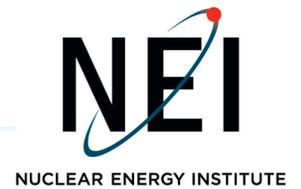


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June 25, 2013

Mr. Michael R. Snodderly
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Industry White Paper: Addressing Cumulative Impact through Generic
Prioritization and Plant-Level Integrated Schedules

Project Number: 689

Dear Mr. Snodderly:

In the May 2013 NRC public meetings on cumulative effects of regulation and the proposed NRC initiative, Improving Nuclear Safety and Regulatory Efficiency, the industry stated that it was developing a white paper on prioritization. Attached for your information is the draft of the executive summary and two process flowcharts that depict the industry's proposed approach. We are finalizing the white paper and plan to send it to the NRC in the near future, as a basis for discussion and starting point for the development of pilot plant implementing guidance for prioritizing and scheduling industry and regulatory actions.

If you have any questions on the executive summary or the flowcharts, please contact Biff Bradley, 202-739-8083, reb@nei.org, or me.

Sincerely,

Adrian P. Heymer

c: Ms. Tara Inverso, NRC

Attachments

**Industry Paper on the Commission's Proposed Initiative for
Improving Nuclear Safety and Regulatory Efficiency – Phase 2,
Addressing Cumulative Impact through Generic
Prioritization and Plant-Level Integrated Schedules**

Executive Summary

Power reactors and fuel cycle facilities have seen substantial regulatory workload expansion in recent years despite improvement in industry's compliance and safety record. This expansion has increased the importance for management and resources to be focused on safety significant actions. Specifically, industry sees a growing need for the development of processes such that:

- Regulatory and plant-identified actions are assessed, prioritized and scheduled commensurate with safety significance and cost effectiveness
- Plant and worker safety take precedence over administrative tasks.

In recognition of these needs, industry formed a senior working group to address cumulative impact of industry and regulatory actions. The working group recommended the development of processes for the prioritization of existing and new generic issues and the implementation of integrated plant-specific schedules.

The purpose of this paper is to describe industry's plan to develop an approach to prioritize regulatory and plant-identified actions and schedule plant improvements at licensee facilities consistent with safety significance. The initial activities will focus on power reactors. Fuel cycle facilities and material licensees will monitor and adjust the process, as necessary, based on lessons learned from the power reactor activities and the unique circumstances applicable to non-power reactor licensees.

Industry has systematically reviewed potential alternatives and is proposing a process for prioritization of regulatory and plant-identified actions and another process for integrated implementation scheduling (IIS). These processes build upon the best features of the Integrated Safety Assessment Program (ISAP) [1], the process details for scheduling in NSAC-90 [2], and the 1992 Commission policy statement on integrated scheduling [3]. The industry approach is generally consistent with SECY-12-0137 [4], "Implementation of the Cumulative Effects of Regulation Process Changes," as directed in the accompanying staff requirements memorandum, as well as COMGEA-12-0001/COMWDM-12-0002 [5], "Proposed Initiative to Improve Nuclear Safety and Regulatory Efficiency." In addition, numerous other programs and processes were considered.

Industry's approach would support generic and plant-specific prioritization that focuses on items of greatest safety importance and cost effectiveness. Industry is proposing a *phased approach*. Adoption of a phased approach to implementing the proposed initiative has the potential for incentivizing industry to develop more complete probabilistic risk assessment (PRA) models. Phase 1 is existing risk-informed activities that have been completed or are in progress. Examples are seismic PRAs and the implementation of 10 CFR 50.48(c) NFPA 805, Alternate

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Fire Protection Rule. Phase 2 uses existing information and processes, adapted as appropriate, for the prioritization of issues in an efficient and effective manner. Phase 2 is the prioritization process outlined in this paper. Phase 3 would include a broader scope of Level 1 and Level 2 PRA models that would enable the NRC and industry to seek additional safety benefits. However, the phases are not disconnected. If new PRA models or refinements in existing PRA models are appropriate to support prioritization of specific issues, such new or refined models would support a transition to Phase 3 prioritization of regulatory actions. In either case prioritizing issues/actions provides an opportunity to improve the understanding of the issue and further exercise the PRA models. Such activity provides additional opportunities to identify risk insights and react accordingly.

