



NUCLEAR ENERGY INSTITUTE

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Mr. Michael T. Lesar  
Chief, Rules and Directives Branch  
Office of Administration  
Mail Stop: T-6D59  
U.S. Nuclear Regulatory Commission  
Washington DC 20555-0001

**SUBJECT: Solicitation of Public Comments on the Implementation of the Reactor Oversight Process (ROP)**

Dear Mr. Lesar:

On behalf of the nuclear energy industry, the Nuclear Energy Institute (NEI) is submitting the enclosed comments on the implementation of the ROP, as requested by the Nuclear Regulatory Commission in the *Federal Register* on October 21, 2005 (70 *Fed. Reg.* 61318). These comments are a compilation of comments NEI received from its member companies.

In general, we believe the ROP is meeting the established performance goals. We appreciate the opportunity to publicly meet with the NRC staff on a monthly basis to provide direct input to revisions and enhancements of the ROP, and we look forward to ongoing discussions in the coming year.

If there are any questions regarding these comments, please contact John Butler at [jcb@nei.org](mailto:jcb@nei.org) or (202-739-8108) or me.

Sincerely,

Anthony R. Pietrangelo

Enclosure

*SIS Review Complete*

*E-RIDS = ADM-03*  
*Adm - S. Pandey (9K55)*

*Template = ADM-013*



## Response to FRN on Reactor Oversight Process

### **(1) Does the Performance Indicator Program provide useful insights to help ensure plant safety?**

Median Response – *Somewhat* (2)

Industry Responses Ranged from *Very Much* (1) to *Somewhat* (2)

#### Additional Comments:

The objective of the ROP is to arrive at an objective assessment of licensee safety performance using Performance Indicators and Inspection findings. (IMC 305 Operating Reactor Assessment Program) The evaluations by NRC inspectors, the communication of results to licensees, and quarterly reported performance indicators generally appear to be focused on the overall safety performance of operating nuclear reactors.

The Performance Indicator Program in particular provides useful insights to help ensure plant safety. Since the inception of the ROP, site programs have improved as result of the performance indicators, notably evident by the positive trends in Unplanned Power Changes, Safety System Functional Failures, Emergency Preparedness Drill Participation, Alert and Notification System Reliability, Occupational Radiation Safety, and Physical Protection Equipment Performance. Some indicators have shown consistently high industry performance (i.e., high in the green band) since the initial implementation of the Reactor Oversight Process. Areas such as these serve to maintain a balanced focus on safety across all cornerstones, while also promoting public confidence.

Two areas of the Performance Indicator program that have been identified as not having the proper safety focus are the Safety System Unavailability (SSU) PIs and the Scrams with Loss of Normal Heat Removal (SwLNHR) PI. The SSU PIs are not risk informed and are inconsistent with Maintenance Rule Program goals in most cases. In certain cases, planned maintenance schedules would have to be inappropriately shortened in order to maintain plant performance in the "GREEN band" for the SSU PIs. The SwLNHR PI has the potential to lead plant operations personnel to delay or eliminate actions they would otherwise take to make a transient easier to control simply to avoid a "hit" with this PI.

A significant industry and NRC effort to develop the Mitigating System Performance Index (MSPI) as a replacement for the SSU PIs is close to completion. The MSPI indicators will be implemented as a replacement for the SSU PIs beginning on April 1, 2006.

A replacement indicator for the SwLNHR PI has been developed and efforts are currently underway to pilot this indicator and ready it for implementation.

**(2) Does appropriate overlap exist between the Performance Indicator Program and the Inspection Program?**

Median Response – *Somewhat* (2)

Additional Comments:

In most cases appropriate overlap exists between the Performance Indicator Program and the Inspection Program. A noted exception is the performance of significance determinations for single equipment failures even though the safety system unavailability PI and Safety System Functional Failure PI monitor failures in key systems. This overlap will continue upon implementation of the MSPI, an indicator that provides a clear measure of the risk significance of equipment failures. Another example would be the Occupational Radiation Safety PI, "Occupational Exposure Control Effectiveness". This PI monitors the number of technical specification high radiation area occurrences, very high radiation area occurrences, and unintended exposure occurrences. Even though this PI effectively monitors these regulatory requirements, NRC continues to document inspection findings (NCVs) related to the same issues. These examples undermine a defining premise of the ROP that overlap between the PI and inspection activities should be minimized.

