Codes and Standards Enhancements

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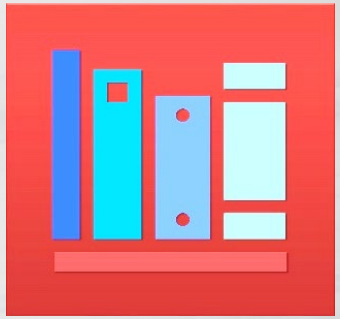
United States Nuclear Regulatory Commission
Protecting People and the Environment

NRC Codes and Standards Background



Key Federal Requirements:

- National Technology Transfer and Advancement Act (NTTAA) of 1995
  - Agencies must use voluntary consensus standards (VCS) instead of government-unique standards whenever practical.
  - Exceptions must be justified and documented annually.
- OMB Circular A-119
  - Provides guidance to agencies on implementing NTTAA.
  - Encourages active participation in standards development organizations (SDOs).

NRC Policy:

- NRC Management Directive 6.5
  - Establishes NRC's policies for participation in VCS development and aligns NRC's practices with NTTAA and OMB Circular A-119.
  - Guides staff engagement and endorsement of VCS.

EO 14300 & ADVANCE ACT

- EO 14300 requires the NRC to take several actions to help provide the American people with safe, abundant nuclear energy.
  - Facilitate increased deployment of new nuclear reactor technologies, such as Generation III+ and IV reactors, modular reactors, and microreactors, including by lowering regulatory and cost barriers to entry.
  - Employ emerging technologies to safely accelerate the modeling, simulation, testing, and approval of new reactor designs.
- The NRC recognizes that stakeholder engagement is important in this process. The NRC has established a public website to inform and engage external stakeholders during implementation of EO 14300.
- The NRC is coordinating its efforts with the actions that were already underway in the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy (ADVANCE) Act.
- ADVANCE Act asks NRC to support international coordination on nuclear technologies and licensing activities.
- To achieve the goals of the ADVANCE Act we are exploring how other standards may be beneficial.

Key Action Plan Components

- Plan based on input from a broad range of stakeholders
  - INL public workshop on April 4, 2024
  - Issued August 22, 2024
- Focus is on increasing timeliness, efficiency, and promoting risk and performance-based insights.
- **Consists of 17 actions within 3 areas for improvement.**
  - Standards Development Process Improvements
  - NRC Endorsement Process Enhancements
  - Leveraging Commercial Standards
- **Three timeframes:**
  - Swift Actions (1-yr)
  - Intermediate Activities (2-4 yrs)
  - Program Enhancements

Action Plan Implementation: Development Process Improvements

- **Swift Actions:**
  - 1.1 Publish a list of prioritized consensus standards, committees, and working groups for enhanced NRC engagement
  - 1.2 Continue and/or enhance staff support at prioritized activities
- **Intermediate Activities:**
  - 1.3 Promote inclusion of RIPB insights within new/revised standards
- **Program Enhancements:**
  - 1.4 & 1.5 Public meetings to solicit information on new materials and provide prompt feedback

Action Plan Implementation: Endorsement Enhancements

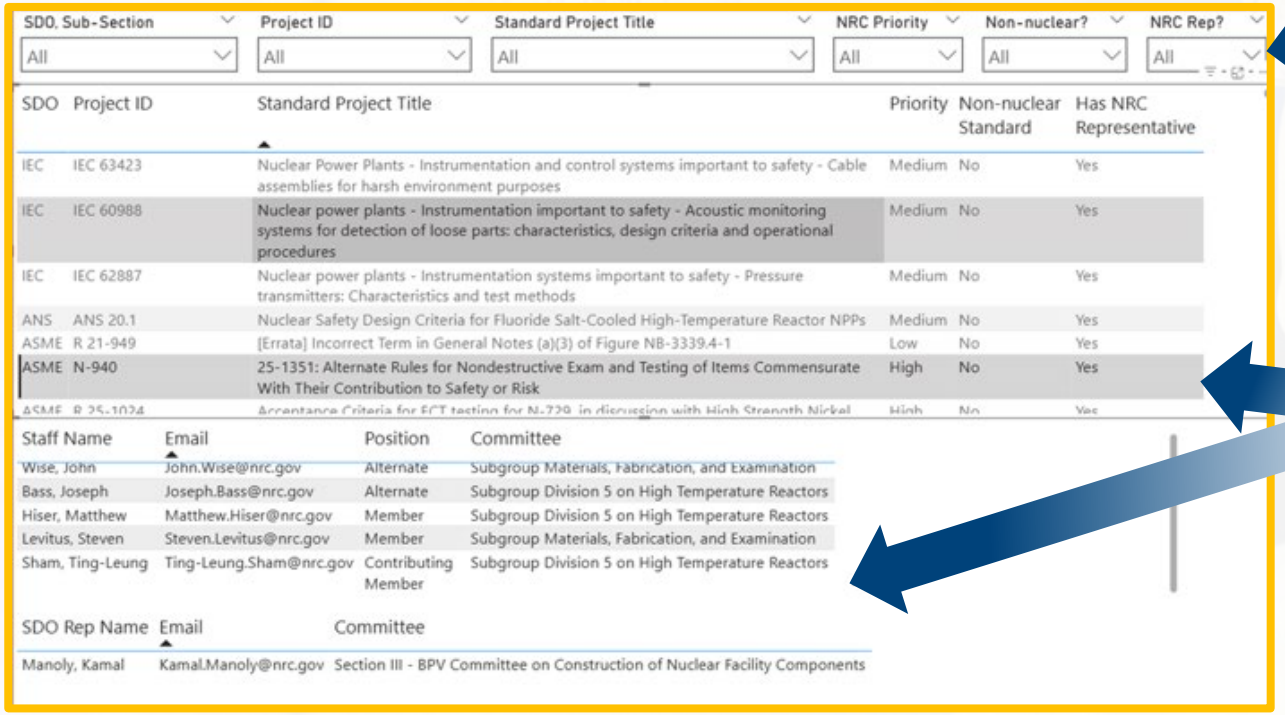
- **Swift Actions:**
  - 2.1 Expedite staff review of ASME Boiler and Pressure Vessel Code, Section III, Division 5, “High Temperature Reactors”
  - 2.2 Develop efficiencies for the endorsement process
- **Intermediate Activities:**
  - 2.3 Update management directive governing the NRC’s program
  - 2.4 Test case to pilot one or more of the efficiency enhancements
- **Program Enhancements:**
  - 2.5 Evaluate efficiency gains possible by using artificial intelligence tools to update regulatory guides containing lists of ASME code cases