The prioritization process would consist of a similar set of *attributes* as considered in the ISAP program [6, 7], namely:

- Public safety (e.g., radiological and non-radiological hazards)
- Plant personnel safety (e.g., industrial and radiological)
- Plant economic performance (e.g., plant availability and efficiency)
- Personnel productivity
- External impacts (e.g., regulatory).

The approach would be *risk-informed*, not risk-based. Thus, it would make use to the extent practicable of risk insights from existing information and processes, such as the Regulatory Oversight Process (ROP), and existing plant PRAs, along with considerations of defense in depth (DID) and margin of safety. The process would be flexible and adaptable to address the variability in items to be prioritized. It would make use of a front-end generic regulatory action ranking and prioritization, as well as a back-end plant-specific assessment. The prioritization process includes a reassessment, review and reconciliation module for issues that are outstanding for more than three outages or when circumstances change. The concept of a multi-disciplinary *Expert Panel* review akin to those employed by the Maintenance Rule (10 CFR 50.65) and 10 CFR 50.69 would be integrated into the process. An industry-sponsored guidance document endorsed by the NRC would be the vehicle for implementation.

There are two major elements to the overall prioritization process. These are:

1. Improvements to the existing regulatory process to better characterize the issue definition, success criteria, significance and priority of new regulatory activities as they are contemplated and developed. This process would include a periodic monitoring and feedback loop, such that new interpretations or issues that develop in the process of implementation are identified and treated with respect to the original problem statement, and, as appropriate, a new issue is identified. The intent of this process is to improve predictability, stability and timeliness of regulatory activities, and to ensure their significance, resource impacts, and schedules are within reasonable proximity to the original regulatory analysis. Figure 1 depicts this overall proposed process.
2. The review of existing regulatory activities by an expert team to determine their generic safety nexus, risk significance, degree of completion, costs, and other factors. This

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information would be used by plants to inform their plant specific analysis of priority, factoring in plant specific risk insights, external hazards, etc. A plant specific integrated schedule would be developed accordingly and implemented through a regulatory action, the nature of which is still under discussion. Figure 2 depicts this proposed process, and how it would integrate with the overall process described in Figure 1.

To be most effective, the prioritization process should address the full scope of outstanding regulatory actions. These include, for example:

- Fukushima regulatory response
- Current and future generic safety issues
- Rules and orders
- License conditions
- Generic communications
- 10 CFR 50.54(f) letters
- Regulatory Issue Summary (RIS)
- Implementation documents (regulatory guides, interim staff guidance)
- Plant modifications (regulatory and non-regulatory).

Additionally, changes to or issuance of other regulatory mechanisms can have large impacts, and the following vehicles are also recommended for evaluation:

- Proposed additions of scope to license amendment requests
- NRC “positions” expressed in meeting summaries and correspondence

The features of a process for the prioritization of actions and integrated implementation scheduling are discussed in this paper and will be addressed in developing guidance and piloting. At the basic level, the most desirable characteristics are:

- A structured, robust process
- Transparency
- Simplicity while remaining structured and robust

The process must be transparent and simple to understand, and cannot be excessively burdensome. *Transparency* means that the process to be used by each licensee, and the outcome of the prioritization, are openly available to all stakeholders, subject to security, proprietary and commercial constraints. The regulatory approval process for prioritization and plant-specific integrated schedules is being developed.

The level of detail in the assessment and the robustness of the results are key aspects of issue prioritization. A *progressive process* similar to NRC’s phased approach to significance determination under the reactor oversight process (ROP) is under consideration. Checklists with supporting guidance are used to qualitatively assess the issue, although a more detailed qualitative or semi-quantitative evaluation also could be performed, as appropriate. If necessary, the assessment might consist of a number of quantitative analyses. The level of PRA model development that has been attained at most facilities is appropriate for the broad categorization

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of safety benefit and sequencing of activities. If necessary, additional or refined analyses can be conducted for specific issues.

Industry currently envisions the development of guidance documents and piloting beginning in the second half of calendar year 2013. The pilots are expected to be completed in 2014 with development of the final guidance documents for NRC endorsement by 2015. Effective piloting of the process is essential for efficient industrywide implementation. As-you-go refinements to the process are an effective way to quickly capture the lessons learned. Effective communication between all stakeholders is crucial to the program's success and acceptance.

