

August 30, 2002

MEMORANDUM TO: Scott F. Newberry, Director
Division of Risk Analysis and Applications

THRU: Mark A. Cunningham, Chief
Probabilistic Risk Analysis Branch
Division of Risk Analysis and Applications

THRU: Nathan O. Siu, Senior Technical Advisor
Probabilistic Risk Analysis Branch
Division of Risk Analysis and Applications

FROM: Hugh W. Woods /RA/
Probabilistic Risk Analysis Branch
Division of Risk Analysis and Applications

SUBJECT: SUMMARY OF PUBLIC MEETING, "USNRC FIRE RISK RESEARCH
WORKSHOP - COMMUNICATING RESEARCH RESULTS TO END
USERS"

Background:

Recognizing that: 1) internal fires are important contributors to the core damage frequency (CDF) for some plants; and 2) there is disagreement regarding key details of current fire risk assessment (FRA) methods which can lead to significant variability in their results, the NRC Office of Nuclear Regulatory Research (RES) initiated a research program in 1998 to develop improved FRA methods.

Purpose of the Workshop:

This workshop was held to make current results of the research program known to "end users," who are a wide range of persons who conduct, review, or make decisions based on FRAs. The workshop was also to obtain feedback from end users regarding their needs, so RES can determine how best to direct their planned future research. To accommodate these two purposes, the workshop was organized as a public meeting (a copy of the public meeting notice is enclosed) with nuclear utilities, vendors, consultants, regulators, and the general public (see enclosed list of registrants).

Format of the Workshop:

The workshop was arranged to highlight the research results' usefulness to end users. Each presentation began with a description of one part of the new method and how it could be utilized by end users to improve their conduct and use of FRAs. Attendees were encouraged to ask questions during the presentations and to engage the speakers in a dialogue. This format was intended to keep the presentations focused on the end users' needs, and to allow RES to obtain feedback regarding how to best meet those needs with future research.

Subjects Discussed:

Presentations regarding the following topics were made and discussed at the workshop (also see enclosed meeting agenda): an overview of FRA methods and related issues, including insights gained through the Individual Plant Examination - External Events (IPEEE) process; circuit analysis (sometimes referred to as the “hot shorts” issue), including an analysis approach and results from recent joint industry/NRC fire experiments; fire modeling; frequency of challenging fires (sometimes referred to as “severity factors”); detection and suppression analysis; and lessons learned from worldwide major nuclear power plant fire events.

Summary of Public Comments:

Two questionnaires requesting comments from the meeting attendees were distributed, one a questionnaire created specifically for this workshop, and the other a generic form (Form 659) required at all NRC-sponsored public meetings. Highlights from the enclosed “Summary of NRC Public Meeting Feedback” (workshop-specific) questions are:

1. The topics of most interest were frequency of challenging fires (sometimes referred to as “severity factors”), fire modeling, circuit analysis (both the method and the fire tests), and fire detection and suppression.
2. The topic of least interest was fire model benchmarking.
3. The workshop was considered to be effective, and future workshops of this type were recommended.
4. The overall value of the workshop was rated “high” by 10 responders, “medium” by 9, and no responders rated it “low.”
5. The critical comments were that fire risk research results should be presented in terms of simple methods or parametric values that are acceptable for immediate use in fire risk analyses. Attendees felt that too many of the results presented at the workshop showed inadequacies in present methods without showing how they can be improved, and without presenting a definite schedule of when the research necessary to learn how they can be improved will be completed. Related comments were that RES' research that's directed toward validating (or not) existing methods is most valuable, and a suggestion that actual “findings” from fire inspections should be evaluated by the Significance Determination Process (SDP) and then compared to results of RES' work.

Responses to the generic questionnaire (Form 659) were generally complimentary, indicating that attendees understood the meeting's purpose and felt that it was achieved, believed the presentations to be both understandable and informative, and recommended that future workshops of this type be held (some conditioned this recommendation on achievement of the changes suggested in the above critical comments). Further details can be found in the enclosed “Summary of Public Meeting Feedback” (form 659 responses).