**(3) Does NEI 99-02, "Regulatory Assessment Performance Indicator Guideline" provide clear guidance regarding Performance Indicators?**

Median Response – *Somewhat* (2)

Additional Comments:

NEI 99-02 provides clear guidance regarding the performance indicators with the exception of IE02, "Scrams with loss of normal heat removal." Efforts are underway to address this problem area through development and piloting of a replacement indicator.

Other efforts taken to date by the industry and NRC to clarify the guidance in NEI 99-02 have been very successful especially with the recent revision to the Frequently Asked Question (FAQ) process. The incorporation of the dispositioned FAQs and the new FAQ process has reduced the number of questions submitted by the industry and the NRC seeking NEI 99-02 guidance clarification.

**(4) Does the Inspection Program adequately cover areas important to safety and is it effective in identifying and ensuring prompt correction of performance deficiencies?**

Median Response – *Very Much* (1)

Additional Comments:

The inspection program is effective in accomplishing its goals in covering areas important to safety and ensuring that performance deficiencies are identified and promptly corrected. Some of the inspected areas with demonstrated good and improving performance, such as Radiation Protection, may be over inspected. Some thought should be given to adjusting the inspection schedule to more effectively distribute the inspection resources.

The current inspection program can be improved by performing only one ALARA inspection per cycle and combining the ALARA and Access to Radiologically Significant Areas inspections. One ALARA inspection per fuel cycle would be sufficient to provide adequate oversight of this program. Additional consideration should also be given to combining the ALARA inspection with the "Access to Radiological Significant Areas Inspection" during a licensee's outage. This is where the success of the ALARA and radiation protection programs can be measured directly—implementation. The current practice of performing Radiation Protection Team Inspections as implemented in Region IV has been highly effective and is a step in the correct direction. If the recommended approach regarding ALARA and Access to Radiologically Significant Areas inspection were implemented, a site could expect two team inspections each cycle with any additional inspection effort being covered by resident baseline and the action matrix as appropriate.

A second area worthy of comment is engineering inspections. The new effort to replace the "Safety System Design and Performance Inspection" by focusing on low margin systems/components appears to be an improvement with regard to safety focus. Given the size of the team and duration of the activity it may prove adequate to extend the frequency beyond two years for this inspection procedure. However, it is recognized that additional inspections must be conducted to develop a better understanding in this regard.

The NRC's baseline inspection process and "Problem Identification and Resolution Inspection" have been providing adequate focus on actions to correct performance deficiencies. Additionally, the NRC's Action Matrix provides additional oversight when warranted to ensure prompt correction of performance deficiencies.

**(5) Is the information contained in the inspection reports relevant, useful and written in plain English?**

Median Response – *Very Much* (1)

Additional Comments:

Documentation required by Manual Chapter (MC) 0612 meets the needs of licensees. The recent changes to MC 0612 did a good job clarifying and distinguishing between the terms "Licensee-Identified," "NRC-Identified," and "Self-Revealing." Other recent improvements include the addition of examples of minor issues and cross-cutting aspects to MC 0612 Appendix E.

Information in inspection reports is generally useful. The organization of the reports and the ties to cornerstones help to provide better definition and focus in problem areas. The listing in the reports of inspection scope is duplicative of the Inspection Procedures and should be eliminated.

Recent definition changes to capture licensee identified findings (NCVs) and improvements to Appendix 'E' (adding additional examples of cross-cutting aspects) are applauded. We encourage working with NEI and the Industry to develop and implement a process to apply thresholds to cross-cutting aspects as discussed in the September 2005 ROP Meeting.

One area of concern to licensees is the recent change to IMC 0612 and its expansion of what constitutes a performance deficiency. The current guidance provided imposes standards beyond those specified or committed to by a licensee in their licensing basis. This process circumvents the backfit process. Additionally, the use of findings has greatly increased since its inception. Inspection reports should contain regulatory based findings for the docket. Observations with insights now being developed in the findings are very useful to the licensees; however, when documented as a "finding" in an inspection report they take on the same weight as a violation (NCV) and this seems inappropriate and may result in inappropriate resources being applied to the issue at the expense of potentially more significant issues.

