Enclosure 2

Definition and Traits of a Positive Safety Culture

Summary

The U.S. Nuclear Regulatory Commission's (NRC's) definition of safety culture and the identification of traits that describe a positive safety culture have evolved since the development of the draft safety culture policy statement published on November 6, 2009, in the *Federal Register*. Participants in the February 2010 workshop modified the original definition and characteristics, which were renamed "traits." Based on ongoing outreach activities and staff discussions, the staff modified the traits developed at the workshop to clarify them; however, the staff did not make any substantive changes. The staff published the definition and traits resulting from the workshop in the *Federal Register* on September 17, 2010, for a 30-day public comment period (although the staff considered comments received after October 18, 2010). The *Federal Register* notice (FRN) also contained the revised draft Statement of Policy.

November 2009 *Federal Register* Notice

The definition of safety culture in the November 2009 draft policy statement is based on the definition of safety culture put forward by the International Nuclear Safety Group (an advisory group of the International Atomic Energy Agency). The staff modified that definition to make it applicable to all NRC-regulated activities and to address security. The staff developed safety culture characteristics (i.e., high-level descriptions or attributes that contribute to a positive safety culture) based on a variety of sources, including the 13 safety culture components used in the Reactor Oversight Process. Additionally, the characteristics explicitly communicated the central role of security considerations and were intended to be generically applicable to the wide range of entities and activities the NRC regulates. Enclosure 7 of SECY-09-0075, "Safety Culture Policy Statement," dated May 18, 2009, provides an overview of the development of the draft safety culture characteristics. The draft safety culture policy statement provided the following definition of safety culture:

> The NRC defines safety culture as that assembly of characteristics, attitudes, and behaviors in organizations and individuals that establishes that, as an overriding priority, nuclear safety and security issues receive the attention warranted by their significance.

The draft statement identified the characteristics of a positive safety culture as summarized below:

- Problem Identification and Evaluation—The organization ensures that issues potentially impacting safety or security are promptly identified, fully evaluated, and promptly addressed and corrected commensurate with their significance.

- Work Practices—Personnel demonstrate ownership for nuclear safety and security in their day-to-day activities.

- Work Planning and Control—Processes for planning and controlling work activities are implemented such that safety and security are maintained.

- Continuous Learning Environment—The organization maintains a continuous learning environment in which opportunities to improve safety and security are sought out and implemented.

- Licensee Decision-making—The organization's decisions ensure that safety and security are maintained.

- Safety Conscious Work Environment—The organization maintains a safety conscious work environment in which personnel feel free to raise safety and security concerns without fear of retaliation.

- Accountability—Roles, responsibilities, and authorities for safety and security are clearly defined and reinforced.

- Resources—The organization ensures that the personnel, equipment, tools, procedures, and other resources needed to ensure safety and security are available.

February 2010 Workshop

Participants in the 3-day safety culture workshop held in February 2010 revised the definition of safety culture (http://www.nrc.gov/about-nrc/regulatory/enforcement/safety-culture.html). The 16 panelists who represented medical, industrial, and fuel cycle materials users, operating power plant licensees, the Nuclear Energy Institute, the Institute of Nuclear Power Operations, and members of the public, reached alignment on a definition with broad applicability. The workshop panelists also agreed on eight traits (originally called "characteristics") that describe a positive safety culture. Although many of these traits were similar to the original list of characteristics the staff provided in the 2009 FRN, there were some differences. The workshop participants developed the following definition of safety culture:

> 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.

The participants aligned on the following traits:

- Problem Resolution and Metrics—The organization ensures that issues potentially impacting safety or security are promptly identified, fully evaluated, and promptly addressed and corrected commensurate with their significance.

- Personal Responsibilities and Attitudes—Everyone is personally responsible for nuclear safety.

- Processes and Procedures—Processes for planning and controlling work activities are implemented such that safety is maintained.

- Continuous Learning—Organizational learning is embraced.

- Leadership Safety Behaviors—Leaders demonstrate commitment to safety.

- Encouraging Report of Problems—The organization maintains a safety conscious work environment in which personnel feel free to raise concerns without fear of retaliation.

- Effective Safety Communication—Effective communication is essential to maintain focus on safety.

- Respectful Work Environment—Trust and respect permeate the organization.

September 2010 *Federal Register* Notice

Following the February 2010 workshop, the staff evaluated the public comments received in response to the November 2009 FRN. Additionally, the staff participated on panels and made presentations at various industry forums in order to provide information to stakeholders about the development of the safety culture policy statement, obtain additional input, and ascertain whether the definition and traits developed at the February 2010 workshop accurately reflected the views of a broad range of stakeholders. The definition developed at the workshop was widely endorsed at industry forums and in the public comments. The NRC staff revised the workshop traits to make them clearer but made no substantive changes. Additionally, the staff added a preamble to the traits explaining what a trait is and noted that although the term "security" is not expressly included in the traits, consideration of both safety and security issues commensurate with their significance is an underlying principle of the Statement of Policy.

The FRN published on September 17, 2010, included the following revised draft definition:

> The Commission defines Nuclear Safety Culture as 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.

The FRN also included the following preamble before the revised traits:

> 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 vs. safety, schedule vs. safety, and cost of the effort vs. safety. 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.

The FRN listed the following traits of a positive safety culture:

- Leadership Safety Values and Actions—Leaders demonstrate commitment to safety in their decisions and behaviors.

- Problem Identification and Resolution—Issues potentially impacting safety are promptly identified, fully evaluated, and promptly addressed and corrected commensurate with their significance.

- Personal Accountability—All individuals are personally responsible for safety.

- Work Process—The process of planning and controlling work activities is implemented so that safety is maintained.

- Continuous Learning—Opportunities to learn about ways to ensure safety are sought out and implemented.

- Environment for Raising Concerns—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 Communication—Communications maintain a focus on safety.

- Respectful Work Environment—Trust and respect permeate the organization.

Proposed Final Safety Culture Policy Statement

At the September 28, 2010, public meeting in Las Vegas, NV, the staff specifically asked the participants to consider adding a trait addressing the importance of individuals and organizations performing regulated activities to have a questioning attitude. Participants expressed no specific support for or against this idea at the meeting. However, several comments in response to the November 2009 and September 2010 FRNs indicated that the policy statement should address the problem of complacency, and the staff agreed with that position. Therefore, the staff added “Questioning Attitude” as the ninth trait to address complacency more directly (i.e., by having a questioning attitude and challenging existing conditions, individuals can avoid complacency). The staff did not change the other traits, the definition of safety culture, or the preamble from the September 2010 FRN.