

International
Topical
Meeting

Probabilistic Safety Analysis

PSA '05

September 11 - 15, 2005

P
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Sir Francis Drake Hotel

450 Powell Street
San Francisco, California 94102
800.795.7129
415.391.8719 (Fax)

Program Sponsors



Lawrence Livermore
National Laboratory



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Local Organizing Committee

Finance	Linda Schenk	ERIN Engineering and Research, Inc.
Hotel Liaison	Bill Keyworth	Patent Agent, Bill & Mary Lou, Inc.
Registration	Tom Fernandez	Consultant
Publicity/Exhibitors	Bryce Johnson	Retired
Publications	Renée Morell	Electric Power Research Institute
Social Events	Kelly Moriarty	ERIN Engineering and Research, Inc.
Audio/Visual Coordinator	Alan Balilea	ERIN Engineering and Research, Inc.

Program Exhibitors

Pre-Function Area near Empire Room (2nd Floor)

ERIN Engineering and Research, Inc.

ERIN Engineering and Research, Inc. is a premier practitioner of probabilistic safety assessment (PSA) providing engineering consulting and application software dedicated to improving the safety, reliability, and performance of our clients' enterprises. ERIN provides a variety of PSA products and services ranging from updates and model enhancements to the development of risk-informed applications, including configuration risk management programs, technical specification enhancements, test and inspection optimization, and cost/risk reduction alternatives. In addition, ERIN is the industry leader in applying risk and engineering insights in addressing concerns related to potential security threats to nuclear power plants. For more information regarding ERIN products and services visit our website at www.erineng.com.

Maracor Software & Engineering, Inc.

Maracor Software & Engineering, Inc. (Maracor) provides a variety of risk and reliability analysis services to the electric utility industry. Our primary focus is on the development and use of methods to quantify and manage risk and to improve reliability for nuclear power stations. The principal service areas offered by Maracor include PSA enhancement (including compliance with industry standards), external events PSA (including fire and flooding evaluations), PSA applications (such as configuration risk management and low power, shutdown and generation risk), and software development (including the development of tools to assist analysts in usage of key industry PSA software packages). Services are also provided in the areas of technical training, maintenance optimization, equipment reliability and nuclear asset management, and cost-benefit analysis. Several software products will be demonstrated at our exhibit booth. Experts in the above technical areas will also be available to provide more detailed information to interested clients. Please also see our Web site (www.maracor.com) for information about our products and services.

Idaho National Laboratory

SAPHIRE, standing for "Systems Analysis Programs for Hands-on Integrated Reliability Evaluations" refers to a set of several microcomputer programs that were developed to perform probabilistic risk assessments (PRAs) for nuclear power plants. This development process started in 1987 at the request of the Division of Systems Technology, Office of Nuclear Regulatory Research at the U.S. Nuclear Regulatory Commission (NRC). The first tool completed was the Integrated Reliability and Risk Analysis System (IRRAS). IRRAS was a state-of-the-art microcomputer-based PRA model development and analysis tool. IRRAS subsequently became the SAPHIRE software. The Idaho National Laboratory's (INL) role in the NRC's SAPHIRE development effort is that of software developer and interface to the user community, including technology transfer and training. To provide technology transfer, the INL sponsors the SAPHIRE Users Group. Membership in the SAPHIRE Users Group entitles the user to instant access to the latest versions of the SAPHIRE software, on-call software support, the latest SAPHIRE training manuals and technical reference manuals, and for additional cost, SAPHIRE training.

ABS Consulting

Received ABS Text, but it is too long. Please see email of 8/23 for request to condense and/or shorten.

Hotel & Meeting Information

REGISTRATION

On-site registration at the meeting is located at the Registration Desk located on the Mezzanine Level of the hotel. Registration is required for all attendees and presenters. Badges are required for admission to all events. The Full Meeting Registration Fee includes the following:

- One badge for Admission to All Technical Sessions (Monday through Thursday)
- One ticket for the Welcome Reception (Sunday Evening)
- One ticket for the Bay Cruise and Dinner (Tuesday Evening)
- One CD of Meeting Proceedings

Additional tickets can be purchased in advance or onsite, based on availability, at the Registration Desk for the Welcome Reception (\$65 each) and the Bay Cruise and Dinner (\$70 each).