**(6) Does the Significance Determination Process yield an appropriate and consistent regulatory response across all ROP cornerstones?**

Median Response – *Somewhat Less Than Needed* (4)

Industry Responses Ranged from *Somewhat* (2) to *Far Less than Needed* (5)

Additional Comments:

For results with elevated colors (worse than green) after Phase 2 assessment, the SDP process frequently degenerates to a costly and resource-intensive risk analysis exercise that has little safety value. Engineering analysis, testing, and plant modeling are conducted to understand conditions beyond the level necessary to characterize the risk and to take appropriate corrective actions. Alternatively, the color should be based on a combination of 1) a rule-based risk assessment that discourages taking credit for mistakes and equipment failures, 2) the quality and effectiveness of the corrective actions, and 3) the risk management capabilities that were in place at the time of the event. EPRI has investigated such an approach that would lead to a more safety-effective and cost-effective SDP process.

Reconciliation of the NRC PRA and the Licensee PRA is essential to producing equivalent results. These efforts should continue until reconciliation is complete.

The Significant Determination Process (SDP) does not yield equivalent results for issues of similar significance across all ROP cornerstones. Specifically, issues and events such as Emergency Preparedness, Security, Radiation Protection, and Fire Protection are evaluated using processes that are more deterministic in nature. These deterministic SDPs tend to exaggerate the actual risk. The reactor safety SDP is the most risk informed and should be used whenever possible. "Specialized" SDPs should be minimized. The Significance Determination Process (SDP) does not apply the same risk significance to issues across the seven cornerstones. Some SDPs are still deterministic in nature – especially in the areas of emergency preparedness and to a lesser degree, occupational and public radiation safety. Deterministic thresholds have the effect of aggregating lesser items of minor risk significance to create findings with a final significance out of proportion to the risk presented by any credible situation.

We recognize that both the industry and the NRC have been working to better risk-inform the Emergency Preparedness and the Radiation Safety SDPs. Additional effort is warranted in both areas.

**(7) Does the NRC take appropriate actions to address performance issues for those plants outside of the Licensee Response Column of the Action Matrix?**

Median Response – *Somewhat* (2)

Industry Responses Ranged from *Very Much* (1) to *Somewhat* (2)

Additional Comments:

Actions taken by the NRC to address performance issues for licensees outside the Licensee Response Column conform to the current ROP program. While the program is being followed as written, improvements should be considered. Specifically, two white inputs into the action matrix is not necessarily equivalent to a yellow input, especially in cornerstones that provide more opportunities for input, such as Mitigating Systems. A more appropriate approach would be to consider 3 white inputs or some combination more equivalent to a yellow input as the entry threshold for a degraded cornerstone.

We continue to believe an improvement that should be considered is limiting the length of time a finding is reflected against licensee performance. A graduated approach should be considered correlating the length of time a finding remains visible (or effective in the action matrix) to the severity of the finding (e.g., a green finding stays for one quarter, a white finding stays for 2 quarters, etc.) rather than retaining all findings for four quarters, this approach results in retaining the finding for a period of time commensurate with its significance. We do not think that two whites are equivalent to a yellow. This is another area where NRC could further risk inform the process. Of course, findings should continue to be retained until the NRC is satisfied that the performance issue has been satisfactorily resolved.

**(8) Is the information contained in assessment reports relevant, useful, and written in plain English?**

Median Response – *Very Much* (1)

Additional Comments:

The information contained in assessment reports is relevant, useful, and written in plain English. Some improvement could be made in the way "Safety-Conscious Work Environment" issues are characterized and what actions would be considered as successfully addressing a "Safety-Conscious Work Environment" issue.

Significant improvement has been noted in the NRC's efforts to address the basis and closure process for Substantive Cross-cutting Issues identified in the assessment letters.

Additional effort is needed in the use of cross-cutting aspects in the assessment process—especially the threshold for identification. However, the current process guidance is much better than last year and if implemented consistently will be a step in the correct direction.

