

# NRC INSPECTION MANUAL

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INSPECTION MANUAL CHAPTER 0308 ATTACHMENT 4

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TECHNICAL BASIS FOR ASSESSMENT

Effective Date: 06/01/2022

## Table of Contents

|               |   |        |
|---------------|---|--------|
| 0308.4-01     | .....INTRODUCTION .....   | 1      |
| 0308.4-02     | .....LEVELS OF ASSESSMENT REVIEW .....  | 2      |
| 02.01         | Continuous Review .....   | 3      |
| 02.02         | Quarterly Review .....  | 3      |
| 02.03         | Mid-Cycle Review Meeting .....  | 4      |
| 02.04         | End-of-Cycle Review .....   | 5      |
| 02.05         | End-of-Cycle Summary Meeting .....  | 6      |
| 02.06         | Agency Action Review Meeting (AARM).....  | 6      |
| 02.07         | Commission Meeting .....  | 7      |
| 02.08         | Public Stakeholder Involvement .....  | 7      |
| 0308.4-03     | .....ACTION MATRIX.....   | 8      |
| 03.01         | Range of Actions .....  | 9      |
| 03.02         | Expected NRC and Licensee Actions .....   | 9      |
| 03.03         | Double Counting PIs and Findings .....  | 12     |
| 03.04         | Start Date of Findings.....   | 13     |
| 03.05         | Held Open Findings.....   | 13     |
| 03.06         | Supplemental Inspections .....  | 13     |
| 03.07         | Action Matrix Deviations .....  | 14     |
| 0308.4-04     | .....TREATMENT OF ITEMS ASSOCIATED WITH OLD DESIGN ISSUES & ED.....                   | 14     |
| 04.01         | Old Design Issues .....   | 14     |
| 04.02         | Violations in Specified Areas of Interest Qualifying for Enforcement Discretion ..... | 15     |
| 0308.4-05     | .....ROLE OF CROSS-CUTTING ISSUES.....  | 16     |
| 0308.4-06     | .....UNACCEPTABLE PERFORMANCE .....   | 17     |
| 0308.4-07     | .....TRANSITIONING TO THE IMC 0350 PROCESS .....                                      | 18     |
| 0308.4-08     | .....TRANSITIONING FROM NEW CONSTRUCTION TO THE ROP .....                             | 18     |
| 0308.4-09     | .....TRADITIONAL ENFORCEMENT FOLLOW-UP .....  | 19     |
| 0308.4-10     | .....ASPECTS OF THE ASSESSMNT PROG CONSIDERED BUT NOT INCLUDED                        | 19     |
| 0308.4-11     | .....REFERENCES .....   | 20     |
| FIGURES       |   |        |
| Figure 1      | Original Action Matrix .....  | Fig1-1 |
| Figure 2      | Assessment Basis Summary Sheet .....  | Fig2-1 |
| TABLES        |   |        |
| Table 1:      | Levels of Assessment Review .....   | T1-1   |
| Table 2:      | Assessment Program Aspects Considered But Not Included.....                           | T2-1   |
| Attachment 1: | Revision History for IMC 0308 Attachment 4 .....                                      | Att1-1 |

## 0308.4-01 INTRODUCTION

The staff's objective in developing a new assessment program was to develop a process that would allow the NRC to integrate various information sources relevant to licensee safety performance, make objective conclusions regarding their significance, take actions based on these conclusions in a predictable manner, and effectively communicate these results to the licensees and to the public. The following key principles were identified as having a direct effect on the assessment program design:

- a. Both performance indicators (PIs) and inspection results will be inputs to the assessment program.
- b. PIs and inspection results will have established thresholds.
- c. Crossing PI or inspection thresholds will have similar meaning and will result in the NRC considering a similar range of actions.

A review system was developed that provides continuous, quarterly, mid-cycle, and end-of-cycle (annual) reviews of licensee performance data (PIs and inspection results). The system is designed so that the lower-level reviews are informal reviews of performance data and are not resource intensive. The mid-cycle review was a more formal meeting and was focused on assessing performance to determine appropriate NRC inspection actions. In a 2016 Staff Requirements Memorandum (SRM) to SECY-16-0009, "Recommendations Resulting from the Integrated Prioritization and Re-Baselining of Agency Activities," dated April 13, 2016, the Commission approved the staff recommendation to discontinue formal mid-cycle assessment meetings as part of a re-baselining of agency activities effort. The staff is still required to conduct a quarterly assessment review in lieu of the mid-cycle assessment meeting. With the elimination of the mid-cycle assessment meetings, regions will still provide semi-annual updates to inspection plans via separate correspondence after completing the second quarter assessment review, as well as documentation of cross-cutting themes or cross-cutting issues (CCIs) via assessment follow-up letter. The end-of-cycle review meetings generate an assessment report and an inspection planning letter. An agency action review is generally reserved for plants requiring consideration of agency-wide actions. This review is analogous to the review performed at the former Senior Management Meeting (SMM); however, the focus has been changed from an assessment activity to an oversight and agency-level action approval function.

The original Action Matrix, Figure 1, was developed to provide guidance for consistent consideration of actions. The Action Matrix ensures that regulatory actions associated with licensee performance are objective, predictable, and transparent. Note that Figure 1 presents the original Action Matrix that was developed when the ROP was established; IMC 0305 includes the most current version of the Action Matrix. The actions are graded across five ranges of licensee performance in all response categories (Regulatory Performance meeting with licensee, licensee action, NRC inspection, communications, and regulatory actions) and in terms of annual communication of assessment results. Action decisions are triggered directly from the threshold assessments of PIs and cornerstone inspection areas. For example, a single White PI or inspection finding would require the NRC to take the actions listed in the Regulatory Response Column of the Action Matrix, such as supplemental inspection to determine the cause of the assessment input degradation. More significant changes in performance, such as one degraded cornerstone, would lead to more significant actions as dictated by the Action Matrix.

The communication of assessment results involves continuous and quarterly updates of assessment data, semi-annual inspection planning letters, and assessment reports. A public meeting will be held for all plants after the conclusion of the annual assessment cycle. Annual assessment letters will be made publicly available prior to the public meetings and the annual Commission meeting on the results of the Agency Action Review Meeting (AARM).

Details of the reactor oversight process (ROP) assessment program, including the Action Matrix and examples of various assessment letters, are contained in NRC Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program." The assessment program has evolved significantly over the years. Figure 2 provides a summary of the scope and basis of the assessment program, and the significant changes to it since its inception.

#### 0308.4-02 LEVELS OF ASSESSMENT REVIEW

The assessment period is a rolling 12-month period that contains four quarters of PIs and inspection findings. An inspection finding is normally carried forward in the assessment program for a total of four calendar quarters. This is done to account for the fact that some inspections are only conducted once per year, and carrying inspection findings forward for four full quarters allows an inspection result to have influence on the assessment program until the next inspection is conducted. Further, holding inspection findings open for four full quarters allows them to accumulate with subsequent inspection findings (similar to PIs) to indicate more pervasive and significant performance problems that require an increased level of interaction per the Action Matrix. Inspection findings would not be able to accumulate in this manner if they were not held open for four full quarters. However, an inspection finding will not be removed from consideration of future agency actions (per the Action Matrix) until the licensee has satisfactorily met all of the objectives of the appropriate supplemental inspection.

PIs are not intended to be monitored on a real time basis. However, if based on current inputs, a PI will cross a performance threshold at the end of the quarter, the regional office may start planning and scheduling activities in anticipation of the supplemental inspection. The licensee will not move in the Action Matrix until the assessment follow-up letter is issued. Additionally, the agency will take actions as appropriate to address plants with significant performance problems. Plants with significant performance problems are those plants that are in the Multiple/Repetitive Degraded Cornerstone column or the Unacceptable Performance column of the Action Matrix. This approach is based on the underlying premise that the NRC will act on performance data when it is known, and not wait for the end of an assessment period to take the appropriate actions.

The inspectors will normally use the Significance Determination Process (SDP) to evaluate inspection findings for risk significance. However, the NRC enforcement policy also applies to violations for issues that the SDP process may not evaluate for risk significance (e.g., violations that may impact the NRC's ability for oversight of licensed activities and violations that involve willfulness, including discrimination). As discussed in more detail later, these issues should be considered in determining the range of agency actions within the appropriate column of the Action Matrix. While these issues may not be evaluated through the SDP for risk significance and input into the Action Matrix, they are important and cumulatively may warrant consideration of a deviation from the Action Matrix. Regional management should notify the licensee in writing if additional inspection activities are scheduled to occur within the current quarter via an assessment follow-up letter.

