



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
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September 7, 2023

MEMORANDUM TO: Michael F. King, Deputy Director  
Office of Nuclear Reactor Regulation

FROM: Russell N. Felts, Director  Signed by Felts, Russell  
Division of Reactor Oversight on 09/07/23  
Office of Nuclear Reactor Regulation

SUBJECT: DISPOSITIONING OF SAFETY CULTURE PROGRAM  
EFFECTIVENESS REVIEW RECOMMENDATIONS

The purpose of this memorandum is to document the recommendations that the agency plans to implement in the near term regarding the Safety Culture Program Effectiveness Review. In calendar year (CY) 2022, the Nuclear Regulatory Commission (NRC) staff completed an effectiveness review of the safety culture program under the Reactor Oversight Process (ROP). The results of the review, along with recommendations for program improvement, were documented in a publicly available report issued on March 20, 2023 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22340A452). The review was conducted as part of the ROP self-assessment process prescribed in Inspection Manual Chapter (IMC) 0307, "Reactor Oversight Process Self-Assessment Program," dated April 07, 2023 (ML23026A246). The working group for this effort performed document reviews, data analysis, and provided multiple briefings to both internal and external stakeholders throughout the review. All feedback was considered in the development of the working group recommendations listed below:

Recommendation 1: IMC 0305, "Operating Reactor Assessment Program," and Inspection Procedure (IP) 95001, "Supplemental Inspection Response to Action Matrix Column 2 (Regulatory Response) Inputs," should be updated to allow for an independent NRC evaluation of safety culture for plants in Column 2 of the ROP Action Matrix if the circumstances warrant. This would not necessarily constitute requiring the licensees to perform an independent third-party safety culture assessment. It would provide for independent NRC consideration of the need for sampling and assessing safety culture.

Recommendation 2: Improve the training available to inspectors to better meet Commission objectives stated in SRM-SECY-04-0111. (Note that steps are already in process that will support this recommendation, as the Office of Nuclear Reactor Regulation (NRR) has a User Need open with the Office of Nuclear Regulatory Research (RES) to enhance training on safety culture based on review of ongoing inspector feedback and projected workload needs.)

CONTACT: Philip J. McKenna, NRR/DRO  
301-415-0037

Molly J. Keefe-Forsyth, NRR/DRO  
301-415-5717

Recommendation 3: IP 93100, "Safety-Conscious Work Environment Issue of Concern Followup," should be revised to cover all aspects of safety culture, in addition to Safety Conscious Work Environment. This will provide the NRC with a tool that can be used for following up on safety culture concerns to encourage meaningful action before licensees are assessed in Column 3 of the ROP Action Matrix.

The team developed three options for Recommendation Three:

- a. IP 71152, "Problem Identification and Resolution (PI&R)," review of specific safety culture attributes should be expanded with a reference to the revised IP 93100 to provide guidance for a more comprehensive review of safety culture as necessary. Considerations already factored into resource allocations for PI&R inspections, including review of data trends and inspector observations, should add consideration for including a qualified safety culture assessor on the team if warranted. The team estimates that this option would be essentially resource neutral.
- b. Adjustments should be made to the existing inspection framework to allow for safety culture assessment when indicated using the revised IP 93100 procedure. This would leave IP 93100 as an App. C procedure, available for use at Regional Administrator (RA) discretion using criteria to be developed separately if this option is chosen. IP 93800, "Augmented Inspection Team," and IP 93812, "Special Inspection," should be updated to reference the revised IP 93100 and consideration of including a qualified safety culture assessor on the inspection team, as well as to emphasize the importance of reviewing safety culture attributes within the scope of the fact-finding purpose of the inspection, to better align the use of these procedures with the intent of changes initiated in response to the original Commission direction.
- c. A regular safety culture assessment, based on the revised IP 93100, should be included as part of the baseline inspection program on a tri-/biennial basis. This could be performed through a graded assessment allotting greater or fewer resources depending on safety culture/Safety Conscience Work Environment (SCWE) related data amassed throughout the inspection cycle. This may require additional inspection resources beyond what is currently allocated, approximately 4-5 (which could include team members who are training to be qualified) team members on site for a week resulting in an estimate of 60-80 inspection hours. Although SRM-SECY-04-0111 specifically decided against a baseline inspection option for safety culture in lieu of the current approach, this effectiveness review finds that the cross-cutting issues program in combination with a periodic safety culture assessment would more effectively meet the stated objectives of the program.

Alternative Recommendation:

During discussions with NRC regional administrators (RAs) and Division Directors, an alternative recommendation was proposed which leverages the existing IMC 0305 quarterly ROP assessment review of licensee performance. The recommendation is to revise existing assessment guidance to prompt NRC Management discussions with licensees on any safety culture aspects discussed during quarterly reviews. This recommendation would encourage licensee action to address safety culture aspects before significant performance degradation occurs. This recommendation would not require additional inspection or significant additional resources, consistent with the graded approach in SRM-04-0111 for licensees in Column 1 or Column 2 of the ROP Action Matrix.

The Division of Reactor Oversight (DRO) recommends implementation of recommendations 2, and 3a (in part), as well as portions of 3.b to include updating IP 93800 and IP 93812 subject to the modification discussed in the section below. As discussed below, recommendation 1 is not recommended for implementation.