**(9) Are the ROP oversight activities predictable (*i.e.*, controlled by the process) and reasonably objective (*i.e.*, based on supported facts, rather than relying on subjective judgment)?**

Median Response – *Neutral* (3)

Industry Responses Ranged from *Very Much* (1) to *Neutral* (3)

Additional Comments:

ROP oversight activities are very predictable. These range from the type of inspection a licensee can expect based on location in the Response Matrix to the determination of significance of inspection findings through use of the Significance Determination Process.

ROP oversight activities are predictable and objective when a plant is in the Green Band of the Action Matrix with no events with the exception of the application of cross-cutting aspects to findings. Recent revisions to Manual Chapters 0305 and 0612 provide some guidance and examples of cross-cutting aspects, but the application of cross-cutting aspects to date has been too subjective.

One recent change to MC 0612 is of concern. The verbiage associated with term “performance deficiency” is very subjective and permits actions to be taken against a licensee for non compliance with a standard which the licensee may not be committed to. While there are no specific docketed examples where performance deficiencies were issued for non compliance with a standard to which the licensee was not committed, the process as described has the potential to circumvent the back fit rule.

Other areas in the ROP oversight activities that are very unpredictable are Security and Fire Protection – Security because of the constantly changing requirements driven “secretly” and solely by a organization within the NRC that is outside the Inspection Branch and Fire Protection because of the constant attempts to try and hold licensees accountable to standards they are not committed to in their licensing basis.

For the majority of the normal baseline inspections, the ROP oversight activities are predictable and objective as reported in the end product (*i.e.* the inspection report). During the course of the actual inspection activities this is not always the case.



Most inspectors follow the guidance but a few still appear to use aggregation and "reverse SDP" techniques. (Reverse SDP means predetermining significance of an issue based on subjective judgment then developing the supporting arguments.)

The subjective nature of some of the SDP screening questions reduces the predictability of the ROP oversight activities. NRC has substantially improved the inspection process guidance—especially IMC 0612, Appendix 'E'. However, some inspectors continue to default to "the issue I found is not in the Appendix". This approach allows them to move into the more subjective process of minor questions. The expectation it seems is that most types of issues are included within the scope of examples within IMC 0612 Appendix 'E' and that few exceptions would be found.

The use of cross-cutting aspects in the inspection process has been improved by the recent changes to the inspection process. The process now provides specific "buckets" to capture issues in. However, much subjectivity remains when deciding whether or not to "flag" a specific finding as having a cross-cutting aspect or not. As the process is written, essentially all findings will be flagged as having a cross-cutting aspect. This practice imparts the evaluation of importance to the mid-cycle and end-of-cycle performance assessments performed by NRC. The current guidance provided would not identify a "substantive" cross-cutting issue unless there is an NRC concern with the licensee's scope of efforts or progress in addressing the cross-cutting area performance deficiency. We believe that this is appropriate and measured.

An area of concern is the documentation of performance deficiencies not associated with regulatory requirements as findings. The new definition of performance deficiency would allow NRC to document on the docket a finding resulting from a licensee not implementing a standard that the licensee had not committed to it in its license basis.<sup>1</sup> This activity circumvents the backfit process when implemented and does not represent past NRC practice. Additionally, the documentation of findings in inspection reports that are not related to specific regulatory requirements is not in keeping with the enforcement practices of the NRC. Specifically, what response is required?

It is recommended that the NRC reconsider the documentation of non-regulatory based findings on the docket of a licensee. Observations may be a better method to communicate these issues to the licensee. If one reviews the history of ROP, findings such as those being written today were not generally documented in an inspection report and appears to be a digression to pre-ROP methods.

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<sup>1</sup> IMC 0612 Definition: Performance Deficiency: An issue that is the result of a licensee not meeting a requirement or standard where the cause was reasonably within the licensee's ability to foresee and correct and that should have been prevented. The licensee does not have to be committed to a standard in order to determine whether there is a performance deficiency (PD).

