NUCLEAR ENERGY INSTITUTE

Proposal for Changing the Threshold for Transition to Column 3 of the NRC's Reactor Oversight Process Action Matrix

August 18, 2014

Preface

This paper responds to Recommendation 5 of the NRC's "Reactor Oversight Process Independent Assessment 2013."[1] The nuclear industry supports NRC Recommendation 5, and has developed this paper/proposal to address NRC and nuclear industry concerns about the ROP Column 3 threshold.

Problem Statement

Issue: The threshold for transitioning to Column 3 of the ROP Action Matrix (two White findings in a cornerstone) is too low. This motivates licensees to challenge most preliminary White findings. As a result, both licensees and the NRC spend extraordinary resources (including limited PRA resources) on findings of low-to-moderate safety significance.

NRC staff and external stakeholders agree that the resources expended to disposition a finding at the Green/White threshold can be excessive. Licensees are willing to expend a great deal of resources to challenge a White finding because, in part, the increase in regulatory oversight for two White findings in a cornerstone (transition to Column 3 of the NRC Action Matrix) is not viewed as proportionate to the risk associated with the White findings. Consequently, the NRC also expends significant resources to finalize the characterization of White findings.

Supporting Information: Although the impact on a licensee from an IP 95001[2] supplemental inspection is fairly modest, the resource impacts of additional White (or greater) findings are significantly greater if those findings lead to the NRC conducting an IP 95002[3] or IP 95003[4] inspection. During feedback sessions with stakeholders, the NRC ROP Independent Assessment team (i.e. "working group") heard a wide variety of perspectives regarding the impacts of White findings which can be decisive inputs to the assessment process and to the determination of regulatory follow-up. Internal (NRC) stakeholders tended to offer a perspective that many licensees challenge the validity of all White findings regardless of the potential Action Matrix outcome. The anecdotes included cases in which licensees invested far more staff time and financial resources in protest of a White finding, and required far more NRC staff time to reach an SDP conclusion, than would have been required to conduct the associated supplemental inspection. In those cases, the lengthy decision-making process was costly in terms of NRC and licensee resources and added substantial delays to the regulatory decision-making process.

Feedback from external stakeholders presented an alternative perspective that, in some cases, suggested the NRC assessment of issues is biased to yield White inputs to the Action Matrix. This was voiced principally as a concern regarding entry into Column 3 of the Action Matrix, but could conceivably influence entry into other Action Matrix columns.

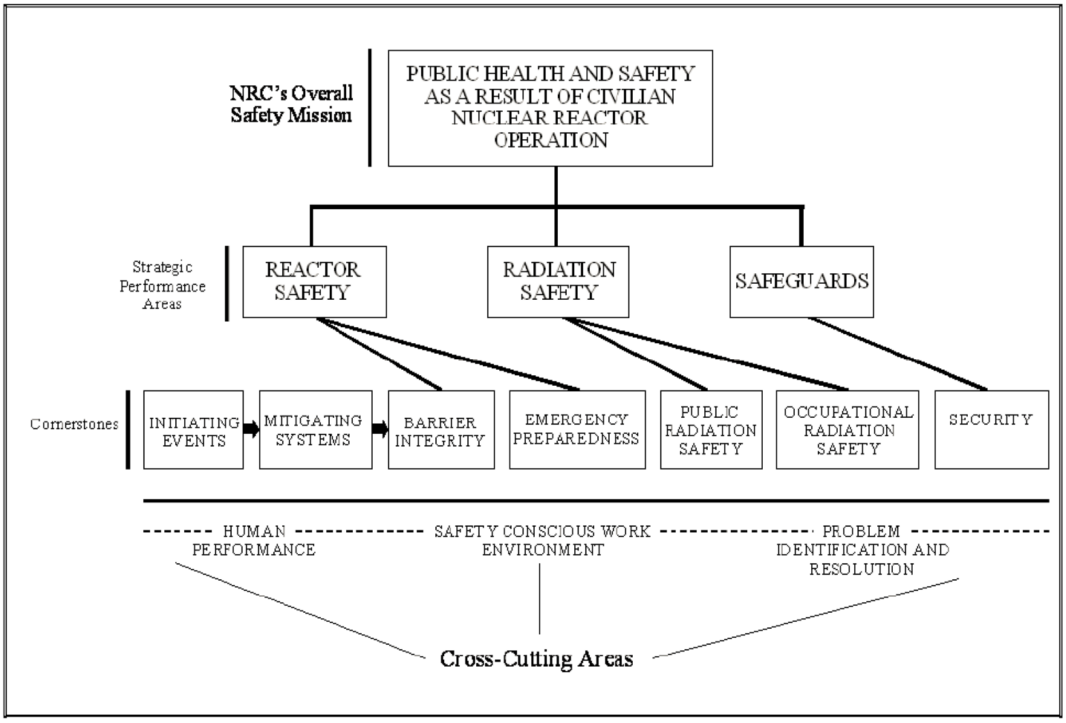
While the external and internal stakeholders don't always agree on whether the SDP yields "correct" assessments (i.e., Green versus White) of issues, both groups do agree that the determination process for issues that are near a threshold (particularly Green/White) is often lengthy and has a large resource impact. Accordingly, the working group suggested that a review of the criteria for transition to Column 3 of the NRC Action Matrix be conducted against the original ROP program goals to ensure that the significance of White inspection findings is not being over-emphasized and to ensure that agency