#### Recommendation 1

The working group recommended that IMC 0305 and IP 95001 should be updated to allow for an independent NRC evaluation of safety culture for Column 2 plants if the circumstances warrant. DRO acknowledges the working group discussion of the decision in 2015 to change the threshold of licensee performance to enter Column 3. This risk-informed decision changed the threshold for all significant oversight actions, including the determination of the need for a specific evaluation of the licensee's Safety Culture, to occur at three white findings instead of two and remains consistent with Commission direction in SRM-SECY-04-0111. The working group report discusses that a revision was made to IP 95001 after the 2015 changes to Column 3 criteria were approved to review common cause evaluations of multiple white inputs and directs inspectors to look for shared causes (e.g., Cross-Cutting Aspects as discussed in IMC 0310; shared systems, structures, and components; shared procedures, processes, or personnel) for programmatic weaknesses in performance. Since this revision to IP 95001 already requires the inspection effort to determine whether the root cause, extent of condition, and extent of cause evaluations appropriately considered the safety culture traits, DRO does not believe a revision to IP 95001 is required. The 95001 inspection team could make a recommendation to the RA to perform a follow-up Safety Culture/SCWE inspection per IP 93100 if the team believes that the licensee is not taking corrective action for a safety culture issue. An IP 93100 inspection should not be initiated if the licensee determined there was a safety culture issue that contributed to the issue and the licensee is taking the appropriate corrective action. DRO agrees with stakeholder comments that the updates to IMC 0305 and IP 95001 should maintain a sensitivity to the graded approach for safety culture oversight. The current guidance maintains a clear distinction in safety culture oversight in IPs 95001, 95002, and 95003.

#### Recommendation 2

The working group recommended improving the training available to inspectors to better meet Commission objectives stated in SRM-SECY-04-0111. The working group also noted that steps are in process that will support this recommendation, as NRR has a User Need Request open with RES to enhance training on safety culture. DRO agrees with this recommendation and envisions that this improved training would potentially consist of revising the IMC 1245 Appendix B independent study activity (ISA) on safety culture to cover the data streams from licensees available to inspectors and revising the "Interviewing Techniques for Inspectors" course to train on safety culture interview techniques. Implementation of this recommendation would not require Commission approval.

#### Recommendation 3

The working group recommended that IP 93100 should be revised to cover all aspects of safety culture, in addition to Safety Conscious Work Environment to provide the NRC with a tool that can be used for following up on safety culture concerns to encourage meaningful action before licensees are assessed in Column 3. The working group developed three options for recommendation three as discussed on the second page of this memorandum.

DRO agrees with stakeholder comments received during the effectiveness review working group briefings that a stand-alone baseline inspection procedure as discussed in recommendation 3.c. appears to go against a decision the Commission previously made on safety culture oversight.

DRO also agrees with stakeholder comments for recommendations 3.a and 3.b to leave IP 93100 as an IMC 2515 Appendix C procedure and enhance the safety culture oversight guidance in inspection procedures 71152, 93800 and 93812, recognizing that the procedures as currently written do allow significant flexibility, and do not prohibit us from including qualified safety culture assessors on teams when warranted.

Based on discussions with all stakeholders, DRO recommends revising IP 93100 to make it a flexible tool to enable inspection of one or more elements of safety culture as appropriate. This will make it a comprehensive inspection procedure that can be effectively and efficiently applied depending on the nature of the safety culture performance issues identified. DRO also recommends that IPs 71152, 93800, 93812, and 95001 be revised to reference the revision to IP 93100. The revision to 93100 will give the entry criteria for when RAs can approve use of this procedure. The entry criteria will be that if an inspection team uncovers a safety culture issue as part of an IP 71152, 93800, 93812, or 95001 inspection, the RA may authorize use of IP 93100 to future inspect that safety culture issue. DRO will evaluate this proposed 93100 revision against the MD 8.13, "Reactor Oversight Process," "Changes to the ROP" section, to determine if Commission approval or notification is required before the revision is issued.

#### Alternative Recommendation

The working group report contained an alternative recommendation which leverages the existing IMC 0305 quarterly ROP assessment review of licensee performance. DRO believes that this alternate recommendation addresses the working group report discussion that the accumulation of increasing numbers of cross-cutting aspects is a statistically meaningful indicator of the potential for performance decline, as measured by the occurrence of safety-significant events and associated movement to higher column in the action matrix, regardless of what column of the action matrix a licensee is currently in. DRO recommends revising existing IMC 0305 assessment guidance to prompt NRC Management discussions with licensees on any safety culture aspects discussed during quarterly reviews. This recommendation would not require additional inspection or significant additional resources for licensees in Column 1 or Column 2 of the ROP Action Matrix, while increasing the level of NRC engagement to encourage licensee action to address safety culture aspects before significant performance degradation occurs.

These recommendations will be tracked to resolution via the ROP lessons learned tracker with the goal of completing the necessary guidance revisions by the end of CY 2023, depending on if Commission approval is required for any recommendation implementation.

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 RECOMMENDATIONS DATE: September 7, 2023

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**NRR-106**

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