**(10) Is the ROP risk-informed, in that the NRC's actions are graduated on the basis of increased significance?**

Median Response – *Neutral* (3)

Industry Responses Ranged from *Very Much* (1) to *Neutral* (3)

Additional Comments:

Many areas of the ROP are risk-informed such that NRC actions are on the basis of increased significance but there are some areas that are still deterministic in nature such as Emergency Preparedness, Security, and Operator Training. The areas covered by Manual Chapter 0609, Appendix A are the most risk informed.

The majority of the ROP is risk-informed due to actions taken over the past years of implementation to further risk-inform the process. Actions that result from findings that are classified using the Reactor Safety SDP, IMC 0609 App A, are the most risk-informed and are the ones most graduated on the basis of an actual increased significance. Actions resulting from findings that are classified based on SDPs that are still deterministic in nature are not as likely to be graduated consistent with actual significance. For example, the number of occurrences does not equate readily to the "significance" of an issue. It would seem that the "significance" of each occurrence would have to be the overriding consideration, rather than the aggregation of a few "minor" items or the sheer number of insignificant occurrences (Radiation Safety, Physical Security, etc.). We believe that a degraded cornerstone should result from three, rather than two, white outcomes (inspection findings and PIs), and the period of time findings remain in the action matrix should be graduated based on safety significance.

Implementation of MSPI will be an improvement in risk informing ROP.

**(11) Is the ROP understandable and are the processes, procedures and products clear and written in plain English?**

Median Response – *Very Much* (1)

Additional Comments:

In general the ROP is understandable and the processes, procedures, and products are clear and written in plain English. Good examples are the recent improvements to IMC 0612 and IMC 0305 relative to cross-cutting issues and their use in the assessment process.

Some of the newer SDPs do require a technical background to understand. The Fire Protection and Steam Generator SDPs are particularly difficult to follow.

**(12) Does the ROP provide adequate regulatory assurance when combined with other NRC regulatory processes that plants are being operated and maintained safely?**

Median Response – *Very Much* (1)

Industry Responses Ranged from *Very Much* (1) to *Neutral* (3)

Additional Comments:

The ROP does provide adequate regulatory assurance that plants are being operated and maintained safely.

**(13) Is the ROP effective, efficient, realistic, and timely?**

Median Response – *Somewhat* (2)

Industry Responses Ranged from *Very Much* (1) to *Somewhat* (2)

Additional Comments:

Since the Significance Determination Process has provided a more realistic approach to the evaluation of safety significant issues, the effectiveness of the regulatory process has been improved.

The ROP is an improvement over the old SALP process. Inspections are more focused, findings are evaluated using a more structured tool, and performance assessment is more objective. Efficiency could be gained by combining related inspection activity and evaluating the need for some inspection activity that may be excessive such as in the area of occupational radiation protection which has been a very good performing area. Timeliness of the SDP process has improved. The ROP improves the efficiency, effectiveness, and realism of the regulatory process over the old SALP process. However, in some cases the efficiency and effectiveness are decreasing in the existing ROP process. The scope and resources needed for the baseline Radiation Protection Cornerstone inspections seem excessive relative to overall industry performance (See item #4 above). The NRC should consider reevaluating the frequency of these inspections. The development of many SDPs are complicating the ROP process and causing significant training issues for the NRC inspection staff as well as licensees.

The Physical Security process is vague, not well communicated and is developed with little stakeholder input. Security inspections continue to judge compliance subject to interpretations by individual inspectors. This area needs improvements in transparency and communication with stakeholders. Additionally, security needs to get back to using the regulatory process and get out of the "order" mode.

**(14) Does the ROP ensure openness in the regulatory process?**

Median Response – *Somewhat* (2)

Industry Responses Ranged from *Very Much* (1) to *Somewhat* (2)

Additional Comments:

From its inception, the ROP has solicited input from all stakeholders, including the public, which has resulted in a very open process.

For most areas of the ROP, the regulatory process is open. Regular public meetings are held with licensees to discuss annual performance assessment results. However, Security has been very closed and disassociated with the rest of the ROP. Another area of the ROP that remains closed is the Significance Determination Process and Enforcement Review Panel (SERP)

The Security process needs to return to the rulemaking process and improve stakeholder involvement and transparency. NRC needs to consider a Security specific website much like INPO uses with assigned passwords for licensees to use to share information and operating experience.