[1] NRC "Reactor Oversight Process Independent Assessment 2013", February 11, 2014, ADAMS Accession Number ML14035A571.
[2] NRC Inspection Procedure 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area", ADAMS Accession Number ML102020522, February 9, 2011.
[3] NRC Inspection Procedure 95002, "Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area", ADAMS Accession Number ML102020532, February 9, 2011.
[4] NRC Inspection Procedure 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs or One Red Input", ADAMS Accession Number ML102020551, February 9, 2011.

resources are not being unnecessarily expended to deal with issues that, by definition, are of low-to-moderate safety significance.[5]

The working group also received a great deal of feedback suggesting that licensees frequently expend a great deal of resources to "push back" during Pre-decisional Enforcement Conferences regarding the significance of potential White inspection findings. Additionally, some Significance Evaluation Review Panel (SERP) participants observed that NRC staff invests a substantial amount of time and effort preparing for this anticipated licensee pushback, particularly if the licensee already has an existing White inspection finding or performance indicator associated with the same ROP cornerstone or strategic performance area. (Cornerstones and Strategic Performance Areas of the ROP are shown in Figure 1 below.)

Figure 1 - ROP Framework Showing the Seven Cornerstones and Three Strategic Performance Areas[6]



When the working group asked for more elaboration, some stakeholders suggested that the current threshold established in Inspection Manual Chapter 0305[7] for Column 3, "Degraded Cornerstone Column," of the NRC Action Matrix might contribute to the extent of licensee pushback on potential White inspection findings. Specifically, concerns were shared that simply increasing the number of White inspection findings at a facility from one to two in any cornerstone (i.e., the IMC 0305 Action Matrix threshold for entry into Column 3) results in a disproportionate level of additional regulatory oversight (i.e., an IP 95002 supplemental inspection, a licensee root cause analysis, and potentially an independent safety culture assessment or an inspection under IP 71152, "Problem Identification and Resolution"[8]). One way to quantify this increase is to note that the supplemental inspection hours alone will increase from 80 hours to 400 hours as a result of having two White findings in one cornerstone. Other specific feedback included the following:

[5] See Recommendation 5 on page vi of the NRC's Reactor Oversight Process Independent Assessment report, July 2013, ADAMS Accession Number ML14035A571.
[6] NRC Inspection Manual Chapter 0308, "Reactor Oversight Process Basis Document", Exhibit 2, November 8, 2007, ADAMS Accession Number ML071860181
[7] NRC Inspection Manual Chapter 0305, "Operating Reactor Assessment Program", October 18, 2013, ADAMS Accession Number ML13178A032.
[8] ADAMS Accession No. ML13179A365.

- Resources expended by the agency and industry supporting PRAs/SERPs are "huge." Efforts can sometimes involve 20 to 40 people, large amounts of time spent debating SDP results, Senior Reactor Analysts (SRAs) reviewing licensee procedures and traveling to sites to walk down systems, licensees even developing mockups costing millions, etc.
- We have never understood how multiple [two] White findings [can] become a Yellow finding. Safety does not seem to be best served using this approach.

Inspection Manual Chapter 0308[9] describes how plant performance bands, based on a combination of Core Damage Frequency (CDF) and Large Early Release Frequency (LERF), were used in developing the five columns of the Action Matrix. However, IMC 0308 does not provide a specific basis for why a licensee with as few as two White inspection findings should be subjected to the same degree of regulatory oversight as a licensee with one Yellow inspection finding (i.e., a finding of substantial safety significance).

Based on the working group's review of the ROP implementation relative to the Green/White threshold issues and stakeholder feedback, the working group believed there would be value in further exploring ways to address licensee and NRC staff concerns with White inspection findings. Specifically, the staff should consider whether the Action Matrix threshold for entering Column 3 (based on two White inspection findings) and the prescribed increase in regulatory oversight are commensurate with overall impact such findings have on the continued safe operation of the facility.

