UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 2, 2015

SECRETARY

COMMISSION VOTING RECORD

DECISION ITEM: SECY-15-0108

TITLE: RECOMMENDATION TO REVISE THE DEFINITION OF DEGRADED CORNERSTONE AS USED IN THE REACTOR OVERSIGHT PROCESS

The Commission acted on the subject paper as recorded in the Staff Requirements Memorandum (SRM) of December 2, 2015.

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Commission.

Annette L. Vietti-Cook
Secretary of the Commission

Enclosures:
1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Burns
Commissioner Svinicki
Commissioner Ostendorff
Commissioner Baran
OGC
EDO
PDR

VOTING SUMMARY - SECY-15-0108

RECORDED VOTES

	APRVD	DISAPRVD	ABSTAIN	NOT PARTICIP	COMMENTS	DATE
CHRM. BURNS	X				X	11/18/15
COMR. SVINICKI	X				X	8/31/15
COMR. OSTENDORFF	X				X	9/8/15
COMR. BARAN		X			X	9/15/15

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

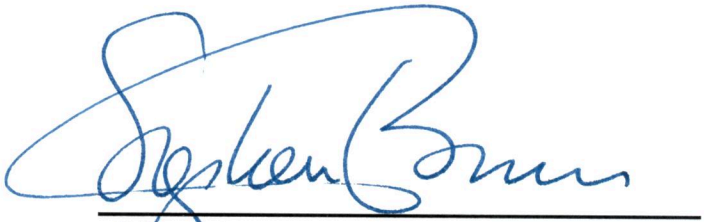
FROM: Chairman Burns

SUBJECT: SECY-15-0108: RECOMMENDATION TO REVISE THE DEFINITION OF DEGRADED CORNERSTONE AS USED IN THE REACTOR OVERSIGHT PROCESS

Approved __X__ Disapproved ____ Abstain ____ Not Participating ____

COMMENTS: Below ____ Attached __X__ None ____

Entered in STARS
Yes __X__
No ____



Signature

18 November 2015
Date

Chairman Burns Comments on SECY-15-0108
Recommendation to Revise the Definition of Degraded Cornerstone
As Used in the Reactor Oversight Process

In SECY-15-0108, the staff recommends that the Commission approve a proposal to revise the definition of a degraded cornerstone in the Reactor Oversight Process (ROP). The staff reviewed the criteria for a licensee to transition to the Degraded Cornerstone Column (i.e., Column 3) of the ROP Action Matrix and focused on whether two White inputs were appropriately indicative of a degraded cornerstone. The staff acknowledged that there were views in support of maintaining the existing definition of a degraded cornerstone but, after carefully evaluating the matter, recommends that the definition of degraded cornerstone be revised from two to three White inputs in the same cornerstone. I approve the staff's recommendation to revise the definition of degraded cornerstone, to make conforming changes to IMC 0305, and to revise IP 95001 to include additional resources and guidance to be used when a licensee has a second White input in the same cornerstone.

The staff's proposal represents a significant change to the ROP Action Matrix structure after 15 years of implementation and deserves careful consideration. In addition to considering the staff paper, I have conferred with senior managers who have provided their insights into the development of the recommendation, some of whom favor it and others who do not. I appreciate the professional manner in which the healthy debate has been carried out on this issue and contributed to the development of the paper before the Commission for a vote.

I delayed voting on this paper after I learned that the NRC staff was briefing the Advisory Committee on Reactor Safeguards (ACRS) on this matter and that the ACRS intended to document their views in a letter to the Commission. The ACRS issued their letter on October 16, 2015, and stated that the Committee had no objection to the staff's proposed change in the definition of a degraded cornerstone. The ACRS noted:

> In the original design of the ROP, a calculus was developed based on what seemed reasonable engineering judgment to define thresholds for additional regulatory oversight based on multiple findings within a specific cornerstone or based on findings across multiple cornerstones....It was anticipated at the outset that these thresholds and the associated calculus would evolve as experience was gained and as more extensive plant-specific risk information became available.

