February 5, 2008

MEMORANDUM TO: Christiana Lui, Director
Division of Risk Analysis
Office of Nuclear Regulatory Research

THRU: Michael Cheok, Branch Chief */RA/*
Probabilistic Risk Assessment Branch
Office of Nuclear Regulatory Research

FROM: John C. Lane, */RA/*
Senior Reliability & Risk Analyst
Probabilistic Risk Assessment Branch
Office of Nuclear Regulatory Research

SUBJECT: JANUARY 25, 2008 PUBLIC MEETING SUMMARY (PRA TOPICS)

A Category 2 public meeting was held on January 25, 2008 at NRC headquarters to discuss items of mutual interest between the staff and the nuclear industry related to risk-informed activities. Attachment 1 lists the attendees. The meeting was announced on January 9, 2008 (ML080080125).

Topics discussed at the meeting were mostly related to fire probabilistic risk assessment (PRA) including regulatory stability, uncertainty analysis, and aggregation of risk results. The staff also discussed the potential to credit alternative accident mitigative strategies, resulting from "B.5.b enhancements" in risk-informed activities.

In advance of the meeting, the Nuclear Energy Institute (NEI) transmitted a white paper entitled, "Insights from the Application of Current Fire PRA Methods for NFPA 805," (ML080240244 and ML080240247), which discussed fire PRA issues. At the meeting, staff and NEI made presentations, copies of which are now publicly available (ML080300325 and ML080300328).

The industry presentation on fire PRA insights was made by representatives from NEI. Several nuclear power plant licensees are in the midst of implementing NFPA 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants." In implementing NFPA 805, licensees are relying on guidance provided in NUREG/CR-6850 which documents advanced fire PRA methods. A number of concerns were raised as a result of the insights gained in this first round of applications.

Industry representatives stated that it is appropriate to take a second look at NUREG/CR-6850 now that the guidance has been used in a more holistic manner. Essentially, the industry believes that the NUREG was not piloted to the extent necessary to avoid unnecessary and/or excessive conservatisms. The industry representatives pointed out that evaluations using guidance provided in the NUREG produces results that are not consistent with actual plant experience. For instance, the industry believes that descriptions of the severity of fire intensity

characterized in the NUREG/CR may reflect more on experimental results than actual events recorded at the plants.

The nuclear industry representatives also commented about the potential for different interpretations related to the guidance found in the NUREG/CR. Practitioners have raised several questions about the NUREG/CR and, in response, NEI has developed a list of frequently asked questions (FAQs) to communicate industry guidance regarding its interpretation of the NUREG/CR. There is concern, however, that the changing interpretations may lead to inconsistent application of the NUREG/CR and that there may be a need for continuing communication to clarify guidance found in the FAQs and in the NUREG/CR.

The industry voiced their opinion that the uncertainties in fire PRA modeling and results needed more industry and staff attention because they are different than the uncertainties which result from other aspects of PRA. For example, it is frequently more difficult to arrive at an understanding of fire consequences compared to those from other phenomena modeled in a PRA. For this reason, care must be taken in addressing fire PRA uncertainty because the typical approach to dealing with uncertainty, i.e., to apply conservatisms in the interpretation of results, may produce a finding that is unrealistic and not useful for a risk-informed application. This is especially important when fire PRA results are aggregated with overall PRA results because multiple, individual conservatisms may compound in an unrealistic manner.

The industry and NRC staff agreed to a more detailed dialogue aimed at discussing aspects of the NUREG/CR that may be overly conservative or that need further clarification. The purpose of the dialogue would be to:

1. Document and formalize the evolving approaches and enhancements discussed in the FAQs referenced above.

2. Address new technical issues which may impact the guidance contained in the NUREG/CR, and

3. Work towards more realistic end results by identifying and addressing excess conservatisms.

On a separate topic, the staff is evaluating how NRC risk-informed decision-making processes (e.g., licensing and inspection activities) should consider plant risk-reductions achieved through alternative mitigation strategies. Licensees have implemented alternative mitigation strategies as safety and security related enhancements to satisfy Section B.5.b of the Commission's February 25, 2002, Interim Compensatory Measures Order. The staff has begun an upgrade to NRC risk assessment tools employed in the NRC's Reactor Oversight Process to incorporate licensees' B.5.b enhancements. NRC's Standardized Plant Risk Analysis (SPAR) models will be upgraded starting in fiscal year 2009. Staff proposed that, in order to grant risk-reduction credit, the alternative mitigation strategy must be:

1. Inspectable (to the maximum extent practical),

2. Modeled in both the baseline PRA and the PRA containing the proposed change, including the use of HRA methodology consistent with the ASME PRA standard,

3. Proceduralized and trained upon, and

4. Demonstrate feasibility for on-site and off-site equipment credited.

A Regulatory Information Summary (RIS) on this topic is planned. Industry representatives expressed an interest in commenting on the RIS prior to its issuance.

Enclosure:
List of Attendees

CC: w/enclosures
M. Cunningham, NRR
Gareth Parry, NRR
Mary Drouin, RES
Don Dube, NRO
Mike Franovich, NRR
J S Hyslop, RES
Alex Klein, NRR
Steven Laur, NRR
Ray Galluci, NRR
Mark Rubin, NRR

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OFFICE	RES/DRA		RES/DRA	
NAME	JLane		MCheok	
DATE	02/04/08		02/05/08	

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List of Attendees
January 25, 2008 Public Meeting
NRC Headquarters

Industry Attendees:
Jim Chapman, Scientech
Bijan Najefi, SAIC/EPRI
Ken Canavan,EPRI
Doug True, ERIN
Biff Bradley, NEI
David Miskiewicz, Progress Energy
Jeff Ertman, Progress Energy
Patrick Baroanowsky, ERIN
Ray Schneider, Westinghouse
Jeff Stone, Constellation
Stanley Levinson, Areva NP
Greg Krueger, Exelon
David McCoy, Southern Nuclear
Dennis Hennecke, via phone

Members of the Public:
Steven Dolley, Platts (inside NRC)

NRC Attendees:
Mark Cunningham, NRR
John Monninger, RES
Gareth Parry, NRR
Mary Drouin, RES
Don Dube, NRO
J S Hyslop, RES
Mike Franovich, NRR
Harry Barrett, NRR
Hahn Phan, NRO
Alex Klein, NRR
John Kaufman, RES
Sam Lee, OCM
Bob Radlinski, NRO
Susan Cooper, RES, via phone
Donald Chung, NRR
John Lai, NRO
Mike Cheok, RES
Martin Stutzke, RES
Steven Laur, NRR
Ray Gallucci, NRR
John C. Lane, RES

NRC Contractor
Steve Nolan, SNL, via phone

Enclosure