Action Plan Implementation:
Leveraging Commercial/Non-nuclear Standards

- **Swift Actions:**
  - 3.1 Solicit input on priority commercial standards from advanced reactor vendors, developers, and applicants
  - 3.2 Continue and/or enhance staff support for prioritized activities
- **Intermediate Activities:**
  - 3.3 Support external efforts to develop/qualify new materials
  - 3.4 Pilot endorsement enhancement for commercial standards
- **Program Enhancements:**
  - 3.5-3.7 Develop guidance for endorsing commercial standards, support RIPB efforts in commercial standards groups, observe ARCSC

Public Codes and Standards Database

- Action Plan items 1.1, 1.2, 1.3, 3.1
- To inform the public on codes and standards priority and activity
- Helps us optimize participation
- Link to database



Endorsement Efficiency

- Action Plan item 2.2 & 2.4
  - 2.2 develop new plan
  - 2.4 pilot new endorsement
- Current endorsement through RG and Rulemaking
- Current timeline to approval is 1-2 years
- Industry landscape requires swift action
- Implementing new procedures for enhanced efficiency

Traditional Regulatory Guide

- Finalize agency stance prior to vote
  - Important for all options
- Streamline concurrence process
- Intended for LWRs under 10 CFR 50.55
- For Codes and Standards with significant conditions

Direct Regulatory Guide without Comments

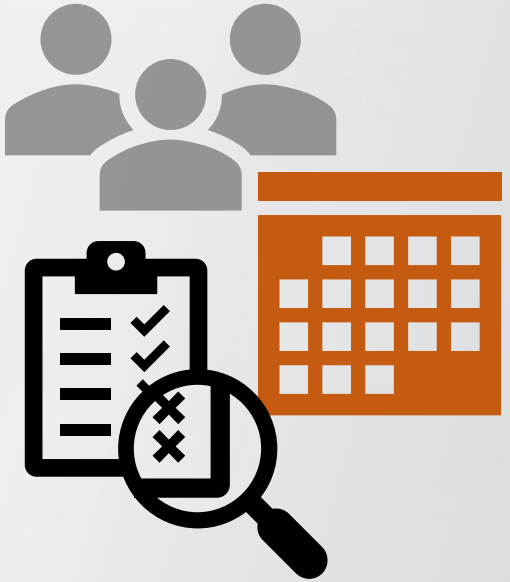
- Promulgate with no public comment period
- Designed for non-controversial codes and standards
- Intended for advanced codes and standards
- Planning test case

Direct Regulatory Guide with Comments

- Release with 30-day post promulgation period
- Designed for Codes and Standards endorsement with comments/conditions
- Intended for advanced reactors

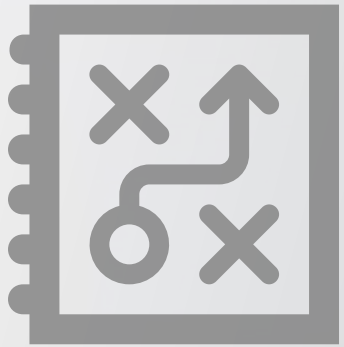
Revision on MD 6.5

- Action Plan item 2.3
- Updating staff expectations for voting
  - Bring in all applicable experts as soon as possible
- Important to establish voting expectations
- Higher scrutiny on negative votes at standards level
- To be completed by FY26Q3



Overall Action Plan Status

- **Process Improvements:**
  - 1.1) Creating public and private database – Complete 11/25
  - 1.2) Track Standards Involvement – Complete 11/25
  - 1.3) Track/Promote RIBP Standards – Ongoing
  - 1.4 & 1.5) Increasing public involvement – Ongoing
- **Endorsement Enhancements:**
  - 2.1) Final RG 1.87 in Concurrence – Complete 6/25
  - 2.2) New enhanced endorsement process (Direct Final Reg Guide) – Complete 12/25
  - 2.3) Updating MD 6.5 – Ongoing
  - 2.4) Pilot enhanced endorsement process – 4/26
  - 2.5) Exploring AI usage to automate RG edits – Ongoing
- **Commercial Standards:**
  - 3.1 & 3.3) Solicited industry input – 4/25, Ongoing
  - 3.2) Database to Track Standards Involvement – Complete 11/25
  - 3.4 & 3.5) Exploring commercial C&S endorsement – Ongoing
  - 3.7) Participating in ARCSC – Ongoing



Questions?

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