REGISTRATION HOURS

Sunday, September 11
1:00 pm - 7:00 pm

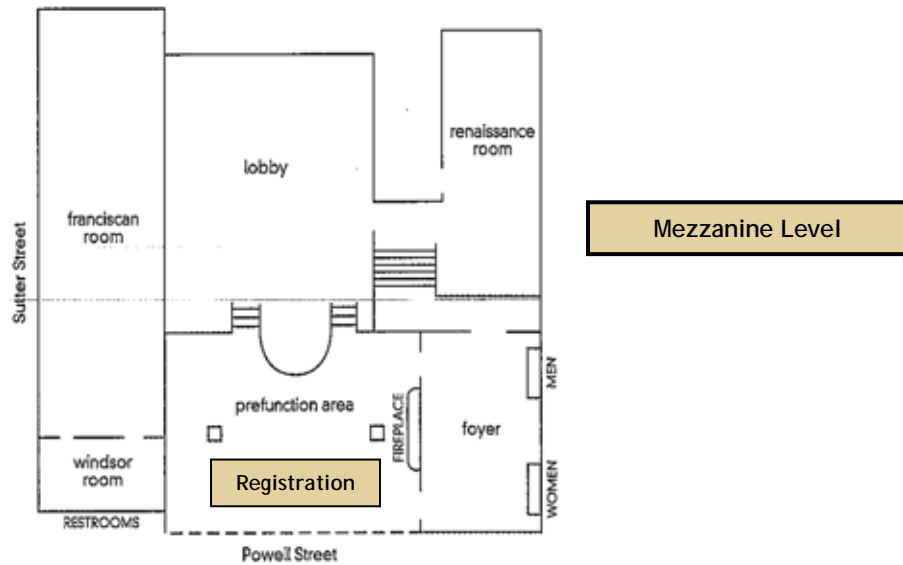
Monday, September 12
7:30 am - 10:00 am

Tuesday, September 13
7:30 am - 9:00 am

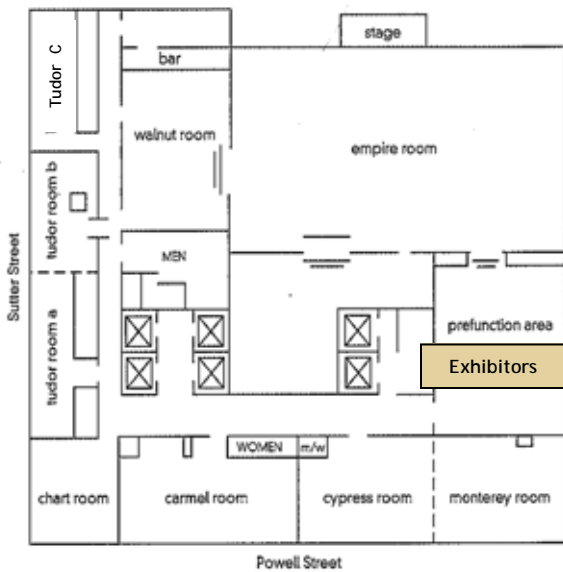
Wednesday, September 14
7:30 am - 9:00 am

SPOUSE HOSPITALITY SUITE

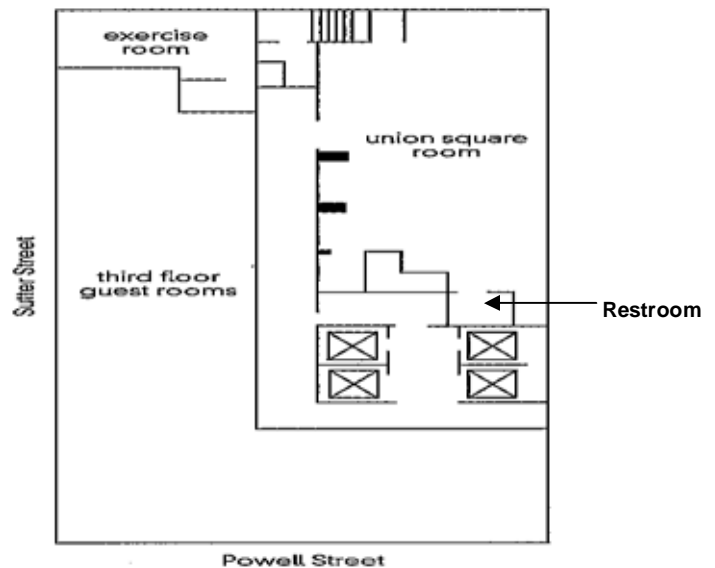
There will be a hospitality suite available for all registered spouses attending the conference on Monday, September 12th from 8:00 am to 12:00 noon in Tudor Room C (formerly the Business Center) on the Second Floor. Stop by for a cup of coffee and to pick up some information about exploring this great City!



Mezzanine Level



Second Floor



Third Floor

Topical Meeting Summary

SUNDAY, SEPTEMBER 11, 2005

1:00 pm - 7:00 pm	Meeting Registration - Mezzanine Level (off of Hotel Lobby)
7:00 pm - 9:00 pm	Welcome Reception - Empire Room (2 nd Floor)

MONDAY, SEPTEMBER 12, 2005

Pages 6-8

8:30 am - 12:00 pm	Opening Plenary
12:00 pm - 1:30 pm	Lunch Break
1:30 pm - 4:30 pm	<u>Technical Sessions</u> Configuration Risk - I Plant Security - I Advanced Reactors - I
	Risk-Informed Applications - I Advanced PSA - I Level 2/3 - I
4:30 pm - 6:00 pm	Poster Session

TUESDAY, SEPTEMBER 13, 2005

Pages 8-11

8:30 am - 10:00 am	LNT Plenary - " <i>Has the LNT Outlived its Usefulness?</i> "
10:15 am - 11:45 am	<u>Technical Sessions</u> Repository Risk Internal Events Space - I
	External Events Chemical Risk Human Reliability Analysis - I
11:45 am - 1:30 pm	Lunch Break
1:30 pm - 4:30 pm	<u>Technical Sessions</u> Advanced PSA - II (1:30-3:00 pm) PSA Standards - I (1:30-3:30 pm) Space - II
	Risk-Informed Applications - II Human Reliability Analysis - II Level 2/3 - II
3:30 pm - 4:30 pm	Panel Discussion - <i>ASME Standard: Ask The Authors Why (Empire Room)</i>
6:00 pm - 10:00 pm	Dinner Cruise on the San Francisco Bay (<i>see page 8 for Shuttle Departure Times</i>)

