

May 28, 2014

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

FROM: See-Meng Wong, Senior Reactor Analyst */RA/*  
PRA Operations and Human Factors Branch  
Division of Risk Assessment  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF PUBLIC MEETING HELD ON MAY 19, 2014 TO  
DISCUSS ISSUES RELATED TO RISK ASSESSMENT  
METHODS USED IN THE NRC SIGNIFICANT  
DETERMINATION PROCESS

On May 19, 2014, the U.S. Nuclear Regulatory Commission (NRC) held a Category 2 public meeting to discuss specific issues related to risk assessment methods used in the NRC Significance Determination Process (SDP) with industry stakeholders and interested members of the public. The attendance list, meeting agenda and presentation slides are included in the enclosure to this summary.

Summary of Meeting

The purpose of the meeting was to hear comments from interested industry stakeholders and members of the public on specific issues related to the risk assessment methods in SDP. The meeting announcement can be found under Agencywide Documents and Management System (ADAMS) Accession No. ML13351A115.

The public meeting commenced with an NRC staff presentation summarizing the rules of engagement and fundamental attributes of the Significant Determination Process (ADAMS Accession No. ML14141A361). The staff indicated that Inspection Manual Chapter 0308 Attachment 3 provided the technical basis of the SDP (ADAMS Accession No. ML062890430). The staff also pointed out that the SDP is an NRC process and IMC 0308 Attachment 3 delineated the rules of engagement with external stakeholder participation in SDP development and its changes. NRC staff from the Office of Nuclear Regulatory Research also provided the staff's perspective in using plant-specific Standardized Plant Analysis Risk (SPAR) models in SDP assessments (ADAMS Accession No. ML14141A419).

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The NRC staff received feedback from the Pressurized Water Reactor Owners Group (PWROG), the Nuclear Energy Institute (NEI), and the public interest groups on issues related to the risk assessment methods in SDP. Mr. Roy Linthicum, PWROG, provided a presentation entitled: "Initiating Event SDP White Paper" (ADAMS Accession No. ML14141A425). Ms. Victoria Anderson, NEI and Mr. Anil Julka, NextEra, jointly provided an NEI presentation entitled: "Use of Licensee PRA Models in SDP Assessments" (ADAMS Accession No. ML14141A369). Ms. Mary Pressley, EPRI, provided the industry presentation entitled: "Joint Human Error Probability for the Significance Determination Process" (ADAMS Accession No. ML14141A422).

The main discussions between NRC staff and industry participants are summarized below:

1) Use of Conditional Core Damage Probability (CCDP) in SDP Assessments

The PWROG asserted the industry position that SDP methods are inappropriate for evaluating licensee performance deficiencies that caused initiating events, and there is no consensus on the approach to convert initiating event CCDP to the delta core damage frequency (CDF) as the metric for SDP assessments. The PWROG further asserted that the use of the CCDP metric in SDP assessments is a policy issue outside the scope of the PWROG effort. However, the PWROG agrees that Bayesian updating methods for evaluating initiating event significance are not appropriate or consistent with SDP methodology. The NRC staff will evaluate this industry feedback to support the work in future revisions of NRC guidance documents such as Inspection Manual Chapter (IMC) 308 and the Risk Assessment Standardization Project (RASP) Handbook.

2) Use of Licensee PRA Models in SDP Assessments

NRC staff from the Office of Nuclear Regulatory Research (RES) provided a presentation entitled: "Perspectives on the NRC's Standardized Plant Analysis Risk (SPAR) Models." This presentation lays out the uses and capabilities of SPAR models for SDP assessments, the modeling philosophy of SPAR model structure, and the quality assurance activities and processes to assure the high quality of SPAR models used in all NRC risk-informed regulatory applications. NEI and industry representatives provided the overview of an industry proposal to use licensee PRA models in SDP assessments. The industry proposal discussed the advantages of using licensee PRA models and the better focus on resources and efforts on evaluating safety significant findings. NRC staff clarified that a previous NEI letter on the proposal to use licensee PRAs for SDP had been discussed in the 2006-2007 timeframe (ADAMS Accession Nos. ML072290362, ML072490566). NRC had responded to NEI and the industry at that time expressing the agency's view of maintaining the independence of NRC's SPAR models for regulatory assessment of licensee performance (ADAMS Accessions No. ML 072490540, ML072490566). The current NEI/industry proposal contains some recommendations considered to be different from the 2007 NEI letter; specifically, that plant licensees conduct the analysis of record for SDP assessments. NRC staff may discuss these suggestions in future ROP meetings if there are merits to specific recommendations in the NEI/industry proposal.

3) Minimum Joint Human Error Probability (HEP) Threshold for Dependent Human Failure Events

Ms. Mary Pressley, EPRI, provided the industry presentation entitled: "Joint Human Error Probability for the Significance Determination Process." This was an update of industry efforts in this subject area, and more discussions will be held in additional public meetings to achieve a better understanding of the technical issues.

