

September 27, 2013

MEMORANDUM TO: Shana R. Helton, Chief  
Rulemaking Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

FROM: Tara Inverso, Project Manager **/RA/**  
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SUBJECT: SUMMARY OF SEPTEMBER 19, 2013, PUBLIC MEETING ON  
CUMULATIVE EFFECTS OF REGULATION PROCESS  
CHANGES

The U.S. Nuclear Regulatory Commission (NRC) held a Category 3 public meeting on September 19, 2013, to discuss the Cumulative Effects of Regulation (CER). The workshop was held at the NRC headquarters location in Rockville, Maryland. The purpose of the meeting was to: 1) Obtain an update on the status, schedule, content and format of industry's case studies to review the accuracy of cost and schedule estimates used in the NRC's regulatory analyses; 2) Discuss the expansion of CER to other (i.e., non-rulemaking) regulatory actions; and 3) Discuss the Nuclear Energy Institute's (NEI) development of the CER template.

The meeting was attended by 72 individuals primarily representing industry representatives, Agreement States, non-power reactors, private citizens, and NRC staff. Of the 72 participants, 40 participated in the meeting through audio teleconferencing. There were technical difficulties with the planned webinar.

The meeting slides and handouts are available in the Agencywide Documents Access and Management System (ADAMS) under Accession Nos. ML13224A065 (NRC presentation), ML13260A476 (NEI's presentation on case studies), ML13260A478 (NEI presentation on cumulative impact), ML13263A134 (NEI prioritization schedule handout).

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The major areas of discussion are summarized as follows:

### **Case Studies on Cost and Schedule Estimates in NRC's Regulatory Analyses (RAs)**

The NRC staff provided background on the case studies, as applied to power reactor facilities, and a representative of the NEI provided a presentation that described the subject RAs, industry participants, cost comparisons and next steps. The following items were also discussed:

- Number of industry participants:
  - National Fire Protection Association (NFPA) 805 (Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.48(c)): 5 units
  - Power Reactor Security Requirements (10 CFR part 73): 12 sites
  - Managing Fatigue (10 CFR part 26, Subpart I): 2 companies (7 units)
  
- Challenges:
  - Not all utilities compile costs the same
  - Difficulties discerning how costs are compiled in the RA estimates
  - Details of actual cost data are proprietary
  
- Cost comparisons
  - NFPA 805
    - An NRC representative mentioned that NFPA 805 was voluntary; a representative from NEI cautioned that it wasn't entirely voluntary, but rather one way of demonstrating compliance
    - The same NRC representative commented that approximately half the costs were likely hiring probabilistic risk assessment (PRA) contractors, and that some of the costs in the presentation may be double-counted with mandatory requirements.
    - A representative from NEI commented that the high average cost (\$10.5 million) was due to the large amount of documentation required
  - Power Reactor Security
    - An NRC staff member commented that the additional incurred costs likely account for safeguards requirements.
    - A representative from NEI pointed out that the volunteer sites implemented the rules in various ways, resulting in differing implementation costs.
  - Fitness for Duty
    - A representative from NEI commented that one vendor helped provide data for the case study. In addition, a portion of the additional costs stem from day-off requirements (approximately \$1 million - \$2 million per outage).
  
- Next Steps
  - A member of the NRC staff asked whether the one-on-one interactions between the NRC and the industry were necessary for *all* case study participants, or just a sampling of the participants. A representative from NEI took an action to look into that question, and also mentioned that he would look into whether some of the interactions could group participants into one call.

- Several attendees commented that the goal of the case studies is lessons learned to incorporate into the RA process moving forward. These lessons learned could result in more accurate regulatory analyses. An NRC representative agreed and commented that the staff is updating the regulatory analysis guidelines; any lessons learned could be incorporated into the guidelines during the update process.
- A representative from Entergy commented that CER is the highest priority for Entergy in 2013, and added that greater levels of granularity are needed in these case studies. He noted that there are orders of magnitude differences between estimated vs. actual data.
- A representative from NEI indicated that the format of the deliverable would be one paper with recommendations, conclusions and lessons learned.
- A representative from the NRC reminded the attendees that the NRC staff takes action because of safety, not costs.
- A private citizen from Citizens Oversight commented that NRC jumps the gun past safety into cost/benefit before considering whether safety is substantially improved. He added that no one (NRC or industry) advocates for safety. A representative from the NRC responded that the NRC will always focus first on safety. An industry representative added that the industry's main focus is safety, also.

