Initiative for development of
ASME Nuclear Code for 2025

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Nuclear Codes & Standards Workshop
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Sponsored by ASME and ÚJV Řež
Topics

• Why a Code for 2025 initiative?
• Current State of ASME Nuclear Codes and Standards
• Thoughts on Future State of ASME Nuclear Codes and Standards
• A path to define Future State
• Considerations in Achieving the Future State
Why an Initiative?

• Future plant designs shaped by dynamic events
  – Global and Regional
• Future designs will have different safety challenges
  – probabilistic risk/safety assessments
  – probabilistic design methodologies
  – other

Nuclear codes and standards will change to support the plants of the future!!!
Currently, we are making incremental changes and “drifting” towards an unknown and undefined future.

This initiative is to replace “incremental drift” … with proactive design of the code of the future.
This Initiative …

- Is a **proactive** approach for planned, systematic and managed evolution to a future Code.
- Objective is to provide a simpler, more “user friendly” Code integrated across a component lifecycle that will enhance nuclear safety and simplify regulatory oversight.

Proactive - tbd
Current State of ASME Nuclear Codes and Standards

• Most comprehensive in the world
• Nuclear has 50 year history
• Used throughout the world
• ASME codes and standards are basis for all other nuclear codes and standards
• Developed and maintained by hundreds of industry volunteers with international participation.
Current State of ASME Nuclear Codes and Standards

Eight (8) Nuclear Codes and Standards

- Code for Construction of Nuclear Facility Components (BPV III)
- Code for Inservice Inspection (BPV XI)
- Standard for Operation and Maintenance of Nuclear Power Plants (O&M)
- Standard for Nuclear Quality Assurance (NQA-1)
Current State (Cont.)

Eight (8) Nuclear Codes and Standards

– Standard for Qualification and Maintenance of Nuclear Power Plants (QME)
– Standards on Cranes for Nuclear Facilities
– Standards for Nuclear Air and Gas Treatment
– Standards on Nuclear Risk Management
Current State (Cont.)

Three (3) Supporting Codes:

– Materials (BPV II)
– Nondestructive Examination (BPV V)
– Welding and Brazing Qualifications (BPV IX)
Current State – Nuclear Codes and Standards Committees

- **Council on Standards and Conformity**
  - **Board on Nuclear Codes and Standards**
    - **Boiler and Pressure Vessel (Nuclear) (BPV)**
      - 8 SC
      - 37 SG
      - 42 WG
    - **Operation & Maintenance of Nuclear Power Plants (OM)**
      - 4 SC
      - 8 SG
      - 12 WG
    - **Nuclear Risk Management**
      - None
    - **Nuclear Air & Gas Treatment Equipment (CONAGT)**
      - 7 SC
      - 13 SG
  - **Nuclear Quality Assurance (NQA)**
    - 6 SC
    - 16 WG
  - **Qualification & Maintenance of Nuclear Power Plants (QME)**
    - 2 SC
  - **Cranes for Nuclear Facilities (CRANES)**
    - 6 SC

- **Board on Pressure Technology Codes and Standards**
  - **Materials (BPV II)**
  - **Nondestructive Examination (BPV V)**
    - **Welding Qualifications (BPV IX)**

**Abbreviations**
- SC = Subcommittee
- SG = Subgroups
- WG = Working Groups
Future State of ASME Nuclear Codes and Standards

• Some identified needs …
  – Simplification and coordination of QA requirements
  – Globalization certification and stamping procedure
  – Improved accreditation process
  – Consistent international Inspection Authorities
  – Simplify application of ASME Section III
Future State: An Early Draft Vision Statement

“A simplified Code that recognizes and utilizes modern construction methodology, governs the complete lifecycle of the component or system, maintains appropriate margins of safety, invokes performance based value added requirements and provides separate administrative and technical requirements.”
Future State of ASME Nuclear Codes and Standards

• Some thoughts …
  – Do we need separate BPV III & XI?
  – Do we need risk-informed design?
  – We are a component Code … do we need to become a **system** Code?
  – Do we need separate O&M?
  – Do we need to move to electronic publishing?
  – Many many more …..
A path to define Future State

ASME is funding Phase 1 of a multi-phase project with the objective that ASME develop the Nuclear Code of the future with an initial target publication date of June 2025.
A path to define Future State

This includes:

• Establishing global advisory and steering committees

• Funding one or more knowledgeable individuals with Code development and proven project management experience to manage the project through:
  – Concept, Content, and Governance Development
  – Development and execution of Communication, Transition, Training, and Publication Plans
A path to define Future State

A systematic and integrated approach will be used to develop the 2025 Code beginning with a “blank sheet of paper” and using global stakeholder input to provide a vision and description of needs.
A path to define Future State

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Considerations in Achieving the Future State

Significant **paradigm** shifts will be needed by:

- Regulator
- Code Users
- Code Committee Volunteers
- ASME Staff

Paradigm …
Considerations in Achieving the Future State

Continuous and effective communication will be needed between development team and:

Regulator

Code Users

Code Committee Volunteers

ASME Staff
Summary

• Nuclear codes and standards will change to support the plants of the future.

• Currently, we are making incremental changes and “drifting” towards an unknown and undefined future.

• ASME has launched Phase 1 of the initiative for proactive design of the Code of the future.

ASME NUCLEAR CODE 2025
You Can Participate in Achieving the Future State

If you or your company have ideas on what the Code of the future should be, please send them to me at …

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