

May 18, 2017

MEMORANDUM TO: Greg Casto, Chief (Acting)
PRA Operations and Human Factors Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

FROM: Alexander Schwab, Project Manager */ra/*
Generic Communications Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF THE MAY 2, 2017, PUBLIC MEETING BETWEEN
STAKEHOLDERS AND THE U.S. NUCLEAR REGULATORY
COMMISSION TO DISCUSS INDUSTRY CONCERNS ON THE RASP
HANDBOOK AND SIGNIFICANCE DETERMINATION PROCESS

On May 2, 2017, a Category 2 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) staff and external stakeholders, at One White Flint North, in the 1st Floor Commission Hearing Room. The purpose of the meeting was to seek interested stakeholder comments and discuss industry concerns on the Risk Assessment Standardization Project (RASP) Handbook and the Significance Determination Process (SDP).

The meeting began with opening remarks from the Acting Deputy Division Director of the Division of Risk Assessment (DRA). This was followed by the DRA Technical Lead for the RASP Handbook who provided an overview of the NRC's RASP Handbook and SDP, emphasizing that the RASP Handbook was a technical guidance document, and not a prescriptive procedure.

The Nuclear Energy Institute (NEI) and industry representatives provided a presentation entitled, "RASP Handbook and Significance Determination Process (SDP) Implementation Issues: An Industry Perspective" (Agencywide Documents Access and Management System Accession No. ML17123A177). A summary of the perspectives and views of industry stakeholders on each issue concerning SDP implementation and its relationship to use of the RASP Handbook is provided below. Appropriate NRC staff clarifications in response to the statements of industry concerns are also provided.

Issue #1: Use of Best Available Probabilistic Risk Assessment (PRA) Models

The industry stakeholders' perspectives on using the best available PRA model for SDP assessments are as follows:

- a) Licensee PRA models are updated more often than SPAR models, more representative of as-built, as-operated plant, and subject to rigorous peer reviews;

- b) Differences between SPAR and licensee PRA models can lead to SDP results by factors of 2 to 10;
- c) Limitations of SPAR models can result in overstating risk significance of performance deficiencies (e.g., Dresden HPCI auxiliary oil pump problem).

The NRC staff explained that the significance determination for a performance deficiency relies on the influential assumptions in the detailed risk evaluation, regardless of the differences between the SPAR and licensee PRA models. Because of this methodology, NRC staff are expected to engage with licensee staff early in the process to resolve discrepancies between SPAR and licensee PRA models to ensure model fidelity and realistic representation of the as-built, as-operated plant. An industry representative expressed a concern that the SDP timeliness metrics sometimes cause the licensees to expend unnecessary resources prior to the characterization of a definitive performance deficiency. The staff acknowledged the comment, and the staff will address resource effects as part of path forward considerations.

Issue #2: Reasonable Adjustment to Common Cause Failure (CCF) Probability

The industry stakeholders' view on this issue was that the NRC's prescriptive guidance can artificially bias outcomes on a factor that is very significant to the SDP results. This view was expressed by the industry representatives in terms of the following observations:

- a) The CCF approach is "built-in" to the SPAR/SAPHIRE process with little consideration of how to appropriately regulate such a significant penalty;
- b) The RASP Handbook does not highlight what "good" looks like as far as effective defenses against CCF;
- c) CCF adjustment should be tempered by fact-based treatment to account for as-found conditions and actual extent of condition.

The industry representative commented that organizational and maintenance defenses are often in place to mitigate a CCF, and that those defenses should be credited appropriately in SDP assessments. The NRC staff explained that some of these CCF defenses identified as "good" operational practices were already included in the NRC's SPAR base model, and therefore, it is not logical to credit those CCF defenses again to avoid "double counting." Further, the NRC position on modeling these types of failures is documented in a draft NUREG report; however, the NRC staff is engaging stakeholders to explore additional appropriate approaches to the treatment of common-cause failures in various regulatory applications.

Issue #3: Minimum "Floor" Value for Joint Human Error Probability (HEP)

The industry stakeholders' view on this issue was that the technical basis for going below the 1E-6 value in HEP lower threshold needs to be clarified. This view was expressed by the industry representatives in terms of the following observations:

- a) The minimum joint HEP should not be prescribed for all cases regardless of how benign the circumstances may be (i.e., no minimum "floor" value for cutset quantification);
- b) Guidance should be considered for HEP in cases where failure is "practically inconceivable";
- c) HEP floor is especially important to shutdown events.

The NRC staff commented that guidance on this topic could be improved if the industry continue with initiatives for the resolution of this issue by development of sound technical bases to support the need of a minimum “floor” value for joint HEP in a risk quantification process. Electric Power Research Institute (EPRI) representatives that called into the public meeting expressed interest to work with the NRC on matters involving Human Reliability Analysis (HRA) modeling and the related issue of minimum threshold for joint HEP.