WEDNESDAY, SEPTEMBER 14, 2005

Pages 11-14

8:30 am - 11:30 am	<u>Technical Sessions</u> Risk-Informed Applications - III Plant Security - II Space - III
	Advanced PSA - III Safety Culture Generation Risk/RCM
11:30 am - 1:30 pm	Lunch Break
1:30 pm - 4:30 pm	<u>Technical Sessions</u> Configuration Risk - II Advanced PSA - IV Fire Risk - I
	PSA Standards - II (1:30-3:30 pm) Advanced Reactors - II Risk-Informed Applications - IV
3:30 pm - 4:30 pm	Panel Discussion - <i>ANS Standards: Ask The Authors Why (Empire Room)</i>

THURSDAY, SEPTEMBER 15, 2005

Pages 15-16

8:30 am - 11:30 am	<u>Technical Sessions</u> Configuration Risk - III Computer Risk-Informed Applications - V
	Advanced PSA - V Fire Risk - II Common Cause Failure

Technical Sessions

MONDAY, SEPTEMBER 12, 2005

OPENING PLENARY

8:30 am - 12:00 pm (Empire Room)

WELCOME

Ian Wall, Associate General Chair, PSA'05

PANEL CHAIR

B. John Garrick - Chairman, U.S. Nuclear Waste Technical Review Board

PANELISTS:

- *Why Probabilistic Risk Assessment?*
B. John Garrick, Chairman, U.S. Nuclear Waste Technical Review Board
- *The Role of Risk Management in Regulation*
Nils J. Diaz - Chairman, U.S. Nuclear Regulatory Commission
- *PSA Development and Implementation at EDF*
Bernard Fourest - Deputy Director, SEPTEN, Electricité de France
- *The Role of PSA in Nuclear Waste Disposal*
Margaret Chu - M.S. Chu & Associates and Former Director, Office of Civilian Radioactive Waste Management, U.S. Department of Energy
- *The Role of Nuclear Power in a Carbon Constrained World*
Theodore U. Marston - Chief Technology Officer, Sr. Vice President, Electric Power Research Institute

CONFIGURATION RISK - I

1:30 pm - 4:30 pm (Carmel Room)

SESSION CHAIRS:

John Gaertner - Electric Power Research Institute
Gene Hughes - ETRANCO

PAPERS:

- *Risk-Informed Shutdown Defense-In-Depth Program Development For Duke Power's Shutdown Risk Management Program*
Dennis Henneke - Duke Power Company
- *Risk Management Technical Specifications Initiative (RMTS) 4b, Use of Configuration Risk Management for Determining Technical Specification Completion Times: NRC Perspectives*
Theodore Robert Tjader - U.S. Nuclear Regulatory Commission
- *Risk Management Assessment and Actions for Extended Completion Times*
Leo B. Shanley III - ERIN Engineering and Research, Inc., Doug True - ERIN Engineering and Research, Inc., Young In - ERIN Engineering and Research, Inc., Roy Linthicum - Exelon Corporation
- *Risk-Informed Technical Specifications (RITS) Initiative 5B Pilot Surveillance Frequency Control Program*
Philip Tarpinian - Exelon Corporation
- *Risk-Managed Technical Specifications (RMTS) - Current Industry Guidelines and Practices*
James Liming - ABSG Consulting, Inc. (ABS Consulting)
- *Discussion of Issues Related to Maintenance Rule (A) (4) Implementation*
Yu Shen - Nuclear Management Company

PLANT SECURITY - I: Security Modeling & Risk Analysis

1:30 pm - 4:30 pm (Union Square Room)

SESSION CHAIRS:

Ashok Thadani - U.S. Nuclear Regulatory Commission
Allen Camp - Sandia National Laboratories

PAPERS:

- *Vulnerability Analysis Considering Explosive Devices Delivered by Land Transport*
Marko Cepin - Jozef Stefan Institute, Leon Cizelj - Jozef Stefan Institute, Matjaz Leskovar - Jozef Stefan Institute, Borut Mavko - Jozef Stefan Institute
- *Calculating the Effect of Surface or Underwater Explosions on Submerged Equipment and Structures*
Charles David Sulfredge - Oak Ridge National Laboratory, Robert L. Sanders - Oak Ridge National Laboratory, Robert H. Morris - Oak Ridge National Laboratory
- *Analysis of Attacks on Spent Fuel Pools*
Herschel Specter - RBR Consultants, Inc.
- *Risk Assessment Using the Homeland-Defense Operational Planning System (HOPS)*
Ronald Durling, Jr. - Lawrence Livermore National Laboratory, David Price - Lawrence Livermore National Laboratory, Kimberlee Spero - Lawrence Livermore National Laboratory
- *An Examination of Risk-Based Resource Allocation in the National Strategy for Homeland Security Using the Maritime Domain as Context*
Paul S. Szwed - U.S. Coast Guard Academy, Duane E. Boniface - Johns Hopkins University, Joseph J. Meyers - Office of Marine Safety, Security & Environmental Protection