NRC ROP Independent Assessment Team, Recommendation 5: The NRC should review the criteria for transition to Column 3 of the NRC Action Matrix against the original ROP program goals to ensure that the significance of White inspection findings is not being overemphasized and to ensure that agency resources used to process White inspection findings are commensurate with findings that, by definition, are of low-to-moderate safety significance. (Section 6.3.3)

While each recommendation or suggestion has its individual merits, two recommendations suggest that a thorough reexamination of the current ROP approach would be beneficial. Specifically, the threshold for the Degraded Cornerstone column of the ROP Action Matrix (Recommendation 5) and the use of Substantive Cross-Cutting Issues/Safety Culture Attributes in the ROP process (Recommendation 6). These two issues garnered the most commentary from both the regulators and the regulated community. While functional in their current state, these aspects of the ROP present the greatest opportunity to enhance the efficiency of the oversight process.

Background

This section provides pertinent background information from key NRC Inspection Manual Chapters governing the Reactor Oversight Process and summary information from ROP results since 2009.

Inspection Manual Chapter 0609[10]

Inspection findings are assigned a color representing the significance of the finding. The following definitions include the quantitative and qualitative aspects for each color and need to be applied appropriately to each SDP appendix listed at the end of this document. These levels of significance are graphically depicted in Figure 1 below, which is reproduced from Exhibit 1 in IMC 0609.

a. Red (high safety or security significance) is quantitatively greater than 10^{-4} ΔCDF or 10^{-5} ΔLERF. Qualitatively, a Red significance indicates a decline in licensee performance that is associated

[9] Inspection Manual Chapter 0308, "Reactor Oversight Process (ROP) Basis Document", November 8, 2007, ADAMS Accession Number ML071860181.
[10] Inspection Manual Chapter 0609, "Significance Determination Process", June 2, 2011, ADAMS Accession Number ML101400479.

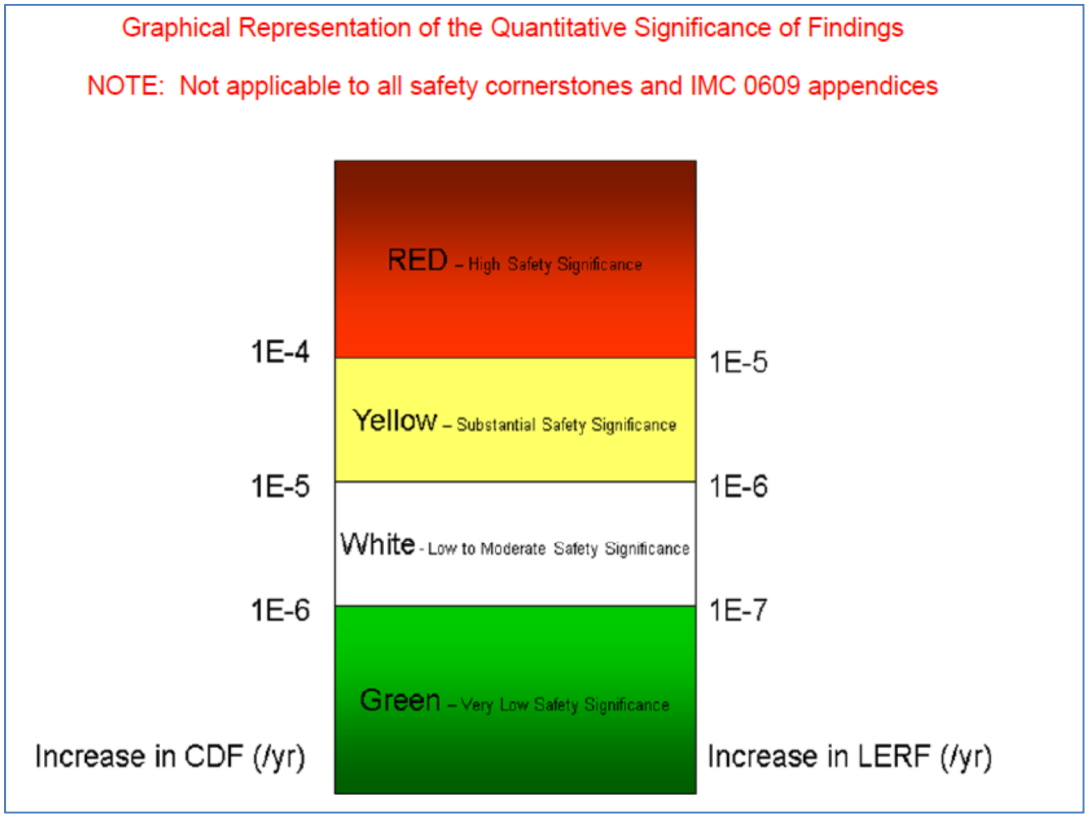
with an unacceptable loss of safety margin. Sufficient safety margin still exists to prevent undue risk to public health and safety.

