



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 13, 2018

MEMORANDUM TO: Sunil Weerakkody, Chief
PRA Operations and Human Factors Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

FROM: Matthew Leech, Reliability and Risk Analyst */RA by C. Spore for/*
PRA Operations and Human Factors Branch
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Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF February 20, 2018 PUBLIC MEETING TO CONTINUE
DISCUSSIONS BETWEEN THE U.S. NUCLEAR REGULATORY
COMMISSION AND INDUSTRY RISK-INFORMED STEERING
COMMITTEES

On February 20, 2018, the U.S. Nuclear Regulatory Commission (NRC) staff held a Category 2 public meeting to continue discussions between the NRC and industry Risk-Informed Steering Committees (RISCs). The meeting notice and presentations used to facilitate discussion are available in the Agencywide Documents Access and Management System (ADAMS), Accession Number ML18053A105. The list of meeting participants is provided as an enclosure to this document. Staff did not receive any public meeting feedback forms as a result of this meeting.

Both the NRC and Industry RISCs discussed their priorities list and expressed their desire to include follow-up action items in the priorities lists. During these discussions staff provided status updates on 50.69 License Amendment Request (LAR) reviews, New PRA Methods, Fire PRA Realism, Realism in the Reactor Oversight Process, Crediting Flex in Risk-Informed Decision Making, Finding and Observation Closure Process, Tornado Missile Risk Evaluator, and NRC reviews of ASME/ANS Code Case and NEI 12-13 documents. The Industry RISC provided the NRC with a new Industry Milestone Chart, and also discussed margins and their relationship to Integrated Risk-informed Decision Making.

Progress on NRC and Industry Priorities List

Some key observations noted by either the NRC RISC members or the industry RISC members are provided below:

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10CFR 50.69

NRC staff reinforced the potential adverse impacts on LAR review schedule caused by deviations from established precedents. In response, Nuclear Energy Institute (NEI) indicated the industry intent to remove Class 1 piping from the scope of 10CFR 50.69 LARs. NRC expressed intent to provide a status of the of the ongoing LAR reviews. That status update is included as an attachment to this meeting summary.

New Methods

Previously, on January 24, 2018, the NRC held a public meeting to discuss control of new probabilistic risk assessment (PRA) methods following an NRC approval of a risk-informed completion time LAR (or other licensee-controlled program). During the meeting, the NRC staff presented slides that provided both a background of why a change control process was needed and the spectrum of options under consideration to implement such a process. NEI staff has indicated that they do not view any process where prior NRC approval is needed as desirable. The NRC staff has identified a number of significant issues that would need to be addressed prior to allowing licensees to use a peer review process to approve new methods. NRC staff provided NEI with questions and details that would need to be addressed in order to pursue industry's latest proposed approach. At the Public RISC meeting on February 20th, NEI stated that they planned to address NRC questions and provide an enhanced proposal at the end of April. NRC management said that they would consider re-convening RISC Working Group 1 to review the NEI proposal once it is submitted.

Crediting FLEX

NRC discussed their views, that the staff has been making significant progress in many aspects of crediting FLEX in regulatory applications, but wanted to discuss in detail two challenge areas that the staff has been emphasizing. The first challenge area that was stressed was the importance of gaining access to the industry's FLEX operational experience data. The second challenge area was the ongoing work to develop a Human Reliability Analysis (HRA) method that would be able to handle the unique aspects of FLEX decisions and actions. Industry RISC representatives discussed the ongoing challenges they have faced with the FLEX operational experience data and discussed how the original intent of the data was for preventive maintenance purposes and how this has created some challenges in using it to develop failure probabilities. The industry RISC discussed the current status of the NUMARC 93-01 revision and said they were waiting for NRC staff to provide feedback on industry provided language. The NRC RISC committed to follow up with the responsible NRC staff. After the public RISC meeting, it was determined that the NRC staff had already provided feedback on the industry submitted language and that NEI had committed to providing further language for NRC consideration.

