



REGULATORY OVERSIGHT  
OF  
SAFETY CULTURE IN THE  
REACTOR OVERSIGHT PROCESS

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# Commission Direction

- To strengthen our process, in conjunction with industry efforts, to better address weaknesses in safety culture before they manifest themselves in significant safety concerns.
- Enhance the Reactor Oversight Process (ROP) treatment of cross-cutting issues to more fully address Safety Culture;
- Develop a process for determining the need for a specific safety culture evaluation of plants in a degraded cornerstone and a process for conducting the evaluation
- Follow the established processes for revising the ROP, in particular the process for involving stakeholders
- Ensure inspectors are properly trained in the area of safety culture;

# Objectives of the Safety Culture Initiative

- To strengthen our process, in conjunction with industry efforts, to better address weaknesses in safety culture before they manifest themselves in significant safety concerns.
- To do the above while remaining within the framework of the Reactor Oversight Process (ROP) and guided by the basic regulatory principles of the ROP.

# Safety Culture Initiative

- During frequent public meetings from October 2005 to February 2006, NRC staff and external stakeholders:
  - Discussed the definition of safety culture
  - Discussed the safety culture components
  - Developed an approach to enhance the NRC oversight of safety culture

# Safety Culture Definition

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

\*Adopted from the IAEA’s International Safety Advisory Group (INSAG) as presented in the 1991 INSAG-4 publication

# Development of the NRC's Safety Culture Components

- Goal: identify what is important to safety culture
- Information compiled from industry and international sources and staff knowledge and experience
- Information screened/ revised to ensure:
  - Is within NRC's regulatory jurisdiction
  - Is readily available or applicable to most licensees
  - Is unambiguous

# Safety Culture Components

## CROSS-CUTTING AREA COMPONENTS

- Human Performance
  - Work Control
  - Work Practices
  - Decision-Making
  - Resources
  
- Problem Identification & Resolution
  - Operating Experience
  - Corrective Action Program
  - Self- and Independent Assessments
  
- Safety Conscious Work Environment
  - Environment for Raising Concerns
  - Preventing and Detecting Retaliation

# Safety Culture Components (cont.)

- Supplemental Inspection Program Safety Culture Components - The 9 cross-cutting area components plus:
  - Accountability
  - Continuous Learning Environment
  - Organizational Change Management
  - Safety Policies

# What Changed in the Baseline Inspection and Assessment Programs?

- The three cross-cutting areas of human performance, problem identification and resolution, and safety conscious work environment remain; however they were adjusted to more closely align with what is important to safety culture, through the cross-cutting area components.
- The SCWE cross-cutting area was adjusted to more fully align with the other cross-cutting areas.
- The Identification and Resolution of Problems inspection procedure (IP 71152) was enhanced to address aspects of safety culture.
- The assessment program provides an option for requesting a licensee to conduct a safety culture self-assessment related to the recurrence of the same substantive cross-cutting issue.

# IMC0305 Bins vs Components

| Cross-cutting Area                  | Previous: Bins  | New: Components  |
|-------------------------------------|---|--|
| Problem Identification & Resolution | <ul style="list-style-type: none"> <li>■ Identification</li> <li>■ Evaluation</li> <li>■ Corrective Action</li> </ul> | <ul style="list-style-type: none"> <li>■ Corrective Action Program</li> <li>■ Assessments</li> <li>■ Operating Experience</li> </ul>                             |
| Human Performance                   | <ul style="list-style-type: none"> <li>■ Personnel</li> <li>■ Resources</li> <li>■ Organization</li> </ul>            | <ul style="list-style-type: none"> <li>■ Decision Making</li> <li>■ Resources</li> <li>■ Work Control</li> <li>■ Work Practices</li> </ul>                       |
| Safety Conscious Work Environment   | <ul style="list-style-type: none"> <li>■ None</li> </ul>  | <ul style="list-style-type: none"> <li>■ Environment for Raising Concerns</li> <li>■ Preventing, Detecting, and Mitigating Perceptions of Retaliation</li> </ul> |

# What is a Cross-Cutting Aspect?

- Cross-cutting aspects are the performance characteristics that comprise the cross-cutting area components.
- The cross-cutting aspects are described in IMC 0305, “Operating Reactor Assessment Program,” Section 06.07.c.