As shown in Table 1, the assessment program consists of different levels of review as described below.

#### 02.01 Continuous Review

The resident inspectors and Branch Chiefs in each regional office continuously monitor the performance of their assigned plants using the results of inspection findings and PIs. Inspections are conducted on a continuous basis in accordance with IMC 2515, "Light-Water Reactor Inspection Program – Operations Phase," and IMC 2201, "Security and Safeguards Inspection Program for Commercial Power Reactors," and PIs are reported quarterly by licensees. One of the key decisions that the staff made during the development of the ROP was that the NRC must reassess licensee performance whenever new performance data is made available.

Between the normal quarterly assessments, the region may issue an assessment follow-up letter to respond to a performance issue in accordance with the Action Matrix or communicate changes in the Action Matrix if: (1) a safety-significant inspection finding is finalized (i.e., greater-than Green significance), or (2) a finding will be closed after the end of the applicable quarter, or mid-quarter if the four-quarter requirement has been met. An assessment follow-up letter shall also be issued to communicate that an Action Matrix deviation was issued or closed outside of the end-of-cycle review meetings, or to notify the licensee of the existence of a cross-cutting theme, or to open or close a cross-cutting issue (CCI). The assessment follow-up letter shall discuss planned actions and note applicable changes to the plant's designation in the Action Matrix.

#### 02.02 Quarterly Review

Each region conducts a quarterly review utilizing PI data submitted by licensees and inspection findings compiled over the previous 12 months. This review is conducted within five weeks after the conclusion of each quarter of the annual assessment cycle. Five weeks was chosen to ensure that the assessments were conducted in a timely manner following the submittal of the PI data by the licensee, gives the NRC sufficient time to process and post the PI data internally, and allows regional inspector staff and management sufficient time to review and analyze the data.

The responsible regional Branch Chief reviews the most recently submitted PIs and the inspection findings contained in the plant issues matrix (PIM) to identify any changes in performance trends. The Branch Chief shall utilize the Action Matrix to identify the potential scope of NRC actions not already embedded in the existing inspection plan. The regional office will notify the licensee via an assessment follow-up letter when assessment input thresholds are crossed. A letter is not issued during these quarterly reviews for those plants that do not have any new inspection findings or PIs that have crossed a threshold since there are no additional agency actions to communicate. Assessment results are posted on the NRC's external web page.

The purpose of the assessment follow-up letter described in section 02.01 is to communicate to all stakeholders the change in the assessment of licensee performance based on new input and the actions planned to be taken in accordance with the Action Matrix. The letter is issued within the timeframe established in IMC 0305 following the regional assessment of licensee performance to ensure Agency actions in response to any inputs with a crossed threshold are communicated to the licensee and public in a timely manner.

Additionally, for plants whose performance is in the Multiple/Degraded Cornerstone column of the Action Matrix, consideration shall be given at each quarterly review for engaging senior licensee and agency management in discussions associated with: (1) transferring the plant to the IMC 0350, "Oversight of Reactor Facilities in a Shutdown Condition Due to Significant Performance and/or Operational Concerns," process and (2) declaring licensee performance to be unacceptable. As described in more detail later in this Attachment, if the agency determines that a licensee's performance is unacceptable, then a shutdown order will be issued. This is an important consideration since the assessment program is continuous and designed to respond accordingly as additional indications of performance deficiencies are received, and not wait for the regularly scheduled annual assessment meeting with senior Agency managers.

### 02.03 Mid-Cycle Review Meeting

The purpose of the mid-cycle review meeting was to allow a higher level of regional management to periodically review and discuss the performance of all plants to ensure performance assessment and Agency actions were being conducted in a consistent manner across the region. The mid-cycle review also provided the opportunity for regional management to review and reallocate regional inspection resources. Each regional office conducted a mid-cycle review utilizing the most recent quarterly PIs and inspection findings compiled over the previous 12 months. This review incorporated activities from the quarterly review after the conclusion of the second quarter of the annual assessment cycle. This review considered the conclusions of any independent assessments of licensee performance such as the Institute of Nuclear Power Operations (INPO) and the International Atomic Energy Agency (IAEA) Operational Safety Review Team (OSART) inspections. The purpose of considering independent assessments was to provide a means of self-assessing the NRC inspection and assessment process. This revision to IMC 0305 was incorporated as a result of a Davis-Besse Lessons Learned Task Force recommendation to consider independent assessments of licensee performance. Additional activities included planning inspection activities for the 24 months following the end of the assessment period, as well as discussing any insights into potential cross-cutting issues (problem identification and resolution, human performance, and safety-conscious work environment). The Action Matrix was used to determine the scope of agency actions in response to the assessment inputs. Each plant received a mid-cycle assessment letter which communicated the results of the mid-cycle review of licensee performance and provided an updated inspection plan.

The mid-cycle review was originally a more formal assessment meeting and was focused on detecting trends and planning future inspections. The desired outcome of the mid-cycle review was to generate an inspection planning letter. The mid-cycle review meeting was discontinued based on Commission direction in the SRM to SECY-16-0009. The former mid-cycle assessment meeting is now a quarterly review conducted after the conclusion of the second quarter of the annual assessment cycle. In addition to the normal quarterly review, the region shall also review the PIM to determine if the licensee has met the criteria for a cross-cutting theme or a cross-cutting issue (CCI) in order to ensure timely identification of declining performance in the cross-cutting areas.

If applicable, an assessment follow-up letter should be issued within the timeframe established in IMC 0305 following the completion of the quarterly review to ensure that any Agency actions to be taken in response to inputs that have crossed thresholds are

communicated to the licensee and public in a timely manner. If a licensee meets the criteria for a cross-cutting theme or CCI, the region shall document it in an assessment follow-up letter. In addition, the region shall also send to licensees an updated inspection plan.

#### 02.04 End-of-Cycle Review

Each regional office conducts an end-of-cycle review which is a comprehensive assessment of licensee performance using the most recent PIs and inspection findings from the previous calendar year. The purpose of the end-of-cycle review is to perform an annual overall review and assessment of the performance of each plant, discuss the effectiveness of licensee corrective actions to address identified performance deficiencies, and determine Agency actions to be taken in response to crossed thresholds. Additionally, in order to provide a means of self-assessing the NRC inspection and assessment process, the end-of-cycle review considers independent assessments of licensee performance, such as INPO and the IAEA OSART. Such review of independent assessment results was incorporated into the ROP as a result of a Davis-Besse Lessons Learned Task Force recommendation. Additional end-of-cycle review activities include planning inspection activities through the next year, discussing any cross-cutting themes or issues (problem identification and resolution, human performance, and safety conscious work environment (SCWE)), and developing input (if applicable) to support the AARM. The end-of-cycle meeting should be held within the timeframe established in IMC 0305. This timeframe was chosen to ensure that the assessments were conducted in a timely manner following the receipt of all inputs (PI data and inspection findings). The Action Matrix will be used to determine the scope of agency actions in response to assessment inputs.

The end-of-cycle review meeting is chaired in each region by the Regional Administrator (or designee). Headquarters program offices also participate in the regional end-of-cycle meetings to provide: (1) an opportunity for these offices to share their insights into licensee performance over the course of the annual assessment period, (2) an independent validation of the regional office's assessment of licensee performance from their office's perspective, and (3) clarifying or ancillary remarks regarding ongoing or current issues within their cognizance.

The output of the end-of-cycle review is the annual assessment letter that is issued in accordance with IMC 0305. In addition to providing an overview of plant performance for the last 12 months, the letter shall also contain a qualitative discussion of cross-cutting themes and CCIs, if applicable. SCWE issues shall be discussed only if the agency has previously engaged the licensee via a meeting or docketed correspondence regarding a potential or actual SCWE concern or issue. Although regulatory actions are not taken on these items alone, they are mentioned in the annual assessment letter to highlight them so that actions can be taken by the licensee to address any performance issues before they result in more significant safety concerns. Along with the assessment letter, the NRC transmits an inspection plan to the licensee covering the 24-month period from the end of the assessment period so the licensee can plan for future inspections, as well as resolve conflicts in the schedule.

All of the annual assessment letters shall be sent to licensees following the completion of the end-of-cycle meetings and before the annual public meetings and Commission meeting on the results of the AARM to ensure that the results of the annual assessments

are available to the licensees and public prior to the Commission meeting. This ensures that the assessment results for all plants are publicly available to all stakeholders prior to these meetings and that they are aware of planned agency actions. The letters are not posted to the public website until two days after they are signed so that licensees are notified of their assessment results ahead of the public.