Senior staff involved in the early development of the ROP have agreed with this characterization. They note that the early determination that two white inputs in the same cornerstone would correspond to a degraded cornerstone was conservative and based mainly on engineering judgment given the lack of experience with oversight under the ROP.

One impetus for the staff's proposal to change the definition of a degraded cornerstone came from the ROP Independent Assessment Working Group. This group was formed as a result of the Staff Requirements Memorandum (SRM) on SECY-12-0081, "Risk-Informed Regulatory Framework for New Reactors," in which the Commission stated that it would benefit from a fresh review of the practices and approaches the staff has developed for the ROP over the course of its years. Specifically, the Commission directed the staff to pursue an independent review of the program's objectives and implementation. The ROP Independent Assessment Working Group

was formed and proceeded to gather insights from internal and external stakeholders to develop an informed independent view of the ROP and its implementation. One recommendation that resulted was that the agency should review the criteria for transition to Column 3 of the 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.

The staff did a thorough job analyzing the available ROP data to come to a determination about how to address this recommendation. While I acknowledge that there is a degree of subjectivity in the analysis, especially for cornerstones that had to be assessed from a qualitative perspective, I believe that the staff's analysis is sound.

As the staff pointed out, one of the fundamental goals of the ROP is to be risk-informed and this change would reflect a more risk-informed approach to ROP decision making. As the ACRS noted in its letter on ROP enhancements:

> [T]his modification represents a small change in absolute values of both Core Damage Frequency and Large Early Release Frequency such that the change is not significant. Adjustment of the 'finding' data relative to degraded cornerstones was anticipated by the original designers of the ROP.

Even so, given the potential for programmatic weaknesses that may be revealed by two White inputs in the same cornerstone, the staff recommended a revision to the IP 95001 supplemental inspection procedure performed for any White input to allow for an increased scope of inspection to include additional potential common cause analyses. This recommendation was made to increase the likelihood of the NRC identifying potentially broader licensee performance issues for future Column 2 plants with two White inputs in the same cornerstone.

Finally, my approval of the staff's proposal is also informed by the fact that the staff can always make use of the Action Matrix deviation process for situations where the staff believes that additional regulatory oversight is warranted for any licensee with two White inputs in the same cornerstone. At bottom, the change does not cede any aspect of NRC's oversight authority but allows appropriate flexibility in responding to the actual circumstances that bear on the assessment of licensee performance. I am satisfied that, with this change, the ROP continues to achieve its objective of establishing a sound framework for risk-informed oversight of licensee performance.

These considerations, taken together, lead me to conclude that the staff's recommendation to redefine a degraded cornerstone will help to better focus NRC and licensee resources and, therefore, I support the staff's proposal. As noted by the staff, the impact of the change can be monitored through the annual ROP self-assessment.

Stephen G. Burns
18 November 2015

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER SVINICKI

SUBJECT: SECY-15-0108: RECOMMENDATION TO REVISE THE DEFINITION OF DEGRADED CORNERSTONE AS USED IN THE REACTOR OVERSIGHT PROCESS

Approved X Disapproved ____ Abstain ____ Not Participating ____

COMMENTS: Below X Attached ____ None ____

I approve the staff's recommended change to the ROP based on the risk analysis presented in the paper.

Entered in STARS
Yes ✓
No ____

Signature

8-31-15
Date

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Commissioner Ostendorff

SUBJECT: SECY-15-0108: RECOMMENDATION TO REVISE THE DEFINITION OF DEGRADED CORNERSTONE AS USED IN THE REACTOR OVERSIGHT PROCESS

Approved X **Disapproved** ____ **Abstain** ____ **Not Participating** ____

COMMENTS: **Below** X **Attached** _____ **None** _____

I approve the staff's recommendation to revise the definition of degraded cornerstone to three or more White inputs or one Yellow input, to make conforming changes to Inspection Manual Chapter 0305, and to revise Inspection Procedure 95001 to include additional resources and guidance to be used when a licensee has a second White input in the same cornerstone. I thank the staff for presenting alternative views in the paper to facilitate a well-informed Commission decision.

