

September 4, 2015

MEMORANDUM TO: Scott A. Morris, Director
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation

FROM: Nathan T. Sanfilippo, Chief **/RA/**
Performance Assessment Branch
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation

SUBJECT: ANALYSIS OF UNINTENDED CONSEQUENCES FOR CHANGE
TO THE DEFINITION OF REPETITIVE DEGRADED
CORNERSTONE

In a memorandum dated July 17, 2015 (Agency Documents Access and Management System (ADAMS) Accession No. ML15194A444), the Director of the Office of Nuclear Reactor Regulation directed the Division of Inspection and Regional Support (DIRS) staff to assess the potential unintended consequences of changing the definition of repetitive degraded cornerstone from more than four quarters to more than five quarters.

Enclosed is the staff's completed analysis, including an analysis of the scenarios mentioned in the Differing Professional Opinion panel report (ADAMS Accession No. ML15194A444). The staff concluded that the consequences of the change are minimal, and the Reactor Oversight Process is sufficiently robust with processes in place to mitigate those consequences.

If you have any questions, please feel free to contact me or Dan Merzke at 301-415-1457.

Enclosure:
Unintended Consequences of Changing Repetitive
Degraded Cornerstone from Four to Five Quarters

CONTACT: Daniel Merzke, NRR/DIRS
301-415-1457

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Unintended Consequences of Changing Repetitive Degraded Cornerstone from Four to Five Quarters

Intended consequences:

- Reduce the probability of Action Matrix deviations because the Inspection Procedure (IP) 95002 supplemental inspection could not be completed within four quarters for licensees whose performance was not commensurate with being in Column 4 of the Action Matrix.
- Provide regions more flexibility and time to schedule and complete the IP 95002 supplemental inspection to avoid rushing the inspection to either prevent a licensee from moving to Column 4 or having to request a deviation, and to avoid inspecting a licensee who is not fully prepared for the inspection.

Unintended consequences:

- Potential delay in moving a licensee to Column 4 (by one quarter) whose performance is consistent with the Column 4 criteria, i.e., longstanding issues or significant degradation in safety performance.
 - Response: The Action Matrix is designed to arrest declining licensee performance using a graded approach before it reaches an unacceptable level (Column 5) and is not designed to arrest licensee performance declines as soon as possible. Performance decline should be captured under the continuous assessment process. However, if performance declines to the point a licensee should be moved to Column 4 prior to the expiration of the fifth quarter, the region should request a deviation.
- Licensees could delay preparations for completing the IP 95002 supplemental inspection given the extra quarter (Commission directed the staff to improve the timeliness of assessment to enhance the ability to identify declining performance early.)
 - Response: The Action Matrix inherently encourages timely completion of supplemental inspections with the potential for moving further right in the Action Matrix if safety significant inspection findings are not closed out as soon as possible. Since Action Matrix inputs can be removed after four quarters, there is still incentive to complete the supplemental inspections in four quarters vice five.

There is no supplemental completion timeliness requirement other than an Operating Plan metric that requires supplemental inspections be completed within 180 days of licensee notification of readiness.

Licensees generally start root cause evaluations and identify corrective actions when the performance deficiency is identified, not waiting until the Significance Determination Process evaluations are finalized. However, to prepare for IP 95002 supplemental 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

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challenge boards. These activities serve to improve licensee readiness for the supplemental inspection, and to identify enhancements to the root cause evaluations and associated corrective actions.

- Licensees could delay developing and/or implementing corrective actions to address the root causes of the performance deficiencies.
 - Response: Licensees generally take immediate actions to address and correct performance deficiencies, especially for risk-significant issues, either through correction of the issue, or implementation of compensatory actions pending correction. Licensees who don't implement corrective actions would be subject to additional enforcement actions.

An adequate corrective action plan to develop corrective actions to prevent recurrence and to address contributing causes would be completed after the root cause evaluation has been completed. Licensee corrective action programs prioritize corrective actions so that the most significant should be implemented the soonest. Oftentimes, some corrective actions might not be implemented until the next scheduled refueling outage, which would mitigate any delay resulting from extending the time in Column 3 by one quarter.

- Potentially fewer licensees requiring re-inspection because of additional time to prepare for the IP 95002 supplemental inspection.
 - Response: There have been a few licensees who were unable to successfully complete the initial IP 95002 supplemental inspection, primarily because of inadequate implementation of corrective actions, or poor extent-of-condition evaluations. While it's not possible to know why these licensees were not fully prepared for the IP 95002 inspections, the revision to the definition of repetitive degraded cornerstone gives licensees an extra quarter to prepare, reducing the probability for the need for a re-inspection.
- Additional quarter gives licensees more time to implement corrective actions and time to determine the effectiveness of corrective actions prior to the supplemental inspection being conducted.
 - Response: U.S. Nuclear Regulatory Commission (NRC) inspectors would be less likely to rely on a corrective action plan because licensees would have more time to actually implement some corrective actions. Inspectors would be better equipped to assess the licensee's effectiveness in improving performance. This could reduce the probability of a licensee returning to a higher column of the Action Matrix shortly after returning to Column 1.

