

Codes and Standards Enhancements

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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

SDO	Project ID	Standard Project Title	Priority	Non-nuclear Standard	Has NRC Representative
IEC	IEC 63423	Nuclear Power Plants - Instrumentation and control systems important to safety - Cable assemblies for harsh environment purposes	Medium	No	Yes
IEC	IEC 60988	Nuclear power plants - Instrumentation important to safety - Acoustic monitoring systems for detection of loose parts: characteristics, design criteria and operational procedures	Medium	No	Yes
IEC	IEC 62887	Nuclear power plants - Instrumentation systems important to safety - Pressure transmitters: Characteristics and test methods	Medium	No	Yes
ANS	ANS 20.1	Nuclear Safety Design Criteria for Fluoride Salt-Cooled High-Temperature Reactor NPPs	Medium	No	Yes
ASME	R 21-949	[Errata] Incorrect Term in General Notes (a)(3) of Figure NB-3339.4-1	Low	No	Yes
ASME	N-940	25-1351: Alternate Rules for Nondestructive Exam and Testing of Items Commensurate With Their Contribution to Safety or Risk	High	No	Yes
ASME	R 25-1074	Acceptance Criteria for ECT testing for N-729 in diversion with high strength nickel	High	No	Yes

Staff Name	Email	Position	Committee
Wise, John	John.Wise@nrc.gov	Alternate	Subgroup Materials, Fabrication, and Examination
Bass, Joseph	Joseph.Bass@nrc.gov	Alternate	Subgroup Division 5 on High Temperature Reactors
Hiser, Matthew	Matthew.Hiser@nrc.gov	Member	Subgroup Division 5 on High Temperature Reactors
Levitus, Steven	Steven.Levitus@nrc.gov	Member	Subgroup Materials, Fabrication, and Examination
Sham, Ting-Leung	Ting-Leung.Sham@nrc.gov	Contributing Member	Subgroup Division 5 on High Temperature Reactors

SDO Rep Name	Email	Committee
Manoly, Kamal	Kamal.Manoly@nrc.gov	Section III - BPV Committee on Construction of Nuclear Facility Components

Filter for projects

Select project for staff POC

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?