**(15) Has the public been afforded adequate opportunity to participate in the ROP and to provide inputs and comments?**

Median Response – *Very Much* (1)

Additional Comments:

The public is afforded adequate opportunity to participate in the ROP process. On a monthly basis, the NRC has held public ROP meetings to discuss improvements in the ROP process and answer Frequently Asked Questions. The monthly ROP meetings have been effective in maintaining open lines of communication between the NRC, industry, and other stakeholders. The one exception is in the area of Security. While there may be opportunities to participate in the area of security for a select few, these opportunities do not exist for the public.

**(16) Has the NRC been responsive to public inputs and comments on the ROP?**

Median Response – *Very Much* (1)

Additional Comments:

The NRC has for the most part been responsive to public input and comments on the ROP. Following the 2004 solicitation for public comment on the ROP, the NRC published a response to comments submitted which was welcomed by the industry. Also, the action item list used to track and status issues discussed at the monthly ROP meetings has been useful in ensuring issues and actions are assigned and tracked to closure.

The NRC makes special efforts to recognize the public representatives at the monthly public ROP meetings and allows the public to have an opportunity to voice their opinion on the issues discussed. Additionally, annual performance review meetings are held with each licensee and the public is encouraged to participate. Public comments are received, evaluated, and dispositioned in a professional manner.

**(17) Has the NRC implemented the ROP as defined by program documents?**

Median Response – *Very Much* (1)

Industry Responses Ranged from *Very Much* (1) to *Somewhat* (2)

Additional Comments:

At times NRC has regulated inconsistent with the program documents. These issues are usually resolved through the FAQ process and resolved through revision to the program documents.

The NRC has implemented the ROP as defined by program documents with the exception of the Security area which is neither scrutable nor predictable.

The NRC as a whole has implemented the ROP as defined by the program documents. NRC has made significant improvements in the program guidance relative to cross-cutting issue identification, characterization and evaluation. Additionally, IMC 0612, Appendix 'E' has been improved to provide more specific focus on cross-cutting aspects that may exist relative to NRC findings.

**(18) Does the ROP result in unintended consequences?**

Numerical Response Not Applicable

Additional Comments:

The ROP does minimize unintended consequences. A good example of avoiding an unintended consequence is the recent revision to MC 0612 which bettered defined "Licensee-Identified." The definition in the previous revision did not encourage a licensee to openly identify problems. Caution should be used when

implementing change without thorough review of the ROP working group. One area susceptible to unintended consequences is Security.

A potential unintended consequence may result from the recent practice of identifying cross-cutting aspects for essentially all NRC findings. This practice naturally results in additional regulatory focus during mid-cycle and end-of-cycle performance meetings by NRC staff. However, the impact should only be the additional time expended by NRC during the assessment process. The potential exists to equate numbers with significance and this was never understood to be the intent of the ROP at its inception—no aggregation of minor or green findings was intended.

Security: The practice of notifying the state and local officials per the action matrix and implementing a “no comment policy” can have the unintended consequence of undermining public trust and confidence.

**(19) Please provide any additional information or comments related to the Reactor Oversight Process.**

- ☐ NRC has been open to comments and change when needed (exception Security).
- ☐ Inspection Manual changes very positive and an overall improvement to process—especially the self-identification of findings and guidance regarding substantive cross-cutting issues.
- ☐ NRC should institute a quality review on some periodicity with regard to the Website as there are disconnects at times between inspection report data and the PIM.
- ☐ NRC continues to pursue the development of limited scope SDPs that are not as risk informed as would be expected at this stage of ROP (should rely upon Reactor Safety SDP whenever possible). This complicates the ROP and should be minimized.
- ☐ A change to the Action Matrix should be considered such that three white findings are required to transition to the Degraded Cornerstone column. The additional effort required to prepare for and implement a 95002 inspection is rarely warranted for two low safety significance issues. A threshold of three white findings to change from the Regulatory Response column to the Degraded Cornerstone column in the Action Matrix would be a better use of available resources.

☐

## **Enclosure**

- ☐ Enforcement manual guidance needs to be improved to clarify expected actions relative to NCVs within the ROP.