b. Yellow (substantial safety or security significance) is quantitatively greater than 10^{-5} and less than or equal to 10^{-4} ΔCDF or greater than 10^{-6} and less than or equal to 10^{-5} ΔLERF. Qualitatively, a Yellow significance indicates a decline in licensee performance that is still acceptable with cornerstone objectives met, but with significant reduction in safety margin.

c. White (low-to-moderate safety or security significance) is quantitatively greater than 10^{-6} and less than or equal to 10^{-5}ΔCDF or greater than 10^{-7} and less than or equal to 10^{-6} ΔLERF. Qualitatively, a White significance indicates an acceptable level of performance by the licensee, but outside the nominal risk range. Cornerstone objectives are met with minimal reduction in safety margin. [Emphasis added.]

d. Green (very low safety or security significance) is quantitatively less than or equal to 10^{-6} ΔCDF or 10^{-7} ΔLERF. Qualitatively, a Green significance indicates that licensee performance is acceptable and cornerstone objectives are fully met with nominal risk and deviation.

Figure 2 - Significance Levels



Inspection Manual Chapter 0305[11]

Following are excerpts or highlights from IMC 0305.

§0305-04.01, Action Matrix. A table that categorizes various levels of plant performance and identifies the range of NRC and licensee actions and the appropriate level of communication for these various levels of performance.

§0305-04.03, Action Matrix Inputs. Inspection findings and PIs that are used to determine a plant's Action Matrix column.

§0305-04.13, Degraded Cornerstone. A cornerstone that has two or more white inputs or one yellow input.

§0305-04.17, Multiple Degraded Cornerstones. Two or more cornerstones that are degraded in any one quarter.

§0305-04.22, Repetitive Degraded Cornerstone. A cornerstone that is degraded for more than four consecutive quarters with at least one of the quarters having: (1) three or more white inputs (the additional white input(s) can be from any cornerstone), or (2) one yellow and one white input (the additional white input can be from any cornerstone).

§0305-10.01, Description of the Action Matrix. The Action Matrix identifies the range of NRC and licensee actions and the appropriate level of communication for different levels of licensee performance. The Action Matrix describes a graded approach for addressing performance issues and was developed with the philosophy that within a certain level of safety performance (e.g., the licensee response band), licensees would address their performance issues without additional NRC engagement beyond the baseline inspection program. NRC actions beyond the baseline inspection program will normally occur only if assessment input thresholds are exceeded.

§0305-10.02a, Licensee Response Column (Column 1)

1. All Action Matrix inputs are green.

§0305-10.02b, Regulatory Response Column (Column 2)

1. Action Matrix inputs result in no more than one white input in any cornerstone and no more than two white inputs in any strategic performance area.

§0305-10.02c, Degraded Cornerstone Column (Column 3)

1. Action Matrix inputs result in a degraded cornerstone (two or more white inputs or one yellow input in any cornerstone) or three white inputs to any strategic performance area.

§0305-10.02d, Multiple/Repetitive Degraded Cornerstone Column (Column 4)

1. Action Matrix inputs result in a repetitive degraded cornerstone, multiple degraded cornerstones, multiple yellow inputs, or a red input.

[11] NRC Inspection Manual Chapter 0305, "Operating Reactor Assessment Program", October 18, 2013, ADAMS Accession Number ML13178A032.