Also enclosed are copies of all slides used in the presentations made at the workshop

Hugh W. Woods, Senior Task Manager
Probabilistic Risk Analysis Branch

Division of Risk Analysis and Applications
Office of Nuclear Regulatory Research

Enclosures:

1. Public Meeting Notice
2. List of Registrants
3. Meeting Agenda
4. "Summary of NRC Public Meeting Feedback" (additional questions)
5. "Summary of NRC Public Meeting Feedback" (form 659 responses)
6. Introductory slides used at the workshop. On ADAMS, the Summary and Enclosures 1 through 6 are included in one file; Enclosure 7 is the 8 other files in the same package.
7. Presentation slides. Registrants were given copies at the workshop, and so will not be sent Enclosure 7. On ADAMS, see 8 separate ".pdf" files within the same package.

cc: (w/Enclosures 1-6) -these persons attended workshop, have copies of presentation slides)
Registrants (see Enclosure 2)

cc: (w/Enclosures 1-7)

NRR:

R. Barrett
J. Hannon
M. Salley
G. Holahan
M. Rubin
J. Hyslop
P. Qualls
L. Whitney
M. Cheok
E. Cobey
M. Fields
E. Eltawila
D. Matthews
P. Wilson
R. Jenkins
T. Eaton
E. Weiss

NMSS & ACRS:

E. Leeds
M. Weber
C. Lui
K. Stablein
M. Virgilio

A. Singh
S. Bahadur

RES:

J.W. Johnson
J. Houghton
S. Mays
N. Chokshi
A. Thadani
R. Zimmerman
P. Baranowski
E. Hackett
T. King
M. Mayfield
A. Rubin
M. Drouin
P. O'Reilly
J. Flack
J. Rosenthal
J. Vora
J. Calvert
C. Antonescu

Regions:

J.M. Trapp (I)
J. Shedlosky (I)
R. Bernhard (II)
K. Kennedy (IV)

PDR
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| NAME | HWoods | | NSiu | | MCunningham | | | | | |
| DATE | 10/01/01 | | 10/01/02 | | 8/20/01 | | / /01 | | / /01 | |

(RES File Code) RES -2C-1A

Enclosure 1: Public Meeting Notice

July 31, 2001

MEMORANDUM TO: Scott F. Newberry, Director
Division of Risk Analysis & Applications
Office of Nuclear Regulatory Research

THRU: Mark Cunningham, Chief /RA/
Probabilistic Risk Analysis Branch
Division of Risk Analysis & Applications
Office of Nuclear Regulatory Research

FROM: Hugh Woods /RA/
Probabilistic Risk Analysis Branch
Division of Risk Analysis & Applications

SUBJECT: NOTICE OF PUBLIC FIRE RISK RESEARCH WORKSHOP,
"COMMUNICATING RESEARCH RESULTS TO END USERS"

DATE AND TIME: August 23, 2001, 2:00 p.m. - 5:00 p.m.
August 24, 2001, 8:30 a.m. - 5:00 p.m.

LOCATION: Radisson Hotel, Harbor Room
35 Governor Winthrop Blvd.
New London, CT

PURPOSE: To discuss the results of recent USNRC-sponsored research developing improved methods for conducting probabilistic risk assessment of the risk due to fires in nuclear power plants. The workshop will be oriented toward discussing how the improved methods can be applied and used in evaluating the fire risk at nuclear power plants, and in evaluating the acceptability of fire risk analyses.