As noted above, the action items for the topics discussed at this meeting are:

- 1) The NRC staff will evaluate industry feedback to support the work in future revisions of NRC guidance documents such as Inspection Manual Chapter (IMC) 308 and the Risk Assessment Standardization Project (RASP) Handbook. The staff will inform NRC management on the industry position that the use of CCDP metric in SDP assessments is a policy issue.
- 2) The NRC staff maintains the view that NRC's SPAR models are independent tools for regulatory assessment of licensee performance. NRC staff may continue discussion of the NEI/industry proposal to use licensee PRA models for SDP assessments in future ROP meetings if there are merits.

Mr. James Riccio, Greenpeace and Mr. Tim Judson, NIRS provided comments on the NRC regulatory processes during discussions on the three topics throughout the public meeting.

No public comment feedback forms were received after the meeting.

Enclosure:

1. Attendance List
2. Agenda
3. Meeting Presentation slides

3) Minimum Joint Human Error Probability (HEP) Threshold for Dependent Human Failure Events

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DATE:	05/ 28 /14	05/ 28 /14

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**Public Meeting on to Discuss Risk Assessment Issues in the Significance Determination  
Process**

**May 19, 2014  
List of Participants**

NRC STAFF

Sunil Weerakkody  
John Nakoski  
Kevin Coyne  
See Meng Wong  
Jeffrey Mitman  
Jeff Circle  
Fernando Ferrante  
Dan Merzke  
Stephen Vaughn  
Michelle Kichline  
Chris Cahill  
Jonathan DeJesus  
John Hanna  
Richard Deese  
Keith Tetter  
David Aird  
Dale Yeilding  
Wayne Schmidt  
Michael Montecalvo  
Ching Ng  
Michelle Gonzalez  
Peter Appignani\*  
Donald Helton\*

OTHER

Victoria Anderson	NEI
Roy Linthicum	PWROG
Jim Riccio	Greenpeace
Gene Kelly	Exelon Nuclear
Anil Julka	Nextera Energy
Tim Judson	NIRS
Mary Presley	EPRI
Zhiping Li*	Callaway Energy Center
Kevin Schoolcraft*	Callaway Energy Center
Michael Calley*	INL
Curtis Smith*	INL
John Conly*	Certrec
Allen Shirelle*	Duke Energy Corporation
Sarah Zafar*	ERIN
Elijah DeVaughn*	Southern Nuclear
Jason Hall*	Entergy

ENCLOSURE

S. Weerakkody

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Adrienne Driver\*  
Marv Lewis\*

Duke Energy  
public

\*Participation via teleconference

## MEETING AGENDA

<u>TIME</u>	<u>TOPIC</u>	<u>LEAD</u>
1:00 – 1:10 p.m.	Introduction and Opening Remarks	NRC
1:10 – 1:30 p.m.	Initiating Event SDP White Paper	NEI/PWROG
1:30 – 2:30 p.m.	Discussion	All
2:30 – 2:45 p.m.	Break	
2:45 – 3:15 p.m.	Perspectives on SPAR Models	NRC
3:15 – 3:45 p.m.	Use of Licensee PRA Models in SDP Assessments	NEI
3:45 – 4:15 p.m.	Discussion	All
4:15 – 4:30 p.m.	Update on Minimum HEP Threshold for Dependent Human Failure Events	NEI
4:30 – 4:50 p.m.	Perspectives from Public Interest Groups	Greenpeace
4:50 – 5:00 p.m.	Closing Remarks	NRC

### Reference Materials

1. PWROG Paper, "Initiating Event SDP White Paper – Draft." (Agency-wide Documents and Management System (ADAMS) Accession No. ML14125A070).
2. NRC White Paper, "Modeling the Safety Significance of Findings that Are the Proximate Cause of an Initiating Event Occurrence and a Framework for Defining the Threshold for Causality to Support the Significance Determination Process (SDP)." (ADAMS Accession No. ML14080A051).
3. NEI White Paper, "Proposal for Use of Licensee PRA Models in the Significance Determination Process." (ADAMS Accession No. ML14106A571, ML14107A083)
4. M. Fertel, NEI Letter, "Followup to August 2 Commission Briefing on Risk-Informed Regulation," August 2007. (ADAMS Accession Nos. ML 072290362, ML072490566)
5. L. Reyes, NRC EDO Letter, "Response to NEI Letter, M. Fertel," October 2007. (ADAMS Accession Nos. ML 072490540, ML072490566).

ENCLOSURE

### **Meeting Presentation Slides**

1. See-Meng Wong, NRC, "Meeting Objective" (ADAMS Accession No. ML14141A361).
2. Roy Linthicum, PWROG, "Initiating Event SDP White Paper" (ADAMS Accession No. ML14141A425).
3. Kevin Coyne, NRC, "Perspectives on the NRC's Standardized plant Analysis Risk Models" (ADAMS Accession No. ML14141A419).
4. Victoria Anderson and Anil Julka, NEI, "Use of Licensee PRA Models in SDP Assessments" (ADAMS Accession No. ML14141A369).
5. Mary Presley, EPRI, "Industry Efforts on Addressing Minimum Joint Human Error " (ADAMS Accession No. ML14141A422).

ENCLOSURE