ADVANCED REACTORS - I: Gas-Cooled Reactors

1:30 pm - 4:30 pm (Windsor Room)

SESSION CHAIRS:

Karl N. Fleming - Technology Insights
Jiejuan Tong - Tsinghua University, Beijing, PRC

PAPERS:

- *Use of PRA to Support the Design and Licensing of the AREVA-HTR*
Farshid Shahrokhi - Framatome ANP, Inc.
- *Use of PRA for the PBMR Demo in South Africa*
Henriette van Graan - PBMR Pty Ltd South Africa
- *Licensing Approach for Modular HTGRS*
Fred A. Silady - Technology Insights
- *Role of PRA to Support Korea's Nuclear Hydrogen Project*
Joon Eon Yang - Korea Atomic Energy Research Institute, Seok-Jung Han - Korea Atomic Energy Research Institute, Jonghwa Chang - Korea Atomic Energy Research Institute, Chang K. Park - Korea Atomic Energy Research Institute
- *Status of Development, ANS Standard 53.1, Nuclear Safety Criteria for the Design of Modular Helium Cooled Reactor Plants*
Malcolm LaBar - General Atomics
- *Historical Overview of PSA in Support of U.S. HTGR Design and Licensing (AIPA to GT-MHR)*
Laurence L. Parme - American Nuclear Society, John Bolin - General Atomics, Arkal Shenoy - General Atomics

Technical Sessions

MONDAY, SEPTEMBER 12, 2005 (Continued)

RISK-INFORMED APPLICATIONS - I

1:30 pm - 4:30 pm (Franciscan Room)

SESSION CHAIRS:

Barry Sloane - Dominion Resources, Inc.
Hak Kyu Lim - Korea Power Engineering Company, Inc.

PAPERS:

- *Integrated Initiating Event Performance Indicator*
Dale M. Rasmuson - U.S. Nuclear Regulatory Commission, Steven Eide - Idaho National Engineering and Environmental Laboratory, C. Atwood - Statwood Consulting
- *Assessment of Model Uncertainties in Regulatory Decisions Involving PRA Results*
Hossein P. Nourbakhsh - U.S. Nuclear Regulatory Commission
- *Methods and Results of SPAR to PRA Importance Measure Comparisons*
John Schroeder - Idaho National Laboratory, James Knudsen - Idaho National Laboratory, Robert Buell - Idaho National Laboratory
- *Guidelines for the Treatment of Uncertainty in Risk-Informed Regulatory Applications*
Doug True - ERIN Engineering and Research, Inc., Edward T. Burns - ERIN Engineering and Research, Inc., Kenneth T. Canavan - Electric Power Research Institute
- *Risk Informing the Maintenance Rule Unavailability Performance Criteria*
Raymond Fine - South Texas Project Nuclear Operating Company

ADVANCED PSA - I: Approaches to PRA Quality/Documentation

1:30 pm - 4:30 pm (Windsor Room)

SESSION CHAIRS:

Greg Krueger - ERIN Engineering and Research, Inc.
Barry Kaufer - Organization for Economic Co-Operation & Development

PAPERS:

- *PRA Quality for the Mitigating Systems Performance Index*
Gareth Parry - U.S. Nuclear Regulatory Commission, Michael Cheok - U.S. Nuclear Regulatory Commission, James Trapp - U.S. Nuclear Regulatory Commission, William Stillwell - South Texas Project Nuclear Operating Company, Jeffrey R. Gabor - ERIN Engineering and Research, Inc.
- *Electronic PRA Documentation for Dominion Nuclear Plants*
Thomas G. Hook - Dominion Resources, Inc.
- *Analysis of Fault Trees for PRA Quality Assessment*
Kamal A. El-Sheikh - Reliability & Safety Assurance Consulting Services
- *Guaranteed Failure Analysis for Gaining Insights from PSA*
Neil Johnson - Ricky Summitt Consulting, Inc., Jeffrey Miller - Ricky Summitt Consulting, Inc.
- *Integration and Simplification of PSA Information to Enhance PSA Management and Communication*
Ricky Summitt - Ricky Summitt Consulting, Inc.
- *Aggregation of Quantitative Risk Assessment Results*
Kenneth Canavan - Electric Power Research Institute, Doug True - ERIN Engineering and Research, Inc.

LEVEL 2/3 - I: Developments in Level 2 Analysis

1:30 pm - 4:30 pm (Renaissance Room)

SESSION CHAIR:

Tom Kress - U.S. Nuclear Regulatory Commission

PAPERS:

- *A Technique for Considering the Effect of Severe Accident Management Activities on the Conditional Containment Failure Probability*
Yoshitaka Yoshida - Institute of Nuclear Safety System
- *Westinghouse Owners Group Simplified Level 2 Modeling Guidelines*
Justin Robert Armstrong - Westinghouse Electric Company, Raymond E. Schneider - Westinghouse Electric Company/Westinghouse Owners Group
- *Level 2 Analysis to Estimate LERF Risk from a Thermally-Induced Rupture of a Through-Wall Steam Generator Tube Defect*
Hugo da Silva - TXU Power, Marc A. Kenton - CREARE, Inc.
- *A Level 2 Probabilistic Safety Assessment Developed at EDF*
François Romanet - Electricité de France
- *Level 2 PSA for KNPP WWER-440/B230*
Kaliopa Mancheva - Risk Engineering, Marinela Ilieva - Risk Engineering, Dobrin Grigorov - Risk Engineering
- *Risk Comparison between PWR and PHWR Plants in Korea*
Jongtae Jeong - Korea Atomic Energy Research Institute, Tae Woon Kim - Korea Atomic Energy Research Institute, Jaejoo Ha - Korea Atomic Energy Research Institute

