

August 29, 2003

MEMORANDUM TO: Chairman Diaz
Commissioner McGaffigan
Commissioner Merrifield

FROM: William D. Travers */RA/*
Executive Director for Operations

SUBJECT: RESPONSE TO STAFF REQUIREMENTS MEMORANDUM M030515 -
BRIEFING ON RESULTS OF THE AGENCY ACTION REVIEW
MEETING, MAY 15, 2003

This memorandum provides the staff's response to staff requirements memorandum (SRM) dated June 10, 2003. The SRM stated that "the staff should inform the Commission of the actions planned to respond to the issues raised by Mr. Riccio in his statement document dated May 15, 2003. The staff should follow the established process for evaluating stakeholder comments to evaluate the ROP changes suggested at the meeting, including increasing the threshold for a degraded cornerstone to three white PIs or inspection findings."

At the completion of each Reactor Oversight Process (ROP) cycle,¹ the staff performs an annual assessment of the effectiveness of the ROP and provides the results to the Commission. In addition, an end-of-cycle meeting is held in each of the four regions, and the regions and the Office of Nuclear Reactor Regulation (NRR) hold an end-of-cycle summary meeting. Following these meetings, senior Nuclear Regulatory Commission (NRC) managers participate in an Agency Action Review Meeting (AARM). Most recently, the ROP Cycle 3 AARM results were presented to the Commission on May 15, 2003. In a subsequent meeting held later on the same day, a panel of external stakeholders consisting of Mr. McGaha of Entergy Operations and Mr. Riccio of Greenpeace provided their perspectives on the ROP to the Commission.

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¹ROP cycle dates were: Cycle 1, April 1, 2000 - March 31, 2001; Cycle 2, April 1, 2001 - December 31, 2001; and January 1, 2002 - December 31, 2002.

Disposition of Stakeholder Feedback

The staff actively solicits and continuously evaluates feedback received from internal and external stakeholders throughout the year and incorporates appropriate changes. Feedback mechanisms include the NRC's internal feedback process, monthly public ROP meetings with the industry, and internal and external surveys. Positive changes to the ROP have been developed as a result of each of the feedback forums. The staff will continue to summarize the more significant comments in the annual paper that reports to the Commission on the status and effectiveness of the ROP. The comments by Mr. McGaha and Mr. Riccio at the May 15, 2003, Commission meeting have been included in the feedback disposition process, and will be addressed in the ROP Cycle 4 self-assessment, to the extent that the comments reach the threshold for inclusion in the paper.

During the May 15, 2003, Commission meeting, Mr. Riccio provided draft versions of the Davis-Besse Lessons Learned Task Force report to the Commission. Mr. Riccio implied that information in draft versions of the report were more critical than the final product and it was his view that it was improperly edited to remove some of the criticism. This particular concern has been referred to the Office of the Inspector General for disposition.

Threshold for a Degraded Cornerstone

A significant part of the assessment program is the Action Matrix, as discussed in Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program." The Action Matrix (see Attachment 1) was developed to provide guidance for consistent application of NRC actions based on plant performance. The actions are graded across five ranges of plant performance (licensee response, regulatory response, degraded cornerstone, multiple/repetitive degraded cornerstone, and unacceptable performance) in all response categories (management meetings, licensee actions, NRC inspections, communications, and regulatory actions) and in terms of annual communication of assessment results.

Action decisions are triggered directly by thresholds in the seven cornerstones of safety. For example, a white performance indicator (PI) or inspection finding requires the NRC to take the actions listed in the regulatory response column of the Action Matrix (e.g. a supplemental inspection to determine the root cause of the white finding and the appropriateness of licensee corrective actions). More significant changes in performance, such as a degraded cornerstone, prescribe more significant actions per the Action Matrix. The thresholds for moving from one column to the next were originally established based on expert panel judgement during the development of the ROP. The established thresholds drew on past experience under the old assessment program and what was determined to be the appropriate level of regulatory oversight needed if these plants had been evaluated under the new assessment program.

