

## **Summary of NRC Public Meeting on Safety Culture Initiatives December 15, 2005**

The U.S. Nuclear Regulatory Commission (NRC) staff made several presentations at this meeting. These presentations and related discussions are summarized below. The presentation slides are available on the NRC safety culture website at: <http://www.nrc.gov/what-we-do/regulatory/enforcement/safety-culture.html>.

### Introduction

NRC's goals for success for this meeting were to reach a mutual understanding regarding the enhancements to the Reactor Oversight Process (ROP) based on the approach (Option G) developed at the November 30 public meeting; a possible framework and acceptance criteria for an evaluation test of the approach; and to reach agreement on the next steps.

Since the November 29-30th meeting, the NRC staff and stakeholders have reached agreement on the objectives and scope of the initiatives on safety culture and convergence on the NRC's use of the INSAG-4 definition of safety culture, which is closely aligned with the Institute of Nuclear Power Operation (INPO) definition. The staff and stakeholders have also reached general agreement on what's important to safety culture in terms of attributes and components. The staff will accept and consider any comments on the description of the components of safety culture that have been developed. In addition, since the November 29-30th meeting, option "G" has been further developed. In implementing any changes to inspection procedures and processes, opportunities for input will be provided to stakeholders. The staff plans to conduct a demonstration using plant data to see the results of proposed changes and expect to have interactions with the stakeholders throughout the development process.

### NEI Narrative Summary of Option G

The industry expressed general encouragement about option "G" and considered it to be a combination approach developed by various stakeholders and the NRC staff. A NEI representative presented the industry narrative of the option. One of the fundamental principles of the narrative is recognizing what the industry is doing in the area of safety culture. Also, the narrative uses a graded approach, with heightened focus on cultural aspects as plants move across the Action Matrix, and with NRC oversight of licensee assessments. Under this approach, the industry did not believe that the baseline inspection program would be changed in a fundamental way, and the criteria for a substantive cross cutting issue would stay the same. Several industry representatives felt that a mutual understanding was needed between the stakeholders' and the staff's interpretations of the approach with regard to the treatment of safety culture in the cross-cutting areas.

In response the NRC staff provided a summary of issues for further discussion (at this meeting or at a later point): e.g., which components fall under each of the cross-cutting areas, how substantive cross cutting issues should be treated, the time frame for clearing substantive cross cutting issues, appropriate event response activities, what constitutes third party and independent assessments, how the allegation process should input into the assessment process, and if and how everyday aspects of inspector activities should be incorporated.

### Proposed Enhancements to the Assessment Process

The NRC staff's presentation discussed the current ROP process and proposed changes under option "G." Under the proposed approach, the framework of Manual Chapter (MC) 0305, "Operating Reactor Assessment Program," would remain largely unchanged, the cross-cutting areas would be more closely aligned to what is important to safety culture, and outputs from the allegation and traditional enforcement process would be used as inputs into the assessment process. The staff presented the existing criteria for determining substantive cross-cutting issues:

Table 1: Existing criteria for cross-cutting issues.

When they have identified a finding, the inspectors need to determine if the causes of the

| <b>PROBLEM IDENTIFICATION &amp; RESOLUTION</b>                                                                                                                                                                                     | <b>HUMAN PERFORMANCE</b>                                                                                                                                                                                                           | <b>SAFETY CONSCIOUS WORK ENVIRONMENT</b>                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Identification</li> <li>• Evaluation</li> <li>• Corrective Action</li> </ul>                                                                                                              | <ul style="list-style-type: none"> <li>• Personnel</li> <li>• Resources</li> <li>• Organization</li> </ul>                                                                                                                         | <p>"An environment in which employees feel free to raise safety concerns ... without fear of retaliation."</p>                                        |
| <p>More than 3 findings with this aspect</p> <p>AND</p> <p>The causal factors have a common theme.</p> <p>AND</p> <p>The NRC has a concern with scope of efforts or progress in addressing this area's performance deficiency.</p> | <p>More than 3 findings with this aspect</p> <p>AND</p> <p>The causal factors have a common theme.</p> <p>AND</p> <p>The NRC has a concern with scope of efforts or progress in addressing this area's performance deficiency.</p> | <p>The agency has previously engaged the licensee via a meeting or docketed correspondence regarding a potential or actual SCWE concern or issue.</p> |

performance deficiency has a nexus to any of the cross cutting areas as they do today. The current bins under the cross cutting area were put in place about a year ago to improve consistency. The NRC recognizes the need to better articulate the exit criteria for licensees with substantive cross cutting areas in the planned approach. For sites with repetitive substantive cross cutting issues (two assessment periods with the same cross cutting areas), the NRC has several options to take, such as discussing the issue at the annual public meeting, asking the licensee for their plans to address the issue, or conducting a separate public meeting. Any changes made to the cross cutting areas will be reviewed during ROP self-assessments. The staff then presented proposed components in the cross-cutting areas and proposed criteria for substantive cross-cutting issues:

Table 2: Proposed components in the cross-cutting areas.

| <b>PROBLEM IDENTIFICATION &amp; RESOLUTION</b>                                                                                                           | <b>HUMAN PERFORMANCE</b>                                                                                                                   | <b>SAFETY CONSCIOUS WORK ENVIRONMENT</b>                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Corrective Action Program</li> <li>• Operating Experience</li> <li>• Self and Independent Assessment</li> </ul> | <ul style="list-style-type: none"> <li>• Decision Making</li> <li>• Resources</li> <li>• Work Control</li> <li>• Work Practices</li> </ul> | <ul style="list-style-type: none"> <li>• Preventing and Detecting Retaliation</li> <li>• Willingness to Raise Concerns</li> </ul> |

Table 3: Proposed criteria for substantive cross-cutting issues.

| <b>PROBLEM IDENTIFICATION &amp; RESOLUTION</b>                                                            | <b>HUMAN PERFORMANCE</b>                                                                                  | <b>SAFETY CONSCIOUS WORK ENVIRONMENT</b>                                                                  |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| More than 3 findings with this aspect                                                                     | More than 3 findings with this aspect                                                                     | Any item* with this aspect                                                                                |
| AND                                                                                                       | AND                                                                                                       | AND                                                                                                       |
| The causal factors have a common theme.                                                                   | The causal factors have a common theme.                                                                   | The NRC has a concern with scope of efforts or progress in addressing this area's performance deficiency. |
| AND                                                                                                       | AND                                                                                                       |                                                                                                           |
| The NRC has a concern with scope of efforts or progress in addressing this area's performance deficiency. | The NRC has a concern with scope of efforts or progress in addressing this area's performance deficiency. |                                                                                                           |

In this context, "item" includes any of the following:

- An inspection finding with a cross-cutting aspect in safety conscious work environment;
- A chilling effect letter; or
- An enforcement action involving discrimination.

There are additional components of safety culture that would be considered under the supplemental inspection program: continuous learning environment, safety conscious work environment policies, safety policies, accountability, and organizational change management.

Stakeholders commented on the proposed changes under the safety conscious work environment cross-cutting area. Some stakeholders did not agree with the proposed criteria, where only one finding with a safety conscious work environment cross-cutting aspect would

trigger review of the area. Comments were also made about the other items that would feed into the safety conscious work environment cross-cutting area, including allegations and enforcement actions, and the time frames involved for some of these inputs. The staff agreed to review the wording for the proposed changes under safety conscious work environment and to clarify its intentions to address the issues discussed.

#### Proposed Triggers for Self- or Independent Assessment Requests/Requirements

For the degraded cornerstone column of the action matrix, the NRC would have an option to request that a licensee do an assessment first and put together the performance improvement plan before the NRC would do its assessment. The guidance is non-prescriptive and gives the NRC flexibility on timing for the assessment. NRC always has to consider the special set of circumstances, and put together the specific inspection plan. Philosophically, the NRC wants to follow the licensee actions. One participant suggested that providing insights for root and contributing causes to the performance problem should be the main thrust of the assessment – the root cause search should include safety culture. NRC staff said they would consider the comment. In the multiple/repetitive cornerstone column, the NRC would require that the licensee conduct an independent assessment of its safety culture and NRC could also conduct an independent evaluation of the licensee's safety culture.

#### Proposed Procedural Enhancements

NRC staff presented proposed procedural enhancements (presentation slides are available on the web at: <http://www.nrc.gov/what-we-do/regulatory/enforcement/sc-lerch-121505.pdf>). Staff stated that the NRC's proposed review of INPO Significant Operating Experience Report SOER-02-04 based self-assessments would be within the bounds of the NRC/INPO Memorandum of Agreement. Staff further stressed that NRC would not look at the self-assessments or external assessments as score cards. Rather, the intent would be to make sure that licensees are following up on findings from the assessment. An example of an enhancement is that inspectors currently have an *option* to look at a licensee's "alternative process for raising concerns," in the enhanced process, the inspectors would be *required* to look at it. Staff pointed out that in addition to the procedures identified in the presentation, others may eventually be identified as needing changes. The ROP basis document would also need to be updated.

One participant asked for clarification of the enhanced inspection procedure for follow-up immediately after an event. NRC staff explained that the goal of the event follow-up inspection is to quickly capture items that need later follow-up rather than performing a root-cause at that time, and that the intent of the enhancement would be to amplify guidance to capture things important to safety culture.

#### "Option G" Evaluation Test

NRC staff presented a proposed framework and acceptance criteria for an "Option G" evaluation test (presentation slides are available on the web at: <http://www.nrc.gov/what-we-do/regulatory/enforcement/sc-hagar-121505.pdf>). The presenter pointed out that staff were in the early stages of planning, and some things had not been decided yet, e.g., (on slide 4) how many is "several," what is "representative," or what is an appropriate time period to consider. In addition, historical data may need to be supplemented because in the past, inspectors did not

have today's guidance on cross-cutting issues, i.e., cross-cutting issues may not have been tagged for findings. The acceptance criteria should give us some confidence going forward.