#### 02.05 End-of-Cycle Summary Meeting

An End-of-Cycle Summary Meeting will be held at the conclusion of the end-of-cycle review meetings to summarize the results of the end-of-cycle reviews with the Director, Office of Nuclear Reactor Regulation (NRR), or another member of the NRR Executive Team. The End-of-Cycle Summary Meeting is an informational meeting (vice a decision-making meeting) to review the performance of those plants with significant performance issues or cross-cutting issues, and agency actions taken or planned, with senior NRC headquarters management.

#### 02.06 Agency Action Review Meeting (AARM)

An AARM is conducted several weeks after the issuance of the annual assessment letters. This meeting is attended by senior NRC managers and is chaired by the Executive Director for Operations (EDO) or designee. The purpose of this meeting is to allow a collegial review by senior NRC managers of:

1. the appropriateness of agency actions for plants with significant performance issues using the data compiled during the end-of-cycle review for both operating reactors and reactors under construction,
2. trends in overall industry performance,
3. the appropriateness of Agency actions concerning fuel cycle facilities and other material licensees with significant performance problems,
4. the results of the ROP self-assessment, including a review of approved deviations from the Action Matrix, and
5. the results of the Construction Reactor Oversight Process self-assessment, including a review of approved deviations from the Construction Action Matrix.

Plants with significant performance weaknesses are those plants in the Degraded Performance column for more than three years, in the Multiple/Repetitive Degraded Cornerstone, or Unacceptable Performance columns of the Action Matrix, and plants under IMC 0350 oversight. The AARM is similar in many respects to the Senior Management Meeting (SMM), which was conducted under the previous oversight program. One notable difference is that while the purpose of the SMM was to assess licensee performance and determine appropriate agency actions, the AARM is an Agency internal control to confirm the adequacy of Agency actions determined during the end-of-cycle meetings using the Action Matrix. The Regional Administrators (or designees) and the Director of NRR (or designee) will brief the participants on overall industry performance, ROP self-assessment results, and any plants with significant performance weaknesses as determined by the Action Matrix. Other program offices will also attend the meeting as needed. The role of these various AARM participants is to: (1) provide an opportunity for these offices to share their insights into licensee



performance over the course of the annual assessment period and (2) provide clarifying or ancillary remarks regarding ongoing or current issues within their areas of responsibility.

Further details on conducting the AARM can be found in Management Directive (MD) 8.14, "Agency Action Review Meeting."

#### 02.07 Commission Meeting

The EDO will brief the Commission annually on the results of the AARM, including a discussion of any deviations from the ROP Action Matrix. The Commission should be briefed within four weeks of the completion of the AARM to ensure the timely dissemination of the assessment results, subject to Commission scheduling constraints.

#### 02.08 Public Stakeholder Involvement

The NRC shall host an annual assessment meeting for the public to discuss the assessment of licensee performance and to answer questions from public stakeholders. For licensees in Columns 1 or 2 of the Action Matrix, these meetings are focused on public interaction, and are not specifically meetings with the licensee, although the licensee will likely attend to also respond to questions from the public. For plants that have been in Column 1 or 2 of the Action Matrix during the entire assessment period, public stakeholder involvement should be scheduled during the year at a time that presents the best opportunity to effectively engage public stakeholders. Public stakeholder involvement can be a meeting tailored to the public: an open house for the public, poster sessions, virtual meetings, or other similar activities that allow the NRC to effectively engage public stakeholders. Participating in an event sponsored by another organization can be considered if such an event would maximize public engagement.

For plants that have been in Column 3, 4, or 5 of the Action Matrix, involvement of the public in a meeting or some other appropriate venue should be scheduled within 16 weeks of the end of the assessment period. The 16-week guideline may occasionally be exceeded to accommodate the regional office or licensee's schedule. For these plants, public involvement should include a formal public meeting with the licensee, but the decision should also take into consideration historical stakeholder interest and involvement when determining the type of meeting to hold.

The region may decide whether the outreach activity should be conducted onsite or in the vicinity of the site. The outreach effort should be scheduled to ensure that it is accessible to members of the public. Two separate venues/events can be considered, such as a public assessment meeting with the licensee and a public event to discuss topics of local interest. In determining what type of event or forum to conduct, the regions should consider, among other things, plant performance, public interest in plant performance, any discussion the regions need to have with the licensee, and any other areas of public interest.

The regional offices should use this meeting as an opportunity to engage interested stakeholders on the performance of the plant and the role of the agency in ensuring safe plant operations. The annual public meeting is intended to provide a forum for a candid discussion of issues related to the licensee's performance. NRC management, as specified in the Action Matrix, will discuss the agency's evaluation of licensee performance as documented in the annual assessment letter.

For meetings with the public, the annual assessment letters provide the minimum information that should be conveyed to stakeholders in the annual public meeting. However, this does not preclude the presentation of additional plant performance information when placed in the proper context. The licensee should be given the opportunity to respond at the meeting to any information contained in the annual assessment letter. The licensee should also be given the opportunity to present to the NRC any new or existing programs that are designed to maintain or improve their current performance. Members of the public, the press, and government officials from other agencies are considered as observers during the conduct of the meeting. However, attendees should be given the opportunity to ask questions of the NRC representatives before the conclusion of the meeting.

Plants under the oversight of IMC 0350 will conduct public meetings in accordance with the IMC 0350 Oversight Panel direction.

#### 0308.4-03 ACTION MATRIX

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

Figure 1 presents the original Action Matrix that was developed when the ROP was established. It was revised on October 18, 2013, when the Security Cornerstone was reintegrated into the normal ROP. After 9/11, the Commission directed the staff to remove the Security Cornerstone from the ROP and treat it separately. IMC 0320 was created to describe the assessment program for that cornerstone. The staff developed the Security Cornerstone Action Matrix described in SECY-05-0082 that contained an additional row to notify external stakeholders of declining licensee performance for security-related issues. The basis for the notification was the elimination of public information regarding security inspection findings and PIs removed an incentive for licensees to perform well, since there could be no public scrutiny of their performance in this area. The staff determined that notifying State and Federal officials as a licensee's performance declines should restore some of the incentive to maintain good performance that may have been lost with the lack of public notification. When the Security Cornerstone was reintegrated with the ROP, the Action Matrix was revised to include that row for security-related issues.

The graded approach to assessment is applied in many different ways to improve the effectiveness and efficiency of NRC actions. Early in the development of the new assessment program, it was determined that varying levels of NRC resources and management oversight could be applied to different levels of licensee performance. For example, the scope of inspection and inspection resources applied will be increased as the assessment inputs indicate performance deficiencies of a more significant nature. Likewise, it was decided that the level of NRC management oversight for all plants should be graded based on plant performance. For example, a plant with a single White input can have its meetings with the licensee conducted by a regional Division Director. However, a plant with more significant issues resulting in performance in the Degraded Performance column of the Action Matrix would have its meetings conducted by the Regional Administrator (or designee).

### 03.01 Range of Actions

The Action Matrix specifies a range of actions appropriate for each level of performance. These actions are defined as follows:

- a. Regulatory Performance Meetings: Regulatory performance meetings are held between licensees and the agency to discuss corrective actions associated with safety-significant inspection findings. Each safety-significant assessment input shall be discussed in order to arrive at a shared understanding of the performance issues, underlying causes, and planned licensee actions.
- b. Licensee Action: Anticipated actions by the licensee in response to overall performance indicated by the appropriate column of the Action Matrix. If these actions are not being taken by the licensee then the agency may consider expanding the scope of the applicable supplemental inspection to appropriately address the area(s) of concern. This would not be considered a deviation from the Action Matrix.
- c. NRC Inspection: The range of NRC inspection activities in response to performance indicated by the appropriate column of the Action Matrix.
- d. Regulatory Actions: The range of actions that may be taken by the agency in response to performance indicated by the appropriate column of the Action Matrix.
- e. Communication: The appropriate level of NRC management to communicate the assessment results to the licensee and public.

### 03.02 Expected NRC and Licensee Actions

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. This is described in more detail below in the description of expected NRC and licensee actions for each column of the Action Matrix:

- a. Licensee Response Column - All assessment inputs are Green. The licensee will receive only the baseline inspection program and identified deficiencies will be addressed through the licensee's corrective action program. The NRC will periodically review and evaluate the licensee corrective actions taken for identified deficiencies through routine problem identification and resolution inspections conducted under the baseline program.
- b. Regulatory Response Column - Assessment inputs result in one or two White inputs in a Strategic Performance Area. One or two White inputs indicate the need for NRC interaction above the baseline level of inspection. 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. The licensee is expected to place the identified deficiencies in its corrective action program and perform an evaluation of

the root and contributing causes. The licensee's evaluation will be reviewed during conduct of supplemental inspection procedure (IP) 95001, "Supplemental Inspection Response to Action Matrix Column 2 (Regulatory Response) Inputs." Due to the apparent isolated nature of these performance deficiencies, the purpose of conducting IP 95001 is to independently review the licensee's corrective actions to determine if they are appropriate to correct the underlying deficiency and prevent recurrence.