Other Issues

- A. The PWR Owners Group (PWROG) representative provided a presentation entitled: “RASP Handbook Treatment of Initiating Event SDPs.” The main concerns expressed by the industry representative were: (1) RASP Handbook treatment of initiating event SDPs is not realistic, (2) Changes in initiating event frequency (IEF) should not be assumed to be one per year, and (3) RASP Handbook should be revised to provide realistic treatment.

NRC staff did not provide any comment because there were several public meetings on this topic over the past 4 years, and NRC staff have revised IMC 308, Attachment 3, “Significance Determination Process Technical Basis,” to clarify NRC’s approach to treatment of initiating event SDPs.

- B. An industry representative provided a presentation entitled: “Governance of the RASP Handbook.” The main concerns expressed by the industry representative were: (1) RASP Handbook change process does not reflect its importance to the Reactor Oversight Process, (2) RASP Handbook methodologies dictate SDP outcomes, and (3) RASP Handbook changes are not sufficiently vetted among internal and external stakeholders.

NRC staff re-emphasized that the RASP Handbook is a technical guidance document for use by Senior Reactor Analysts and risk analysts, and it is a lower-tier guidance document on acceptable methods and practices to support the programmatic implementation of SDP and other risk-informed regulatory applications. NRC staff also clarified that the process in IMC 0040, “Preparing, Revising and Issuing Documents for the NRC Inspection Manual,” dated December 2016, is used for review of RASP Handbook changes among NRC stakeholders, and recent practice includes providing any proposed new guidance in the RASP Handbook to industry stakeholders for review and comment.

- C. The staff asked industry stakeholders to prioritize the topics that were discussed in the meeting. The industry representatives agreed that, in order, common cause failure, human reliability assessment, initiating event SDP method, and best model application topics should be considered for priority treatment.
- D. The staff and industry acknowledged that further development of future actions should be vetted through the Risk Informed Steering Committee (RISC). The staff will engage with the industry through NEI, in preparation for a near term RISC topic discussion on the path forward to these topics.

During the meeting, the attendees were reminded that although their comments were discussed with the staff, no decisions would be made at the meeting.

G. Casto

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A list of meeting attendees is enclosed.

Please direct any inquiries to Alexander Schwab, Project Manager, at 301-415-8539, or Alexander.Schwab@nrc.gov.

Enclosure:
List of Attendees

SUMMARY OF THE MAY 2, 2017, PUBLIC MEETING BETWEEN STAKEHOLDERS AND THE U.S. NUCLEAR REGULATORY COMMISSION TO DISCUSS INDUSTRY CONCERNS ON THE RASP HANDBOOK AND SIGNIFICANCE DETERMINATION PROCESS Date: May 18, 2017

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ATTENDANCE LIST

**MEETING BETWEEN STAKEHOLDERS AND THE U.S. NUCLEAR REGULATORY
COMMISSION STAFF TO DISCUSS INDUSTRY CONCERNS ON THE RASP HANDBOOK
AND SIGNIFICANCE DETERMINATION PROCESS
(CATEGORY 2)**

May 2, 2017

9:00 a.m. - 12:00 p.m.

ONE WHITE FLINT NORTH, FIRST FLOOR COMMISSION HEARING ROOM

NAME	ORGANIZATION
Greg Casto	NRC
See-Meng Wong	NRC
Sunil Weerakkody	NRC
Russell Gibbs	NRC
Andy Rosebrook	NRC
John David Hanna	NRC
Chris Cahill	NRC
Laura Kozak	NRC
William Cook	NRC
Mark Thaggard	NRC
Dale Yeilding	NRC
Kevin Coyne	NRC
Mike Montecalvo	NRC
Jeff Circle	NRC
Sean Peters	NRC
Brandon Hartle	NRC
Song-Hua Shen	NRC
Jerrold Demers	NRC
Jeff Wood	NRC
Chris Hunter	NRC
Steven Wessels	NRC
Yung Hsien J. Chang	NRC
Matt Leech	NRC
Don Helton	NRC
Anders Gilbertson	NRC
James Slider	NEI
Greg Krueger	NEI/Exelon
Jim Barstow	Exelon
Jeff Stone	Exelon
Gene Kelly	Exelon
Darani Reddick	Exelon

Ron Gaston	Exelon
Roy Linthicum	PWROG
Chris Nolan	Duke
Robert Rishel	Duke
Owen Scott	Southern Nuclear Co.
Peter Wilson	TVA
Anil Julka	NextEra
Jamie Mallon	PSEG
James Pak	Dominion
Mark A. Brossart	Xcel Energy
John F. Bretti	Entergy
Mary Presley	EPRI
Fernando Ferrante	EPRI
Ken Heffner	Certrec
Larry Parker	STARS Alliance
Deann Raleigh	Curtis Wright
Dave Lochbaum	Union of Concerned Scientists