### **Considering Expansion of CER to Other Regulatory Actions**

The NRC staff described Commission direction that any expansion of CER should be considered in the broader context of the prioritization initiative (see SRM-COMGEA-12-0001/COMWDM-12-0002, "Proposed Initiative to Improve Nuclear Safety and Regulatory Efficiency," dated February 6, 2013 (ADAMS Accession No. ML13037A541)). In addition, the following items were discussed:

- The attendees discussed the list of regulatory actions in NEI's July 3, 2013, white paper. Specifically:
  - A representative from NEI indicated that NEI developed that list by asking: "What are the drivers for the regulatory actions?" Every one of the regulatory actions listed has CER impact. He also added that internally generated plant modifications are missing from the list.
  - An attendee commented that the items on the list are contributors to CER, but don't necessarily need to have process enhancements applied.
  - A member of the NRC staff commented that NEI may be issues based, while the NRC may be more process-based.
  - A member of the NRC staff added that the NRC's Office of Nuclear Materials Safeguards and Security (NMSS) has reviewed the list of regulatory activities that contribute to CER, as addressed in NEI's April 3 and April 16, 2016, letters to the NRC, and will hold public meetings to discuss a number of these activities. The first of these public meetings will occur on October 3, 2013.
  - A representative of the NRC added that we shouldn't pursue CER changes to the laundry list of regulatory actions. As it relates to prioritization, the following activities should be considered: rules, orders, generic letters, bulletins. Table top exercises and piloting activities should be pursued.

## CER Template and Prioritization

The NRC staff described the background of the CER template and prioritization initiative, as applied to power reactors. A representative from NEI provided a presentation on industry's proposed approach for addressing the cumulative impact of NRC actions, including a template for addressing cumulative impact, prioritization guidance, pilot plant participation, next steps, and general guidance. The following items were also discussed:

- A representative of NEI noted that the goal of prioritization is to focus on matters of safety significance with the right people at the right time and added that the industry's and NRC's workloads have increased substantially.
- The same NEI representative requested that the NRC re-visit NEI's April 2013 (ADAMS Accession No. ML13113A163) letter with 24 industry proposals on immediate actions for improving regulatory efficiency.
  - An NRC attendee asked what the relationship between the April 2013 letter and July 2013 white paper is. She noted that the April 2013 letter appears to be an output of the July 2013 process. An NEI representative responded that the April 2013 letter was developed before the prioritization process details were developed. He added that the pilot process will result in a plant-specific level of prioritization, while the April 16<sup>th</sup> letter was high-level/industry-wide.
- An NEI representative noted that the guidance associated with the prioritization is being developed and would be submitted to the NRC by the end of September 2013.
  - The NEI representative requested that NRC perform a quick look at the guidance to identify any fatal flaws.
- The attendees discussed the flow-chart titled "Proposed Process for Managing Cumulative Impact for Power Reactors."
  - An NRC representative noted that the NRC holds the right to make the safety determination, and that the box containing "regulatory analysis" seemed like a hinge point for the whole process. Regulatory analyses aren't required for adequate protection rules. An NEI representative commented that NEI acknowledged that point, and that those considerations were contained in the "Cost Benefit/Backfit Criteria" box.
  - The NRC staff said NEI needed to better characterize adequate protection and compliance as delineated in the regulatory analysis guidelines.
  - An NEI representative stated that, as part of the process, industry and NRC could focus on:
    - Discipline within regulatory actions
    - Prioritization
    - Clarity when regulatory analysis is needed
- On generic characterization, an NRC representative noted that:
  - An expert panel of approximately five members would evaluate the generic characterization. Not every plant has the same risk outcome, so not every plant will have the same generic characterizations. This would assist the plants when performing their plant-specific evaluations.

- Implementation
  - An NEI representative noted that NEI needed to focus on how the prioritization would become effective. In ISAP, prioritization was made effective through a license amendment. What would the regulatory vehicle be in this prioritization scheme?
  - An NRC staff member urged attendees to consider legal questions. Would the regulatory analysis need to be revised?
  
