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How Is the US Engaging its Nuclear Facilities in a Dialogue Addressing a Nuclear Safety Culture?

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Overview

- NRC's Mission
- NRC's Scope of Responsibility
- Safety Culture Background in US
- Safety Culture Policy Statement

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NRC's 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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NRC's Scope of Responsibility

- NRC's regulatory mission covers three main areas:
  - Reactors: commercial reactors for generating electric power and non-power reactors used for research, testing, and training
  - Materials: uses of nuclear materials in medical, industrial, and facilities that produce nuclear fuel
  - Waste: transportation, storage, and disposal of nuclear materials and waste, and decommissioning of nuclear facilities from service

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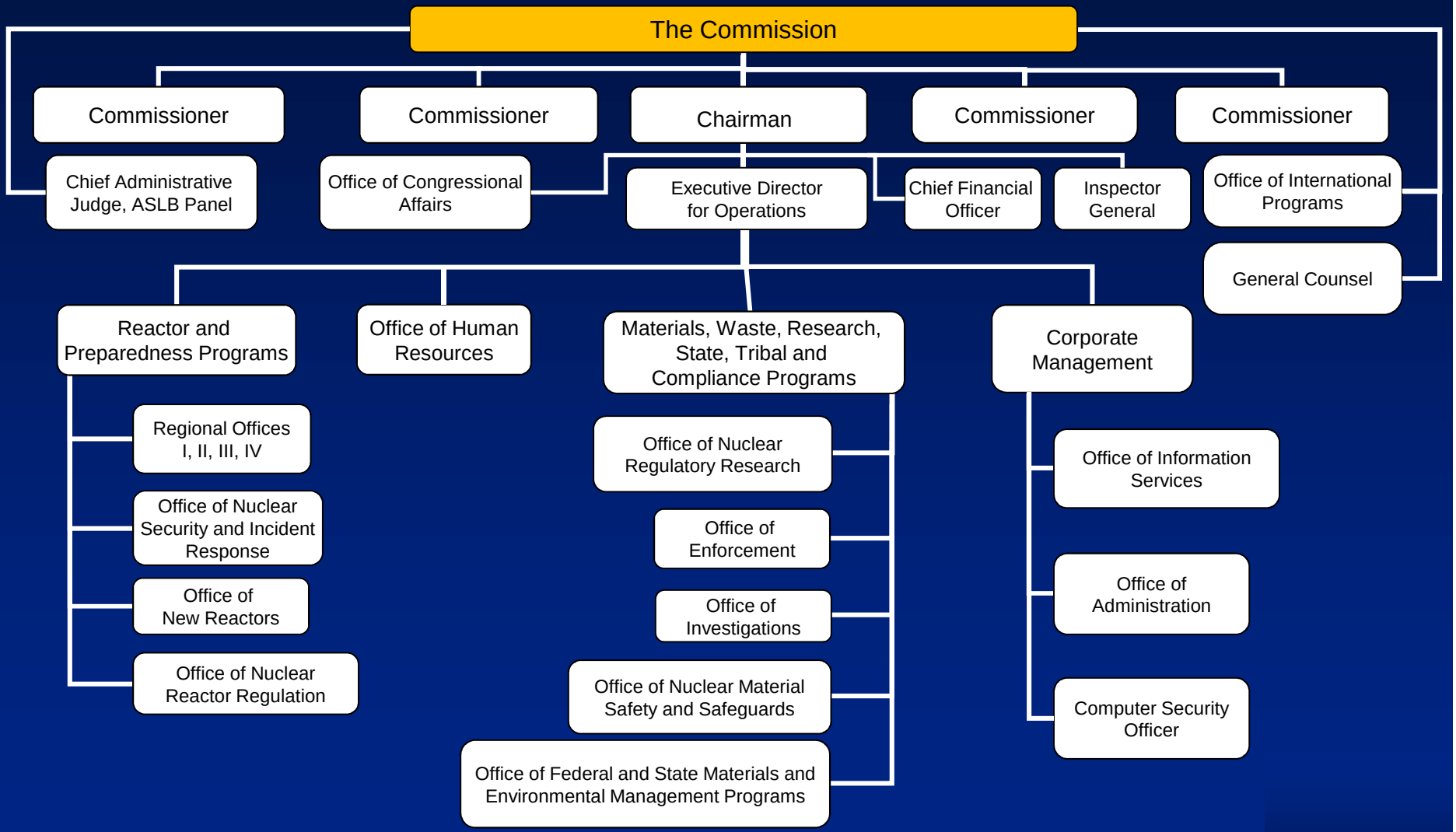
NRC Organization