COMGEA-12-0001/COMWDM-12-0002 discusses the prioritization initiative as an incentive for licensees to develop PRAs meeting the scope of NRC endorsed consensus standards in Regulatory Guide 1.200. Industry is currently expanding the scope of their PRAs in this regard, to the extent supported by the infrastructure. All operating plants have developed PRAs that have been peer reviewed or self-assessed to the internal events at-power PRA standard, which addresses Level 1 and Large Early Release Frequency (LERF). Over half the operating fleet is developing fire PRAs to support the transition to NFPA 805, and a number of other licensees are also developing fire PRAs for other regulatory purposes. Seismic PRAs are being developed on a sequenced basis to support resolution of post Fukushima regulatory actions. In summary, industry is addressing all currently endorsed NRC PRA standards, and is moving towards the expectations articulated in the COMGEA-12-0001/COMWDM-12-0002. We believe the prioritization initiative can provide additional incentive in this regard, and could potentially provide for additional resources to be allocated to risk significant activities, including associated PRA development.

The remainder of this paper discusses:

- Background (previous and recent initiatives and activity on prioritization and scheduling)
- Existing or adapted processes which could be used to address prioritization
- Key characteristics of a successful process
- Industry proposal
- Challenges which must be addressed
- Concluding remarks and path forward

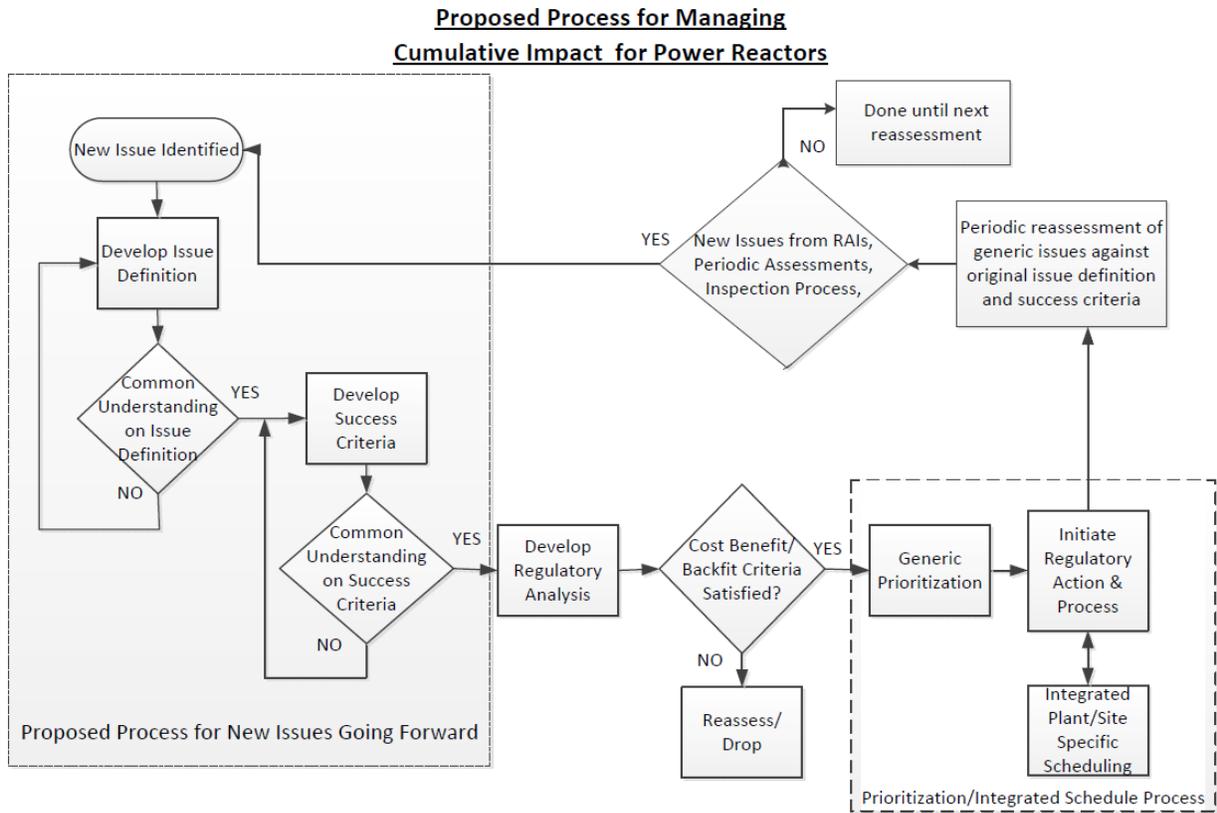


Figure 1 Industry’s Proposed Process for Regulatory Issue Prioritization

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**Assessment of Existing Regulatory Activities for
Cumulative Impact**