# Example

- Each of the following bullets are different cross-cutting aspects of the Corrective Action Program (CAP) cross-cutting area component.
  - The licensee implements a corrective action program with a low threshold for identifying issues. The licensee identifies such issues completely, accurately, and in a timely manner commensurate with their safety significance.
  - The licensee periodically trends and assesses information from the CAP and other assessments in the aggregate to identify programmatic and common cause problems. The licensee communicates the results of the trending to applicable personnel.

## Example (cont.)

- The licensee thoroughly evaluates problems such that the resolutions address causes and extent of conditions, as necessary. This includes properly classifying, prioritizing, and evaluating for operability and reportability conditions adverse to quality. This also includes, for significant problems, conducting effectiveness reviews of corrective actions to ensure that the problems are resolved.
- The licensee takes actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity.
- If an alternative process (i.e., a process for raising concerns that is an alternate to the licensee's CAP or line management) for raising safety concerns exists, then it results in appropriate and timely resolution of identified problems.

# Substantive Cross-Cutting Issue (SCCI) in Human Performance & PI&R

- Are there more than 3 similar findings in the current 12-month assessment period?
- Is there an underlying theme (i.e., more than 3 inspection findings with causes that share the same cross-cutting aspect)?
- Does the staff have a concern with the licensee's scope of effort or progress in addressing the issue?

# SCCI Assessment for SCWE - New

- The licensee has received a chilling effect letter; **OR**
- There is an inspection finding in the current 12-month assessment period with a documented cross-cutting aspect in the area of safety conscious work environment (SCWE); **OR**
- The licensee has received correspondence from the NRC which transmitted an enforcement action with a severity level of I, II, or III, and which involved discrimination, or a confirmatory order which involved discrimination.

## SCCI Assessment for SCWE – New (cont.)

- Additionally, both of the following criteria must be met in order to have a substantive cross-cutting issue in SCWE:
  - The associated impact on safety conscious work environment was not isolated, **AND**
  - The Agency has a concern with the licensee's scope of efforts or progress in addressing the individual and collective performance deficiencies that satisfied the previous criteria for SCWE.

# Changes to IP 71152

- Requirements and related guidance:
  - inspector awareness of safety culture components when selecting inspection samples
  - clarified inspection for evaluating operating experience, alternative processes for raising concerns, SCWE, and self assessments/audits
  - if performed, review a licensee's self assessment or independent assessment of safety culture

## Changes to IP 71152 (cont.)

- Requirements and related guidance (cont.):
  - expanded documentation instructions (in IMC 0612, App. D) to address all components of PI&R
  - enhanced description of problems that may impact a SCWE
  - improved the SCWE questions in Appendix 1

# What Changed in the Supplemental Inspection Program?

- The event response inspection procedures (IP 71153, 93812, 93800) were enhanced to allow inspectors to take the safety culture components into consideration.
- For licensees in the Regulatory Response Column of the ROP Action Matrix, IP 95001 was enhanced to consider safety culture components.
- Provided a structured way (IP 95002) of determining the need for a plant in the Degraded Cornerstone to conduct a safety culture evaluation.
- Provided a process (IP 95003) for the NRC to independently evaluate the licensee's independent assessment of safety culture and to conduct an assessment of the licensee's safety culture for plants in the Multiple/Repetitive Degraded Cornerstone.

# Summary-Safety Culture Assessments

- Recurring Substantive Cross-Cutting Issues;
- Licensee in the Degraded Cornerstone Column of the Action Matrix and IP 95002 identifies licensee did not recognize role of safety culture component deficiencies;
- Licensee in the Multiple/Repetitive Degraded Cornerstone Column

# Ongoing Staff Activities

- Formation of ROP Safety Culture Focus Team
- Formation of SCWE Findings Review Group
- Monthly ROP public meetings with industry
- 18 Month initial implementation phase

# References

- <http://www.nrc.gov/what-we-do/regulatory/enforcement/safety-culture.html>
- SECY/SRM 04-0111, 05-0187, and SECY-06-0122
- RIS 2006-13