- c. Degraded Performance Column – A licensee in this column would have assessment inputs that result in a degraded cornerstone or three White inputs in any one Strategic Performance Area. A degraded cornerstone may result from three 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 focused on a particular aspect of licensee performance. The licensee is expected to place the identified deficiencies in its corrective action program and perform an evaluation of the root and contributing causes for both the individual and the collective issues. The licensee's evaluation will be reviewed, along with an independent assessment of the extent of condition, during supplemental inspection IP 95002, "Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area." An independent assessment of the extent of condition of the performance deficiency is performed to ensure that the licensee has thoroughly evaluated the causes of the problems. Additionally, if the licensee did not recognize, that one or more safety culture component deficiencies caused or significantly contributed to the risk-significant performance issues, the NRC may request that the licensee complete an independent safety culture assessment. The consideration of safety culture was incorporated into the ROP as a result of Commission direction in SRM-SECY-04-0111, "Recommended Staff Actions Regarding Agency Guidance in the Areas of Safety Conscious Work Environment and Safety Culture," in which the Commission directed the staff to include as part of its enhanced inspection activities for plants in the Degraded Cornerstone column (Column 3) of the Action Matrix a determination of the need for a specific evaluation of the licensee's safety culture.

In the beginning of the ROP, this column was called the Degraded Cornerstone Column. The staff changed the name in 2016 to the Degraded Performance Column to avoid confusion over which cornerstone was degraded if the licensee entered this column because of three White inputs in a Strategic Performance Area.

In 2016, the staff also revised the definition of a degraded cornerstone from two White inputs in a cornerstone to three White inputs because of Commission direction in SRM- SECY-15-0108, "Recommendation to Revise the Definition of Degraded Cornerstone as Used in the Reactor Oversight Process." Because there was no documented technical basis for the criterion of two White inputs being equivalent to one Yellow input, the staff developed a technical basis in SECY-15-0108. Based on a probabilistic risk assessment and a review of supplemental inspection reports, the staff determined that three White inputs were more equivalent to one Yellow input, and indicative of degraded performance. The staff issued a report documenting the basis for the recommendation (Agency Documents Access and Management System (ADAMS) Accession No. ML14350B164) and summarized the data analysis to support the recommendation (ML14350B180).

- d. Multiple/Repetitive Degraded Cornerstone Column – A licensee in this column would have assessment inputs that result in a repetitive degraded cornerstone, multiple

degraded cornerstones, multiple Yellow inputs or a single Red input. A repetitive degraded cornerstone is a cornerstone that has been degraded for more than five quarters, with the addition of another White input in any cornerstone during that period. These different combinations warrant an increase in the level of interaction from the previous column since the quantity of cornerstones affected, length of time a single cornerstone is degraded, or the number of significant inputs indicates a systemic and pervasive degradation of licensee performance. Performance in this column also warrants the consideration of additional regulatory actions (e.g., Confirmatory Action Letter or Order) as necessary since these performance deficiencies may represent a significant reduction in safety margin. The licensee is expected to place the identified deficiencies in its corrective action program and perform an evaluation of the root and contributing causes for both the individual and the collective issues. The NRC will perform supplemental inspection IP 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs or One Red Input," to determine the breadth and depth of the performance deficiencies. Following the completion of the inspection, the NRC will decide whether additional agency actions are warranted, including additional supplemental inspection, a demand for information, or issuance of an order, up to and including a plant shutdown. A Confirmatory Action Letter (CAL) will, at a minimum, document licensee commitments contained in their Performance Improvement Plan. These regulatory actions may also be considered prior to the completion of the supplemental inspection, if warranted. While these regulatory actions are not mandatory, except for issuance of a CAL, the regional office should consider each of them when significant new information regarding licensee performance becomes available. These regulatory actions should be implemented, when appropriate, in accordance with the NRC Enforcement Manual. Due to the depth and breadth of performance issues reflected by a plant being in this column, it is prudent to ensure actual performance improvements have been made prior to closing out the inspection findings and exiting this column of the Action Matrix. IMC 0305 includes specific information to consider prior to closing out inspection findings, customized follow-up actions, and documentation of Agency decisions. The licensee is also expected to conduct a third-party safety culture assessment.

The definition of repetitive degraded cornerstone has undergone several revisions since ROP inception. It was originally defined as two White inputs or one Yellow input in a single cornerstone for five or more quarters. In SECY 2009-002, "Revision to the Reactor Oversight Process Implementation Guidance," the staff informed the Commission of another change to the definition of repetitive degraded cornerstone, as a result of lessons learned from the Palo Verde 2007 performance issues. Because of the potential that two White PIs that lingered could potentially drive a licensee into Column 4, the definition was revised so that at least one of the five quarters would require three White inputs into the Action Matrix. This revision ensured that PI inputs were treated the same as inspection findings. In 2011, because of some confusion over the duration, the definition was changed to more than four quarters. Additionally, language was added to clarify that the third White input could be in any cornerstone. In 2014, the staff revised the definition to a degraded cornerstone for more than five quarters, with an additional White input in any cornerstone during that period. The change to more than five quarters was in response to feedback that it was difficult for the regions to complete the supplemental inspections by the end of the fourth quarter in which a licensee was in Column 3 of the Action Matrix. An additional quarter was added to give the regions more scheduling flexibility. The staff determined this change did not

require Commission approval because the definition had been modified several times previously where the Commission was notified of changes through information papers.

- e. Unacceptable Performance Column - Licensee performance is unacceptable and continued plant operation is not permitted within this column. In general, it is expected that entry into the Multiple/Repetitive Degraded Cornerstone column of the Action Matrix and completion of supplemental inspection IP 95003 will precede consideration of whether a plant is in the Unacceptable Performance Column. If the agency determines that a licensee's performance is unacceptable, then a shutdown order will be issued in accordance with the NRC Enforcement Manual. The licensee is expected to conduct a third-party safety culture assessment. Additional information on the determination of unacceptable performance can be found in Section 6 of this Attachment.
- f. IMC 0350 - Licensee performance satisfies the IMC 0350 entrance criteria and NRC management has decided to remove the plant from the normal ROP and establish a separate oversight panel. Subsequent management review of licensee performance has determined that entrance into the Unacceptable Performance Column is not warranted at this time. Additionally, NRC management will review licensee performance on a quarterly basis to determine if entrance into the Unacceptable Performance Column is warranted. The licensee is expected to place the identified deficiencies into their performance improvement plan and perform an evaluation of the root and contributing causes for both the individual and collective causes. As discussed in IMC 0350, the regional offices will conduct baseline and supplemental inspections as appropriate, as well as special inspections per the restart checklist. Performance indicator data should continue to be gathered in accordance with IMC 0608, "Performance Indicator Program," to the extent that it is applicable to shutdown conditions. Plants under the IMC 0350 process are considered to be outside of the normal assessment process and under the auspices of IMC 0350. However, this column has been added to the Action Matrix for illustrative purposes to demonstrate comparable agency response and communications. Plants under the IMC 0350 process should be discussed at the end-of-cycle review to integrate inspection planning efforts across the regional office and to keep internal stakeholders abreast of ongoing inspection and oversight activities. Annual assessment letters are generally not issued for these plants because a separate communication plan is developed as part of the IMC 0350 oversight process that may involve more frequent communication. Annual public meetings will not be conducted for these plants as the regional office conducts periodic public meetings to discuss licensee performance.

### 03.03 Double Counting PIs and Findings

Some distinct issues may result in simultaneously crossing a PI threshold and generating a safety-significant inspection finding. Although an attempt was made during the development of the ROP to minimize this kind of double-counting between PIs and inspection findings, some double-counting is desirable. This is because the PIs generally count and aggregate single occurrences, and therefore are often not good at reflecting the significance of a particular event. For example, a PI might count personnel overexposures, but a particularly egregious and significant overexposure would not be counted any differently than one that was just over the personnel exposure limit. Therefore, in situations like this, the SDP is relied upon to place the proper safety significance on the individual occurrence. However, this would result in two assessment inputs from the same occurrence combining to cause increased regulatory action per the Action Matrix. Therefore, issues with the same underlying cause should not be

double-counted in the assessment program to ensure that inappropriately excessive regulatory action is not taken in response to a single event. However, the most conservative significance characterization related to the PI and the inspection finding (i.e., Yellow vs. White) shall be used to determine the appropriate agency action according to the Action Matrix. This is not considered a deviation from the Action Matrix.

