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NRC Safety Culture Activities

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Presentation Overview

- Background information (http://www.nrc.gov/about-nrc/regulatory/enforcement/safety-culture.html)
- Safety culture policy statement development
- NRC safety culture components
- Activities in the reactor area
  - Reactor Oversight Process (ROP) for operating reactors
  - New reactor construction oversight
- Activities in the materials area
  - Fuel cycle facilities safety culture pilot
- Internal (NRC) safety culture initiative

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NRC's Definition of Safety Culture

"Safety Culture is that assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear safety issues receive the attention warranted by their significance"

Adopted from the IAEA's International Nuclear Safety Advisory Group (INSAG)

What Caused NRC to Increase Attention on Safety Culture?

- Davis-Besse reactor vessel head degradation event in 2002

See http://www.nrc.gov/reactors/operating/ops-experience/vessel-head-degradation.html

- Commission directed staff to enhance Reactor Oversight Process to more fully address safety culture

See SECYs/SRMs 04-0111, 05-0187, and SECY 06-0122 http://www.nrc.gov/reading-rm/doc-collections/commission/secys/, and http://www.nrc.gov/reading-rm/doc-collections/commission/srm/

Safety Culture Policy Statement

February 2008 Commission direction* to

- expand the Commission's policy of safety culture to address the unique aspects of security
- ensure the resulting policy is applicable to all licensees and certificate holders

*Staff Requirements-COMGBJ-08-0001, "A Commission Policy Statement on Safety Culture":
http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2008/2008-0001comgbjsrm.pdf

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Safety Culture Policy Statement

- Established an inter-office task group and steering committee
- Currently conducting information collection, review, and analysis
- Stakeholder outreach
  - January 28, 2009 public workshop materials available at: http://www.nrc.gov/public-involve/public-meetings/index.cfm?fuseaction=Search.Detail&MC=20080837&NS=0&CFID=266470&CFTOKEN=61320445
- Draft policy statement(s) to be provided to the Commission in FY'09 3rd quarter

Development of NRC Safety Culture Components

- Establishment of an agency Safety Culture Working Group
- The group developed a set of 13 Safety Culture Components by:
  - Evaluating information on attributes and elements of safety culture from various sources
  - Screening information to ensure applicability
  - Engaging stakeholders
- "Aspects" under each component provided as examples
  - Will be modified for different environments

NRC's Safety Culture Components

- Decision-making
- Resources
- Work control
- Work practices
- Corrective action program
- Operating experience
- Self and independent assessments
- Environment for raising safety concerns
- Preventing, detecting, and mitigating perceptions of retaliation
- Accountability
- Continuous learning environment
- Organizational change management
- Safety policies

Note: These components will potentially change as part of the Safety Culture Policy Statement effort.

See the Appendix to NRC Regulatory Information Summary 2006-13 for a full description of the components:
http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2006/ri200613.pdf

2006 Revisions to the Reactor Oversight Process

Reactor Oversight Process revised in 2006 to more fully address safety culture

- Safety culture components incorporated into ROP
- Inspection findings evaluated for weaknesses related to safety culture components
- Structured process for assessing results
  - Threshold for number of findings with the same cause
  - Consideration of licensee scope of effort
  - Options for agency actions

2006 Revisions to the Reactor Oversight Process - continued

Graded response to plant performance issues in supplemental inspection program

1. Verify the licensee's evaluation appropriately considered all the safety culture components

2. Independently determine whether weakness in a safety culture component was a root or contributing cause

3. Review the licensee's third party safety culture assessment AND conduct the NRC's independent assessment of safety culture

Detailed information on the changes provided in NRC Regulatory Information Summary 2006-13
http://www.nrc.gov/reading-rm/doc-collections/gen comm/reg-issues/2006/ri200613.pdf

2006 ROP Safety Culture Enhancements

Resources

- Described in Regulatory Issues Summary 2006-13
- Inspection Manual Chapters 0305 (ROP Assessment) and 0612 (Inspection Report Documentation)
- Inspection Procedures 71152 (Problem Identification and Resolution), 71153 (Event Follow-up), 93800 (Augmented Inspection Team) and 93812 (Special Inspection)
- IP95001 (One or Two White Inputs in a Strategic Performance Area), 95002 (One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area)
- IP95003 (Supplemental Inspection for Repetitive Degraded cornerstones, Multiple Degraded cornerstones, Multiple Yellow Inputs, or One Red Input)

Documents available at (see June 26, 2008 issuance and final IP95003):
http://www.nrc.gov/about-nrc/regulatory/enforcement/safety-culture.html
and the RIS 2006-13 http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2006/

Licensee Safety Culture Voluntary Self- Assessments

- Licensees are performing periodic voluntary self-assessments in accordance with INPO SOER 02-04, “Reactor Pressure Vessel Head Degradation at Davis-Besse Nuclear Power Station” and Institute of Nuclear Power Operations (INPO) “Principles for a Strong Nuclear Safety Culture”

- There are no regulatory requirements for licensees to perform safety culture self-assessments on a routine basis.

