of IEEE standards independent of the reactor type
- To mandate or not to mandate – That is the question!

Staff Thoughts on Applicability of RIM

- NRC staff does not see the need to mandate the use of ASME Section XI, Division 2.
- The NRC staff will approach the review with the intent of endorsing, and will determine if conditions should be applied to the endorsement.
- Once ASME Section XI, Division 2 is reviewed, the NRC will initiate development of a regulatory guide to endorse the code, with any appropriate conditions, as an acceptable means for establishing an in-service inspection program for non-light water reactors.
- The NRC expects to issue the draft RG for public comment in the Fall of 2021.

Future Code Needs

- Develop supplements for additional reactor types (Liquid Metal, Molten Salt, Gen 2 LWR, and Fusion). These are indicated as still under development in RIM.
  - Priority should be placed on development of the Liquid metal reactor and molten salt reactor supplements to Appendix 4
- Refine development process to establish reliability targets.
- Refine means for demonstrating reliability targets are met.

QME-1 Material Qualification for Active Mechanical Equipment in Advanced Reactors

Thomas G. Scarbrough
Mechanical Engineering and Inservice Testing Branch
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

October 2020

TOPICS

- ASME Standard QME-1
- Active Equipment in Advanced Reactors
- Active Equipment Material Qualification for Advanced Reactors
- Draft QME-1 Nonmandatory Appendix on Material Qualification for Active Mechanical Equipment in Advanced Reactors
- QME Task Group Review

ASME Standard QME-1
Qualification of Active Mechanical Equipment Used in Nuclear Power Facilities

- Provisions and guidelines for qualifying active mechanical equipment whose function is required to ensure safe operation or safe shutdown of a nuclear facility.
- General qualification (Section QR) to demonstrate equipment can perform specified function when operational and environmental conditions are imposed per equipment qualification specification.
- Specific qualification requirements and guidelines for active dynamic restraints (Section QDR), pumps (Section QP), and valves (Section QV).
- Refers to IEEE Standards for electrical equipment qualification.
- NRC accepts QME-1-2007 in NRC Regulatory Guide (RG) 1.100 (Rev. 3) and QME-1-2017 in RG 1.100 (Rev. 4) with conditions

Active Equipment in Advanced Reactors

- Advanced reactors might include pumps, valves, compressors, rotating devices, and circulators.
- New equipment types might move or control fluid, but might not be called pumps or valves.
- Qualification life, operating cycles, and performance characteristics of components need to be specified.
- Inservice inspection and testing, including accessibility, need to be determined.

Active Equipment Material Qualification for Advanced Reactors

- Active mechanical equipment materials in advanced reactors are susceptible to different degradation mechanisms compared to water-cooled reactors.
- Working fluid properties in advanced reactors might involve high temperatures (including stratification, radioactive attributes, corrosive properties, viscosity differences, solidification concerns (including peritectic reactions) and reactive characteristics.

Active Equipment Material Qualification for Advanced Reactors

(continued)

- Qualification considerations:
  - Environmental and service conditions.
  - Effect of process medium on material life.
  - Changes in fluid conditions within and surrounding equipment.
  - Potential failure mechanisms.

Draft QME-1 Nonmandatory Appendix on Material Qualification for Active Mechanical Equipment in Advanced Reactors

- NRC staff prepared Draft QME-1 Nonmandatory Appendix, “Guide for Qualification of Advanced Reactor Materials”
- Describes a process and documentation to demonstrate qualification of materials in active mechanical equipment in advanced reactors.
- Appendix is nonmandatory but would be mandatory if included in design specifications.

Draft Nonmandatory Appendix Outline

- Scope, Purpose, References, and Definitions
- Requirements
  - General
  - Identification and Specification of Qualification Requirements
    - External Conditions
    - Internal Conditions
  - Selection of Qualification Methods
  - Preservation of Qualification
  - Documentation

Draft Nonmandatory Appendix Outline
(continued)

- Methods of Qualification
  - General
  - Qualification by Testing
    - Thermal Qualification
    - Radiation Qualification
    - Mechanical Qualification
    - Chemical Reaction Qualification
  - Qualification Combination of Testing and Analysis
  - Qualification Combination of Testing, Analysis, and Experience
- Documentation

QME Task Group Review

- QME Task Group on High Temperature Reactors met on July 10, 2020, for an initial discussion of the draft nonmandatory appendix for the qualification of materials used in active mechanical equipment for advanced reactors.
- QME Task Group agreed to review the proposal for further discussion at the next meeting.
- Next meeting planned for late 2020.