#### 03.04 Start Date of Findings

The date used for consideration in the assessment program is defined in IMC 0305. This ensures that the minimum four-quarter time frame during which the inspection finding is considered in the assessment program starts at the beginning of the quarter of the date of completion of the onsite inspection which identified the finding.

#### 03.05 Held Open Findings

There may be instances in which the corresponding supplemental inspection reveals substantive inadequacies in the licensee's evaluation of the root causes of the original performance deficiency, determination of the extent of the performance problems, or the actions taken or planned to correct the issue. Significant weaknesses in the licensee's evaluation of the performance issue (PI or inspection finding) may be subject to additional agency action, including additional enforcement actions or an expansion of the supplemental inspection procedure as necessary to independently acquire the necessary information to satisfy the inspection requirements. In general, licensees should be given an opportunity to correct any identified deficiencies prior to re-inspection. For inspection findings, the original performance issue will remain open beyond the normal four quarters and will not be removed from consideration in the assessment program until the weaknesses in the evaluation are addressed and corrected. This allows the NRC to continue to consider the original performance deficiency in the assessment program until the licensee adequately satisfies the objectives of the appropriate supplemental inspection. For significant weaknesses in the licensee's evaluation of a performance issue that are associated with a PI, a parallel inspection finding will be opened and given the same color as the PI. However, this finding will not be double-counted in the assessment program. Because of how PIs are calculated, a PI may return to the Green band even when the licensee has not taken adequate corrective actions to address the underlying performance issue. The issuance of a parallel inspection finding ensures that this performance issue can continue to be considered in the assessment program until the licensee adequately satisfies the objectives of the appropriate supplemental inspection. The finding will be removed from consideration of future agency actions (per the Action Matrix) when the objectives of the supplemental inspection are satisfactorily met.

#### 03.06 Supplemental Inspections

Until the appropriate supplemental inspection as prescribed by the Action Matrix is completed, the licensee shall remain in the higher column of the Action Matrix, even if the greater-than-Green inputs are no longer present in subsequent quarters. For example, based on the timing of the PI events, a PI may return to the Green band prior to the NRC completing the supplemental inspection. In this case, the licensee would remain in the higher column until satisfying all of the objectives of the appropriate supplemental inspection. For supplemental inspections completed in response to safety significant inspection findings, if the licensee satisfactorily meets the objectives of the inspection, then the inspection finding would be an active input into the Action Matrix

for only four quarters, unless the finding were held open. If there are no other active inputs, then the licensee would transition back to the Licensee Response column on the first day of the fifth quarter.

### 03.07 Action Matrix Deviations

According to SECY-99-007, "Recommendations for Reactor Oversight Process Improvement," the Action Matrix is not intended to provide guidance that is excessively rigid. It establishes expectations for interactions, licensee actions, and NRC actions. It does not preclude the NRC from taking less action or some additional action, when justified. The key point is that assessment results are determined by the PI and cornerstone inspection area results. There may be rare instances in which the regulatory actions dictated by the Action Matrix may not be appropriate. In these instances, the agency may deviate from the Action Matrix to either increase or decrease agency action. A deviation is defined as any regulatory action taken that is inconsistent with the range of actions described in the applicable column of the Action Matrix. The EDO shall approve all deviations from the Action Matrix. The EDO was chosen as the approval authority to provide an appropriate level of senior Agency management oversight to ensure agency-wide consistency in considering the need for a deviation from the Action Matrix. Approved Action Matrix deviations will be discussed at the AARM and subsequent Commission meeting on the results of the AARM.

When a Region determines extra inspection resources need to be expended to evaluate emerging technical issues not related to licensee performance issues, this change in scope is not considered an Action Matrix deviation and does not require an Action Matrix deviation memorandum, e.g., the additional inspection required because of the concrete degradation at Seabrook from the alkali-silica reaction (ASR). However, this extra effort should be acknowledged in assessment letters to inform external stakeholders of the additional effort being expended and the reason it is not a deviation from the ROP. Additional guidance can be found in IMC 2515 Section 07.03.

## 0308.4-04 TREATMENT OF ITEMS ASSOCIATED WITH OLD DESIGN ISSUES AND ENFORCEMENT DISCRETION

### 04.01 Old Design Issues

An Old Design Issue is an inspection finding involving a past design-related problem in the engineering calculations or analysis, associated operating procedure, or installation of plant equipment that does not reflect a performance deficiency associated with existing licensee programs, policy, or procedures. The purpose of this approach is to place a premium on licensees initiating efforts to identify and correct safety-significant issues that are not likely to be identified by routine efforts before degraded safety systems are called upon to work. The assessment program evaluates current performance issues, and this approach excludes old design issues from consideration of overall licensee performance in the Action Matrix.

If the finding meets all of the old design issue criteria, it **will** not aggregate in the Action Matrix with other performance indicators and inspection findings. In order to ensure the licensee corrects the performance deficiency, the NRC will still conduct an IP 95001 supplemental inspection for findings determined to be White, or an IP 95002 supplemental inspection for those findings determined to be Yellow or Red to review the



licensee's root cause evaluation and corrective actions for that particular issue. If the finding is determined not to meet the old design issue criteria, it would be treated like any other inspection finding and additional agency actions would be taken in accordance with the Action Matrix.

The NRC may refrain from considering safety-significant inspection findings in the assessment program for a design-related finding in the engineering calculations or analysis, associated operating procedure, or installation of plant equipment that meets all of the following criteria:

- a. It was licensee-identified as a result of a voluntary initiative such as a design basis reconstitution. For the purposes of this manual chapter, self-revealing issues are not considered to be licensee-identified. Self-revealing issues are those deficiencies which reveal themselves to either the NRC or licensee through a change in process, capability or functionality of equipment, or operations or programs.
- b. It was or will be corrected, including immediate corrective action and long-term comprehensive corrective action to prevent recurrence, within a reasonable time following identification (this action should involve expanding the initiative, as necessary, to identify other failures caused by similar root causes). For the purpose of this criterion, identification is defined as the time from when the significance of the finding is first discussed between the NRC and the licensee. Accordingly, issues being cited by the NRC for inadequate or untimely corrective action are not eligible for treatment as an old design issue.
- c. It was not likely to be identified by recent ongoing licensee efforts such as normal surveillance or quality assurance activities, or evaluation of industry information.
- d. The finding does not reflect a current performance deficiency associated with existing licensee programs, policy, or procedure.

A finding that includes a violation that meets all applicable requirements for enforcement discretion and meets the criteria for old design issues will be documented in the cover letter of the associated inspection report.

#### 04.02 Violations in Specified Areas of Interest Qualifying for Enforcement Discretion

In general, generic issues involving enforcement discretion will be authorized via an Enforcement Guidance Memorandum (EGM), or other type of authorizing document. That document should specify the requirements for determining the significance and following-up on issues receiving enforcement discretion.

Findings that include violations subject to enforcement discretion in accordance with the Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10CFR50.48(c)) included in the Commission's Enforcement Policy may be dispositioned as described in IMC 0305.

The cover letter shall state that the staff is exercising enforcement discretion and explain the basis for doing so, including a reference to the applicable enforcement document(s) and the appropriate section of IMC 0305. Also, cover letters should be consistent with the guidance provided in the Enforcement Manual. Note: If a single finding has multiple related violations, only those violations not subject to enforcement discretion should be

considered when dispositioning the finding with the normal SDP and Action Matrix process. The violations subject to enforcement discretion will be processed and documented as findings in accordance with the provisions of the above guidance.

#### 0308.4-05 ROLE OF CROSS-CUTTING ISSUES

There are other inputs, beside PIs and inspection findings, that can influence the actions taken through the assessment program. These items include cross-cutting issues, traditional enforcement actions, and allegations. While these items are not inputs to the Action Matrix, they can influence the range of actions taken when PI thresholds are crossed, or inspection findings are greater-than-Green. For example, the scope of the supplemental inspection can include the performance deficiencies associated with a long-standing cross-cutting issue.