Trigger Points for NRC to Ask Licensee to Perform a Safety Culture Assessment

- Based on the same substantive cross-cutting issue (SCCI) with the same cross-cutting aspect documented in 3 consecutive assessment cycle letters; may ask licensee to perform a safety culture self-assessment.

- Based on licensee position in Action Matrix: following IP95002 inspection may ask licensee to perform an independent safety culture assessment (if the 95002 inspection identifies, and the licensee did not recognize, that one or more safety culture component deficiencies caused or significantly contributed to the risk-significant performance issues). And before IP95003 expect licensee to perform a third party safety culture assessment.

2006 Revisions to the Reactor Oversight Process - Initial Implementation Review

- Agency committed to performing assessment of the initial 18-month implementation period
- Staff has reviewed results to identify and develop revisions to ROP guidance documents.

Summary of interim assessment results available at (see April 17, 2008 and May 14, 2008 meeting documents): http://www.nrc.gov/about-nrc/regulatory/enforcement/safety-culture.html

NRC Changes Underway

- Issued revised IP95003: graded NRC safety culture assessment
- Issued revised IMC0305: additional tools for follow-up of repetitive SCCIs

See issued documents at: http://www.nrc.gov/reading-rm/doc-collections/insp-manual/manual-chapter/index.html and http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html

- IMC0305: staff is discussing possible changes to safety culture components and aspects
- IP71152: staff will provide additional guidance for follow-up of licensee independent safety culture assessment performed in response to NRC request

Changes Underway - continued

- Industry developing standardized safety culture assessment guidelines
- Industry developing objective safety culture performance metrics and site assessment protocol

See the NEI White Paper in NRC Agencywide Document s Access and Management System (ADAMS) ML083540518

NRC Inspection of Safety Culture

- NRC reviews the licensee's third party safety culture assessment and conducts a graded assessment of licensee safety culture during IP95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input"

IP95003 Safety Culture Assessment (SCA) changes

- Shift of focus to evaluate licensee 3rd party safety culture assessment first to inform NRC safety culture assessment
- Determine scope NRC safety culture graded assessment activities, based on evaluation of licensee's 3rd party assessment
  - Range from limited activities to full NRC independent safety culture assessment

IP95003 SCA draft changes - continued

- If weaknesses not identified with 3rd party methods/qualifications, focus will be on licensee response
- Evaluate licensee progress in:
  - Performing evaluation of assessment results
  - Identifying appropriate corrective actions
  - Developing action plans
  - Implementing corrective actions

IP95003 SCA draft changes - continued

- If weaknesses with comprehensiveness, conduct targeted assessment activities focusing on:
  - Groups/levels not sufficiently covered or inadequately sampled
  - Safety culture components inadequately covered
- If weaknesses with methodology/qualification, conduct sampling activities to evaluate consistency of results
- Results used to adjust scope of graded assessment as needed
  - Up to full NRC independent safety culture assessment

New Reactor Construction Oversight – Safety Culture Initiative

- Office of New Reactors established a Safety Culture Task Group (completed)
- Internal review of safety culture components and aspects for applicability (completed)
- Review and modify selected aspects of safety culture components to capture the unique characteristics of the new construction environment (on-going)
- Stakeholder outreach through public meetings

Summary of new reactor information available at (see April 2, 2008 and May 13, 2008 meeting documents):

http://www.nrc.gov/about-nrc/regulatory/enforcement/safety-culture.html

NMSS Safety Culture Pilot

- Office of Nuclear Materials Safety & Safeguards (NMSS)'s Safety Culture Pilot
- Pilot objective
  - Determine how to enhance the current Fuel Cycle Oversight Program for addressing safety culture
- Pilot activities
  - Completed information gathering and analysis on current NRC & licensee programs/processes relative to safety culture components
  - Insights being evaluated for potential incorporation into oversight program
- Information available at: http://www.nrc.gov/about-nrc/regulatory/enforcement/safety-culture.html (see June 17-19, 2008 meeting materials)

Internal Safety Culture Initiative

April 2008 Commission direction to:

- Continue to look for ways to increase awareness of safety culture internally
- Provide the Commission with potential initiatives that could improve the agency's internal safety culture
- Identify best practices currently used across the agency

Internal Safety Culture Initiative

Approach:

- Task Force stand-up (completed)
- Research and data gathering (completed)
  - Consideration of current agency activities for external (licensee) safety culture
  - Focus groups & interviews
  - Benchmarking – internal & external
  - Communications & outreach
    - December 4, 2008 public meeting information available at:

    http://www.nrc.gov/about-nrc/regulatory/enforcement/safety-culture.html
- Analysis and integration (in progress)
- Report writing and communications
- Target completion date: by April 2009

Conclusions

- NRC safety culture activities occurring in several areas
- Efforts made to leverage progress from the Reactor Oversight Process safety culture enhancements
- Stakeholder interactions and engagement important in all areas
- To stay informed, visit NRC's Safety Culture Webpage: http://www.nrc.gov/about-nrc/regulatory/enforcement/safety-culture.html