The original policy decision² was that one yellow input, two white inputs (in the same cornerstone) or three white inputs in the same strategic performance area would be required for entry into the degraded cornerstone column of the Action Matrix. The thresholds for entry into

² SECY-99-007, "Recommendations for Reactor Oversight Process Improvements" and memorandum to Regional Administrators from Samuel J. Collins dated May 20, 1999, "Pilot Program for the New Regulatory Oversight Process"

each column have not changed since the beginning of full implementation on April 1, 2000. Two white findings or performance indicators in the same cornerstone (versus two white findings or performance indicators in different cornerstones) were deemed to warrant increased NRC action since they qualitatively represent a more substantial degradation of a particular aspect of licensee performance. Mindful that this degraded cornerstone threshold was based on expert panel judgement, the assessment program requires periodic reviews to assure that appropriate actions are taken to adequately respond to licensees with poor plant performance. This is accomplished by the routine assessments of plant performance conducted quarterly, semiannually, and annually, as well as the ongoing self-assessment of the effectiveness of the ROP, which culminates in an annual Commission paper and briefing.

In accordance with the guidelines in IMC 0305, the regions and the Executive Team of the Office of Nuclear Reactor Regulation (NRR) conduct an end-of-cycle summary meeting to review the performance of all of the plants that have been in the degraded cornerstone, multiple/repetitive degraded cornerstone, or unacceptable performance cornerstone columns of the Action Matrix during the past 12 months. This meeting serves as a means for senior regional and NRR managers to become aware of the placement of the plants within the Action Matrix and the NRC's actions in response to plant performance, and to confirm that a plant's performance justifies its Action Matrix column assignment.

Upon completion of the end-of-cycle summary meeting, NRC senior managers, including the Executive Director for Operations, participate in the AARM. Using data from the end-of-cycle assessments, AARM participants confirm the appropriateness of the agency action for plants with significant performance problems. Following the three ROP cycles completed to date, NRC senior management has consistently confirmed that the actions directed by the Action Matrix have been appropriate for those plants whose performance has resulted in them being placed in either the degraded cornerstone or the multiple/repetitive degraded cornerstone column of the Action Matrix.

On December 13, 2002, the Significance Determination Process (SDP) Task Group issued a report that included an evaluation of the appropriateness of the current threshold for entering the degraded cornerstone column. Internal and external stakeholders surveyed by the Task Group generally agreed that the NRC's response for plants that had entered the degraded cornerstone column was justified by a licensee's performance. The report concluded that "the staff used reasoned judgement to support its decision to use two white inputs in the same cornerstone as part of the criteria for defining a degraded cornerstone. Although a detailed analysis or evaluation was not developed to support this decision, the task group did not identify data or obtain information from its interviews that suggested that the criterion was inappropriate."

As a result of the Commission briefing on May 15, 2003, the staff performed an analysis of the plants that have entered the degraded cornerstone column or multiple/repetitive degraded cornerstone column of the Action Matrix during the 3-year period of April 1, 2000, through March 31, 2003. Attachment 2 contains a list of the plants and the timeframes involved and Attachment 3 contains the staff's analysis. The staff's review has determined that 4 of the 11 plants that entered the degraded cornerstone column of the Action Matrix would not have entered that column if the entry threshold were three white inputs in a single cornerstone, rather than the current threshold of two white inputs. As a result, those plants would have received a less intensive Inspection Procedure (IP) 95001 inspection instead of an IP 95002 supplemental

inspection. After further review of the IP 95002 inspections that were performed, the staff concluded that in these four cases, IP 95002 was the appropriate inspection for the issues at the plants, and that the degraded cornerstone column of the Action Matrix was the appropriate action level.

The industry has recommended³ that the NRC change the action-level criterion for entering the degraded cornerstone column from two white findings in a single cornerstone to three white findings. The industry's position is that the current Action Matrix criterion of two white inputs for a degraded cornerstone can have the unintended consequence of licensees resisting the first white finding because they are vulnerable to a second white finding, which would move the plant into the degraded cornerstone column. The industry's position is that licensees would be less likely to challenge the first white finding if three findings or PIs were required to enter the degraded cornerstone column.

The staff disagrees with the Nuclear Energy Institute (NEI) position because the NRC has come to understand that licensees dispute findings based on their own assessment of the merit (or lack thereof) of the findings. 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 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.