The ROP was developed with the presumption that plants with significant performance issues in the cross-cutting areas would also have safety-significant PIs or inspection findings. In response to lessons learned from the reactor vessel head degradation event at Davis-Besse, the staff proposed to enhance the ROP treatment of cross-cutting issues to more fully address safety culture, and to allow for more agency action as the result of the identification of a cross-cutting issue, as described in SECY-04-0111. The Commission approved the staff recommendation in SRM-SECY-04-0111, and as a result, the staff developed the Substantive Cross-Cutting Issue (SCCI) process, which included specific criteria for a cross-cutting theme, and a list of questions to determine if the staff believed an SCCI existed. Entry criteria for a substantive cross-cutting issue was greater than three inspection findings with a common theme in the current 12-month assessment period with documented cross-cutting aspects in one of the three cross-cutting areas. Additionally, the Agency must have had a concern with the licensee's scope of efforts or progress in addressing the cross-cutting area performance deficiency for the agency to highlight an SCCI. Further enhancements integrating safety culture into the ROP are described in Regulatory Information Summary (RIS) 2006-13, "Information on the Changes Made to the Reactor Oversight Process to More Fully Address Safety Culture."

In 2014, the staff completed an effectiveness review and data analysis of the SCCIs assigned since implementation of the criterion of four findings with the same cross-cutting aspect. This review was documented in a memorandum, "Effectiveness Review of Substantive Cross-Cutting Issues," dated April 23, 2014, (ML14099A171). The staff concluded that SCCIs were not a precursor to declining licensee performance, and the resource cost for implementing the SCCI process was not commensurate with the safety benefit. As a result of the ROP Enhancement Project in 2014, the staff revised the criteria for a cross-cutting theme, created a backstop for a cross-cutting theme at the cross-cutting area level, removed the term "substantive" from SCCIs, and eliminated the questions for opening a Cross-Cutting Issue (CCI). The questions were eliminated because they were subjective and implemented inconsistently. The staff revised the criteria for a cross-cutting theme to at least six inspection findings with the same cross-cutting aspect in human performance or PI&R in the previous 12-month period because it was more indicative of a trend. Analysis showed that licensees with demonstrated poor performance would have still met the new threshold for a cross-cutting theme. A backstop for a cross-cutting theme at the area level was developed to ensure staff identified licensees with pervasive concerns in a cross-cutting area, but did not trip the threshold for a theme at the aspect level. The thresholds for a cross-cutting theme at the aspect and area level are described in IMC 0305. The changes were intended to make the CCI process more objective, efficient, and predictable. There were no changes to cross-cutting for the SCWE area.

The staff determines if a cross-cutting theme exists during the second quarter assessment review, and during the end-of-cycle assessment meeting. If a licensee crosses the threshold for a cross-cutting theme, the staff identifies the theme in an assessment follow-up letter, or in the annual assessment letter, depending on the timing, with the expectation that the licensee will take some corrective action. The second consecutive occurrence of the same cross-cutting theme is again identified in the assessment letter, and NRC inspectors will follow up on the licensee's corrective actions. The third consecutive occurrence of the same cross-cutting theme results in issuance of a Cross-Cutting Issue (CCI). These criteria increased objectivity and ensured consistent implementation. The CCI is not issued until the third consecutive occurrence to allow the licensee's Corrective Action Program an opportunity to identify and correct the theme prior to NRC engagement. By the third consecutive occurrence, all of the inspection findings which resulted in the first cross-cutting theme would have dropped off because 12 months will have already passed. If the licensee still meets the threshold for the same theme, then they have accrued enough additional findings to again trip the threshold, indicative of inadequate corrective actions. Due to the increased amount of time it takes to recognize and correct SCWE concerns, the Regions have some flexibility as to when to open a CCI for SCWE if they conclude that the licensee has identified and implemented corrective actions to address the concern.

Documentation of cross-cutting themes and CCIs in assessment letters should be done in accordance with IMC 0305 Exhibit 7, "Cross-Cutting Issues Excerpt Template." When a CCI has been opened, it should be closed out through some inspection activity. The Region shall specify the CCI closure criteria in the assessment letter in which the CCI is opened. Closure options are provided in IMC 0305.

#### 0308.4-06 UNACCEPTABLE PERFORMANCE

Unacceptable performance represents situations in which the NRC lacks reasonable assurance that the licensee can or will conduct its activities without undue risk to public health and safety. Examples of unacceptable performance may include:

- a. Multiple significant violations of the facility's license, technical specifications, regulations, or orders.
- b. Loss of confidence in the licensee's ability to maintain and operate the facility in accordance with the design basis (e.g., multiple safety-significant examples where the facility was determined to be outside of its design basis, either due to inappropriate modifications, the unavailability of design basis information, inadequate configuration management, or the demonstrated lack of an effective problem identification and resolution program).
- c. A pattern of failure of licensee management controls to effectively address previous significant concerns to prevent the recurrence.

During the development of the new assessment program, the staff attempted to develop more objective criteria to identify unacceptable performance and the need for the regulatory actions described in the Unacceptable Performance Column of the Action Matrix. However, the staff determined that it was too difficult to identify adequate objective measures that could be relied upon to indicate unacceptable performance. The staff concluded that the determination of unacceptable performance must remain a subjective decision by senior Agency management with the application of the regulatory actions taken in accordance with the guidance of the

Enforcement Manual. However, the use of PIs and inspection findings with risk-informed performance thresholds, used in conjunction with the above noted examples of unacceptable performance, should make the decision of unacceptable licensee performance more understandable to the licensees and public.

#### 0308.4-07      TRANSITIONING TO THE IMC 0350 PROCESS

Although a plant under the oversight of IMC 0350 is not assessed using the ROP Assessment Program outlined in IMC 0305, it is still under the auspices of several aspects of the ROP; however, each program area needs to be customized appropriately to conform to the IMC 0350 extended shutdown conditions. Those aspects are described more thoroughly in IMC 0350, Section 06.03.

The focus of IMC 0350 is to provide oversight of the licensee's performance until such time that a return to the normal ROP Assessment Program is appropriate. Implementation of IMC 0350 provides adequate assurance that the licensee is ready for a return to plant operation, and once restarted, acceptable licensee performance is verified prior to the NRC returning the plant to routine oversight inspection and assessment programs of the ROP.

#### 0308.4-08      TRANSITIONING FROM NEW CONSTRUCTION TO THE ROP

The transition from construction oversight to the ROP for the AP1000 reactor units is described in the memo, "Transition to Reactor Oversight Process for Vogtle Electric Generating Plant, Units 3&4" (ML20191A383). The staff determined that the transition point would be at the 10 CFR 52.103(g) finding, when all inspections, tests, analyses, and acceptance criteria (ITAAC) have been met, at which point the operational phase begins.

SECY-18-0091, "Recommendations for Modifying the Reactor Oversight Process for New Large Light Water Reactors with Passive Safety Systems Such as the AP1000 (Generation III+ Reactor Designs)," dated September 12, 2018, discusses the staff's review of the ROP's applicability to AP1000 units, which found that certain PIs would no longer be applicable to the AP1000 design and recommended deletion of those from oversight of the AP1000 units. Additionally, the review specified that modifications to the ROP baseline inspection procedures (IPs) would be necessary to address unique aspects of the AP1000 design. In SRM-SECY-18-0091, dated February 24, 2020, the Commission approved the deletion of the Mitigating Systems Performance Index (MSPI) PIs for the AP1000 design, with no new PIs being developed during initial operation and limited modifications being made to the baseline inspection program, as described by the staff in the SECY paper. The staff proposed no changes to the assessment program for the AP1000 units.

When licensees transition to oversight under the ROP from a construction status, there may be greater-than-Green operational program inspection findings identified under construction oversight that remain open after the 103(g) determination is made. If there are greater-than-Green findings associated with an operational program for which the supplemental inspections were not successfully completed before the 103(g) determination was made, the findings will remain open and will be assigned to the ROP cornerstone that is most closely related to the finding.

- These findings will be considered as inputs to the ROP Action Matrix upon initial implementation of the ROP. These findings will not be required to remain open for four

full quarters; they will remain open until the appropriate supplemental inspection is completed.

- Greater-than-Green inspection findings mapped to a cornerstone that is more reliant on a probabilistic risk assessment (PRA) (i.e., initiating events, mitigating systems, barrier integrity), will not count in the ROP Action Matrix, but the licensee will be required to have the appropriate supplemental inspection completed in order to close the finding. The reason for this is the basis for determining significance of findings using the construction SDP is different from the ROP SDP. Additionally, these findings are indicative of construction deficiencies and not operational performance.