PARTICIPANTS: Open to the Public

CONTACT: Hugh Woods, RES
301-415-6622
hww@nrc.gov

Enclosure 2: List of Registrants

Registrants for August 23-24 USNRC Workshop

| Name | Affiliation | Location |
|------------------------------|--|--------------------------|
| 1 Bailey, Les | Southern Nuclear Operating Company | AL, Birmingham |
| 2 Beller, Doug | NFPA International | MA, Quincy |
| 3 Boone, Andrew | Sandia National Laboratories | NM, Albuquerque |
| 4 Brown, Randal W. | Promatec Technologies, Inc. | TX, Cypress |
| 5 Burgess, Sonia | USNRC, Region III | IL, Lisle |
| 6 Burns, William E. | Southern Nuclear Operating Company | AL, Birmingham |
| 7 Chan, Calvin | Atomic Energy of Canada Ltd. | Canada, Pinawa, Manitoba |
| 8 Chapman, James R. | Scientech, Inc. | MA, Boxboro |
| 9 Connell, Edward | USNRC | DC, Washington |
| 10 Coones, Charles | dnfsb, Defense Nuclear Facilities Safety Board | DC, Washington |
| 11 de Peralta-Meister, Fleur | TRI-EN Corporation | WA, Vancouver |
| 12 Dey, Moni, Dr. | USNRC | DC, Washington |
| 13 Dimitrijevic, Vesna | Duke Engineering & Services | MA, Marlborough |
| 14 Dungan, Kenneth W. | Risk Technologies, LLC | TN, Knoxville |
| 15 Emerson, Fred | Nuclear Energy institute | DC, Washington |
| 16 Erdman, Ken | Omaha Public Power District | NE, Ft. Calhoun |
| 17 Gallucci, Raymond | Rochester Gas & Electric | NY, Ontario |
| 18 Guey, Ching | FPL | FL, Juno Beach |
| 19 Hampshire, David | Diablo Canyon Power Plant | CA, Avila Beach |
| 20 Hardy, Steve | Progress Energy, Brunswick Nuclear Plant | NC, Southport |
| 21 He, Wei G. | PSEG Nuclear | NJ, Hancocks Bridge |
| 22 Hollingsworth, Jeff | Palo Verde Nuclear Generating Station | AZ, Tonapah |
| 23 Hufelfinger, Ch. | Sicherheitsinstitut | Switzerland, Zurich |
| 24 Hyslop, J.S. | USNRC | DC, Washington |
| 25 Jenkins, Ronaldo | USNRC | DC, Washington |
| 26 Jung, Ian | USNRC | MD, Rockville |
| 27 Kalantari, Robert | EPM, Inc. | MA, Framingham |
| 28 Kandrak, Jan, PhD | Risk Consult, Ltd. | Slovakia, Bratislava |
| 29 Klein-Hessling, Walter | Gesellschaft fur Anlagen-und Reaktorsicherheit (GRS) mbH | Germany, Koln |
| 30 Kleinsorg, Elizabeth | The Kleinsorg Group | CA, Aptos |
| 31 Lanham, Randy | DOE-Lab Oak Ridge Nat'l Lab | TN, Oak Ridge |
| 32 Leatham, Russ | Diablo Canyon Power Plant | CA, Avila Beach |
| 33 LeChance, Jeffrey | Sandia National Laboratories | NM, Albuquerque |
| 34 Lin, James C. | ABS Consulting (formerly EQE) | CA, Irvine |
| 35 Linville, James | USNRC, Region I | PA, King of Prussia |
| 36 Lojk, Robert | Canadian Nuclear Safety Commission | Canada, Ottawa, Ontario |
| 37 McDonald, James N. | Travelers Insurance | CT, Hartford |
| 38 Nicholson, Patrick J. | Fire Risk Mgmt, Inc. | MA, Falmouth |

| | | |
|---------------------------|---|-----------------------|
| 39 Nigicser, Jeno | VEIKI Institute for Electrical Power Research Co. | Hungary, Budapest |
| 40 Nowlen, Steven | Sandia National Laboratories | NM, Albuquerque |
| 41 Parker, Michael E. | USNRC, Region III | IL, Lisle |
| 42 Parry, Gareth | NRC/NRR/DSSA | DC, Washington |
| 43 Patel, Jitesh | Wolf Creek Nuclear Operating Corp. | KS, Burlington |
| 44 Patrizz, Anthony (Jr.) | Duke Engineering & Services | Ct, Vernon |
| 45 Pepe, David M. | Duke Engineering & Services | MA, Marlborough |
| 46 Phan, Hanh K. | Energy Northwest | WA, Richland |
| 47 Pruett, Troy W. | USNRC, Region IV | TX, N. Richland Hills |
| 48 Rau, Larry | Seabrook Station | NH, Seabrook |
| 49 Redmond, Joe | Duke Engineering & Services | NC, Charlotte |
| 50 Respondek, J. | Sicherheitsinstitut | Switzerland, Zurich |
| 51 Ribeiro, Joe | Supporting BWROG & NEI Circuit Failures Issues Task Force | NY, Melville |
| 52 Rogers, Walt | USNRC, Region II | GA, Atlanta |
| 53 Rowekamp, Marina | GRS (Gesellschaft fur Anlagen and Reaktorsicherheit) | Germany, Koln |
| 54 Rubin, Mark | USNRC | DC, Washington |
| 55 Schmidt, Michael | Industrial Risk Insurers (IRI) | CT, Hartford |
| 56 Seidel, Kelly | DOE Yucca Mountain Project/Booz-Allen & Hamilton | NV, Las Vegas |
| 57 Shumaker, Denis | PSE&G | NJ, Hancocks Bridge |
| 58 Siu, Nathan | USNRC | DC, Washington |
| 59 Steele, Sharon | USNRC | DC, Washington |
| Sufczynski, Frank - | | |
| 60 President | ELECTRAK Corporation | MD, Woodbine |
| 61 Sullivan, Kenneth | Brookhaven National Laboratory | NY, Upton |
| 62 Vanover, Donald E. | ERIN Engineering & Research, Inc. | PA, West Chester |
| 63 Whaling, John A. | The Protectowire Co., Inc. | MA, Hanover |
| 64 Wilson, Peter | NRC | DC, Washington |
| 65 Wong, See-Meng (Dr.) | USNRC/NRR | DC, Washington |
| 66 Woods, Hugh | USNRC | DC, Washington |
| 67 Wyant, Francis | Sandia National Laboratories | NM, Albuquerque |
| 68 Zalosh, Bob | CWPI, Center for Firesafety Studies | MA, Worcester |