POSTER SESSION

4:30 pm - 6:00 pm (Empire Room)

SESSION CHAIR:

Robert Breen - Electric Power Research Institute (Retired)

PAPERS:

- *Risk of Oil Products Transportation in Lithuania*
Juožas Augutis - Lithuanian Energy Institute, Eugenijus Uspuras - Lithuanian Energy Institute, Ricardas Krikstolaitis - Lithuanian Energy Institute, Vaidas Matuzas - Lithuanian Energy Institute
- *Updated Requirements on PSA Scope and Methods for Comprehensive Safety Reviews in Germany*
Heinz Peter Berg - Federal Office for Radiation Protection, Germany, Thomas Froehmel - Federal Office for Radiation Protection, Rudolf Goertz - Federal Office for Radiation Protection
- *Application of Top Event Protection to Development of Risk-Informed Nuclear Facility and Power Plant Standards*
Dave Blanchard - Applied Reliability Engineering, William Reuland - Electric Power Research Institute
- *CEA Program of Work to Carry Out a Level 1 PSA on the Gas-Cooled Fast Reactor*
Nicolas Devictor - Commissariat à l'Energie Atomique, Paul Saignes - Commissariat à l'Energie Atomique, Bernard Mathieu - Commissariat à l'Energie Atomique, Anne Bassi - Commissariat à l'Energie Atomique, Frédéric Bertrand - Commissariat à l'Energie Atomique
- *Impact of Resampling Spallings Model Parameters on the Waste Isolation Pilot Plant Performance Assessment*
Sean C. Dunagan - Sandia National Laboratories

Technical Sessions

MONDAY, SEPTEMBER 12, 2005 (Continued)

POSTER SESSION (Continued)

4:30 pm - 6:00 pm (Empire Room)

PAPERS:

- *Epistemic Uncertainty in LOCA PRA Models*
Steven E. Farkas - Hudson Global Resources, Raymond Schneider - Westinghouse Electric Company
- *Example Application of Advanced Reactor Regulatory Framework*
Mark R. Holbrook - Idaho National Laboratory
- *PSA Program for Point Lepreau NGS Refurbishment Project*
Raj K. Jaitly - Atomic Energy of Canada Ltd., L. Comanescu - Atomic Energy of Canada Ltd., D. Mullin - Point Lepreau NGS, A. Jean - Point Lepreau NGS
- *Bayesian Updating Approach to Diagnose Accidents*
Moosung Jae - Hanyang University
- *EPRI HRA Calculator™ - Version 3*
Jeffrey A. Julius - Sciencetech LLC, Jan Grobbelaar - Sciencetech LLC, Frank Rahn - Electric Power Research Institute, Zouhair Elawar - Arizona Public Service
- *International Network on Incorporation of Aging*
Christian Kirchsteiger - European Commission, Milan Patrik - European Commission
- *Risk-Informed Optimization, Theory and Applications*
Alexander Knoll - Exelon Corporation
- *Numerical Comparison Between Analytical Human Reliability (HRA) Methods For Post-Initiator Actions*
Kaydee Kohlhepp - Texas A&M University, William Burchill - Texas A&M University
- *Risk-Informed Decision-Making For Prudent Asset Management*
James K. Liming - American Nuclear Society, Randal L. Montgomery - ABSG Consulting Inc. (ABS Consulting), Ernest J. Kee - South Texas Project Nuclear Operating Company
- *Updated Basic Event Parameter Estimates for the SPAR Models*
Patrick O'Reilly - U.S. Nuclear Regulatory Commission, Dale M. Rasmuson - U.S. Nuclear Regulatory Commission, Steven Eide - Idaho National Engineering and Environmental Laboratory

- *The Importance of Trial Usage as an Integral Part of the Development of New PRA Standards*
Barry D. Sloane - Dominion Resources Services, Inc., Gareth Parry - U.S. Nuclear Regulatory Commission, Doug True - ERIN Engineering and Research, Inc., Michelle Carr - Southern California Edison Company, David Miskiewicz - Progress Energy Inc., Stanley H. Levinson, Framatome ANP, Inc., Ian B. Wall - Consultant
- *Use of PSA for Beyond Design Basis Accidents*
Vincent Sorel - Electricité de France
- *An Overview of the Reliability and Availability Data System (RADS)*
Thomas Wierman - Idaho National Laboratory, Kellie Karfordt - Idaho National Engineering and Environmental Laboratory, Steven Eide - Idaho National Engineering and Environmental Laboratory, Dale M. Rasmuson - U.S. Nuclear Regulatory Commission

**Join Us Tuesday Evening For Our
Bay Cruise and Dinner
on the San Francisco Bay!**



**TRANSPORTATION TO &
FROM THE BAY CRUISE:**
Shuttles will be located on the Sutter Street side of the hotel and will depart at 5:45 pm and 6:15 pm to Pier 33 on the Embarcadero. Shuttles will return to the hotel after the yacht docks at approximately 10:00 pm.