Entered in STARS
Yes _____
No _____

/RAO/

Signature

9/8/15

Date

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Commissioner Baran

SUBJECT: SECY-15-0108: RECOMMENDATION TO REVISE THE DEFINITION OF DEGRADED CORNERSTONE AS USED IN THE REACTOR OVERSIGHT PROCESS

Approved ____ Disapproved XX Abstain ____ Not Participating ____

COMMENTS: Below ____ Attached XX None ____

Entered in STARS
Yes ✓
No ____

Signature

9/15/15
Date

Commissioner Baran's Comments on SECY-15-0108, "Recommendation to Revise the Definition of Degraded Cornerstone as Used in the Reactor Oversight Process"

In this paper, the NRC staff recommends several changes to the definitions and criteria associated with the Reactor Oversight Process (ROP) Action Matrix.[1] Simply put, the staff proposes to require a higher number of white findings or performance indicators before a nuclear power plant warrants increased inspection and oversight by NRC. The staff concedes that this change represents "a reduction of regulatory oversight from the currently established levels." And this recommendation follows other staff-initiated changes in the past year that have reduced regulatory oversight from the levels originally established by the ROP. I disapprove the staff's proposal, which I consider to be an unnecessary weakening of the ROP and enforcement program.

The current definition of a "degraded cornerstone" (also known as Column 3 in the ROP Action Matrix) is a combination of two findings or performance indicators of low to moderate safety significance (or "white" inputs) in the same cornerstone, three white inputs in the same strategic performance area, or one finding of substantial safety significance (or "yellow" input).[2] The staff recommends revising this definition from two white inputs in a single cornerstone to three white inputs in a single cornerstone. The staff also recommends making a corresponding change to the criteria for the "regulatory response cornerstone" (Column 2) and the "multiple/repetitive degraded cornerstone" (Column 4). These thresholds have been in place since the ROP's inception 15 years ago. As the NRC staff notes in the paper, reports by the Government Accountability Office, the NRC Inspector General, and a recent Commission-directed independent review panel "have all concluded that the ROP is working well" and "is a mature and effective program."

According to the staff paper, this proposed change stems from public meetings held on the ROP enhancement project and a position paper from the Nuclear Energy Institute (NEI), which states that the current definition of Column 3 may "contribute to the extent of licensee pushback on potential 'White' inspection findings" and a change may "present the greatest opportunity to enhance the efficiency of the oversight process."[3] The NRC staff concluded that, although this asserted benefit is speculative, "the staff cannot discount the potential for fewer challenges which could result in more timely final significance determinations." However, in response to a similar NEI comment in 2003, the NRC staff told the Commission:

> The staff believes that licensees will continue to challenge any finding (green, white, yellow, or red) if they do not agree with the NRC's characterization of the

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[1] NRC uses color-coded inspection findings and performance indicators, referred to as "inputs to the Action Matrix" to assess nuclear plant performance. The colors are green for very low safety significance, white for low to moderate safety significance, yellow for substantial safety significance, and red for high safety significance. NRC's ROP Action Matrix reflects overall plant performance and agency response based on the inputs from findings and performance indicators. There are five columns in the matrix with Column 1 requiring a baseline level of inspections and higher columns resulting in increased NRC oversight and inspection. If NRC loses confidence in the plant's ability to perform safely, the plant will move to Column 5 and shut down.

[2] There are three key strategic performance areas in the ROP regulatory framework: reactor safety, radiation safety, and safeguards. Within each strategic performance area are seven cornerstones that reflect the essential safety aspects of facility operation: initiating events, mitigating systems, barrier integrity, emergency preparedness, public radiation safety, occupational radiation safety, and security.

[3] Nuclear Energy Institute's Proposal for Changing the Threshold for Transition to Column 3 of the NRC's Reactor Oversight Process Action Matrix (August 18, 2014).