Enclosure 3: Meeting Agenda

**USNRC Fire Risk Research Workshop
Agenda**

Thursday August 23:

- 14:00 - 14:30 Registration
- 14:30 - 14:45 Welcome and Opening Remarks, USNRC
- 14:45 - 15:45 Fire PRA - Overview, Nathan Siu, USNRC/RES
- 15:45 - 16:00 Break
- 16:00 - 17:00 Fire PRA Application Insights, Steve Nowlen, Sandia National Laboratories

Friday August 24:

- 8:00 - 8:30 Late Registration
- 8:30 - 9:30 Methods of Circuit Analysis for Fire PRA - Jeff LaChance, Sandia National Laboratories
- 9:30 - 10:30 Cable Failure Modes and Effects Experiments and Data - Frank Wyant, Sandia National Laboratories
- 10:30 - 10:45 Break
- 10:45 - 11:45 Fire Model Benchmarking - Moni Dey, USNRC/RES
- 11:45 - 13:00 Lunch
- 13:00 - 14:00 Frequency of Challenging Fires - Dennis Bley, Buttonwood Consulting
- 14:00 - 15:00 Fire Detection and Suppression Data and Analysis - Steve Nowlen, Sandia National Laboratories
- 15:00 - 15:15 Break
- 15:15 - 16:15 Fire Risk Methods Insights from Fire Events - Mardy Kazarians, Kazarians and Associates
- 16:15 - 17:00 Open Discussion Forum
- 17:00 Adjourn

Enclosure 4:
**Summary of NRC Public Meeting Feedback
for August 23 and 24 Meeting,
“USNRC Fire Risk Research Workshop -
Communicating Research Results to End Users”**

Twenty (20) responses were received to an “**Additional Questions: USNRC Fire Risk Research Workshop**” form that was provided to the approximately 70 attendees.

Unlike the “NRC form 659 responses” reported separately, these “Additional Questions” were not formulated for numerical tabulation. Rather, they were to obtain the consensus of the attendees regarding each of several aspects of the meeting, including the subjects of greatest and least interest and the strengths and weakness of several organizational aspects of the meeting. The responses in each area, and the resulting consensus (if any), are summarized below.

NRC Fire Risk Research Program:

1. Q: Which of NRC's fire risk research activities are of greatest interest to you?

R: Most responses listed several activities, and as a result the total set of responses mentioned most of the topics presented. Topics receiving significantly more than the average number of mentions were severity factors (i.e., frequency of significant fires), fire modeling, and circuit analysis (i.e., the hot shorts issue, including the recent fire [circuit failure] tests).

2. Q: Which of NRC's fire risk research activities are of least interest to you?

R: Fire model benchmarking was mentioned four times, slightly more than other topics which were typically mentioned once or at most twice. Comments pointed out that the benchmarking calculations involved insignificant temperatures for cable damage concerns, and that the process should have included comparison of calculation results to actual fires, rather than just to other codes.

3. Q: Which of the results presented at this workshop were of greatest interest to you?

R: Similar to item #1 above, most of the topics presented were mentioned in one or more of the responses. Topics receiving significantly more than the average number of mentions were severity factors, circuit analysis (i.e., the “hot shorts” issue), and detection and suppression.

4. Q: Which of the results presented at this workshop were of least interest to you?

R: Same as item 2 above.

Workshop Effectiveness:

1. Q: Considering the workshop as a whole, what elements (e.g., specific presentations or discussions) did you find to be the most effective?

