

EMBEDDED TOPICAL MEETING #2: Risk Management—Now More Than Ever



Robert L. Long
Honorary Chair
Nuclear Stewardship, LLC



B. John Garrick
Honorary Chair



Ronald A. Knief
General Chair
XE Corporation



G. William Hannaman
Technical Program Chair
Data Systems and Solutions

CONDENSED SCHEDULE

Room	Monday, June 2nd 1:00-6:00 p.m.	Tuesday, June 3rd 8:30 a.m.	1:00 p.m.	4:00-5:30 p.m.	Wednesday, June 4th 8:30 a.m.	1:00 p.m.	4:00-5:30 p.m.	Thursday, June 5th 8:30 a.m.
Royal Palm I	Opening Plenary	Facility Risk Management Applications	Organization Culture Issues in Risk Management	Special Session on Software Support for Risk Management	Quantitative Methods for Managing Risk	Science of Counterterrorism—Panel	Special Session on Computer Tools for Managing Risk	Standards That Support Risk Management

Cosponsor: Institute of Nuclear Materials Management

This meeting presents state-of-the-art ideas for addressing risk management in a spectrum of applications. The meeting sessions follow the historical thinking and development in risk management as a technical tool to support decision making. The opening plenary begins with a broad overview of risk management issues from different disciplines. Then, current risk management practices at a variety of facilities are addressed in the session on Facility Risk Management Applications. Following the development of insights from quantifying risk, one begins to understand the importance of organizations and human actions in risk management as discussed in the session Organization Culture Issues in Risk Management. Facility risk managers then ask how a system can be maintained over the long term using quantitative tools and software, which are discussed in sessions on Computer Tools for Managing Risk. Then, through applications of ever-improving software tools, quantification questions have arisen; current quantification issues are addressed in the session Quantification Methods for Managing Risk. In today's environment, facilities must be ready for a whole new set of risk issues involving how to manage for counterterrorism, which is addressed in the special session on the Science of Counterterrorism. Finally, we address the need for standards in risk management by looking at various standards applications conveying elements of risk management in a session on Standards That Support Risk Management.

This meeting will provide a quick summary of the key elements of risk management for people new to the field, stimulate ideas for risk management innovations for experienced facility risk managers, and point to issues for standard development applicable to engineered facilities for risk managers faced with integrated decision making across multiple facilities with different functions.

The authors and session leaders will be providing input into a followup publication that is expected to become a primer on risk management of engineered facilities.

MONDAY, JUNE 2, 2003, 1:00–6:00 p.m.

Opening Plenary. *Session Organizer:* Ronald A. Knief (XE Corp). *Cochairs:* Ronald A. Knief, G. William Hannaman (Data Syst Sol)

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Speakers:

- Risk—Manage It or It Will Manage You, Theodore Marston (EPRI)
- Managing Risk Through Developing a Strong Safety Culture, Richard Taylor (BNFL)
- Behavior-Based Safety: Reducing Risk Where It Counts, Dennis Ruddy (BWXT Y-12)
- Risk Management—A Military Perspective, General Charles Bolden (U.S. Marines, ret.)
- Risk Management Lessons from Man-Made Catastrophes: Implications for Aerospace and Anti-Terrorism, Ed Zebroski (Consultant)
- The Role of Quantitative Risk Assessment in Combating Terrorism, B. John Garrick (Consultant)

- Psycho-Social Risk for a Nuclear Terrorist Event, Robert Long (Nuclear Stewardship, LLC)
- Smallpox: A Case Study for Personal Risk Management, Alan Zelicoff (SNL)

TUESDAY, JUNE 3, 2003, 8:30 a.m.

Facility Risk Management Applications. *Cochairs:* William Burchill (Texas A&M Univ), Tim Leahy (INEEL)

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8:30 a.m.

Application of Nuclear Insurance Risk Assessment Using Risk Informed Methodologies, W. G. Wendland (American Nuclear Insurers)

8:55 a.m.

NPP Improvement by Risk Management, W. E. Burchill (Texas A&M Univ)

9:20 a.m.

Balancing Technical and Socio-Political Issues in Managing Risks—The Radiation Perspective, R.H. Taylor, R. Coates, J. Waring (BNFL)

9:45 a.m.