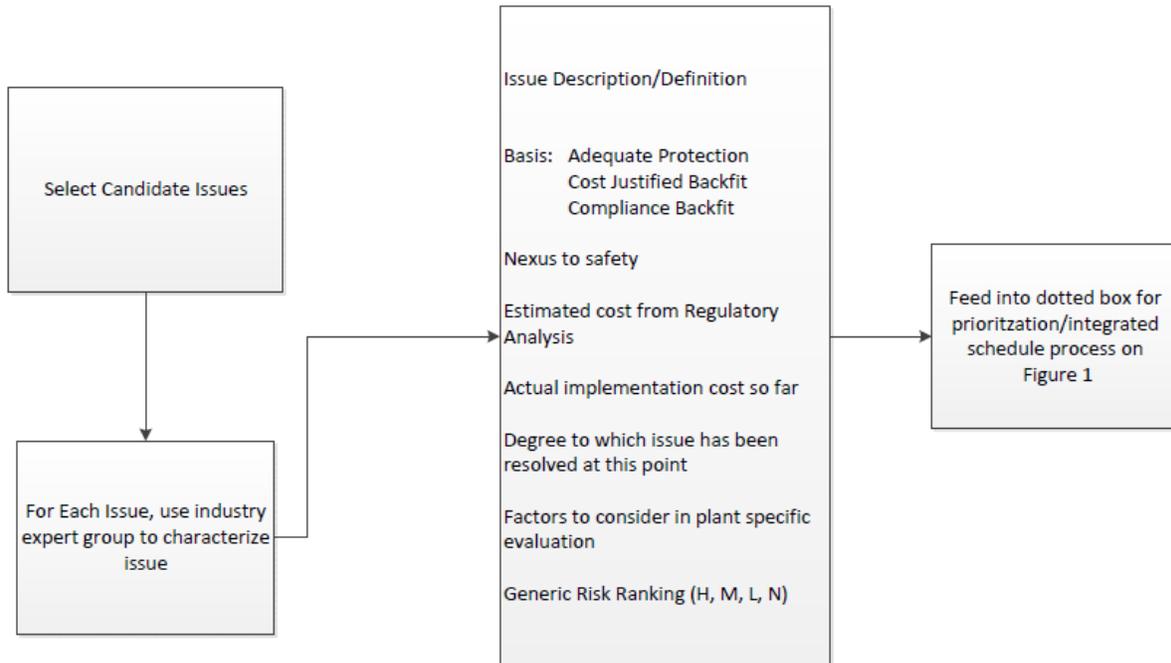


Figure 2 Assessment of Existing Regulatory Activities

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References

1. SECY-84-133, "Integrated Safety Assessment Program (ISAP)," US Nuclear Regulatory Commission, March 23, 1984.
2. NSAC-90, "Developing a Living Schedule, Fundamental Concepts," Final Report, Delian Corporation, August 1985.
3. 57 FR 43886, NRC Policy Statement on Integrated Schedules, published September 23, 1992.
4. SECY-12-0137, "Implementation of the Cumulative Effects of Regulation Process Changes," October 5, 2012, and associated SRM-12-0137, March 12, 2013.
5. COMGEA-12-0001/COMWDM-12-0002, "Proposed Initiative to Improve Nuclear Safety and Regulatory Efficiency," February 6, 2013.
6. Letter to C. I. Grimes (USNRC) from J. F. Opeka (Northeast Nuclear Energy Company), "Millstone Unit No. 1, Integrated Safety Assessment Program, Final Report for Millstone Unit No. 1," Docket No. 50-245, July 31, 1986.
7. Letter to C. I. Grimes (USNRC) from E. J. Mroczka (Connecticut Yankee Atomic Power Company), "Haddam Neck Plant, Integrated Safety Assessment Program, Final Report for Haddam Neck Plant," Docket No. 50-213, December 12, 1986.