Figure 3 – ROP Action Matrix Reproduced from IMC 0305

		Licensee Response Column (Column 1)	Regulatory Response Column (Column 2)	Degraded Cornerstone Column (Column 3)	Multiple/Repetitive Degraded Cornerstone Column (Column 4)	Unacceptable Performance Column (Column 5)	IMC 0350 Process[1]
RESULTS		All assessment inputs (performance indicators and inspection findings) green; Cornerstone objectives fully met	One white input, or Two white inputs (in different cornerstones) in a strategic performance area; Cornerstone objectives met with minimal degradation in safety performance	One degraded cornerstone (2 white inputs or 1 yellow input), or Any 3 white inputs in a strategic performance area; Cornerstone objectives met with moderate degradation in safety performance	Repetitive degraded cornerstone, Multiple degraded cornerstones, Multiple yellow inputs, or One red input; Cornerstone objectives met with longstanding issues or significant degradation in safety performance	Overall unacceptable performance; Plants not permitted to operate within this band; Unacceptable margin to safety	Plants in a shutdown condition with performance problems are placed in the IMC 0350 process
RESPONSE	Regulatory Performance Meeting	None	Branch Chief or Division Director meets with licensee	Regional Administrator or designee meets with senior licensee management.	EDO/DEDO or designee meets with senior licensee management	EDO/DEDO or designee meets with senior licensee management	RA/EDO or designee meets with senior licensee management
	Licensee Action	Licensee corrective action	Licensee root cause evaluation and corrective action with NRC oversight	Licensee cumulative root cause evaluation with NRC oversight	Licensee performance improvement plan with NRC oversight		Licensee performance improvement & restart plan with NRC oversight
	NRC Inspection	Risk-informed baseline inspection program	Baseline and supplemental inspection (IP 95001)	Baseline and supplemental inspection (IP 95002)	Baseline and supplemental inspection (IP 95003)		Baseline and supplemental as practicable; Special inspections per restart checklist.
	Regulatory Actions[2]	None	Supplemental inspection only	Supplemental inspection only; Plant discussed at AARM if conditions met	10 CFR 2.204 DFI; 10 CFR 50.54(f) letter; CAL/Order; Plant Discussed at AARM	Order to modify, suspend, or revoke license; Plant discussed at AARM	CAL/Order requiring NRC approval for restart; Plant discussed at AARM
COMMUNICATION	Assessment Letters	Branch Chief or Division Director reviews and signs assessment letter w/ inspection plan	Division Director reviews/signs assessment letter w/ inspection plan	Regional Administrator reviews/signs assessment letter w/ inspection plan	Regional Administrator reviews/signs assessment letter w/ inspection plan		N/A. RA or 0350 Panel Chairman review/ sign 0350-related correspondence
	Annual Involvement of Public Stakeholders	Various public stakeholder options involving the senior resident inspector or Branch Chief	Various public stakeholder options involving the BC or DD	Regional Administrator or designee discusses performance with senior licensee management	EDO/DEDO or designee discuss performance with senior licensee management		N/A. 0350 Panel Chairman conducts periodic public status meetings
	External Stakeholders[3]	None	State Governors	State Governors, DHS, Congress	State Governors, DHS, Congress	State Governors, DHS, Congress	
	Commission Involvement	None	None	Possible Commission meeting if licensee remains for 3 years	Commission meeting with senior licensee management within 6 months.	Commission meeting with senior licensee management	Commission meetings as requested; Restart approval in some cases.
	INCREASING SAFETY SIGNIFICANCE →						

Inspection Manual Chapter 0308, Attachment 4[12]

§0308-3, page 9: The Action Matrix lists expected NRC and licensee actions based on the inputs to the assessment program. Actions are graded such that the agency becomes more engaged as licensee performance declines. The thresholds for each column of the Action Matrix were established in a risk-informed manner to indicate declining licensee performance of a more pervasive and systemic nature as you proceed from the left-most column across the Action Matrix. As assessment inputs (inspection findings and PIs) that have crossed thresholds accumulate (both in quantity of inputs and significance of thresholds crossed), required NRC actions become more significant in resources applied, scope of inspection, and level of NRC management oversight.

§0308-3, page 9: Regulatory Response Column - Assessment inputs result in one or two White inputs (in different cornerstones) in a Strategic Performance Area. One or two White inputs in different cornerstones indicate the need for NRC interaction above the baseline level of inspection since licensee corrective actions were unable to maintain a level of performance within the Green band. However, indications at this level indicate performance deficiencies that appear to be isolated in nature, and warrant the lowest level of supplemental inspection by the NRC. [Emphasis added]

§0308-3, page 10: Degraded Cornerstone Column - Assessment inputs result in a degraded cornerstone or 3 White inputs to any Strategic Performance Area. A degraded cornerstone may result from two or more White inputs in a single cornerstone, or a single Yellow input in a cornerstone. These different combinations warrant increased NRC interaction since they represent a more substantial degradation

[12] NRC Inspection Manual Chapter 0308, Attachment 4, "Technical Basis for Assessment", July 28, 2005, ADAMS Accession Number ML052100195.

focused on a particular aspect of licensee performance, with a minimal reduction in safety margin overall. [Emphasis added]

ROP Action Matrix Results – Column 3 (2009 – Present)[13]

A review of Action Matrix results since 2009 produced the data shown below. Table 1 below shows that the cornerstone most often involved in a plant transitioning into Column 3 of the Action Matrix is the Mitigating Systems cornerstone. This cornerstone is addressed in several inspection modules as well as the Mitigating System Performance Index and the Safety System Functional Failure performance indicators.

Table 1 - Action Matrix Results for Column 3

Cornerstone	Number of Plants
Emergency Preparedness	1
Initiating Events	7
Mitigating Systems	20
Occupational Radiation Safety	1
Physical Protection	3

As noted below, of the units that transitioned into Column 3 during this period, 18 were driven there by two White inputs in a cornerstone. These 18 units represent the population subject to the industry proposal to raise the threshold to three White inputs in a cornerstone. No units tripped the other criterion for transitioning into Column 3, i.e., three White inputs in a Strategic Performance Area.