NRC Review and Endorsement of ASME BPVC Section III, Division 5

Jordan Hoellman, NRR/DANU/UARP
October 13, 2020

Background – ASME BPVC

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- NRC Implementation Action Plan (IAP) Strategy 4: Facilitate industry code & standards development needed to support the non-LWR lifecycle, including fuels & materials
- ASME BPVC, Section III establishes rules for material, design, fabrication, examination, testing, overpressure, and quality assurance of nuclear components.
- ASME BPVC, Section III, Division 1 establishes rules for components where material strength and deformation is time-independent.
  - ASME BPVC Section III, Division 1 is incorporated by reference in 10 CFR 50.55a
  - Maximum temperature is 425°C (800°F)
  - Does not address graphite and ceramic-composite components
- ASME BPVC, Section III, Division 5 extends the rules for nuclear components to operate within the creep-regime (time-dependent).

Review Expectations

- NRC will create a draft RG by April 2021 (public milestone). Staff will solicit public comments on the draft RG and will subsequently issue a final RG.
- The HBB (Class A) rules will be reviewed with the assumption that components have safety-significant functions similar to Division 1, Class 1 (NB) components. HCB (Class B) rules will be reviewed with the assumption that the components will have similar functions to Division 1, Class 2 (NC) components.
- Categorization of SSCs is not within the scope of this activity.
- NRC review will emphasize the "Reasonable Assurance of Adequate Protection" standard.
- NRC reviewers consist of materials, mechanical, and inspection staff from NRR, RII, and RES

Contractor Expert Recommendations

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- In October 2018, the NRC core team sent the ASME BPVC Section III, Division 5 standard and the technical background documents to the Pacific Northwest National Laboratory (PNNL), Oak Ridge National Laboratory (ORNL), and NUMARK for a peer review on the technical adequacy of Section III, Division 5.
- In December 2019, PNNL, ORNL, and NUMARK provided draft reports to the NRC detailing their technical findings.
- In January 2020, the NRC initiated efforts to review the PNNL, ORNL, and NUMARK reports and to begin drafting the Regulatory Guide (RG) and RG technical basis document (NUREG).

Status of Contractor Reports

- **PNNL** – PNNL Final Report available at ADAMS Accession No. ML20269A145

- **ORNL** – ORNL Final Report available at ADAMS Accession No. ML20269A125

- **NUMARK/EMC^2** – All technical comments have been resolved. Final report expected in October 2020.

- **ANL** – Final input expected in October 2020.

ANL Expert Recommendations

- The NRC staff recognizes that Argonne National Laboratory (ANL) has foremost expertise on this standard including that ANL staff chair ASME BPVC Section III, Division 5 subgroups and working groups.
  - The NRC expects that the review team, the public, and ACRS will have questions and concerns regarding the adequacy and use of ASME BPVC Section III, Division 5.
- Obtain on-call technical expertise from ANL related to NRC's endorsement of ASME BPVC Section III, Division 5.
  - Technical assistance to facilitate the staff's efforts in drafting a RG and the NUREG
  - Providing the review team with the technical basis and historical perspective on ASME BPVC Section III, Division 5.

INL Expert Recommendations

United States Nuclear Regulatory Commission
Protecting People and the Environment

- The NRC staff recognizes that Idaho National Lab (INL) has foremost expertise on the graphite portions of this standard.
  - The NRC expects that the review team, the public, and ACRS will have questions regarding the graphite rules in Section III, Division 5.
- Obtain on-call technical expertise from INL related to NRC’s endorsement of ASME BPVC Section III, Division 5.
  - Technical assistance to facilitate the staff’s efforts in drafting a RG and the NUREG
  - Providing the review team with the technical basis and historical perspective on ASME BPVC Section III, Division 5.

Current Status – Next Steps

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- NRC staff are receiving the final contractor reports. The contractor reports will be published and available to the public. These reports provide a recommendation on the technical adequacy of ASME Section III, Division 5.
- The NRC staff are drafting the NUREG (technical analysis) and RG (the vehicle for endorsement and conditions). We are planning for a public meeting in the fall 2020 timeframe to update industry stakeholders.
- The ASME Code Committees have developed both background reports and gap analyses for the metallic and non-metallic portions of ASME Section III, Division 5. These reports have been published or will be published soon. The NRC has started interactions with the ASME Code committees regarding the NRC contractor comments.
- At the current time, we have not found any issues that would be show stoppers; however, there is still a significant amount of work to be completed and public interactions to be had.