Hazard Assessment of the International Fusion Materials Irradiation Facility, L. Burgazzi (ENEA)

10:10 a.m.

Risk Informed Criticality Configuration Generator for the Monitored Geological Repository, J. K. Knudsen, J. A. McClure (Bechtel SAIC)

10:35 a.m.

Safe Management of the Contaminated Land Inventory, Sellafield, UK, C. Grundy, P. Humphreys, R. Strong (BNFL)

11:00 a.m.

Risk Management of Legacy Material Disposition at Oak Ridge National Laboratory, K. Billingsley, S. Van Housen, J. Hardt (ORNL)

TUESDAY, JUNE 3, 2003, 1:00 p.m.

Organization Culture Issues in Risk Management. *Cochairs:* Robert Long (Nuclear Stewardship, LLC), Stephen Ortiz (SNL)

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1:00 p.m.

Analysis of Human Error in Trip Event Considering Risk Significance of Events in Korean NPPs, Y. S. Lee, Y. Kim, S. H. Kim, C. Kim, C. H. Chung (Seoul Natl Univ), W. D. Jung (KAERI)

1:25 p.m.

Effectively Managing Risk Through Human Performance Improvement, R. P. Coe (Richard Stockton Coll of New Jersey), P. A. Lake (Louisiana Pacific) invited

EMBEDDED TOPICAL MEETING #2: Risk Management—Now More Than Ever

1:50 p.m.

An Incident Management System for Nuclear Power Plants, C. Smith (INEEL), G. Apostolakis, L. Pagani (MIT)

2:15 p.m.

Impact of the Organization on Human Reliability at Ft. Calhoun Nuclear Power Plant, S. E. Daniel, C. D. Heising (Iowa State Univ)

2:40 p.m.

Risk Management: Many Challenges—Technical and Cultural!, D. D. Carlson, J. B. Woodard, C. Madigan (SNL)

3:05 p.m.

Consideration of Human Factors to Improve Logistic Operations, M.-J. Chiou, S.-F. Lin (Chung-Shan Inst Sci Technol), J. C. Lin (ABS Consulting)

3:30 p.m.

Changing Safely—A Methodology for the Structured Assessment of Modifications to Safety Management Systems and Organisations, M. D. Rowbottom, D. W. B. Wilson (DGP Int)

TUESDAY, JUNE 3, 2003, 4:00–5:30 p.m.

Special Session on Software Support for Risk Management. *Cochairs:* Mark Prelas (Univ of Missouri, Columbia), G. William Hannaman (Data Syst Sol)

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4:00 p.m.

TMI and Chernobyl as Models for Emergency Planning, T. Rockwell (Radiation, Sci & Health)

4:30 p.m.

From e-mail to the e-Safety Case—Using Internet Technology to Fully Integrate the Safety Case with Plant Operations, D. W. B. Wilson (UKAEA), M. D. Rowbottom (AEA Technol)

5:00 p.m.

Development and Enhancement of a Level 3 PRA Tool, S. H. Levinson (Framatome ANP)

WEDNESDAY, JUNE 4, 2003, 8:30 a.m.

Quantitative Methods for Managing Risk. *Cochairs:* G. William Hannaman (Data Syst Sol), Peter Dolan (Consultant), Felicia Duran (SNL)

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8:30 a.m.

Impacts of Data Updating on a Probabilistic Risk Assessment, G. Teagarden (ERIN Eng), X. Polanski (Exelon), J. Ahlman (Nexus Tech Svc)

8:55 a.m.

Uncertainty Propagation with Variable Dependency to Diverse Scenarios: Application of Radioactive Waste Disposal Risk, C.-J. Lee (KINS), K.-J. Lee (KAIST)

9:20 a.m.

Why Conservatism Need Not Be Discouraged in PSA: An Argument for "Absolute" Rather Than "Relative" Importance Measures, R. H. V. Gallucci (Ginna Nucl Station)

9:45 a.m.

Systematic Errors—A Neglected Subject in PSA? P. Dolan

10:10 a.m.

Risk Management on an Enterprise-Wide Basis, M. Sabety (Flywheel Group)

10:35 a.m.