- Assessment of Existing Regulatory Activities
  - A representative from NEI noted that it is important to evaluate the degree to which an issue has been resolved. Often, an issue is 95 percent resolved, and, though the industry and NRC may be struggling with how to complete the remaining 5 percent, the risk (problem statement) is already addressed.
  
- Prioritization Process Guidance
  - An NEI representative noted that the process would use existing risk information. Based on the different risk factors for various sites, there would be different generic characterizations.
  - Generic characterization of an issue would take place first and an expert panel would identify screening questions, criteria, and possible modifications for addressing the issue. The expert panel would then look at specific applications.
  - The attendees noted that there is a need to identify issues for table tops and a need to schedule a follow-on public meeting.
  - A member of the NRC staff noted that external events are not fully developed from a risk standpoint, and, in her view, external events dominate risk. She stressed the importance of making conservative assumptions when it comes to external events.
    - NEI agreed and added that the goal is to do the most important (from a safety perspective) items first. Additionally, NEI noted that security, emergency preparedness, and radiological impacts are difficult to address from a risk perspective. Those types of regulations could be addressed and put into bins of high, medium, and low priority.

Enclosure:  
List of Attendees

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**Accession Nos.: Pkg.: ML13224A063; Notice ML13220A285; Summary ML13267A228, NRC Presentation ML13224A065; Industry Presentation ML13260A476 and ML13260A478, Industry Handout ML13263A134  
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<b>DATE</b>	09/26/2013	09/26/2013	09/27/2013	09/27/2013

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## LIST OF MEETING ATTENDEES

<b>Name</b>	<b>Organization</b>
Larry Campbell	NRC
Mike Snodderly	NRC
Tom Stevens	NEI
David Bradish	NEI
Tara Inverso	NRC
Adrian Heymer	NEI
Biff Bradley	NEI
Jana Bergman	Scientech
Gayle Elliott	AREVA
Jim Riley	NEI
Anthony Markley	NRC
Antonios Zoulis	NRC
Tim Reed	NRC
Mike Buckley	NRC
Tanya Mensah	NRC
Alex Popova	NRC
Michael Johnson	NRC
Fernando Ferrante	NRC
Nathan Sanfilippo	NRC
Janet Schlueter	NEI
Lawrence Kokajko	NRC
Kohei Ikutu	Chubu
Liz Gormsen	ICF
John Collier	ICF
Howard Benowitz	NRC
George Tartal	NRC
Shana Helton	NRC
Cardelia Maupin	NRC
Donnie Harrison	NRC
Randy Sullivan	NRC
Jeffrey Mitman	NRC
Daniel Rich	NRC
Paul Duke	PSEG
John Hawkinson	Enercon Services, Inc.
Greg Harris	Callaway
Larry Nicholson	FPL
Stanley Levinson	AREVA
Jodi Rappe	NuScale Power
Dan Cronin	University of Florida Training Reactor
Roy Linthicum	Exelon Nuclear
Chris Earls	NEI
Ray Lutz	Citizens Oversight
Dan Chalk	Department of Energy

ENCLOSURE

Abe Zeitoun	SCAINC
Alan Jelalian	EPM, Inc.
Henry Barnes	Troxler Labs
Robert Free	Texas
Linda Litinski	Honeywell Metropolis Works
John Cash	UR Energy
Don Dube	ERIN Engineering and Research Inc
Alan Leven	Department of Energy
Jerald Head	GE Hitachi Nuclear Energy
Marvin Lewis	Private Citizen
Jim Belfiore	FENOC
Ann Ryan	FENOC
Steven Dolley	Platts
Leslie Collins	Westinghouse
Gerald Loignon	VCSNS
Tom Houghton	Certrec Corporation
Laura Kozak	NRC
Wes Brinsfield	
James O'Brien	Department of Energy
David Nester	Department of Energy
James Slider	NEI
Kay Wilde Gallogly	The 42 Group
Eric Perry	Kentucky
Beth Wetzel	TVA
Gary Becker	NuScale
Steven Mirskey	NuScale
Darani Reddick	Winston Strawn
David Mannai	Entergy
Millie Ronnlund	Balch and Bingham