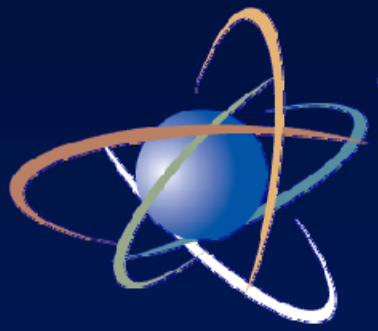

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UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

NRC Use of Codes and Standards

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May 11, 2009

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Who We Are

- The Energy Reorganization Act of 1974 established the independent U.S. NRC to regulate commercial uses of nuclear material.
- The NRC employs about 3,000 people in its suburban Maryland headquarters and in 4 regional offices in Pennsylvania, Georgia, Illinois and Texas.
- NRC inspectors are assigned to 65 nuclear power plant sites and three fuel facilities.
- Mission: to license and regulate the nation's civilian use of byproduct, source and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.

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The NRC Regulates:

- Nuclear reactors - commercial power reactors, research and test reactors, new reactor designs;
- Nuclear materials - nuclear reactor fuel, radioactive materials for medical, industrial and academic use;
- Nuclear waste – transportation, storage and disposal of nuclear material and waste, decommissioning of nuclear facilities; and
- Nuclear security – physical security of nuclear facilities and materials from sabotage or attacks.

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Regulation for Safety

"The Commission believes that a strong and fully independent regulator, who communicates and exchanges best practices with strong and independent regulators from other countries, is the best guarantee of an orderly and safe deployment of nuclear plants to meet the world's growing energy demands."

-Dr. Dale E. Klein, Chairman, U.S.NRC
American Nuclear Society meeting, Nov. 2006

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Our Primary Functions

- Establish rules and regulations
- Issue licenses
- Provide oversight through inspection, enforcement and evaluation of operational experience
- Conduct research to provide support for regulatory decisions
- Respond to emergencies

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Rulemaking

- NRC establishes rules that users of radioactive material must follow. These rules protect workers and the public from the potential hazards of radioactivity.

- Before writing or changing the regulations, NRC solicits and considers the views of the public, industry representatives, researchers, state officials, scientists and technical experts.

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NRC's Policies on Consensus Codes and Standards

- Consensus codes and standards have been integral to the regulatory process for 3 decades
- Codes and standards promote safe operation of nuclear power plants, improve effectiveness and efficiency of regulatory oversight
- Federal law requires Government staff to use consensus standards where possible
  - National Technology Transfer and Advancement Act (1995)
  - OMB Circular A-119

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NRC Staff Participation

- NRC staff participate on codes and standards development committees along with other stakeholders, including licensees, manufacturers, engineering contractors, inspection vendors, consultants, staff of national laboratories
- Codes and standards are developed based on a rigorous consensus process with input from all stakeholders

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How does NRC use Codes and Standards?

- Methods of satisfying NRC regulations are explained in NRC Regulatory Guides (RGs)
- Standard Review Plans maintained by NRC explain how NRC reviews applications for licenses and license amendments
- Both widely reference Codes and Standards

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How does NRC use Codes and Standards?

- 10 CFR incorporates specific sections of the ASME Code and some IEEE Standards by reference in 10 CFR§50.55a, involving
  - Staff review
  - Federal Register notification
  - Public comment period
  - Resolution of comments
  - Final rulemaking

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Scope of 10 CFR § 50.55a

- Incorporates by reference and mandates use of ASME B&PV Code
  - Sections III (Design) and XI (Inservice Inspection)
  - Operations & Maintenance Code
  - Code Cases N-729-1 and N-722
- Imposes limitations and modifications
- Endorses use of selected ASME code cases
- Also incorporates by reference 2 IEEE standards

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Regulatory Guides

- 1.84: Sec. III Code Cases
- 1.147: Sec. XI Code Cases
- 1.192: Operation & Maintenance Code
- 1.193: Code Cases not approved

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Some NRC Endorsed ASME Standards

- ASME NQA-1, "Quality Assurance (QA) Program Requirements for Nuclear Facilities"
  - Referenced in RG 1. 28, "QA Program Requirements"
- ASME QME-1, "Qualification of Active Mechanical Equipment Used in Nuclear Power Plants"
  - Referenced in DG-1175, currently in comment resolution stage

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ANS/ASME Standards

- ASME RA-S-2002, "Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications"
  - Referenced in NRC RG 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities"
- ANS/ASME joint program on risk
  - Developing updated and more comprehensive Probabilistic Risk Analysis (PRA) standards for referencing in NRC RG 1.200

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ASME Standards for New Reactor Construction

- ASME Boiler & Pressure Vessel Code
  - Changes expected in Section III – Construction
  - Re-start activity on Sec III, Subsection NH – Elevated Temperature Design
  - Section D – Subgroup on Elevated Temperature Design
  - New Working Group on High Temperature Gas Reactors
  - New materials and fabrication techniques

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International Standards Developers

- International Atomic Energy Agency (IAEA) Safety Standards, Codes of Conduct
- International Standards Organization (ISO) Standards
- International Committee on Radiation Protection (ICRP) recommendations
- NRC participates in the work of these & other organizations, but does not directly endorse their standards

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Conclusions

- NRC makes extensive and effective use C&S as part of its regulatory process
- Regulatory vehicles include regulations, regulatory guides, standard review plans
  - C&S endorsed or cited in all types of regulatory vehicles
- C&S written by numerous standards bodies, domestic & international
- NRC staff participate in writing C&S and have influence in setting the priorities of C&S bodies