

December 19, 2006

MEMORANDUM TO: Michael D. Tschiltz, Deputy Director
Division of Risk Assessment
Office of Nuclear Reactor Regulation

FROM: Donald A. Dube, Senior Technical Advisor for Risk-Informed Initiatives
Division of Risk Assessment **/RA/**
Office of Nuclear Reactor Regulation

SUBJECT: PUBLIC MEETING SUMMARY REGARDING USE OF STANDARDIZED
PLANT ANALYSIS RISK MODELS AND LICENSEE PROBABILISTIC
RISK ASSESSMENT MODELS IN THE REACTOR OVERSIGHT
PROCESS HELD ON DECEMBER 13, 2006

On December 13, 2006, a public meeting was held at the One White Flint North Building, Room 3B4, to discuss the use of the risk insights from Standardized Plant Analysis Risk (SPAR) models and the licensee Probabilistic Risk Assessment (PRA) models to characterize the safety significance of inspection findings for the Nuclear Regulatory Commission (NRC) Reactor Oversight Process. The agenda and a list of attendees are provided as Enclosure 1. There were no hand-out materials.

This meeting was held as follow-up to an action item from the public meeting of September 28, 2006, between the NRC, PRA Steering Committee and industry representatives. The action from the September 28 meeting was to form a task group to investigate various options to the use of the SPAR models in the Significance Determination Process (SDP). The objective of the kick-off meeting of December 13 was to identify issues and concerns with the current process as well as to identify major issues to resolve before moving forward with alternatives.

The industry outlined their concerns with the current process. They provided several examples where the use of SPAR models by the staff resulted in sometimes conflicting results with the licensee's own PRA model on the safety significance of performance deficiencies. Some industry representatives felt that this was resulting in large resources on their part to address such modeling differences. The NRC staff recognized that there could be discrepancies in model predictions, but expressed their view that most often this was the result of varying assumptions from the engineering analysis as to whether certain degraded conditions were actual failures, and for how long the condition existed, as opposed to major PRA modeling differences.

Enclosure:
As stated

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During the meeting, 10 items were identified for further clarification and study. These items would form the major elements of the working group charter. These included:

1) *What are the reasons for the SPAR model?* The staff noted that the SPAR models are used not only for the SDP, but for wide ranging applications including the Incident Investigation Program (Management Directive MD 8.3), the accident sequence precursor program, prioritizing generic issues, and major studies of regulatory significance such as the Station Blackout risk reevaluation effort per NUREG/CR-6890.

2) *How would a change to the use of the SPAR models in the SDP impact the other uses of SPAR models?* The staff noted that there are substantial fixed costs with the SPAR model development program, for example, and that the elimination of the use of SPAR models for SDP for some fraction of the plants would not necessarily result in major project savings. SPAR models would still need to be maintained for other applications noted above.

3) *What are the regulatory, logistical, and legal issues associated with the staff obtaining and using licensees' PRA models?* Discussion focused on the practicality of keeping the models current, control of documentation, and other concerns.

4) *What does it mean to conform to Reg Guide 1.200 (regarding the technical adequacy of PRA for risk-informed initiatives) in the context of SDP?* Discussion ensued as to what conditions would be required before the staff would allow use of the licensee's PRA model for SDP.

5) *What recent improvements have been made to the SDP and what others are under consideration?* The staff briefly discussed improvements to the Phase 2 notebooks. The staff's long-term goal is to "sunset" the notebooks and to rely on integrated SPAR models that incorporate elements of external events and low/power shutdown, as well as large early release frequency (LERF).

6) *How are external events, low power/shutdown, and LERF treated under SDP?* The industry discussed how some 40 to 50 fire PRAs are anticipated under NFPA 805 (performance-based standards for fire protection in LWRs) over the coming years. It would seem logical for the staff to take full advantage of that effort. The staff agreed that this was a reasonable approach, as opposed to developing external events models separately. The staff noted that the Office of Nuclear Regulatory Research has developed about a dozen external events SPAR models using mainly individual plant examination of external events sources as a pilot to understand the magnitude of the effort as well as the merits of the approach.

7) *What are the implications of the industry having several different PRA software platforms?* The staff noted its concerns with having to train the PRA staff including the region SRAs not only on 3 to 4 major PRA platforms, but on the wide-range of varying PRA models, each with their own methods, data bases, and structures. Some suggested it might be able to convert some of the PRA models to the NRC's platform (SAPHIRE), but model details could be lost in the process.

