Response to NRC's Gap Analysis of the Reactor Oversight Process (December 28, 2010)

James E. Slider
for the ROP Task Force

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Summary

The NRC provided an analysis of the Reactor Oversight Process in a memo dated December 28, 2010 (ADAMS Accession #ML103620319). The analysis examines 11 potential performance indicators and discusses the feasibility of developing these indicators and the value they would add to the performance data currently gathered through inspections in these areas. The report recommends proceeding with development of a new indicator on groundwater contamination events. The report recommends proceeding with a new indicator for passive safety systems found in new reactor designs at some future time when those systems are better understood.

NEI Comments

1. **Useful Report:** The review of potential indicators listed in SECY 99-007 is helpful. We appreciate that the analysis of the 11 potential indicators recognizes that inspections and PIs go hand-in-hand. As the report acknowledges, in some areas it is not possible to develop a practical performance indicator. In these areas, reliance on the NRC inspection program is legitimate and appropriate to provide NRC with adequate assurance that performance requirements are being met.

2. **Sources:** We would recommend that any future gap analyses or updates to this analysis include a detailed list of sources examined (e.g., as is commonly done in NRC inspection reports). The listing of types of inputs to the present report gives the reader a general sense of the range of inputs examined, but no appreciation for the number of each type actually evaluated or the nature of what each contributed to the analysis. A detailed listing would lend additional credence to the conclusions presented and promote knowledge retention and sharing with those who may undertake similar analyses in the future.

3. **Performance Model:** We think of a "gap" analysis as addressing differences between current conditions and an ideal, a model or a desired state. The present gap analysis implies the basis for comparison is the Regulatory Framework presented in SECY 99-007 (Attachment 1, page 1). However, the report does not state this explicitly. We would recommend that future gap analyses clearly identify the model or ideal that is the basis for the evaluation.

4. **Gaps:** We would recommend that future gap analyses or updates to the present one describe the apparent gaps revealed by NRC's examination of sources (See Comment 2 above). The present report does not present this important intermediate result. While it references previous studies (e.g., NUREG-1753 on risk-based performance indicators), the present report does not say what gaps were revealed by the review of NRC's self-assessments, feedback forms, action matrix deviations, and so forth. Explicit identification of suspected gaps would help NRC and industry to prepare a clear problem statement for each gap. A clear problem statement would help NRC and industry reach alignment on understanding the problem and ways to address it. A clear problem statement would include: (a) the area of plant performance that is not adequately addressed by existing PIs or inspection procedures; (b) the significance of the inadequacy; (c) the options for addressing it; (d) the criteria and method for deciding the best way to address it; and (e) the recommended way to address it.

5. **Indicator Model:** The gap analysis would also benefit from a succinct presentation of the characteristics of a model performance indicator. The report describes a variety of reasons for concluding that various indicators are not "viable" to pursue. Some of these reasons can be found in SECY 99-007. We believe it would be valuable to articulate the characteristics that

comprise a "viable" performance indicator today and refer to these characteristics explicitly in future evaluations of potential indicators. (Industry and NRC discussed their views on the desired characteristics of new PIs in ROP meetings in the spring of 2010[1].)

6. **Difficulty:** The report speaks of the difficulty of developing some of the potential indicators (e.g., Shutdown Safety Margin; Maintenance Rule Implementation; Unauthorized Radioactive Material Release Occurrence; Operator Licensing Examination). We believe this wording disserves NRC. To say that potential indicators will not be pursued because it would be difficult to do so invites the public perception that NRC and industry are either unable or unwilling to do difficult things even if doing so could serve the public interest. It is legitimate for NRC and industry to determine that the effort to develop an indicator would exceed the value of insights it would provide. However, as currently worded the report seems to say that certain potential indicators will not be developed simply because that would be too hard, rather than because they would not yield valuable new information.

7. **Not Currently Viable:** The report concludes that nine of the 11 indicators examined are "Not Currently Viable". The word "currently" implies that the NRC may reopen consideration of the nine potential indicators. However, neither the Evaluation nor the Recommendation sections of the report describe what circumstances would cause the NRC to reconsider these indicators. If they are impractical to develop today, but worthwhile, what changes would be needed in operations or reporting to make them practical? If they are not worthwhile, it is valuable to say why and label them as "Not Worthwhile" rather than Not Currently Viable.

8. **Groundwater Indicator:** The Recommendation says that sources mentioned (e.g., action matrix deviations at Vermont Yankee and Indian Point),

   > "…indicate that a gap exists in the ROP's ability to address licensee performance in monitoring and controlling releases to groundwater. Development of, or changes to, inspection program tools or a PI should be pursued to address this potential gap in public confidence even though the key safety attribute may be sufficiently satisfied."

   We understand the NRC's concerns about public confidence associated with the groundwater situation. We understand NRC needs to examine its inspection tools in light of the groundwater experiences that have occurred. While we are prepared to work with NRC to examine inspection tools appropriate to the groundwater initiative, we believe the existing performance indicator on radiological effluent occurrences addresses public radiation safety adequately and no other effluent indicator is needed. We do not believe an additional radiological indicator aimed at groundwater events would help NRC address public confidence in this or any other area of its responsibilities.

9. **Unauthorized Radioactive Material Release:** The Recommendation for this potential indicator simply says "Defer". As noted in previous comments, the wording implies that NRC could pursue this indicator in the future, but does not say what circumstances would drive that decision. Additionally, the evaluation does not reveal what the review of inputs revealed the gap to be in this area. While acknowledging the difficulties in pursuing a solid waste indicator, the evaluation and recommendation do not provide a basis for determining when it would be

[1] See NRC PI Meeting Summary, April 21, 2010 (ADAMS Accession #ML101180467); and NRC ROP Meeting Summary, June 15, 2010 (ADAMS Accession #ML101530434).

worthwhile and why it would be worthwhile to pursue. It would be helpful to state these explicitly.

10. **Pre-initiator Human Performance:** It is unclear what is meant by the recommendation that this effort should be "kept open". As noted in previous comments, the evaluation and recommendation acknowledge difficulties but give no criteria for determining when NRC would consider it worthwhile to develop this indicator.

11. **Summary Table:** The introductory text indicates the comments in the summary table describe the proposed path forward. Some of the comments do not appear to describe a clear path forward, e.g., (a) Indicator #2, Shutdown Monitoring Performance, "Although not currently viable as a risk-based PI, deterministic and qualitative considerations could [emphasis added] be applied to establish thresholds for performance bands."; (b) Indicator #9, Unauthorized Radioactive Material Release Occurrence, "Monitoring solid radioactive release occurrences is a potential option [emphasis added] to supplement the cornerstone." We would recommend clarifying the introductory wording to be consistent with the comments, or vice versa.

Contact for additional information:

James E. Slider,
Senior Project Manager, Safety-Focused Regulation
Nuclear Energy Institute
1777 I Street, NW, Suite 400
Washington, DC 20006
E-mail: jes@nei.org
Phone: 202-739-8015