R: The total set of responses mentioned most of the topics presented. Only one presentation was mentioned twice (severity factors), and none were mentioned more than twice. Thus, no consensus was indicated by the responses.

2. Q: What improvements would you suggest for future workshops?

R: The only suggestion made repetitively was that it was difficult for all members of the audience to hear all of the comments and questions, and that better accoustics and at least one microphone for audience use would be desirable.

3. Q: Would you recommend that NRC hold future workshops on its risk assessment research activities?

R: Eighteen responded "yes," and the remaining two responded "yes," but only if final results, i.e., results that could be immediately used in PRAs, were presented.

Workshop Arrangements:

1. Q: For future NRC risk assessment research-related workshops, which of the following would you prefer: no registration fee, or a nominal registration fee to cover breakfast and lunch?

R: Responses were about 2 to 1 in favor of "no registration fee."

2. Q: Are there additional arrangements you would like to see even if these would require an additional registration fee?

R: No suggestions were made.

3. Q: Did the coordination of this workshop with the SMiRT Post-Conference Seminar on Fire Protection influence your decision to attend this workshop?

R: 13 responded "not at all," 1 responded "modestly," 4 responded "strongly," and 2 made no response.

Overall:

1. Q: Please assess the overall value of the workshop to you:

R: 10 responded "high," 9 responded "medium," one did not respond to this question, and none responded "low."

2. Q: Please provide any additional comments, positive or negative, regarding NRC's fire risk research program in general and this workshop in particular.

R: The largest group of comments were that fire risk research results should be presented in terms of simple methods or parametric values that are acceptable for immediate use in fire risk analyses. Attendees felt that too many of the results presented at the workshop showed inadequacies in present methods without showing how they can improved, and without presenting a definite schedule of when the research necessary to learn how they can be improved will be completed. Related comments were that our research that's directed toward validating (or not) existing methods is most valuable, and a suggestion that actual "findings" from fire inspections should be evaluated by the Significance Determination Process (SDP) and then compared to results of SNL's work.

Enclosure 5:

**Summary of NRC Public Meeting Feedback
for August 23 and 24 Meeting,
“USNRC Fire Risk Research Workshop -
Communicating Research Results to End Users”**

Eighteen (18) “NRC Public Meeting Feedback” form 659 responses were received from the approximately 70 attendees.

Note that some respondents did not respond to all of the questions, and that some respondents selected more than one of the choices for some questions (therefore, the total responses for some questions are greater, or less, than 18).

| <u>Question/Response Choices</u> | | <u>Number of Responses</u> |
|--|---|----------------------------|
| 1. Why did you attend this meeting? | | |
| a. | I am a local resident | 0 |
| b. | I work for an interested organization | 14 |
| c. | I am concerned about environmental issues | 0 |
| d. | I am concerned about economic issues | 0 |
| e. | Other _____ | 5 |
| 2. Were you familiar with the meeting topic prior to coming today? | | |
| a. | Very | 12 |
| b. | Somewhat | 6 |
| c. | Not at all | 0 |
| 3. How did you find out about this meeting? | | |
| a. | NRC mailing list | 7 |
| b. | Newspaper | 0 |
| c. | Radio/TV | 0 |
| d. | Internet | 5 |
| e. | Other _____ | 7 |
| 4. Have you attended an NRC meeting before? | | |
| a. | Never | 4 |
| b. | 1 or 2 times | 5 |
| c. | 3 to 5 times | 1 |
| d. | More than 5 times | 8 |
| 5. Was sufficient notice given in advance of the meeting? | | |
| a. | Yes | 18 |
| b. | No | 0 |
| 6. How well do you feel you understand NRC’s role with regard to the issues discussed today? | | |
| a. | Very well | 14 |
| b. | Somewhat | 4 |
| c. | Not at all | 0 |