#### 0308.4-09 TRADITIONAL ENFORCEMENT FOLLOW-UP

In SECY-08-0046, "Reactor Oversight Process Self-Assessment for Calendar Year 2007," the staff noted its intent to explore how certain traditional enforcement (TE) items related to all seven cornerstones could be used as a more integrated input into the assessment program. A working group was established to gather perspectives for achieving a more integrated enforcement process with the ROP. One recommendation was to perform follow-up inspection on all traditional enforcement outcomes which would place a focus on the regulatory significance associated with licensee actions that are willful, impede the regulatory process, or have actual consequences. The staff would examine traditional enforcement outcomes over the preceding 12 months during the mid-cycle and end-of-cycle performance reviews. Using an escalating approach similar to that in the Action Matrix, the number, severity level, and similarities among the violations would trigger one of three levels of inspection response. However, the inspection response to the traditional enforcement outcomes would not be a direct input into the Action Matrix since the SDP would have already captured any associated risk significance by processing the performance deficiency separately.

In CY 2009, the staff changed Appendix B, "Issue Screening," to IMC 0612, "Power Reactor Inspection Reports," to allow performance deficiencies to be processed separately from the violation, so that the technical aspect could become a timely input into the Action Matrix. IMC 0305 and supporting inspection guidance were changed to allow follow-up inspection on all levels of traditional enforcement outcomes. These inspections were IP 92722, "Follow Up Inspection for Any Severity Level I or II Traditional Enforcement Violation or for Two or More Severity Level III Traditional Enforcement Violations in a 12 Month Period," and IP 92723, "Follow Up Inspection for Three or More Severity Level IV Traditional Enforcement Violations in the Same Area in a 12-Month Period."

In 2016, IMC 0305 was revised to clarify that the 12-month period in which to count traditional enforcement violations for the purposes of determining whether or not to implement a follow-up inspection was changed to a 12-month rolling period, vice the 12-month period determined by the end-of-cycle meetings. This revision was based on the applicability described in the inspection procedures that specifies any 12-month period.

#### 0308.4-10 ASPECTS OF THE ASSESSMENT PROGRAM CONSIDERED BUT NOT INCLUDED

Table 2 provides a detailed discussion of various aspects of the ROP Assessment Program that were considered during its development, and the basis for not including them.

0308.4-11 REFERENCES

Atomic Energy Act of 1954 as amended

IMC 0305, "Operating Reactor Assessment Program"

IMC 0310, "Components within the Cross-Cutting Areas"

IMC 0350, "Oversight of Reactor Facilities in a Shutdown Condition Due To Significant Performance and/or Operational Concerns"

IMC 0608, "Performance Indicator Program"

IMC 0609, "Significance Determination Process"

IMC 2201, "Security and Safeguards Inspection Program for Commercial Power Reactors"

IMC 2515, "Light-Water Reactor Inspection Program – Operations Phase"

IMC 2515, Appendix B, "Supplemental Inspection Program"

IMC 2515, Appendix C, "Special and Infrequently Performed Inspections"

IP 95001, "Supplemental Inspection Response to Action Matrix Column 2 Inputs"

IP 95002, "Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area"

IP 95003, "Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input"

MD 8.14, "Agency Action Review Meeting"

NFPA 805, "Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants"

NRC Enforcement Manual

NRC Enforcement Policy

SECY-99-007, "Recommendations for Reactor Oversight Process Improvements"

SECY-15-0108, "Recommendation to Revise the Definition of Degraded Cornerstone as Used in the Reactor Oversight Process"

SRM-SECY-04-0111, "Recommended Staff Actions Regarding Agency Guidance in the Areas of Safety Conscious Work Environment and Safety Culture"

SRM-SECY-16-0009, "Recommendations Resulting from the Integrated Prioritization and Re-Baselining of Agency Activities"

Figure 1<sup>3</sup> Original Action Matrix

|                                       | Licensee Response Column   | Regulatory Response Column  | Degraded Cornerstone Column  | Multiple/ Repetitive Degraded Cornerstone Column   | Unacceptable Performance Column   | IMC 0350 Process   |
|---------------------------------------|--|---|--|--|---|--|
|                                       | 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 Minimal Reduction in Safety Margin <sup>4</sup> | Repetitive Degraded Cornerstone, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or 1 Red Input; Cornerstone Objectives Met with Longstanding Issues or Significant Reduction in Safety Margin | Overall Unacceptable Performance; Plants Not Permitted to Operate Within this Band, Unacceptable Margin to Safety | Plants in a shutdown condition with performance problems placed under the IMC 0350 process |
| 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  | RA (or EDO) Meet 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 Plan / Restart 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   |   | Baseline and supplemental as practicable, plus special inspections per restart checklist.  |
| Regulatory Actions <sup>1</sup>       | None   | Supplemental inspection only  | Supplemental inspection only   | -10 CFR 2.204 DFI<br>-10 CFR 50.54(f) Letter<br>- CAL/Order  | Order to Modify, Suspend, or Revoke Licensed Activities   | CAL/order requiring NRC approval for restart.  |
| 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)  |   | N/A. RA (or 0350 Panel Chairman) review/ sign 0350-related correspondence                  |
| Annual Public Meeting                 | SRI or BC Meet with Licensee   | BC or DD Meet with Licensee   | RA (or designee) Discuss Performance with Licensee   | RA or EDO Discuss Performance with Senior Licensee Management  |   | N/A. 0350 Panel Chairman conduct public status meetings periodically                       |
| Commission Involvement                | None   | None  | None   | Plant discussed at AARM  | Commission Meeting with Senior Licensee Management  | Commission meetings as requested, restart approval in some cases.                          |
| INCREASING SAFETY SIGNIFICANCE -----> |  |   |  |  |   |  |

Note 1: Other than the CAL, the regulatory actions for plants in the Multiple/Repetitive Degraded Cornerstone column and IMC 0350 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.

Note 2: The IMC 0350 Process column is included for illustrative purposes only and is not necessarily representative of the worst level of licensee performance. Plants under the IMC 0350 oversight process are considered outside the auspices of the ROP Action Matrix. See IMC 0350, "Oversight of Operating Reactor Facilities in a Shutdown Condition with Performance Problems," for more detail.

Note 3: Figure 1 is the Action Matrix when the ROP was developed. IMC 0305 contains the current version of the Action Matrix.

Note 4: The original terminology regarding minimal reduction in safety margin for Column 3 and significant reduction in safety margin for Column 4 was derived from the terminology in the conceptual model for evaluating licensee performance indications described in SECY-99-007. There was not an exact correlation between that model and the columns of the Action Matrix. Because the concept of safety margins can be confusing to the public, the terminology evolved to replace safety margins with safety performance. Ultimately, it was determined that Column 2 should be characterized as a minimal reduction in safety performance, while Column 3 would be a moderate reduction and Column 4 would be a significant reduction in safety performance.



Figure 2: Assessment Basis Summary Sheet

Basis Summary Sheet

|   |   |
|---|---|
| <p><b>Procedure No.:</b> IMC 0305</p>   | <p><b>Title:</b> Operating Reactor Assessment Program</p> |
| <p><b>Scope:</b> IMC 0305 applies to all operating commercial nuclear reactors, except those sites that are under IMC 0350, "Oversight of Operating Reactor Facilities in Shutdown Condition with Performance Problems." The assessment program as described in IMC 0305 does not restrict the NRC from taking any necessary actions to fulfill its responsibilities under the Atomic Energy Act of 1954 (as amended).</p>  |   |
| <p><b>Basis:</b> The assessment program uses PIs and inspection findings with risk-informed performance thresholds as indications of degradation of licensee performance. Based on the accumulation of these inputs, a range of appropriate NRC actions is specified by the Action Matrix. A graded approach to NRC inspection resources, scope of inspections, and management oversight is applied to the actions taken for different levels of licensee performance. For example, those plants without any inputs with crossed thresholds only receive the baseline inspection effort and performance is reviewed at a lower level of NRC management. However, as plants accumulate inputs with crossed thresholds, supplemental inspection above the baseline is conducted and higher levels of NRC management are involved in the assessment of licensee performance. Other factors that can affect the assessment program are cross-cutting issues, traditional enforcement items, and allegations. While agency action in the assessment program is not taken for these items alone, they can influence the range of actions taken when a PI or inspection finding crosses a threshold.</p>   |   |
| <p><b>Significant Changes and Basis:</b></p> <p>March 2001 - Added EDO responsibility for authorizing all deviations from the Action Matrix. This was done, by Commission direction, to ensure consistency and the appropriate level of senior NRC management oversight for deviating from the Action Matrix. Added the performance of an End-of-Cycle summary meeting between the regional offices and the Director of NRR. This was done to ensure senior NRR management was aware of the NRC actions being taken by the regions for those plants with significant performance issues. Added a note that the regulatory actions listed in the Multiple/Repetitive Degraded Cornerstone column of the Action Matrix are not mandatory. This was done to clarify the fact that these actions are those that should be considered for performance in this column of the Action Matrix, and they do not all have to be performed.</p> <p>February 2002 - Added a discussion on the treatment of old design issues, provided a definition of a substantive cross-cutting issue, and included examples of when deviations from the Action matrix should be considered.</p> <p>February 2003 - Added guidance to the regions for closing out findings for plants in the multiple/repetitive degraded cornerstone column, clarified guidance on the treatment of old design issues, and clarified the time frame for counting inspection findings in the assessment program.</p> <p>January 2004 - Provided guidance on interface issues between the IMC 0350 process and the normal assessment program, added response options for plants that have been determined to have substantive cross-cutting issues, and clarified when to start counting inspection findings in the assessment program</p> <p>December 2004 - Added a requirement to consider independent assessments during the mid-cycle and end-of-cycle assessment reviews (DBLLTF 3.3.3.1), added more guidance on defining and following up on substantive cross-cutting issues, and incorporated commitments from several feedback forms.</p> |   |