**Additional Tickets for Spouses and Guests
are available at the Registration Desk
during the Conference,
subject to availability**

TUESDAY, SEPTEMBER 13, 2005

LNT PLENARY - "Has the LNT Outlived Its Usefulness?"

8:30 am - 10:00 am (Empire Room)

PANELISTS:

- *LNT History*
Chauncey Starr - Founding President, Electric Power Research Institute
- *Hormesis and Radiation*
Bobby R. Scott - Lovelace Respiratory Research Institute, Albuquerque, New Mexico
- *Health Effects of Low Level Radiation*
Kenneth L. Mossman - Director, Office of Radiation Safety, School of Life Sciences, Arizona State University, Tempe, AZ
- *BEIR VII Report*
William C. Dewey - Director, Radiation Oncology Research Laboratory (RORL), Univ. of California, San Francisco

REPOSITORY RISK

10:15 am - 11:45 am (Carmel Room)

SESSION CHAIR:

J. Russell Dyer - U.S. Department of Energy (DOE)

PAPERS:

- *Impact of Pyrophoric Events on Long-Term Repository Performance*
Richard Gregg - Idaho National Engineering and Environmental Laboratory
- *Modeling HIC and Failure of TI Alloy Drip Shields Within the Yucca Mountain Nuclear Waste Repository*
Zack Qin - The University of Western Ontario
- *U.S. Department of Energy Approach to Probabilistic Evaluation of Long-Term Safety for a Proposed Yucca Mountain Repository*
J. Russell Dyer - U.S. Department of Energy (DOE), Robert Andrews - Bectel SAIC LLC, Abraham Van Luik - U.S. Department of Energy (DOE)

Technical Sessions

TUESDAY, SEPTEMBER 13, 2005 (Continued)

INTERNAL EVENTS

10:15 am - 11:45 am (Cypress & Monterey Rooms)

SESSION CHAIRS:

Dale M. Rasmuson - U.S. Nuclear Regulatory Commission
Biff Bradley - Nuclear Energy Institute

PAPERS:

- *Station Blackout Risk Re-Evaluation*
Dale M. Rasmuson - U.S. Nuclear Regulatory Commission, Gary DeMoss - U.S. Nuclear Regulatory Commission, Steven Eide - Idaho National Engineering and Environmental Laboratory, C.S. Hunter - U.S. Nuclear Regulatory Commission, Thomas Wierman - Idaho National Engineering and Environmental Laboratory, C.D. Gentillon - Idaho National Laboratory
- *Accident Sequences Analysis of the Low Temperature Over-Pressure Accident During the Refueling Outage*
Ho-Gon Lim - Korea Atomic Energy Research Institute, Seung-Cheol Jang - Korea Atomic Energy Research Institute, Jin-Hee Park - Korea Atomic Energy Research Institute

SPACE - I: Panel Comparing Space and Terrestrial PRA

10:15 am - 11:45 am (Empire Room)

Panel discussion on terrestrial nuclear, space system, and space nuclear system PRA applications.

SESSION CHAIR:

Michael Frank - Safety Factor Associates, Inc.

PANELISTS:

- Michael Frank - Safety Factor Associates, Inc.
- William Kastenberg - University of California, Berkeley
- Roger Boyer - NASA Johnson Space Center
- Joseph Fragola - Science Applications International Corporation

EXTERNAL EVENTS

10:15 am - 11:45 am (Franciscan Room)

SESSION CHAIRS:

Robert Budnitz - Lawrence Livermore National Laboratory
H.C. Chang - Taipower, ROC

PAPERS:

- *Simplified Risk-Informed Turbine Missile Analysis*
Dave Blanchard - Applied Reliability Engineering, Peter Szetzu - Applied Reliability Engineering, Steve Hesler - Electric Power Research Institute, Bill Reuland - Electric Power Research Institute
- *Development and Application of a Mid-Level Effort High Winds Analysis Tool*
Jeffrey Miller - Ricky Summitt Consulting, Inc., Yunlong Li - Entergy Nuclear
- *Development of CGS SPSA to Meet ANS External Event Standard*
Vincent Andersen - ERIN Engineering and Research, Inc., Hanh Phan - Energy Northwest

CHEMICAL RISK

10:15 am - 11:45 am (Windsor Room)

SESSION CHAIRS:

Ed Jones - Lawrence Livermore National Laboratory (LLNL)
Christian Kirchsteiger - European Commission

PAPERS:

- *PRA of the Abandoned Chemical Weapons in China*
Steven Epstein - ABS Consulting, Donald Wakefield - ABS Consulting
- *A Simplified Probabilistic Safety Assessment of a Steam-Methane Reforming Hydrogen Production Plant Coupled to a High-Temperature Gas-Cooled Nuclear Reactor*
Pamela Nelson - Universidad Nacional Autónoma de México, Alain Flores - Universidad Nacional Autónoma de México, Juan Luis Francois - Universidad Nacional Autónoma de México
- *Hazard Analysis with Functional FMEA in PSA Procedure for MOX Fuel Fabrication Facility*
Hitoshi Tamaki - Japan Atomic Energy Research Institute, Kazuo Yoshida - Japan Atomic Energy Research Institute, Norio Watanabe - Japan Atomic Energy Research Institute, Ken Muramatsu - Japan Atomic Energy Research Institute