Backup - Contractor Assignments

- **Task C, Elevated Temperature Metallic Components**
  - PNNL
    - Design, Fabrication, Examination, Testing (HBB; HCB; HGB-3000, -4000, -5000, -6000),
    - Rules for Strain, Deformation, and Fatigue Limits (Mandatory Appendix HGB-I)
    - Rules for Construction of Core Support Structures Without Explicit Consideration of Creep and Stress-Rupture (Mandatory Appendix HGB-II)
    - Rules for Buckling and Instability (Mandatory Appendix HGB-III)
    - Rules for Time-Temperature Limits (Mandatory Appendix HGB-IV)
  - ORNL
    - Materials (HBB; HCB; & HGB-2000)
    - Tables and Figures (Mandatory Appendix HBB-I)
    - Guidelines for Restricted Material Specifications (Non-Mandatory Appendix HBB-U)

Backup - Contractor Assignments

- **Task C, Elevated Temperature Metallic Components** (continued)
  - NUMARK/EMC^2
    - Rules for use of SA-533 Type B (Mandatory Appendix HBB-II)
    - Rules for Strain, Deformation, and Fatigue Limits (Nonmandatory Appendix HBB-T)
    - Rules for Stress Range Reduction Factors (Mandatory Appendix HCB-I)
    - Rules for Allowable Stress Values for Class B Components (Mandatory Appendix HCB-II)
    - Rules for Time-Temperature Limits (Mandatory Appendix HCB-III)
- **Task D, Graphite**
  - NRC Staff (General Requirements)
  - NUMARK/EMC^2 (Technical Requirements)
- **Task E, Code Cases N-861 and N-862**
  - NUMARK/EMC^2 (All aspects)

NRC Plans for Endorsement of the ASME/ANS Advanced Non-LWR PRA Standard

Michelle M. Gonzalez

U.S NRC

Office of Nuclear Regulatory Research

Objectives

- Provide an overview of the Advanced Non-LWR (ANLWR) PRA Standard development efforts
- Discuss plans for endorsement of the ANLWR PRA Standard
- Provide an update on the NRC efforts for endorsement of the ANLWR PRA Standard
- Provide updated schedule for endorsement

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Introduction

- The ANLWR PRA standard (ASME/ANS RA-S-1.4-2013) was issued in 2013 by ASME/ANS for trial use
- The scope of the standard includes Level 1 PRA through Level 3 PRA, all hazards and all operating modes
- The requirements in this standard cover PRAs performed during design, pre-operational, and post-operational phases
- Standard was issued for consensus ballot in March 2020
- Unanimous consensus achieved following August 2020 recirculation ballot.
- Final publication expected to be released by December 2020

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Plan for Endorsement

- NRC staff has developed an endorsement action plan, “Review and Endorsement of ASME/ANS Advanced NON-LWR PRA Standard Action Plan (ML20104C132)”
  - Task 1 - Supporting development of the standard*
    - Initial review and ballot comments completed on May 22, 2020
    - Recirculation ballot review/ comments completed on August 20, 2020.
  - **Task 2 - Preparation for review of the ANLWR PRA standard and NEI’s peer review guidance**
  - **Task 3 - Staff review and endorsement**
  - Task 4 - Development of schedule for staff review and endorsement*
  - Task 5 - Identification of resources*
  - Task 6 - Development of communication plan

* These tasks have been completed

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Task 2: Preparation for review of the ANLWR PRA Standard and NEI's peer review guidance

- Determine the scope of regulatory activities for the ANLWR PRA standard
  - Scope of the RG will be limited to DC and COL applications
- Identify the needed technical expertise to review the ANLWR PRA standard for endorsement
- Guidance for staff review of the ANLWR PRA standard for endorsement
- Comparison of the ANLWR PRA standard to other related standards and guidance
- Develop the staff position for an acceptable ANLWR PRA
- Identify and resolve technical and policy issues

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Task 3: Staff Review and Endorsement

- Endorsement Status
  - Staff will endorse the ANLWR PRA standard with the development of a new regulatory guide (RG), similar to RG 1.200
  - Ongoing activities for endorsement include:
    - Comparing the ANLWR PRA standard to other PRA standards
    - Development of draft regulatory guidance
    - Engagement with internal stakeholders (management, OGC, ACRS)
    - Engagement with external stakeholders (public, potential applicants)

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Planned Endorsement Schedule

- Draft Guidance- December 2021
- Public Comment- December 2021 through March 2022
- Final RG published – December 2022

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