- There is a perception that the NRC is relaxing regulatory oversight of plants with moderate degradation in safety performance.
 - Response: While the perception can exist that the NRC is relaxing regulatory oversight with this change, the Different Professional Opinion (DPO) panel concluded that the relaxation was minimal and concluded that the change did not need to be rescinded. All of the regulatory actions required for a licensee in Column 3 of the Action Matrix must still be completed; there is just an extra quarter in which to complete those actions. It should also be emphasized that this change was not initiated by industry, but by internal stakeholders who were challenged to schedule and complete the IP 95002 supplemental inspections prior to the end of the fourth quarter in which a licensee was in Column 3. In addition, the ROP was designed to provide adequate margin in the assessment of licensee performance so that appropriate licensee and NRC actions are taken before unacceptable performance occurs, not to prevent licensee declining performance.
- Example 1 from the DPO panel report:

Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6
Y – MS	Y – MS	Y – MS	Y – MS (closed)		
			W -MS	W -MS	W -MS
			PI – W - MS	PI – W - MS	

The DPO panel asserted that the change analysis focused on the “held open” findings and did not consider the impact from identification of additional issues. Under this proposed scenario with the revised criteria, a licensee would remain in Column 3 throughout the assumed period, while under the previous definition of repetitive degraded cornerstone, the licensee would have met the criteria for transition to Column 4 of the Action Matrix. The DPO panel asserted that the region would plan for an IP 95003 inspection.

- Response: The DPO panel assertion that the region would plan for an IP 95003 inspection may or may not be true. Under the old definition, the region would have to make a decision whether to move a licensee to Column 4, or to request a deviation. That discussion may still take place under the revised definition. The report states, “Using the revised definition of being degraded for five completed quarters, a decision on transition to Column 4 would be delayed until the beginning of Quarter 6, thus delaying the decision on whether to perform IP 95002 on the new inputs resulting in a degraded cornerstone or an IP 95003 inspection on the three inputs (Yellow and two Whites).” However, the DPO panel did not consider the time necessary to finalize the significance determination of the inspection finding, which under historical conditions, would be late into Quarter 5, or early Quarter 6, so the inspection finding input would not be an input throughout most, if not all of Quarter 5. This scenario is similar to Monticello performance in 2014, which resulted in a deviation request to keep

Monticello from moving to Column 4. Until the significance of the finding is finalized, there can be no decision on whether to do an IP 95002 or 95003. Transition to Column 4 under the old definition would not have been assured. After the significance of the finding is finalized, the region would likely review overall licensee performance and, if warranted, they could request a deviation to move the licensee to Column 4. This decision point would have no delay compared to the original definition of repetitive degraded cornerstone.

- Example 2 from the DPO Panel report:

Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6
Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
White					

In this example, the DPO panel states that the change in the definition of repetitive degraded cornerstone may have extended the number of quarters assessed for inputs into the Action Matrix to beyond what has previously existed. The report states that the definition of an assessment period is a period that contains four full consecutive quarters. The report states that the revision to Inspection Manual Chapter 0305 appears to have introduced an additional quarter into the agency's assessment of licensee performance.

- Response: Licensee performance is assessed continuously. The assessment period refers to the mid- and end-of-cycle periods in which licensee performance is assessed based on inputs into the Action Matrix for each quarter during a four-quarter period. If the DPO panel asserts that an assessment period is only four consecutive quarters, then in the example scenario, inputs would only be considered for Quarter 2 through Quarter 5, which would indicate only a degraded cornerstone exists. However, under the old definition, licensee performance was assessed into the fifth quarter to determine if a licensee met the criteria for a repetitive degraded cornerstone, which would be beyond the four consecutive quarters. The definition of repetitive degraded cornerstone has always exceeded four consecutive quarters. The report states that in this scenario, the majority of staff indicated the licensee would be in the repetitive degraded cornerstone in Quarter 6, even though the White input had been closed for more than four consecutive quarters. The suggestion appears to be that Column 4 may be inappropriate, since the White input has been closed for four consecutive quarters. However, in this particular case, under the old definition, the licensee met the criteria for Column 4 in Quarter 5. In either case, the region would have to make a conscientious decision on whether or not to move the licensee to Column 4 of the Action Matrix, or to request a deviation.