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Importance of Safety Culture

- Operating experience has demonstrated nexus between safety culture and events
- Safety culture contributes to the safe and secure use of radioactive materials
- NRC recognizes that licensees bear the primary responsibility for the safe use of nuclear materials while the NRC, as the regulator, must consider the importance of safety culture in its oversight programs

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Background of Safety Culture in US

- Previous Commission policy documents related to safety culture
  - Conduct of Operations (1989)
  - Safety Conscious Work Environment (1996)

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Davis-Besse Reactor Vessel Head Degradation Event – 2002

Rod Rusty Boric Acid Deposits on Vessel Flange (12RFO)

- Cavity in the top of the reactor pressure vessel head caused by corrosion from boric acid deposits
- Licensee root cause identified a weak safety culture
- Plant shut down February 2002; restart authorized March 2004

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Post Davis-Besse Event

- 2006 – Enhanced the Reactor Oversight Process to more fully address safety culture
- 2009 -- Developed a draft Safety Culture Policy Statement that is applicable to all NRC licensees, addresses the unique aspects of security

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Basis of Final Safety Culture Policy Statement

- Seek opportunities to develop a common terminology based on existing standards and references
- Continue to engage broad range of stakeholders
- Consider incorporating suppliers and vendors

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Outreach Activities

- Draft Policy Statement published for public comment
- February 2010 workshop – diverse panel reached alignment on safety culture definition and traits
- Presentations on development of policy at various industry forums
- September 2010 Final Draft Policy Statement published for comment
- September 2010 workshop – provided continued support for February workshop definition and trait

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Final Draft Safety Culture Definition

"Nuclear safety culture is the core values and behaviors resulting from a collective commitment by leaders and individuals to emphasize safety over competing goals to ensure protection of people and the environment."

Final Draft Safety Culture Traits

Leadership Safety Values and Actions	Problem Identification and Resolution	Personal Accountability
Leaders demonstrate a commitment to safety in their decisions and behaviors	Issues potentially impacting safety are promptly identified, fully evaluated, and promptly addressed and corrected commensurate with their significance	All individuals take personal responsibility for safety
Work Processes	**Continuous Learning**	**Environment for Raising Concerns**
The process of planning and controlling work activities is implemented so that safety is maintained	Opportunities to learn about ways to ensure safety are sought out and implemented	A safety conscious work environment is maintained where personnel feel free to raise safety concerns without fear of retaliation, intimidation, harassment or discrimination
Effective Safety Communications	**Respectful Work Environment**	**Questioning Attitude**
Communications maintain a focus on safety	Trust and respect permeate the organization	Individuals avoid complacency and continually challenge existing conditions and activities in order to identify discrepancies that might result in error or inappropriate action

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Preamble to the Safety Culture Traits

A trait, in this case, is a pattern of thinking, feeling, and behaving that emphasizes safety, particularly in goal conflict situations, e.g., production vs. safety, schedule vs. safety, and cost of the effort vs. safety. It is the Commission's expectation that all organizations and individuals overseeing or performing regulated activities involving nuclear materials should take the necessary steps to promote a positive safety culture by fostering these traits. Additionally, it should be noted that although the term "security" is not expressly included in the traits, safety and security are the primary pillars of the NRC's regulatory program. Consequently, consideration of both safety and security issues commensurate with their significance, is an underlying principle of the Statement of Policy.

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Schedule and Next Steps

- Final proposed Policy Statement presented to Commission for review in January 2011
- Assuming final approval and issuance, continue outreach activities to all NRC regulated communities to increase attention to safety culture.
- Power plant industry developing safety culture assessment tool

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Resources

- NRC safety culture website:
  http://www.nrc.gov/about-nrc/regulatory/enforcement/safety-culture.html
  - Policy Statement meeting summaries
  - Regulatory Issue Summary – 2006 changes made to the Reactor Oversight Process to more fully address safety culture
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