| | | |
|---|--|----|
| 7. Were you able to find all of the supporting information you wanted prior to the meeting? | | |
| a. Yes | | 12 |
| b. I did not try to find any information | | 5 |
| c. No | | 0 |
| 8. Was the purpose of the meeting made clear in the preliminary information you received? | | |
| a. Yes | | 17 |
| b. No | | 1 |
| 9. In your opinion, were people's questions answered clearly, completely and candidly? | | |
| a. Yes | | 18 |
| b. No | | 0 |
| 10. Was the written material useful in understanding the topic? | | |
| a. Very | | 12 |
| b. Somewhat | | 6 |
| c. Not at all | | 0 |
| 11. Were NRC's presentations and material presented in clear, understandable language? | | |
| a. Yes | | 17 |
| b. No | | 1 |
| 12. In your opinion, did the meeting achieve its stated purpose? | | |
| a. Yes | | 18 |
| b. No | | 0 |
| 13. Has this meeting helped you with your understanding of the topic? | | |
| a. Greatly | | 12 |
| b. Somewhat | | 6 |
| c. Not at all | | 0 |
| 14. How well did NRC staff respond to your concerns at this meeting? | | |
| a. My concerns were directly addressed | | 9 |
| b. I was provided an alternate source of information to address my concerns | | 4 |
| c. I did not raise my concerns at this meeting | | 4 |
| d. I raised my concerns but am not satisfied with the response | | 0 |
| 15. Was adequate time allotted for discussion with NRC staff on the topic of today's meeting? | | |
| a. Yes | | 15 |
| b. No | | 2 |

| | |
|---|----|
| 16. How satisfied are you with the NRC staff who participated in the meeting? | |
| a. Very | 16 |
| b. Somewhat | 1 |
| c. Not at all | 0 |
| 17. Were the next steps in this process clearly explained, including how you can continue to be involved? | |
| a. Yes | 10 |
| b. No | 2 |
| If you would like someone to contact you, please provide your name and phone number or email. | 8 |
| NRC is striving to improve its communications with the public and would appreciate any additional comments you may have on today's meeting. | 3 |

USNRC Fire Risk Research Workshop - Communicating Research Results to End Users

**Radisson Hotel Ballroom
New London, Connecticut, USA**

**August 23, 2:00 PM - 5:00 PM
August 24, 8:30 AM - 5:00 PM
2001**

**Sponsored by:
U.S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research**

“WELCOME,” from Your Hosts / Workshop Organizers

NRC/RES/DRAA/PRAB

**Roy Woods
Nathan Siu
Moni Dey**

Sandia National Laboratories (SNL)

**Steve Nowlen
Jeff LaChance
Frank Wyant
Libby Greene**

Other Contractors & SNL Subcontractors

**Dennis Bley, Buttonwood Consulting, Inc.
Mardy Kazarians, Kazarians & Associates**

- **Objective: To Communicate Between RES' Fire Risk Research Team and Potential End Users**

- **We (RES) Need to Explain the Better Methods to Regulatory and to Industry End Users**
- **RES Requests Feedback From End Users To Enable Us to Optimize the New Methods to Fit Their Needs**

- **Target Audience:**

- **Fire PRA Practitioners (Regulatory Staff and Industry)**
- **USNRC Staff and Others Interested in Improving NPP Fire Safety Analysis Methods**
- **Those Interested in Potential Future Applications of Fire PRA**

Workshop Structure

- **Fire PRA Overview: A Framework for Discussing**
 - **Potential Methodological and Application Issues**
 - **USNRC Fire Risk Program Tasks**
- **Fire PRA Application Insights**
- **Topical Areas of the Current USNRC Research Programs**
 - **Methods of Circuit Analysis for Fire PRA**
 - **Cable Failure Modes and Effects Experiments & Data**
 - **Fire Model Benchmarking**
 - **Frequency of Challenging Fires**
 - **Fire Detection and Suppression Data and Analysis**
 - **Fire Risk Methods Insights from Fire Events**

Format

- **We Want to Encourage Open Communication and Exchange**
- **We Have Prepared Formal Presentations, BUT:**
 - **You're Strongly Encouraged to Ask Your Questions During the Presentations, and**
 - **The Closing Session is Specifically for Additional Open Discussion**
- **"Business Casual" Atmosphere**
- **Feedback is Requested**
- **Logistics (Libby Greene)**
- **The Agenda**

If you are using the NRC ADAMS System to download this Workshop Meeting Summary with its enclosed “Slides used at Workshop,” note that the remainder of those slides are in 8 additional (separate) files in the “ADAMS package” which contains this Workshop Meeting Summary. You need to separately download those 8 files to obtain a complete set of the slides.

If you were a workshop registrant and have received this as a paper copy or an email, the remaining slides are not enclosed because you received copies at the meeting.

If you received this as a paper copy and were not a workshop registrant, the remaining slides follow this page.