Basis for Entry into Column 3

- ✓ One Yellow Input = 14 units
- ✓ Two White Inputs in Cornerstone = 18 units
- ✓ Three White Inputs in a Strategic Performance Area = 0 units

Assumptions

- The data reflects ROP data from 1Q 2009 to June 10, 2014.
- All data is based on information contained in the ROP historical performance section of the NRC website and the current quarter action matrix page.
- The numbers are based on units since that is how they are presented in the NRC summary documentation. If more than one unit was discussed in one entry because the conditions were the same (like the 3 Browns Ferry units in 4Q 2009) they were separated into three entries; one for each unit.
- The initial entry condition that met the requirements for entry into Column 3 was the one counted. For example, in 4Q 2011, Palisades went into Column 3 due to a yellow finding in initiating events. They also ended up with an additional white finding in initiating events and a white finding in mitigating systems. Since the yellow finding initially got them there, that is the reason listed.
- Three plants were in Column 3 due to security issues. Because only a vague, general description of the issue is released publicly, it is not known how many greater that green inputs were received. The write-up just stated "one or more greater than green findings".

[13] Source: Curtiss-Wright/Scientech data, June 10, 2014.

Proposal

The industry proposes that NRC change the Degraded Cornerstone Column (Column 3) threshold from "2 White Inputs or 1 Yellow Input in a cornerstone, or any 3 White Inputs in a Strategic Performance Area" to "3 White Inputs or 1 Yellow Input in a cornerstone, or any 3 White Inputs in a Strategic Performance Area."

Supporting Information

The nuclear industry believes that the NRC 2013 ROP Independent Assessment Report accurately reflects the following:

1. The current threshold established in IMC 0305 for Column 3, "Degraded Cornerstone Column," of the NRC Action Matrix is a significant contributor to the extent of licensee pushback on potential White inspection findings. Specifically, an increase in the number of White inspection findings/PIs at a facility from one to two in any cornerstone (Column 3 entry threshold) results in a disproportionate level of additional regulatory oversight (i.e., a IP 95002 supplemental inspection, a licensee root cause analysis, and potentially an independent safety culture assessment or an inspection under IP 71152, "Problem Identification and Resolution"). This disproportionate regulatory response compels licensees to "push back" on most White findings.
2. Extensive NRC and licensee resources are being expended to deal with issues that, by definition, are of low-to-moderate safety significance (i.e. White inputs). In particular, the NRC and licensees are dedicating extensive PRA and SRA resources on potential White inspection findings (i.e., the SDP process) at a time when PRA/SRA resources are strained by such matters as plant conversions to NFPA 805[14] and development of post-Fukushima seismic PRAs. NRC and licensee resources dedicated to the SDP process, SERPs, and Regulatory Conferences are enormous, and the overwhelming majority of these resources are spent on potential White findings. By their very nature, these are of low-to-moderate safety significance (i.e., minimal reduction in safety margin).
3. NRC and licensees share a perspective that the significance determination process for issues near a threshold (particularly Green/White) is frequently lengthy and has a large resource impact.
4. Inspection Manual Chapter 0308 describes how plant performance bands, based on a combination of CDF and LERF, were used in developing the five columns of the Action Matrix. However, IMC 0308 does not provide a specific basis for why a unit with as few as two White inspection findings should be subjected to the same degree of regulatory oversight as a unit with one Yellow inspection finding (finding of substantial safety significance).

The nuclear industry agrees with the NRC 2013 ROP Independent Assessment Report that the NRC should review the criteria for transition to Column 3 of the NRC Action Matrix against the original ROP program goals to ensure that the significance of White inspection findings is not being over-emphasized and to ensure that agency and industry resources are not being unnecessarily expended to deal with issues that, by definition, are of low-to-moderate safety significance.

As discussed in IMC 0609, a White finding/PI represents an issue of low-to-moderate safety or security significance, and indicates an acceptable level of performance by the licensee, but outside the nominal risk range.

[14] National Fire Protection Association 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants".

Proposal Details

In developing this proposal, the NEI Regulatory Issues Working Group (RIWG) reviewed IMC 0308, Reactor Oversight Process Basis Document, and its attachments, as well as various SECY papers associated with the development of the ROP, including SECY-99-007[15] and SECY-99-007A[16]. The RIWG also ensured that the proposal is consistent with the four NRC performance goals outlined in IMC 0308: 1) maintain safety, 2) increase openness, 3) make NRC activities and decisions more effective, efficient, and realistic, and 4) reduce unnecessary burden. The RIWG also ensured that the proposal is consistent with the defining principles outlined in IMC 0308. The proposal ensures that the NRC's oversight process provides adequate margin in the assessment of licensee performance so that appropriate licensee and NRC actions are taken before unacceptable performance occurs (IMC 0308).