Accordingly, the staff does not support changing the existing threshold of two white inputs to three white inputs for the following reasons:

- 1) The ongoing reviews of plant performance over the first 3 years of ROP implementation have confirmed that plants are receiving the appropriate level of oversight based on the current Action Matrix thresholds. The recent analysis of plants that have entered the degraded cornerstone column of the Action Matrix since ROP implementation in April 2000, as documented in Attachment 3 to this paper, further confirms that plants are receiving the appropriate level of oversight and that a change in the Action Matrix is not warranted.
- 2) The SDP Task Group concluded that the current threshold of two white inputs in the same cornerstone as the criterion for a degraded cornerstone was reasonable and there was no information to suggest that it was inappropriate.
- 3) The staff is currently reviewing the green/white thresholds for the individual SDPs and PIs due to a variety of stakeholder concerns. The staff believes that these threshold questions should be fully resolved before any changes are made to the entry conditions for the Action Matrix.

³ 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 on May 15, 2003.

4) An unintended consequence of raising the threshold for response at the degraded cornerstone level might be to decrease public confidence. Only 16 reactor units have reached the degraded cornerstone and/or multiple repetitive degraded cornerstone during the 3-year period of April 1, 2000 to March 31, 2003. Raising the threshold for more significant regulatory oversight could indicate to some stakeholders (external and internal) that the NRC is applying a less proactive regulatory approach to plants with demonstrated performance problems. Some stakeholders believe, and have stated in the recent survey responses, that the NRC threshold for action is already too low.

Accordingly, the staff intends to maintain the threshold of two white inputs and to continue to assess the appropriateness of the current Action Matrix thresholds as additional experience is gained with ROP implementation.

Attachments: As stated

cc: SECY
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ACTION MATRIX

| | Licensee Response Column | Regulatory Response Column | Degraded Cornerstone Column | Multiple/ Repetitive Degraded Cornerstone Column | Unacceptable Performance Column | |
|---------------|--|---|---|---|---|---|
| RESULTS | All Assessment Inputs (Performance Indicators (PIs) and Inspection Findings) Green; Cornerstone Objectives Fully Met | One or Two White Inputs (in different cornerstones) in a Strategic Performance Area; Cornerstone Objectives Fully Met | 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 1 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 | |
| RESPONSE | Regulatory Performance Meeting | None | Branch Chief (BC) or Division Director (DD) Meet with Licensee | DD or Regional Administrator (RA) Meet with Licensee | RA (or EDO) Meet with Senior Licensee Management | Commission meeting 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 cumulative root cause evaluation with consideration of a Performance Improvement Plan with NRC Oversight | |
| | NRC Inspection | Risk-Informed Baseline Inspection Program | Baseline and supplemental inspection procedure 95001 | Baseline and supplemental inspection procedure 95002 | Baseline and supplemental inspection procedure 95003 | |
| | Regulatory Actions ¹ | None | Supplemental inspection only | Supplemental inspection only | -10 CFR 2.204 DFI -10 CFR 50.54(f) Letter - CAL/Order | Order to Modify, Suspend, or Revoke Licensed Activities |
| COMMUNICATION | Assessment Letters | BC or DD review/sign assessment report (w/ inspection plan) | DD review/sign assessment report (w/ inspection plan) | RA review/sign assessment report (w/ inspection plan) | RA review/sign assessment report (w/ inspection plan) | |
| | Annual Public Meeting | SRI or BC Meet with Licensee | BC or DD Meet with Licensee | RA (or DD) Discuss Performance with Licensee | RA or EDO Discuss Performance with Senior Licensee Management | |
| | Commission Involvement | None | None | None | Plant discussed at AARM | Commission Meeting with Senior Licensee Management |
| | INCREASING SAFETY SIGNIFICANCE -----> | | | | | |

Note 1: The regulatory actions for plants in the Multiple/Repetitive Degraded Cornerstone column are not mandatory agency actions. However, the regional office should consider each of these regulatory actions when significant new information regarding licensee performance becomes available.

SELECTED PLANT DISCUSSIONS

During the 3-year period April 1, 2000 through March 31, 2003, the following plants entered the degraded cornerstone column or multiple/repetitive degraded cornerstone column of the Action Matrix:

| Plant | Timeframe | Action Matrix Column | Notes |
|----------------|-------------------|-------------------------------|--|
| Indian Point 2 | 2Q/2000 - present | Multiple Degraded Cornerstone | Indian Point 2 began the ROP in the multiple/repetitive degraded cornerstone column and transitioned to the degraded cornerstone column of the Action Matrix in 3Q/2002. |
| Kewaunee | 2Q/2000 - 1Q/2001 | Degraded Cornerstone | Kewaunee entered the degraded cornerstone column based on a yellow PI and subsequent parallel PI/inspection finding in the emergency preparedness cornerstone. |
| Quad Cities 1 | 2Q/2000 - 4Q/2000 | Degraded Cornerstone | Quad Cities 1 entered the degraded cornerstone column based on a yellow PI in the mitigating systems cornerstone. |
| Farley 2 | 2Q/2000 - 4Q/2000 | Degraded Cornerstone | See Attachment 3 |
| Millstone 2 | 3Q/2000 - 2Q/2001 | Degraded Cornerstone | See Attachment 3 |
| Callaway | 3Q/2000 - 2Q/2001 | Degraded Cornerstone | Callaway entered the degraded cornerstone column based on three white findings in the occupational radiation safety cornerstone. |

| | | | |
|------------------|-------------------|---------------------------------|---|
| Oconee 1 | 1Q/2001 - 2Q/2002 | Repetitive Degraded Cornerstone | Oconee 1 entered the degraded cornerstone column based on two white findings in the mitigating systems cornerstone and later moved to the multiple/repetitive degraded cornerstone column based on additional white findings in the same cornerstone. |
| Calvert Cliffs 1 | 3Q/2001 - 2Q/2002 | Degraded Cornerstone | Calvert Cliffs 1 entered the degraded cornerstone column based on a yellow finding in the mitigating systems cornerstone. |
| Cooper | 2Q/2001 - present | Repetitive Degraded Cornerstone | Cooper entered the degraded cornerstone column based on two white findings in the emergency preparedness cornerstone and later moved to the multiple/repetitive degraded cornerstone column based on additional white findings in the same cornerstone. |
| Columbia | 3Q/2001 - 2Q/2002 | Degraded Cornerstone | Columbia entered the degraded cornerstone column based on a yellow finding in the emergency preparedness cornerstone. |
| Vermont Yankee | 3Q/2001 - 3Q/2002 | Degraded Cornerstone | Vermont Yankee entered the degraded cornerstone column based on a yellow PI in the physical protection cornerstone. |
| Braidwood 1 | 2Q/2002 | Degraded Cornerstone | See Attachment 3 |

| | | | |
|---------------|-------------------|-------------------------------|---|
| Harris | 2Q/2002 - 3Q/2002 | Degraded Cornerstone | Harris entered the degraded cornerstone column based on three white findings in the mitigating systems cornerstone. |
| DC Cook 2 | 3Q/2002 - present | Degraded Cornerstone | see Attachment 3 |
| Point Beach 1 | 1Q/2003 - present | Multiple Degraded Cornerstone | Point Beach 1 entered the multiple/repetitive degraded cornerstone column due to one red finding in the mitigating systems cornerstone. |
| Point Beach 2 | 1Q/2003 - present | Multiple Degraded Cornerstone | Point Beach 2 entered the multiple/repetitive degraded cornerstone column due to one red finding in the mitigating systems cornerstone. |

STAFF ANALYSIS OF SELECTED PLANTS

Through the first three Reactor Oversight Process (ROP) cycles, plus the first quarter of Cycle 4, only 16 plants have entered either the degraded cornerstone or multiple/repetitive degraded cornerstone column of the Action Matrix. Specifically, 7 new plants entered these Action Matrix columns during ROP cycle 1 (April 1, 2000 - March 31, 2001), 2 during ROP cycle 2 (April 1, 2001 - December 31, 2001), 3 during ROP cycle 3 (January 1, 2002 - December 31, 2002, and 4 during the first quarter of ROP cycle 4.

Of these 16, 3 plants (Indian Point 2 and Point Beach 1 and 2) entered the multiple/repetitive degraded cornerstone column of the Action Matrix as a result of red findings, and 2 plants (Oconee 1 and Cooper) entered the multiple/repetitive degraded cornerstone column of the Action Matrix as a result of repetitive findings in the same cornerstone. Of the remaining 11 plants that entered the degraded cornerstone column of the Action Matrix, 4 plants (Braidwood 1, Millstone 2, Farley 2, and DC Cook 2) would not have entered that column if the entry threshold were three white inputs in a single cornerstone, rather than the current threshold of two white inputs and would not have received an Inspection Procedure (IP) 95002 supplemental inspection.

The staff performed an analysis of the IP 95002 inspections performed for Braidwood 1, Millstone 2, Farley 2, and DC Cook 2 to determine if the scope of the inspection and the degree of regulatory focus were appropriate to those plants based on the existing performance problems. In addition, the staff reviewed the actions taken at the Cooper plant to determine what effect a threshold change would have had on the regulatory focus at that facility.