Facts and Observations Closure Process

NRC stated that we plan to continue to conduct observations and audits of the Independent Assessment (IA) facts and observations (F&O) Closure Process to establish confidence that there is industry-wide understanding and effective implementation of the process. Once this confidence is established, NRC staff will continue with audits and observations at a reduced periodicity to maintain confidence and provide continued monitoring and oversight. NRC requested a list of plants with upcoming IA F&O Closure Teams scheduled for NRC to select for observation. NEI discussed scheduling a public meeting to develop an effective protocol for discussing

observations and disseminating this information such that industry and NRC can maintain openness on these closure issues.

Industry Fire Probabilistic Risk Assessment Realism

The NRC discussed that a recent public meeting on Fire PRA held in mid-February reached initial resolution on two frequently asked questions (FAQs). The NRC and industry continue to work towards resolution of existing draft fire PRA FAQs and continue discussion on potential new FAQs.

The Industry RISC told the NRC that they see positives from recent meetings with the NRC's Office of Research and Electric Power Research Institute.

Realism in Reactor Oversight Process (ROP)

The NRC staff gave a status that internal stakeholders have received and are reviewing the White Paper that NEI submitted regarding Common Cause Failure (CCF). The goal with CCF is to explore proposed qualitative methods for possible inclusion to the Risk Assessment Standardization Project guidance noting that there are both conservatisms and non-conservatisms in our current process. Industry RISC stated that they are aligned on time frame. The industry RISC mentioned that after CCF, the industry would like to pursue discussions on the issue of the HRA floor next and eventually how Initiating Events are treated in ROP event assessments vs condition assessments.

Tornado Missile Risk Evaluator (TMRE)

Industry and NRC are in alignment on the timeline industry provided for a TMRE pilot plant review and subsequent endorsement review for NEI 17-02, Revision 2. Industry raised a comment on the number of draft audit questions for one of the pilot plants, and voiced some concern over some calculation questions that appeared to drive re-work of the model. Staff disagreed with the implication of draft audit questions expressing significant model flaws, and believed that pilot plants understood the issues and difference between initial audit questions and resultant formal RAs. Further, an industry stakeholder asked about the status of draft safety evaluation (SE) completion in advance of generation of audit questions, and the staff answered that in accordance with office instructions, draft SEs were written.

A licensee inquired about issuance of a blanket extension to Enforcement Guidance Memorandum (EGM) 15-002, due to the emerging EGM deadline and progress with TMRE approval. Staff replied that consistent with early discussion in prior public meetings, revisions made accordingly to the EGM and Division of Safety Systems ISG-2016-01, site specific extension requests were necessary. NEI staff present also acknowledged that topic as jointly agreed upon with industry.

NRC staff brought up that one of the pilot plants was owned by a utility that had withdrawn from NEI, and the staff will be alert to any issues that may be caused from loss of interaction among the pilot plants. There was no specific further discussion from industry on this topic.

ASME/ANS Code Case and NEI 12-13

The NRC provided an update that they will review and endorse (as appropriate) part 5 of the new edition of the ASME/ANS PRA standard. Also the NRC will review and endorse NEI 17-07 (which will replace NEI 12-13) in the next revision to Regulatory Guide 1.200.

Integrated Risk-Informed Decision Making

The Industry RISC mentioned that they intend to develop a white paper related to margin to the Quantitative Health Objectives. They showed on their milestone chart that a white paper is scheduled to be complete by the beginning of May, and intend to follow up with a public meeting in May or June. The NRC RISC mentioned that we would review a white paper when we receive it.

Closing Remarks

The public was given an opportunity to speak and ask questions, however, nobody from the public chose to do so. The NRC RISC chair then thanked the participants for their attendance and closed the meeting.