There was extensive discussion on the test. NRC staff asked participants to share any ideas about how we can measure the success of the evaluation test. The following were proposed as goals, or measures of success:

- q If we can bin the findings that would tell us one thing; if we find things we cannot fit in anywhere, that would point to NRC guidance being inadequate.
- q The supposed premise is to identify safety culture issues prior to them becoming a performance issue. Staff reminded everyone however that NRC would not make assessments of safety culture except in the inspection procedure 95003 in response to multiple/repetitive degraded cornerstone(s).
- q A link needs to be made that shows by identifying certain elements of safety culture, we can detect warning signs of a declining safety culture.
- q One question for the test is, can we implement the approach consistently? Will different people doing the binning come up with the same answers?
- q Another question is ultimately, does it work? It will be difficult to provide an answer because we already know the results (e.g., of Davis Besse); this is one of the classic challenges.

Several participants had various suggestions for the test:

- q Knowing a plant is bad ahead of time biases you... while not absolutely necessary, consider doing some blind binning of inspection findings to the extent you can.
- q At a minimum, the test should look at: (1) the case of Davis Besse, (2) the case of Salem and Hope Creek, (3) the case of a plant that is green all the time.
- q One participant pointed out that the problem with testing current plants is if the test uncovers a safety culture issue, a stakeholder can submit a 10 CFR 2.206 petition the next day for NRC to do a safety culture assessment.
- q How could we test the "how many consecutive letters" trigger question? We could try to use IMC 0305 and assess that retrospectively.
- q Primary concern raised today was about binning, so that should definitely be a part of the test. But some participants do not think the binning should change. The fundamental question is, can the binning be changed, and should it? Is the NRC staff outside the scope of the Commission charter or not?
- q There are concerns about proceeding with the test before finalizing the process. Another way to view it, is the test should help flesh out the process that should be used; e.g., if all green findings get binned, will we end up with 500 cross-cutting issue findings?
- q An NRC staff member explained that we can not go back before January 2004 because the process was so different. After January 2005, the new system was in place; but we can not be too current either.

### Summary and Actions for the Next Public Meeting

Issues that were sufficiently addressed at the meeting included event response and how it ties into the proposed approach, independent assessment and what independence means. NRC staff are committed to making sure stakeholders understand the allegation process better.

There was general agreement that the group was converging on the *approach* for degraded and multiple/repetitive degraded cornerstone columns, but not necessarily for (1) the approach for the regulatory response column, or (2) what the final cross-cutting area bins should be.

Actions:

- In order to clarify the issue of cross-cutting areas, and differences between the old and new approaches, and differences between industry's narrative on Option G and what the NRC staff has in mind:
  - < NRC staff could come up with an example and showed how that would be treated under current approach vs. the suggested approach. The example would incorporate necessary assumptions so we can see how the binning is done, and how the cross-cutting issues would be rolled up in the assessment.
  - < NRC staff will work on a high-level narrative of the proposed option and provide this to participants in sufficient time to get comments before the next public meeting. NRC should decide what their day-to-day involvement on safety culture would be and clarify this in the narrative.
  - < NRC staff will consider sharing the delta document that shows which safety culture components are treated in current ROP inspections and which are not (or are touched only indirectly).
- NRC will propose dates for the next two or three meetings, in order to get back to a cycle of scheduling meetings and providing relevant materials sufficiently ahead of time for meeting participants.
- NRC staff will make draft revisions to procedures and share them with stakeholders and get comments probably by the end of January, with a follow-up meeting in mid-February. The hope is to get comments on procedure changes in a matter of weeks so NRC can look to exercising the test in parallel with comments. The NRC would enter the formal procedure revision process after the meeting.
- Industry will provide the NRC written comments on the proposed safety culture components and the cross-cutting issues approach.
- The NEI representative will follow-up with the industry human performance group to see what they think about how cross-cutting issues fall in that area (the NRC's narrative will help clarify that), and what are the right sub-components/bins for human performance.

## Acronyms and Abbreviations

|       |                                                     |
|-------|-----------------------------------------------------|
| ADR   | Alternative Dispute Resolution                      |
| CAP   | Corrective Action Program                           |
| CCA   | Cross-Cutting Area (in ROP)                         |
| IAEA  | International Atomic Energy Agency                  |
| IMC   | Inspection Manual Chapter                           |
| INPO  | Institute of Nuclear Power Operations               |
| IP    | Inspection Procedure                                |
| NEI   | Nuclear Energy Institute                            |
| PI    | Performance Indicator                               |
| PI&R  | Problem Identification and Resolution               |
| ROP   | Reactor Oversight Process                           |
| SCART | Safety Culture Assessment Review Team (of the IAEA) |
| SCWE  | Safety-Conscious Work Environment                   |
| SRM   | Staff Requirements Memorandum                       |
| SSC   | Structure, system, and component                    |