The NRC and Safety Culture

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Introduction / Overview

- NRC Mission and Importance of Safety Culture
- NRC Safety Culture Policy Statement
- Safety Culture During Pre-Operational Phases
- Contact and Safety Culture References
NRC Mission
and
Importance of Safety Culture
NRC 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.
Concept of Safety Culture is Not New

Importance of Safety Culture

• Safety culture contributes to the safe and secure use of radioactive materials.

• The basic principles of safety culture are essentially the same …
  – Both domestically and internationally.
  – For both operational and pre-operation situations.
Importance of Safety Culture (Continued)

- NRC recognizes that licensees and other users of regulated material bear the primary responsibility for the safe and secure use of nuclear materials as well as a culture that promotes those outcomes.

- Additionally, the NRC, as the regulator, must consider the importance of safety culture in its oversight programs and activities.
NRC Safety Culture Policy Statement
Safety Culture Policy Statement Timeline

- 2004: Options Formally Discussed
- 2005: Options Formally Discussed
- 2006: May 2006 Public Meeting
- 2009: NRC Authored Safety Culture Definition
- 2010: Workshop Authored Safety Culture Definition
- 2010: 30 Day Public Comment Period
- 2010: Apr-Nov 2010: NRC Staff Participate in 18 Industry Meetings
- 2011: Workshop Supported Safety Culture Definition
- 2011: Workshop Supported 8 Safety Culture Traits + Questioning Attitude
- 2011: Workshop Supported 8 Safety Culture Traits

Timeline events:
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Statement of Policy

- Includes safety culture definition and nine traits.
- Considers interface of safety and security.
- Addresses “security” in a Preamble.
- Recognizes diversity of regulated entities.
- Applies to safety-related vendors and suppliers.
- Considers negative factors (such as incentive goals).
- Does not address implementation directly.
Sets forth the Commission’s expectation that individuals and organizations performing regulated activities establish and maintain a positive safety culture commensurate with the safety and security significance of their actions and the nature and complexity of their organizations and functions.
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.
Preamble

Experience has shown that certain personal and organizational traits are present in a positive safety culture. A trait, in this case, is a pattern of thinking, feeling, and behaving that emphasizes safety, particularly in goal conflict situations, e.g., production versus safety, schedule versus safety, and cost of the effort versus safety.
Preamble (Continued)

It should be noted that although the term “security” is not expressly included in these traits, safety and security are the primary pillars of the NRC’s regulatory mission.

Consequently, consideration of both safety and security issues, commensurate with their significance, is an underlying principle of this Statement of Policy.
### Safety Culture Traits

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

Tier 1

Safety Culture Definition
Overarching definition applicable to all regulated entities
- Easy to understand
- Timeless
- Inclusive

Tier 2

Safety Culture Traits
High level descriptions of what constitutes a strong safety culture
(Not necessarily all inclusive or completely applicable to each particular regulated entity)

Tier 3

Implementation
Translating the Definition and Traits into lower level descriptions that are applicable to different regulated entities
- Programs, processes, procedures, practices, behaviors, etc.
- Details vary based on the nature of the regulated entity

NRC Actions  <->  Regulated Entities Actions

Contained in the Safety Culture Policy Statement

Next Steps
(Not Yet Approved by the Commission)
Current Status of Policy Statement

• The Commission approved, with revisions, the safety culture policy statement and provided direction to continue dialogue and education efforts via Staff Requirements Memorandum SRM-SECY-11-0005, “Proposed Final Safety Culture Policy Statement,” dated March 7, 2011 (ADAMS Accession No. ML110660547).

• The policy statement was published in the Federal Register (76 FR 34773) on June 14, 2011, after Office of Management and Budget (OMB) review and approval pursuant to the Congressional Review Act.
Safety Culture During Pre-Operational Phases
Safety Culture During Construction

- The staff is continuing to engage in activities to increase an awareness and understanding of the benefits of a positive safety culture for those entities covered by the safety culture policy statement.

- Construction activities, which include pre-operational testing, address safety culture through the construction Reactor Oversight Process (cROP)
Construction Reactor Oversight Process (cROP) and Safety Culture

• Substantive Cross Cutting Issues (NRC Inspection Manual Chapter (IMC) 613 and IMC 2505).

• Pilot Program will provide insights into first year of licensed construction.

• Ensured Vendors are also informed of the Policy Statement.
Oversight Experience

• Global market and supply chain.

• Many challenges for vendors and users of regulated nuclear materials across the world including conforming with expectations of multiple regulatory philosophies.

• Words and ideas of safety culture need to be carefully translated … not just linguistically but culturally as well.
Additional Considerations During Pre-Operational Phases

• Constructors and people who work for constructors are not users of nuclear material.

• This adds the challenge that licensees need to make the nexus for such people from the work they do to the ultimate safe use of the material that will be in the plant after they construct it.

• Since it has been 20+ years since nuclear construction has gone on in the U.S., there is no ready pool of construction talent that has done nuclear work.
Actions to Be Considered

• Recognize that safety culture in a construction or pre-operational environment has it’s unique challenges.

• Training – Expectations for management and staff in important areas of safety culture such as safety-conscience work environment (SCWE).

• Training for employees newly entering the nuclear field … new to nuclear.
Contact and Safety Culture References
Contact

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References


References (Continued)

• Staff Requirements Memorandum SRM-SECY-05-0187, "Status of Safety Culture Initiatives and Schedule for Near-Term Deliverables,” dated December 21, 2005 (ADAMS Accession No. ML053550519).