The proposal entails no changes to ROP Action Matrix Columns 1, 2, 4, and 5. The proposal would change the White Input threshold for Column 3 specific to a cornerstone, but maintain the existing overarching Column 3 threshold of three White Inputs in a Strategic Performance Area (or 1 Yellow Input). No changes are proposed to the Yellow input threshold for Column 3.

The ROP already permits as many as two White Inputs in a strategic performance area for a plant in Column 2 and as many as three White Inputs (or one Yellow Input) in a strategic performance area for a plant in Column 3 of the Action Matrix. These thresholds bound the risk for plants in Columns 2 and 3, respectively. This proposal would make no changes to these bounding thresholds. While the Column 3 threshold for White Inputs in a specific cornerstone would increase from 2 to 3, the bounding threshold of three White Inputs (or one Yellow Input) in a strategic performance area for Column 3 would remain unchanged.

The proposal represents no programmatic increase in risk since the NRC's Column 3 threshold of three White Inputs in a Strategic Performance Area would not be changed. Three White Inputs in a cornerstone or Strategic Performance Area would result in the plant being in Column 3 and subject to an IP 95002 inspection.

The proposal ensures that licensee investigation and corrective actions associated with declining performance in a cornerstone would still be subject to intrusive NRC oversight via IP 95001 supplemental inspections. Specifically, NRC's oversight of licensee performance would remain strong as IP 95001 supplemental inspections would still be conducted for each White Input and IP 95002 supplemental inspections would still be conducted when the licensee reaches three White Inputs in any Strategic Performance Area [or cornerstone].

As discussed in IMC 0308, Attachment 4, the Degraded Cornerstone Column (Column 3) reflects that increased NRC interaction is warranted since there is more substantial degradation focused on a particular aspect of licensee performance, with a minimal reduction in safety margin overall. Given that the existing Column 3 threshold of three White Inputs in a Strategic Performance area would not be changed in this option, the Degraded Cornerstone Column threshold and associated increased NRC interaction via an IP 95002 inspection would still occur at a point where licensee performance degradation represents minimal reduction in safety margin overall.

The proposal would maintain thorough licensee evaluations and corrective actions associated with each and every White Input. Specifically, in response to each White Input, licensees would continue to perform a Root Cause Evaluation (RCE) that assures that the root causes and contributing causes of each

[15] NRC Memorandum from W. D. Travers, EDO, to The Commissioners, "Recommendations for Reactor Oversight Process Improvements", SECY-99-007, January 8, 1999, ADAMS Accession Number ML992740074.
[16] NRC Memorandum from W. D. Travers, EDO, to The Commissioners, "Recommendations for Reactor Oversight Process Improvements (Follow-up to SECY-99-007)", SECY-99-007A, March 22, 1999, ADAMS Accession Number ML992740073.

White Input are identified and understood. The RCE will continue to utilize systematic methodologies to identify the root and contributing causes. The RCE will include a consideration of prior occurrences of the same or similar problems and knowledge of prior Operating Experience. These evaluations will address the plant-specific risk consequences of the issues. The process also includes extent of condition and extent of cause reviews, and assessment whether other systems, equipment, programs, or conditions could be affected. The process also evaluates whether a weakness in any safety culture component was the root cause or significant contributing cause of the White Input, and if so, ensure that it is addressed through adequate corrective actions. The process ensures that corrective actions are specified for each root and contributing cause and that the corrective actions are prioritized with consideration of risk significance and regulatory compliance. Licensees will continue ensure that appropriate corrective actions are taken to address the nuclear safety culture contributors to the White Input. Licensees will also establish measures to determine the effectiveness of the corrective actions to prevent recurrence.

In preparation for IP 95001 inspections, licensees conduct readiness activities that typically include such things as independent (fleet or external) reviews of the relevant Root Cause Evaluations, self-assessments, mock inspections, and/or challenge boards. These activities serve to improve licensee readiness for the supplemental inspection, and to identify enhancements to the RCE and associated corrective actions. These important activities would continue under this proposal.

It is important to note that under this proposal, licensees will continue to conduct the collective reviews currently addressed in NRC IP 95002 when multiple White Inputs are received. These collective reviews will continue to be available for NRC review. In addition to the licensee actions taken for each White Input (discussed above), when a second White Input is received (licensee would still be in Column 2), licensees will continue to:

- Assure that the root and contributing causes of the individual and collective (multiple white inputs) White Inputs are identified and understood.
- Assure that the extent of condition and the extent of cause of the individual and collective (multiple white inputs) performance issues are identified.
- Determine if safety culture components caused or significantly contributed to the individual and collective (multiple white inputs) performance issues.
- Assure that appropriate corrective actions are specified based on insights from the collective review.