A Balanced Response to the Risk of Terrorist Attack, G. B. Varnado, J. M. Elliott (Infrastructure Protection Sci)

11:00 a.m.

An Approach to Managing the Risk of Generation Loss at Nuclear Plants, J. C. Lin (ABS Consulting)

WEDNESDAY, JUNE 4, 2003, 1:00 p.m.

Science of Counterterrorism—Panel. *Session Organizer:* Mark Prelas (Univ of Missouri, Columbia). *Cochairs:* Mark Prelas, Mark Hoover (NIOSH/CDC)

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Terrorism has become very dependent upon technology. Information technology for example has been used extensively by al-Qaida (satellite phones, cell phones, the Internet, etc.). Since the events of September 11, 2001, it is clear that the goals of terrorist groups have changed to seek mass casualties. The means to do this resides in weapons technologies that are quickly being adapted by terrorist groups. We now know from documentation taken from Afghanistan that al-Qaida has sought nuclear, biological, and chemical weapons. This reliance on technology by terrorist organizations has increased the sophistication of the science and technology of counterterrorism.

This session will examine how technology has proliferated and how the science and technology have changed to adapt to the technology proliferation. A panel of experts will discuss the implications of technology in general, but also nuclear, biological, and chemical technologies specifically and the associated threats that these technologies represent. National planning is a major endeavor given the proliferation of technology, and these issues will be discussed by a planner involved in the acquisition of counterterrorism technologies for the National Guard Bureau. In addition, communities on the local level will be stressed, being the first responders to a terrorism event that might use weapons of mass destruction. The mayor of a model small community will discuss how the proliferation of technology changed his community's terrorism response planning.

Speakers:

- National Overview, Michael May (Stanford Univ)
- Counterterrorism, Tushar Ghosh (Univ of Missouri, Columbia)
- Chemical Terrorism, Tushar Ghosh (Univ of Missouri, Columbia)
- Biological Terrorism, Mark Prelas (Univ of Missouri, Columbia)
- Aerosol Dispersion, Sudarshan Loyalka (Univ of Missouri, Columbia)
- Government Response National Guard Bureau, Paul Spackman (National Guard)
- Local Response, Stan Salva (Mayor of Sugar Creek, Missouri), Herb Soule (Chief of Police of Sugar Creek, Missouri)
- Nuclear Materials, William Sutcliffe (LLNL)

WEDNESDAY, JUNE 4, 2003, 4:00–5:30 p.m.

Special Session on Computer Tools for Managing Risk. *Cochairs:* Mark Prelas (Univ of Missouri, Columbia), G. William Hannaman (Data Syst Sol)

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4:00 p.m.

Assessing the Risk of Nuclear Terrorism Using Logic Evolved Decision Analysis, S. W. Eisenhower, T. F. Bott, D.V. Rao (LANL)

4:30 p.m.

PARAGON™—Next Generation Software for Risk-Informed Decision Making, L. Shanley, D. E. True (ERIN Eng), W. Burchill (Texas A&M Univ)

THURSDAY, JUNE 5, 2003, 8:30 a.m.

Standards That Support Risk Management. *Cochairs:* G. William Hannaman (Data Syst Sol), Stanley Levinson (Framatome ANP)

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8:30 a.m.

Risk Management Dynamics in Today's Nuclear Project Environment, J. Dignum, H. Dorbin, G. Palmer (Nielsen-Wurster Grp)

9:00 a.m.

Setting Standards for NPP Risk Management Practices, W. E. Burchill (Texas A&M)

9:30 a.m.

A Framework for Integrated Decision-Making in a Risk-Informed World, A. Heymer (NEI), J. Gaertner (EPRI), D. True (ERIN Eng)

10:00 a.m.

Development of the Quad Cities Model into a First-Class PRA, X. Polanski, E. Jebsen (Exelon), E. Burns, L. Lee (ERIN Eng)

10:30 a.m.

Application and Evolution of Software V&V to Nuclear Safety Systems in Korea, T.-W. Lim, J.-Y. Byun (KOPEC), J. O. Han (Sargent and Lundy)

11:00 a.m.

The Need for Testing and Upgrading the Air Monitoring Systems at U.S. Nuclear Power Plants, A. C. Schmidt (Schmidt Instrument)