Figure 2 Assessment Basis Summary Sheet

Basis Summary Sheet

|   |   |
|---|---|
| <p><u>Procedure No.:</u> IMC 0305</p>   | <p><u>Title:</u> Operating Reactor Assessment Program</p> |
| <p>November 2005 – To protect security-related information, the staff developed a separate assessment process for security performance within the framework of the Reactor Oversight Process (ROP). IMC 0305 was revised to reflect the existence of this separate security assessment process.</p> <p>June 2006 – Revised to more fully address potential safety culture issue for plants in Columns 3, 4 and 5 in accordance with SRM SECY 04-0111.</p> <p>November 2007 – Revised the Action Matrix for plants in Columns 3 and 4 to include the provision that the senior licensee management of a plant in Column 4 shall brief the Commission on the activities the licensee will be taking to improve the operation of the plant (within 6 months of entering Column 4, subject to Commission scheduling). Additionally, a licensee who remains in Column 3 for 3 years should be invited to meet with the Commission.</p> <p>August 2009 – Revised to add traditional enforcement follow-up inspections to follow-up on licensee corrective actions when there is a demonstrated pattern of traditional enforcement violations.</p> <p>December 2009 – Revised to clarify mid-quarter movement in the Action Matrix and to relocate guidance for cross-cutting aspects to a separate manual chapter (IMC 0310).</p> <p>June 2012 – Revised to re-incorporate the Security Cornerstone into the assessment program and discontinue use of the separate security assessment program. The staff will continue to ensure security-related information is not publicly released.</p> <p>November 2014 – Revised the definition of Repetitive Degraded Cornerstone to a cornerstone degraded for more than five quarters to give Regions more flexibility in scheduling supplemental inspections.</p> <p>April 2015 – The ROP Enhancement Project resulted in a major revision to the SCCI process, eliminating the word “substantive,” revising the criterion for a cross-cutting theme to six findings with the same aspect in 12 months, adding a cross-cutting theme at the cross-cutting area level, and eliminating the subjective questions for opening a CCI. Historical data analysis was the basis for six findings being a cross-cutting theme, determined to be more indicative of a theme for plants exhibiting declining performance.</p> <p>December 2015 – Revised the definition of Degraded Cornerstone from two White inputs to three White inputs in the same cornerstone in response to Commission direction in SRM-SECY-15-0108. Revised the title of Column 3 to the Degraded Performance Column to eliminate confusion when a licensee moves to Column 3 because of three White inputs in the same Strategic Performance Area.</p> <p>November 2016 – Revised to remove the requirement to conduct mid-cycle assessment meetings based on Commission approval of a staff recommendation in SRM-SECY-16-0009. Guidance was left to consider cross-cutting themes during the second quarter assessment review, as well as to continue issuing inspection plans via separate correspondence.</p> |   |

Table 1: Levels of Assessment Review

| <u>Level of Review</u>       | <u>Frequency/Timing</u>   | <u>Participants</u><br>(* indicates chairperson)                                | <u>Desired Outcome</u>  | <u>Communication</u>  |
|------------------------------|---|---|---|---|
| Continuous                   | Continuous  | BC, SRI, RI, regional inspectors, SRAs  | Performance awareness   | None required, notify licensee by an Assessment Follow-up letter <u>only</u> if thresholds crossed  |
| Quarterly                    | Once per quarter/<br>5 weeks after end of quarter                             | DRP: BC*, PE, SRI, RI   | Input/verify PI/PIM data, detect early trends                                   | Update data set, notify licensee by an Assessment Follow-up letter <u>only</u> if Action Matrix or cross-cutting thresholds crossed.<br>After second quarter, updated inspection plans provided to licensees via separate transmittal letter. |
| End-of-Cycle                 | At end-of-cycle/<br>7 weeks after end of assessment cycle                     | DRS or DRP DD, RAs*, BCs, principal inspectors, SRAs, HQ offices as appropriate | Assessment of plant performance, oversight and coordination of regional actions | Annual Assessment Letter with an inspection plan for approximately 24 months from the end of the assessment period.   |
| End-of-Cycle Summary Meeting | After EOC meetings, but before annual assessment letters issued, if possible. | DIR NRR, RAs, BCs, DIRS, OE, OI, other HQ offices as appropriate                | Summarize results of the end-of-cycle review meetings                           | Information to be discussed at the Agency Action Review Meeting   |
| Agency Action Review Meeting | Annually/<br>several weeks after issuance of annual assessment letters        | EDO*, DIR NRR, RAs, DRS/DRP DDs, DIRS, OE, OI, other HQ offices as appropriate  | Review of the appropriateness of agency actions                                 | Commission briefing, followed by public meetings with individual licensees to discuss assessment results  |

Table 2: Assessment Program Aspects Considered But Not Included

| Table 2: Assessment Program Aspects Considered But Not Included                              |   |
|--|---|
| Program Aspect Considered  | Basis for Not Including   |
| Regulatory Conference versus Regulatory Performance Meeting                                  | The meeting with a licensee described in the first row of the Action Matrix was originally called a Regulatory Conference. The purpose of these meetings was originally envisioned to cover a broad spectrum of topics, including meetings necessary to discuss the significance of individual inspection findings as they were processed through the SDP and meetings to discuss licensee performance, such as following supplemental inspections. Implementation of the ROP proved that it was difficult to differentiate the purposes of these different meetings. To provide clarification, the term Regulatory Conference was applied to those licensee meetings conducted in accordance the SDP and Regulatory Performance meeting was applied to those meetings conducted to discuss licensee performance. |
| Number of white findings for entry into the degraded cornerstone column of the Action Matrix | The staff wrote a SECY memorandum in response to an SRM dated June 10, 2003 that asked the staff, among other things, to evaluate increasing the threshold for a degraded cornerstone column to three white findings or performance indicators. The Commission memorandum (ADAMS accession # MI031900342) concluded that the staff does not support changing the threshold. In 2015, the staff again reviewed this issue, and recommended changing the number of White inputs for a Degraded Cornerstone from two to three, which the Commission approved in SRM-SECY-15-0108 (ADAMS Accession No. ML15335A559).  |

Attachment 1: Revision History for IMC 0308 Attachment 4

| Commitment Tracking Number | Accession Number<br>Issue Date<br>Change Notice | Description of Change   | Description of Training Required and Completion Date | Comment Resolution and Closed Feedback Form Accession Number (Pre-Decisional, Non-Public Information) |
|----------------------------|---|---|--|---|
| N/A                        | ML042100285<br>06/25/04<br>CN 04-020            | Initial issuance of document.   | None   |   |
| N/A                        | ML052100195<br>07/28/05<br>CN 05-022            | Revised to add guidance on old design issues, enforcement discretion, cross cutting issues, traditional enforcement, allegations, and deviations from the Action Matrix.  | None   |   |
| N/A                        | ML16273A036<br>05/15/17<br>CN 17-010            | Reformatted in accordance with current guidance. Major revision incorporating changes to the Action Matrix and the SCCI process. Addressed ROP feedback form 0308.4-1793. | None   | ML16277A313<br>0308Att4-1793<br>ML17130A010   |
| N/A                        | ML22080A203<br>06/01/22<br>CN 22-011            | Revised to include transition of new plants from construction oversight to the ROP and note the change to the start date for inspection findings.                         | None   | ML22080A204   |