

Implementation

Conclusion

The NRC Program Offices responsible for the licensing and oversight of the regulated community will work with their constituents to address specific implementation issues. The “Tiers” chart at the end of this enclosure explains how implementation will be addressed in this process.

Before implementation issues are addressed, the program offices can work with the regulated community, the public, and other stakeholders as the regulated community begins assessing their activities to identify areas for enhancement. For example, community members could begin to identify tacit organizational and personal goals that, at times, may compete with a safety-first focus and develop strategies for adjusting those goals. Some monetary incentive or other rewards programs could work against making a safe decision. Current training programs may not adequately address safety culture and its traits or how those traits apply to day-to-day work activities. Identification of both strengths and weaknesses related to safety culture in the regulated community will be helpful in evaluating implementation strategies.

Office of Nuclear Reactor Regulation (NRR) Next Steps

Beginning in 1989, the NRC published two policy statements concerning safety culture at nuclear power plants. One describes the Commission’s expectations regarding the conduct of operations in control rooms; the second establishes the Commission’s expectation for maintaining a safety conscious work environment (SCWE) in which workers are able to raise nuclear safety concerns without fear. The Reactor Oversight Process (ROP) approach to addressing safety culture takes these policy statements into consideration. In 2003 the Davis-Besse reactor vessel head degradation event led to Commission direction that the staff should monitor efforts to develop objective measures that serve as indicators of possible problems with safety culture. Subsequently, on July 1, 2004, the staff issued SECY-04-0111 which proposed possible options for enhancing oversight of SCWE and safety culture. In response to this SECY, the Commission issued Staff Requirements Memorandum (SRM)-SECY-04-0111 on August 30, 2004, approving several options including to: (1) enhance the ROP treatment of cross-cutting areas to more fully address safety culture; (2) ensure inspectors were properly trained; and (3) develop a process for determining the need for conducting safety culture evaluations of plants in the Degraded Cornerstone Column of the ROP Action Matrix. Since 2006, the NRC’s oversight of safety culture for power reactors through the ROP has included guidance and procedures for inspecting and assessing aspects of licensees’ safety culture. In 2008, several additional changes to the guidance on oversight of safety culture in the ROP were developed as a result of lessons learned from the supplemental inspection conducted at Palo Verde. The staff believes that the current process for monitoring and assessing safety culture is effective within the established framework of the ROP.

The staff continues to enhance ROP guidance documents, as needed, based on lessons learned and stakeholder feedback. Although the staff believes that the existing program already fits within the framework of this policy statement, NRR will continue to work with internal and external stakeholders through the normal processes to be better aligned with the philosophy

and language of the proposed final policy statement and to consider insights from ongoing industry initiatives on safety culture.

Through the Nuclear Energy Institute (NEI) in partnership with the Institute for Nuclear Power Operations (INPO), the nuclear power industry pilot tested a broad initiative to monitor and improve its nuclear safety culture. Four nuclear power plants volunteered to participate in the industry's pilot application of the "Site Nuclear Safety Culture Process," documented in NEI 09-07, "Fostering a Strong Nuclear Safety Culture." NRR agreed to observe three key elements of the safety culture initiatives underway at the pilot plants. To date, NRC staff have observed all four of the pilot applications. Staff plans to observe a revision to the NEI 09-07 process at Hope Creek in February 2011, including the nuclear safety culture assessment process. NRR will continue to work with NEI and INPO to develop a common terminology of safety culture, where appropriate, during the implementation phase of the policy statement.

For research and test reactors (RTRs), the staff plans on addressing safety culture as part of the updates to existing procedures in order to incorporate safety culture guidance into its inspections of RTRs and its evaluation of inspection findings. The staff will seek stakeholder input on these updates. Similarly, NRR will continue to work with NRO, NMSS, and other internal and external stakeholders on inspection guidance to take into account safety culture as it applies to suppliers and vendors.

Office of New Reactors (NRO) Next Steps

NRO has worked closely with NRR in order to develop and implement an approach for documenting and evaluating aspects of safety culture during construction that are consistent with the ROP. This process for construction was documented by NRO in inspection manual chapter (IMC) 0613, "Documenting 10 CFR Part 52 Construction and Test Inspections," and IMC 2505, "Periodic Assessment of Construction Inspection Program Results" (similar to NRR IMC 0305 and IMC 0310). Subsequently, in response to Commission direction, NRO staff established an internal working group to evaluate and possibly revise these construction oversight processes, including how safety culture issues should be addressed. The construction oversight programs continue to go through revisions and evolutions which may result in additional revisions to these IMCs. NRO will await the Commission's final determination on the safety culture policy to look at its construction oversight program and evaluate the need for any necessary modifications to reflect the Commission's vision. Just as in the ROP, the office will learn from self-assessments it conducts and will ensure the appropriate measures are taken to adequately assess the safety culture at construction sites.