8) *What are the sensitive unclassified non-safeguards information (SUNSI) concerns with making the PRA models available for staff use?* All agreed that there are adequate measures in place to protect the information, but that there were other (e.g., legal) issues that needed to be understood.

9) *What about taking advantage of user-friendly configuration management tools (e.g., on-line risk monitor)?* It was noted that such tools are available to plant planning staff, and could be readily available to the NRC staff. However, there were concerns that these tools do not provide detailed modeling information that can be subject to review and scrutiny by the staff.

10) *What about SPAR model quality and standards?* The concern was expressed by industry that the SPAR models do not have to undergo the same rigors of quality and peer review as do industry PRA models. The staff agreed that SPAR models are being applied to uses that were not envisioned when they were first created a decade ago. Accordingly, a significant effort has been underway to improve the quality including bench marking of the SPAR models against licensee PRAs at the cut set level, completion of a quality assurance plan, development of a handbook for the standardization of risk assessment applications by the staff, a plan for performing thermal-hydraulic analyses to confirm system success criteria in the models, and the identification and prioritization of technical modeling issues for resolution.

Toward the end of the meeting, it was agreed that a core group of perhaps 5 people would be assembled to create a charter centered around the issues discussed above. The working group would assess the issues and determine what, if any, improvements could be made to the current process, consistent with the needs of the staff to perform its regulatory function. The time frame for the study and development of recommendations to the larger community of stakeholders would be 6 to 10 months. A preliminary draft of the charter would be made available by early February 2007.

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ADAMS Accession No.: ML063530303

NRR-106

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DATE	12/19 /06	12/ 19 /06	

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U.S. Nuclear Regulatory Commission
Rockville, Maryland 20852
December 13, 2006
O-3B4

Agenda

Purpose: The purpose of the meeting is to discuss the use of the risk insights from Standardized Plant Analysis Risk (SPAR) models and the licensee Probabilistic Risk Assessment (PRA) models to characterize the safety significance of inspection findings for the NRC Reactor Oversight Process (ROP).

<u>TIME</u>	<u>TOPIC</u>	<u>PRESENTER</u>
2:00 P.M.	Purpose of meeting and working group	NRC
2:10 P.M.	Discussion of issues with current process	Industry
3:00 P.M.	Questions	All
3:15 P.M.	Break	
3:25 P.M.	Continued discussion of issues	All
4:30 P.M.	Next steps, including formation of working group, membership, charter, schedule, and deliverables	All
5:15 P.M.	Public Comment	
5:30 P.M.	Adjourn	

Teleconference
1-800-638-8081 or 301-231-5539 pass code 6154#

**U.S. Nuclear Regulatory Commission
Rockville, MD 20852
Public Meeting on the Use of PRA Models
To Characterize Safety Significance of Inspection Findings
December 13, 2006**

List of Attendees

NAME	ORGANIZATION	PHONE
Don Dube	NRC/NRR/DRA	301-415-1483
Sonia Burgess	NRC/Region III	630-829-9752
Pete Appignani	NRC/RES	301-415-6857
Dave Bucheit	Dominion Resources	804-273-2264
Gabe Salamon	NMC	715-377-3324
Gareth Parry	NRR/DRA	301-415-1464
David Finnicum	Westinghouse	860-731-6440
Biff Bradley	NEI	202-739-8083
Steve Nass	First Energy	330-573-9698
Gerald Sowers	APS-Palo Verde	623-393-5647
Deepak Rao	Entergy	601-368-5427
Don Vanover	ERIN/Exelon RMT	610-431-8260
Stanley Levinson	AREVA NP Inc	434-832-2768
Julie Keys	NEI	202-739-8129
See Meng Wong	NRC/NRR/DRA/APOB	301-415-1125
Steven Dolley	Inside NRC/Platts	202-383-2166
Anne Marie Grady	NRC/RES	301-415-7645
Yumi Kawanago	MNES/Mitsubishi	202-775-9211
Alan Rubin	NRC/RES/DRASP/PRB	301-415-6776
Mike Franovich	NRC/NRR/APOB	301-415-1185
Jeff Circle	NRC/NRR/APOB	301-415-1152
Paul Bonnett	NRC/NRR/DIRS/IRIB	301-415-4107

John Thompson	NRC/NRR/DIRS/IPAB	301-415-1011
Patrick Baranowsky	NRC/RES/DRASP/OERA	301-415-7493
Michael Tschiltz	NRC/NRR/DRA	301-415-3183
Laura Kozak (call-in)	NRC/ Region III	630-829-9604
Dave Passehl (call-in)	NRC/ Region III	630-829-9872
Ching Guey (call-in)	FP&L	561-694-3137