Braidwood 1

During the fourth quarter of 2002, an IP 95002 supplemental inspection was conducted for a white PI (safety system unavailability/heat removal system(AFW)) and a white finding in the mitigating systems cornerstone. The white finding was due to the licensee's failure since 1992 to identify and correct the failures of the check valves located between the instrument air system and the accumulators for the Unit 1 pressurizer power-operated relief valves. The supplemental inspection revealed that, although the immediate actions to address the performance issues were complete, the licensee's proposed corrective actions and evaluation of activities to address the degraded cornerstone were in a developmental and investigatory phase. The team found the approach for completing these activities to be sound, but was unable to assess the effectiveness or completeness of these proposed actions.

The staff concludes that Braidwood might have received adequate regulatory oversight if they had been in the regulatory response column of the Action Matrix, but the IP 95002 inspection was beneficial in validating the licensee's cumulative root cause evaluation and extent-of-condition review.

Farley 2

During the third quarter of 2000, an IP 95002 supplemental inspection was conducted for two white Performance Indicators (PIs) (safety system unavailability/heat removal system (AFW)) and emergency AC power supply unavailability. The inspection revealed that the licensee's root cause investigation was thorough and the proposed corrective actions were considered acceptable. However, the Nuclear Regulatory Commission (NRC) later returned to conduct

additional inspection in the areas of breaker maintenance, maintenance program implementation, and the maintenance rule. The staff concludes that the IP 95002 inspection was warranted as it validated the licensee's collective root cause evaluation and extent-of-condition review for the two white performance indicators.

Millstone 2

In the first quarter of 2001, an IP 95002 supplemental inspection was conducted for a white PI (safety system unavailability/high-pressure safety injection) and a white finding in the mitigating systems cornerstone. The white finding was due to the failure of a turbine-driven auxiliary feedwater (TDAFW) pump speed controller. The supplemental inspection indicated that the licensee took appropriate corrective actions for the PI and the inspection finding. However, the technical evaluation and extent-of-condition review for the TDAFW pump failure were weak and did not thoroughly address other contributors to the failure. For the reasons stated above, as well as Millstone having a substantive cross-cutting issue in the problem identification and resolution area, the staff concludes that an IP 95002 inspection was appropriate.

DC Cook 2

In the first quarter of 2003, the first IP 95002 supplemental inspection was conducted for two white findings in the mitigating systems cornerstone. The findings involved TDAFW pump failures and degraded essential service water system performance. The inspection revealed that the licensee's evaluation of the two white findings was incomplete because an adequate extent-of-condition review for the root and contributing causes had not yet been performed. Specifically, the extent-of-condition reviews for maintenance procedure adequacy and condition report evaluation and closure for equipment-related issues, which were two important causes for both of the white findings, were not adequately completed. The NRC considered this to be a significant weakness in the licensee's evaluation of the issues and resulted in holding open both of the white findings that contributed to the degraded cornerstone. For the reasons stated above, the staff concludes that an IP 95002 inspection was appropriate.

Cooper

Cooper entered the degraded cornerstone in the second quarter of 2001 and subsequently entered the multiple/repetitive degraded cornerstone column in the second quarter of 2002 due to five consecutive quarters with a degraded emergency preparedness cornerstone. If three white findings had been required prior to entering the degraded cornerstone, Cooper would have reached the degraded cornerstone and the multiple/degraded cornerstone column three months later. The hours allowed by IP 95002 enabled inspectors to conduct a more in-depth review of the licensee's root cause analysis, extent-of-condition review, and corrective actions. This inspection included table top exercises. Based on this inspection, the regional office found that the licensee had not adequately evaluated the extent of condition of performance issues and the white findings remained open. If sufficient inspection resources had not been applied to this inspection, the regional office might not have been able to develop these inspection insights, and might have closed the white findings. In that case, Cooper would not have entered the multiple/repetitive degraded cornerstone column of the Action Matrix. As a result, the NRC could not have performed a detailed inspection of plant performance across cornerstones (IP 95003) and the licensee would not have developed a comprehensive improvement plan to address plant performance issues identified in areas outside of the original degraded cornerstone. Accordingly, the staff concludes that the IP 95002 and subsequent IP 95003 inspections were appropriate.

