

August 9, 2006

MEMORANDUM TO: Supervisors on the Enclosed List

FROM: John D. Monninger, Deputy Director for */RA/*  
Probabilistic Risk and Applications  
Division of Risk Assessment and Special Projects  
Office of Nuclear Regulatory Research

SUBJECT: SOLICITATION OF INTEREST IN UPCOMING PILOT PRA  
TRAINING COURSE

In response to approved recommendations of the Davis-Besse Lessons Learned Task Force (DBLLTF), the Office of Nuclear Regulatory Research (RES) is developing a 1-day course entitled, "Assessing the Adequacy of Models for Risk-Informed Decisions," which addresses the importance of communicating interim technical findings and the impact of those findings on PRA model uncertainty. We are soliciting interest from members of your staff to attend the pilot version of the course, to be offered in the TWF Training Center, Room T-3-B-41 on Thursday, August 24. The comments and opinions of the pilot course participants will be instrumental in helping us finalize the course and so this is an opportunity for them not only to learn a little about the emerging topic of uncertainty awareness, but also to make a significant contribution as we plan the agency-wide rollout of the course next year as part of the PRA training program. The course objectives, including a sample flowchart of planned course material, is enclosed.

Also enclosed is a table providing a list of potential course attendees, under your supervision, who have expressed an interest in participating in the pilot course and providing us with feedback. Providing you approve their attendance, please confirm with John Lane of my staff via email or phone. We are especially interested in participation by staff with expertise in materials, structural, mechanical or electrical engineering, systems engineering, thermal hydraulics/heat transfer, inspection and PRA. The basic concept is that these disciplines model important phenomena which provide input into PRAs; in essence, the PRAs are built from these findings. The DBLLTF recommended, and management agreed, that the agency would benefit if we can provide training to individuals responsible for making technical conclusions which impact PRAs and, ultimately, the risk-informed decisions. Special attention will be paid to the role of underlying uncertainty in the course.

Enclosures:

1. Potential Attendee List
2. Course Objectives

CONTACT: John C. Lane, RES  
301-415-6442

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OFFICE	PRA		PRA		C:PRA		D:DRASP	
NAME	JLane:dfw		RJenkins		JMonninger		FEltawila	
DATE	08/09/06		08/09/06		08/09/06		08/09/06	

**Potential Attendee List  
Pilot Course on  
Assessing the Adequacy of Models for Risk-Informed Decisions  
August 24, 2006  
Training Room T-3-B-41**

<b>Person</b>	<b>Engr. Specialty</b>	<b>Office NRR/RES/NMSS</b>	<b>B.C./Supervisor</b>	<b>Staff Interest Expressed</b>
Ganesh Cheruvenki	Materials	NRR	M. Mitchell	yes
Jim Vail	PRA	NRR	M. Franovitch	yes
Malcolm Patterson	PRA/systems	NRR	L. Mrowca	yes
Gary Hammer	mechanical	NRR	John Huang	yes
Len Ward	Thermal-H	NRR	F. Akstulewicz	yes
D. Jackson	Materials	RES	J. Uhle	yes
Todd Mintz	Materials	RES	Andrea Valentin	yes (AM only)
R. Solanki (Indian Assignee)	PRA	RES	R. Jenkins	yes
Art Salomon	PRA	RES	A. Rubin	yes
Don Marksbury	PRA	RES	M. Cheok	yes
Gary Demoss	PRA	RES	M. Cheok	yes
Mirela Gavrilas	Thermal-H	RES	J. Danna	yes
Emmett Murphy	Materials	NRR	A. Hiser	yes
John Fair	Structural	NRR	K. Manoly	yes

## **Assessing the Adequacy of Models for Risk-Informed Decisions**

### **High Level Course Objective:**

To train NRC staff, via a multi-step process, to identify, characterize and communicate the uncertainties associated with the inputs of their analyses to risk-informed decision making.

### **Subsidiary Course Objectives**

- A. Review the history of the agency's efforts to predict the initiation and progression of passive system degradation phenomena and assess the associated risk of the increased probability of passive component failure with emphasis on cases where these efforts were found to be inadequate and lessons learned to prevent repetition of past mistakes.
- B. Improve the staff's<sup>1</sup> understanding of risk assessment and PRA quality as impacted by issues such as passive component degradation, in balance with the principles of a risk informed decision-making outlined in Regulatory Guide 1.174.
- C. Reinforce the need to evaluate the overall adequacy of physical and logical models incorporated into the decision-making by focusing on: (1) sources of uncertainty, particularly in the area of passive component degradation, (2) methods and tools being developed for quantifying and assessing uncertainties in complex engineering assessments and (3) evaluating how the estimates affect confidence that the results demonstrate acceptable or unacceptable conditions.
- D. Clarify expectations regarding communication of assessments of the adequacy of the specific models to be used in regulatory decision-making. Demonstrate how pending LIC 504 office instructions will help ensure that estimates related to these models, especially as they are impacted by uncertainties, will be defined and documented to convey the degree to which risk assessments can be relied upon to support risk-informed decisions.
- E. Apply lessons learned from one type of component or degradation mechanism to other, similar components or mechanisms with emphasis on instances where inappropriate extrapolation from known data to unknown situations resulted in poor decisions.
- F. Be consistent with the Agency's overall training expectations for improving risk-informed decisions, risk communications and critical thinking. The course should build on existing training, if any, associated with the implementation of Regulatory Guide 1.174, with emphasis on considering the levels of confidence and uncertainty in the available information relevant to each of those principles when balancing and integrating the risk assessment with the other principles of sound regulatory decision-making.

Enclosure 2

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<sup>1</sup> The participating staff includes the technical staff in all contributing disciplines, such as, technical experts in materials degradation analysis, structural analysis, inservice inspection, thermal hydraulics and risk modeling.