> performance issue or the significance of the finding. Additionally, the vast majority of performance indicators and findings on the ROP web page are green. The staff believes that licensees would prefer to avoid the appearance of being an industry outlier that comes with display of non-green PI or inspection findings on the ROP web page and would therefore continue to dispute non-green PI or inspection findings, regardless of the threshold for a degraded cornerstone.[4]

Based on my interactions with licensees and the NRC staff, I firmly believe the 2003 NRC staff assessment still holds true today. For example, one licensee recently told me that it views white findings as indications of a safety failure and that it would continue to challenge white significance determinations based on this perspective and its interest in avoiding a move from Column 1 to Column 2.

In my view, the staff's other arguments in support of the proposed changes are not convincing. The staff's quantitative analysis involved summing the mean delta core damage frequencies for hypothetical white findings in ways that are inconsistent with how green-to-white and yellow-to-red thresholds are treated. The staff's qualitative analysis relies on the absence of identified programmatic weaknesses in inspection reports for plants that moved to Column 3 on the basis of white findings even though "those inspection reports were not written with the contemporary question of a degraded cornerstone definition in mind."

The NRC staff reviewed the criteria for transition to Column 3 against the original ROP program goals and examined the 31 plants that transitioned to Column 3 based on white findings during the past 15 years. Yet the staff cannot point to a single instance where a plant received an inappropriate level of NRC oversight based on the current definition of degraded cornerstone. If the staff believed that any of these moves to Column 3 were not justified, the staff could have used the Action Matrix deviation process to increase or decrease NRC oversight based on plant-specific circumstances. But the deviation process was never used for any of those 31 plants. I can only conclude that the staff believed that the increased oversight resulting from two white findings in the same cornerstone was appropriate in each of those cases.

In addition, as the paper acknowledges, refinements over time in probabilistic risk assessment modeling and the Significance Determination Process have made it more difficult for NRC to characterize a performance deficiency as white rather than green. As a result, the performance deficiencies that rise to the level of a white finding today are likely more significant than when the ROP was first implemented. If two white findings in the same cornerstone moved a plant to Column 3 at that time, surely they should do so now.

In the past 12 months, regulatory oversight from the originally established levels has already been reduced on more than one occasion. In the fall of 2014, a revised definition of a "repetitive degraded cornerstone" in the agency's inspection guidance gave licensees an additional three months to show that a performance deficiency has been corrected.[5] This

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[4] Letter from William Travers, EDO to the Commission, "Response to Staff Requirements Memorandum M030515 – Briefing on Results of the Agency Action Review Meeting, May 15, 2003," (August 29, 2003); Nuclear Energy Institute's response to Federal Register Notice 7590-01-P," Solicitation of Public Comments on the Third Year of Implementation of the Reactor Oversight Process" and Mr. McGaha's testimony before the Commission (May 15, 2003).

[5] Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," (November 20, 2014).

change essentially gives licensees a longer grace period before NRC could consider a move from Column 3 to Column 4. In the spring of 2015, another inspection guidance revision both increased the required number of findings with the same cross-cutting aspects and the length of time that must pass before NRC staff can cite a "cross-cutting issue."[6] We should not make yet another significant change to the ROP without assessing the cumulative effects of the prior changes and understanding how they would interact with the latest change proposed in this paper. But, as the staff explains in the paper, it "did not evaluate the cumulative effects of these changes during the development of the Action Matrix recommendation."

The staff is currently examining whether guidance can be developed to enhance the efficiency and timeliness of the basic analyses underlying the Significance Determination Process. While I support efforts to improve existing processes and boost efficiency, I do not support doing so in a way that erodes the agency's oversight of plant performance and safety. Project Aim is not about reducing regulatory oversight. It is about conducting our existing scope of work more efficiently, identifying any outdated and unnecessary initiatives, and making adjustments for a declining workload in some areas.

If the staff believes that additional guidance is needed to improve the implementation of Action Matrix deviations in order to prevent inappropriate levels of oversight in plant-specific cases, the staff should revise the inspection guidance to address those situations. The staff should seek Commission approval for any future changes to the ROP or Action Matrix that could result in a perceived or actual decrease in regulatory oversight from the currently established levels.

[6] Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," (April 9, 2015).