A key element to keep in mind is the challenges inherent to the roll-out of such a policy in the realm of construction vendors, given their vast numbers and variety of work capacity and organization. How the office looks at the efforts by the numerous vendors inspected will depend on a number of factors. This will be an ongoing effort that the office will need to resolve; however, there are venues and lessons learned that will be considered to ensure that the different vendor sites have positive safety cultures.

Office of Nuclear Material Safety and Safeguards (NMSS) Next Steps

After the Commission has acted on the proposed final Statement of Policy, NMSS will evaluate the oversight programs for fuel cycle facilities, independent spent fuel storage installations

(ISFSI), and cask vendors to identify appropriate means to incorporate safety culture into these programs. The staff's activities will include outreach to the affected licensees and certificate holders to understand measures already in place to develop and maintain a positive safety culture and how best to consider these activities in the oversight programs.

In recent months, the Commission has provided direction to staff on near-term activities related to revising the fuel cycle oversight process. The staff expects to provide a paper to the Commission in March 2011 comparing integrated safety analysis and probabilistic risk assessment methods in the context of fuel cycle facility oversight. In July 2011, the staff expects to provide the Commission a paper describing its development of safety cornerstones for fuel cycle facilities and providing recommendations for next steps in revising the fuel cycle oversight process. The staff will include in that paper recommendations for incorporating safety culture in the oversight process.

Regarding oversight of ISFSIs and cask vendors, in COMSECY-10-0007, "Project Plan for the Regulatory Program Review to Support Extended Storage and Transportation of Spent Nuclear Fuel," dated June 15, 2010, the staff proposes to perform comprehensive reviews and evaluations of the inspection and enforcement programs within the current regulatory program. In conjunction with the reviews proposed in COMSECY-10-0007, the staff will consider appropriate ways to incorporate safety culture in its oversight of these licensed activities. The timing of implementation will consider the integration of the waste confidence rulemaking (ref. SRM on SECY-09-0090, dated September 15, 2010) with the activities described in COMSECY-10-0007. NMSS proposes to conduct a thorough review of its regulatory oversight and enforcement programs in accordance with the Commission direction on the staff's proposed plan in COMSECY-10-0007. Following additional Commission input on this item and the overall agency safety culture direction, the staff will determine appropriate follow-up activities for all spent fuel storage and transportation certificate holders and licensees to ensure there is an effective implementation of a corrective action process that identifies, follows, and corrects conditions adverse to quality. This is especially true with regard to determining the cause of a problem and the elimination of both the problem's recurrence or the occurrence of a similar problem. NMSS could potentially modify the inspection requirements to review licensee and certificate holders' implementation of an effective safety culture program (ensuring a safety/quality conscious work environment).

Office of Federal and State Materials and Environmental Management Programs (FSME) Next Steps

After the final policy statement is complete, FSME will evaluate its oversight programs in light of the final policy statement. Although the policy statement is not a matter of compatibility, FSME will work with the Agreement States as FSME reviews the oversight programs for byproduct materials licensees.

As a first step, FSME is looking for ways to introduce safety culture into the NUREG-1556 series, "Consolidated Guidance about Materials Licenses," and the FSME revision to IMC 1246, "Formal Qualification Programs in the Nuclear Materials Safety and Safeguards Area." The latter document will be given a new number and will apply specifically to the byproduct materials program. Although FSME is looking for ways to introduce safety culture into these documents, addressing safety culture is not the primary reason for updating these documents. The work on these updates has begun. FSME is involving the Agreement States in these efforts so that the NRC can learn from the best practices in the Agreement States.

The update of the NUREG-1556 series is anticipated to take about three and one-half years. The first three volumes — portable gauges, fixed gauges, and industrial radiography — are scheduled to be completed in early 2011. The extent to which safety culture is introduced into any particular volume of the NUREG-1556 series will be influenced by the timing of its completion and the Commission action on the proposed final policy statement. We will continue to learn as we update the different volumes of the NUREG-1556 series and will have more time to look at how best to introduce safety culture into guidance in light of the final policy statement. Although we may be able to include more detail on safety culture as we work on the subsequent volumes, FSME will make other changes, as appropriate, in its oversight programs and future updates to these documents consistent with the outcomes from FSME's longer-term efforts to evaluate its oversight of byproduct materials licensees.

TIERS