Enclosures:

1. List of Meeting Attendees
2. Status of 10 CFR 50.69 LAR Reviews

SUBJECT: SUMMARY OF DECEMBER 11, 2017 PUBLIC MEETING TO CONTINUE DISCUSSIONS BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND INDUSTRY RISK-INFORMED STEERING COMMITTEES DATE MARCH 13, 2018

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OFFICE	DRA:APHB	APHB
NAME	MLeech (Candace Spore for)	SWeerakkody
DATE	03/13/2018	03/13/2018

OFFICIAL RECORD COPY

LIST OF MEETING ATTENDEES

Name	Organization
Candace Spore	NRC
Matt Leech	NRC
Jeff Stone	Exelon
Greg Krueger	NEI
Mary Drouin	NRC
Robert Rishel	Duke Energy
Jeff Circle	NRC
Fernando Ferrante	EPRI
Angela Wu	NRC
Jana Bergman	Curtiss-Wright
Daniel Frumkin	NRC
Brian Metzger	NRC
Michelle Hayes	NRC
Jim Anderson	NRC
Doug True	Jensen Hughes
Joe Pollock	NEI
Scot Greenlee	Exelon
Steve Vaughn	NEI
Mihaela Biro	NRC
Greg Casto	NRC
Russell Felts	NRC
Paul Amico	Jensen Hughes
Chris Nolan	Duke Energy
Brian Holian	NRC
Stephen Geier	NEI
Mark Thaggard	NRC
Mike Franovich	NRC
Bob Bement	Arizona Public Service
JS Hyslop	NRC
Victoria Anderson	NEI
Danny Bost	Southern Company
Jeff Mitman	NRC
Ray Lorson	NRC
Stacey Rosenberg	NRC
Gregory Suber	NRC
Jordan Tyman	PG&E
Tina Taylor	EPRI
Matt Humberstone	NRC
Stephen Dinsmore	NRC
Donnie Harrison	NRC
Ed Miller	NRC
Tommy Nazario	NRC
Roy Linthicum*	PWROG
Don Helton*	NRC
Anders Gilbertson*	NRC
John Hanna*	NRC
John Conley*	Certrec

*Participated by teleconference

Status of 10 CFR 50.69 LAR Reviews
 “Risk-Informed Categorization of SSCs”

Site	Effort		Age (months)	Issuance	
	Est. Hours ⁹	% Used		Target Date	% Complete ¹⁰
St Lucie 1,2 ¹	494	15%	1	Sep 2018	0%
Turkey Point 3,4 ¹	480	2%	1	Oct 2018	0%
Vogtle 1,2 ²	650	117%	6	Jul 2018	60%
Limerick 1,2 ³	670	74%	5	Jun 2018	60%
Palo Verde 1,2,3 ⁴	875	79%	5	Aug 2018	25%
Byron / Braidwood ⁵	610	21%	4	Sep 2018	25%
Duane Arnold	650	13%	4	Sep 2018	25%
Peach Bottom 2,3 ³	694	60%	3	Aug 2018	25%
Point Beach ^{3, 6}	850	28%	3	Aug 2018	25%
Brunswick 1,2 ⁷	1350	5%	1	Oct 2018	10%
Harris ⁸		0%	0	Feb 2019	0%

¹ Application has been withdrawn by licensee.

² Vogtle is a complex review since it's the first LAR that includes a seismic PRA.

³ LAR was accepted for review following a supplement.

⁴ Palo Verde LAR includes a seismic PRA.

⁵ Combined review of Byron & Braidwood.

⁶ Point Beach was originally submitted with a High Winds PRA (withdrawn), which led to a higher estimate of hours.

⁷ Brunswick includes new high winds and flooding PRAs.

⁸ Harris is currently undergoing acceptance review.

⁹ The estimated hours were calculated during the acceptance review.

¹⁰ Completion percentage is based on the milestones in the key to the right as opposed to a precise estimate of review progress.

% Complete Key
10% - Acceptance review complete
25% - Biweekly Notice Issued
50% - All RAIs Issued to Licensee
60% - All RAIs Responses Received
80% - ALL SEs from Technical Division