Consistent with the premise of Recommendation 5 of the 2013 NRC ROP Independent Assessment, the proposal would likely significantly reduce the number of licensee challenges to potential White findings. Dialogue with industry Regulatory Affairs leaders reflects that the number of challenges/Regulatory Conferences on potential White findings could be cut significantly. While the magnitude of the reduction in challenges/Regulatory Conferences is difficult to quantify, the increase in regulatory margin between the Column 2 threshold and the Column 3 threshold would reduce the motivation licensees have to challenge a potential White finding.

With this proposal, a licensee in Column 1 facing a preliminary White finding would no longer face the regulatory risk of an additional White input leading to Column 3 and an IP 95002 inspection. Also, a licensee with one White Input (Column 2) would no longer face the present disproportionate level of additional regulatory oversight (Column 3) upon receipt of the next White Input. Rather, the licensee would have to receive two more White Inputs in the same cornerstone or strategic performance area before facing such an increase in regulatory oversight. This additional margin would likely result in licensees deciding to not spend the extensive resources to challenge the finding significance (e.g., PRA,

SERP, Regulatory Conference, etc.). Ideally, resources and "management attention units"[17] not applied to contesting the significance determination would be freed to focus on fixing the cause of the finding and preparing for the IP 95001 supplemental inspection, or addressing other matters of greater safety significance. Thus, resources would be better directed to safety and performance improvement.

Such a shift in focus would have resource benefits for the NRC and licensees. Extensive NRC and licensee resources would no longer be expended on regulatory challenges associated with issues that, by definition, are of low-to-moderate safety significance (i.e. White inputs). In particular, the NRC and licensees are dedicating extensive PRA and SRA resources on potential White inspection findings (SDP process) at a time when PRA/SRA resources are limited and strained by such matters as NFPA 805 and Seismic PRAs. NRC and licensee resources dedicated to the SDP process, SERPs, and Regulatory Conferences are enormous, and the overwhelming majority of these resources are spent on potential White findings, issues that by their very nature are of low-to-moderate safety significance (minimal reduction in safety margin).

Summary

- ✓ One Yellow Input = 14 units
- ✓ Two White Inputs in Cornerstone = 18 units
- ✓ Three White Inputs in a Strategic Performance Area = 0 units

Based on the 2009-2014 ROP data, this proposal likely would have prevented 18 units from entering Column 3 of the ROP Action Matrix [a 56% reduction]. However, these units would have been in Column 2 and subject to rigorous increased NRC oversight via IP 95001 supplemental inspections.

The proposal ensures that licensee investigation and corrective actions associated with declining performance in a cornerstone would still be subject to intrusive NRC oversight via IP 95001 supplemental inspections. Specifically, NRC's oversight of licensee performance remains strong as IP 95001 supplemental inspections would still be conducted for each White Input and IP 95002 supplemental inspections would still be conducted when the licensee reaches three White Inputs in any Strategic Performance Area [or cornerstone] or one Yellow Input in a Cornerstone. Using the data above, while this proposal would have prevented 18 units from entering Column 3, the NRC would still have conducted thirty-six 95001 supplemental inspections [18 units x 2 White inputs], and thus provided rigorous oversight of licensee causal analyses, extent of condition reviews, extent of cause reviews, corrective actions, and safety culture contributors associated with each White input. Also, comprehensive IP 95002 inspections would still have been conducted for the 14 units that entered Column 3 due to Yellow inputs.

As discussed earlier, the proposal would maintain thorough licensee evaluations and corrective actions associated with each White Input. Licensees will also continue to conduct the 'collective' reviews when multiple White Inputs are received.

The proposal is responsive to Recommendation 5 of the NRC's 2013 ROP Independent Assessment Report. Specifically, the proposal addresses the criteria for transition to Column 3 of the NRC Action Matrix, is consistent with the original ROP program goals, and ensures that the significance of White inspection findings is not being overemphasized so that NRC resources used to process White inspection findings are commensurate with findings that, by definition, are of low-to-moderate safety significance. With the adoption of the proposal, it is reasonable to assume that licensees would pursue fewer regulatory conferences for White findings due to the increased regulatory margin between the

[17] In the nuclear context, the term is attributed to NRC Commissioner Christine Svinicki. See, for example, the reference to Commissioner Svinicki's use of the term quoted by NEI's Anthony R. Pietrangelo in a presentation at the NRC's Regulatory Information Conference, March 13, 2013. See transcript page 16, lines 18-19.

Column 2 threshold and the Column 3 threshold. The reductions would have significant resource benefits for the NRC and licensees. Extensive NRC and licensee resources would no longer be expended on regulatory challenges associated with issues that, by definition, are of low-to-moderate safety significance (i.e. White inputs).

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