HUMAN RELIABILITY ANALYSIS - I

10:15 am - 11:45 am (Union Square Room)

SESSION CHAIRS:

William Hannaman - Science Applications International Corporation
Pierre Le Bot - Electricité de France

PAPERS:

- *The Probability of System Failure and Human Error and the Influence of Depth of Experience*
Romney Duffey - Atomic Energy of Canada, Ltd., John Saull - International Federation of Airworthiness
- *HREX (HRA Calculator) Development for Risk-Informed Applications*
Hak-Kyu Lim - Korea Power Engineering Company
- *Analysis of Dependent Human Failure Events Using the EPRI HRA Calculator™*
Jeffrey Julius - Scientech LLC, Jan Grobelaar - Scientech LLC, Frank Rahn - Electric Power Research Institute

ADVANCED PSA - II

1:30 pm - 3:00 pm (Cypress & Monterey Room)

SESSION CHAIRS:

Mohammad Modarres - University of Maryland
Tatsuya Taminami - TEPCO, Japan

PAPERS:

- *SWISRUS: Novovoronezh Unit 5 PSA and Regulatory Application*
Artur V. Lyubarskiy - Scientific and Engineering Centre, Sergey Volkovitskiy - SEC NRS, Dmitry Noskov - SEC NRS, Gennady Samohin - SEC NRS, Irina Kouzmina - International Atomic Energy Agency, Sabyasachi Chakraborty - HSK, Mohsen Khatib-Rahbar - Energy Research, Inc.
- *Survey of Probabilistic Safety Analyses, Level 1, for VVER-1000 Plants*
Klaus Koeberlein - Gesellschaft fuer Anlagen- und Reaktorsicherheit (GRS) mbH
- *Use and Development of PSA in NEA Member Countries*
Barry Kaufer - OECD Nuclear Energy Agency

Technical Sessions

TUESDAY, SEPTEMBER 13, 2005 (Continued)

PSA STANDARDS - I

1:30 pm - 3:30 pm (Empire Room)

SESSION CHAIRS:

Rick Grantom - South Texas Project Nuclear Operating Company
Irina Kouzmina - International Atomic Energy Agency

PAPERS:

- *Integration and Harmonization of PRA Standards for the Nuclear ???*
Robert Bari - Brookhaven National Laboratory, Rick Grantom - South Texas Project Nuclear Operating Company
- *Complying with the ASME PSA Standard*
Thomas Morgan - Maracor, Michelle Carr - Southern California Edison Company, Eddie Krantz - Sciencetech, Inc.
- *Peer Review of PSAs for Three Ukrainian NPPs - Results of the Trilateral US-German-Ukrainian Program*
Rolf Janke - Gesellschaft fuer Anlagen- und Reaktorsicherheit (GRS) mbH, Ted Ginsberg - Brookhaven National Laboratory
- *PRA Model Quality for an RG1.200 Pilot Plant*
Victoria Warren - ERIN Engineering and Research, Inc., Donald Vanover - ERIN Engineering and Research, Inc., Philip Tarpinian - Exelon Corporation

PANEL DISCUSSION: ASME Standard: Ask the Authors Why

3:30 pm - 4:30 pm

PANELISTS:

Sid Bernsen - Consultant
Rick Grantom - South Texas Project Nuclear Operating Company
Duncan Brewer - Duke Power Company
Barry Sloane - Dominion Resources, Inc.
Gareth Parry - U.S. Nuclear Regulatory Commission
Ian Wall - Consultant

SPACE - II: Space Shuttle PRA Insights and Applications

1:30 pm - 4:30 pm (Carmel Room)

SESSION CHAIRS:

Michael Frank - Safety Factor Associates, Inc.
R. Wilcox - Jet Propulsion Laboratory

PAPERS:

- *The Role of Precursors in Forecasting and Forestalling Accidents: Lessons to be Learned from Challenger and Columbia*
Joseph Fragola - Science Applications International Corporation
- *A PRA Structure to Assess the Risk of Wires in the Space Shuttle*
Michael Frank - Safety Factor Associates, Inc., Karl Fleming - Technology Insights
- *Issues and Insights of PRA Methodology in Nuclear and Space Applications*
Feng Hsu - SAIC, NASA Johnson Space Center, Zoran Musicki - ZM Engineering Consulting
- *An Integrated Total S&MA Management Framework - The Triple-Triple Concept for Risk-informed Comprehensive S&MA Management*
Feng Hsu - SAIC, NASA Johnson Space Center

RISK-INFORMED APPLICATIONS - II

1:30 pm - 4:30 pm (Franciscan Room)

SESSION CHAIRS:

Gareth Parry - U.S. Nuclear Regulatory Commission
Juan Arellano - Instituto de Investigaciones Eléctricas, Mexico

PAPERS:

- *An Application for PSA Evaluation of Maintenance Rule Performance Criteria*
Neil Johnson - Ricky Summitt Consulting, Inc.
- *Status of Industry Risk-Informed Technical Specifications Initiatives*
Donald Hoffman - EXCEL Services Corporation
- *Risk Assessment Standardization Methods for Risk-Informed Regulatory Applications*
See-Meng Wong - U.S. Nuclear Regulatory Commission
- *Adaptation of Industry Standard Integrated Leakage Rate Testing (ILRT) Risk Evaluation Methodologies for Plants with Drywells*
Yunlong Li - Entergy Nuclear, Gary Smith - Entergy Nuclear, Deepak Rao - Entergy Operations, Inc.
- *Low Cost Flood Risk Reduction at Surry*
Ross C. Anderson - Dominion Resources Services, Thomas G. Hook - Dominion Resources, Inc.
- *Digital Upgrades - Risk-Informed Defense-in-Depth and Diversity Evaluations*
Dave Blanchard - Applied Reliability Engineering, Raymond Torok - Electric Power Research Institute, Thuy Nguyen - EPRI/EDF, Glenn Lang - Consultant, Robert T. Fink - CDF Services, Inc.

HUMAN RELIABILITY ANALYSIS - II

1:30 pm - 4:30 pm (Union Square Room)

SESSION CHAIRS:

Tony Spurgin - Consultant
Attila Bareith - VEIKI Institute for Electric Power Research, Hungary

PAPERS:

- *HRA Methodology Applied in Surry Power Station*
Song-Hua Shen - Dominion Resources, Inc.
- *Use of Expert Judgments for Assessment of Performance Shaping Factors in Human Reliability Analysis*
Tibor Stojka - VUJE Inc.
- *Evaluation of Engineering Judgment Applied to Analytical Human Reliability Analysis (HRA) Methods*
Kaydee Kohlhepp - Texas A&M University, William Burchill - Texas A&M University
- *Assessing the Risk Impact of Diagnosis Failures in HRA*
Jae Whan Kim - Korea Atomic Energy Research Institute, Wondea Jung - Korea Atomic Energy Research Institute, Jinkyun Park - Korea Atomic Energy Research Institute
- *An Empirical Study on the Potential of Diagnosis Failures in HRA*
Wondea Jung - Korea Atomic Energy Research Institute, Jaewhan Kim - Korea Atomic Energy Research Institute, Jinkyun Park - Korea Atomic Energy Research Institute
- *Selecting Probability Models for Human Reliability Analysis*
G. William Hannaman - Science Applications International Corporation

Technical Sessions

TUESDAY, SEPTEMBER 13, 2005 (Continued)

LEVEL 2/3 - II

1:30 pm - 4:30 pm (Renaissance Room)

SESSION CHAIRS:

Richard Denning - Battelle-Columbus Laboratory
Ignacio Hermana - Iberenco, Spain

PAPERS:

- *Byron and Braidwood Feed and Bleed Analysis Using MAAP4*
Jeff R. Gabor - ERIN Engineering and Research, Inc., Doug True - ERIN Engineering and Research, Inc.
- *The Impact of Uncertainties in BWR Lower Head Failure on Source Terms Using MAAP4*
Barbara Schlenger-Faber - ERIN Engineering and Research, Inc., Jeff R. Gabor - ERIN Engineering and Research, Inc.
- *Frequency-Consequence Risk Acceptance Criteria*
Thomas S. Kress - U.S. Nuclear Regulatory Commission
- *Simulation Of Mixed Oxide (MOX) Versus Low Enrichment Uranium (LEU) Fuel Severe Accident Response Using Melcor*
Scott G. Ashbaugh - Sandia National Laboratories, Randall Gauntt - Sandia National Laboratories, KC Wagner - dycoda LLC

- *A Scoping Study on the Environmental Releases from the Chernobyl Accident (Part I): Fuel Particles, (Part II): Iodines*
Genn Saji - Secretariat of Nuclear Safety Commission of Japan
- *A Methodology for Performing Consequence Analyses in Support of Level-3 PRAs*
Nathan E. Bixler - Sandia National Laboratories, Randall Gauntt - Sandia National Laboratories
- *Severe Accident Analysis of VVER 1000 Using SCDAP/RELAP5 Code*
Hemant Ganesh Lele - Bhabha Atomic Research Centre, Barun Chatterjee - Bhabha Atomic Research Centre, D. Mukhopadhyay - Bhabha Atomic Research Centre, A.K. Ghosh - Bhabha Atomic Research Centre, H.S. Kushawaha - Bhabha Atomic Research Centre

WEDNESDAY, SEPTEMBER 14, 2005

RISK-INFORMED APPLICATIONS - III: Risk & Performance Regulations

8:30 am - 11:30 am (Empire Room)

SESSION CHAIRS:

Herschel Specter - RBR Consultants, Inc.
Ashok Thadani - U.S. Nuclear Regulatory Commission

PAPERS:

- *Advancing the Regulatory Process*
Herschel Specter - RBR Consultants, Inc.
- *PRA Quality and Its Impact on Risk Ranking Applications*
Greg Krueger - ERIN Engineering and Research, Inc., Donald E. Vanover, ERIN Engineering and Research, Inc., Herschel Specter - RBR Consultants, Inc.
- *Using the Combined Change Request Approach of Regulatory Guide 1.174 to Change a Plant's Licensing Basis*
Hanh Phan - Energy Northwest, Earl Page - RBR Consultants, Inc.
- *Real Time Risk and Performance Monitoring*
Frank Rahn - Electric Power Research Institute, Kenneth Canavan - Electric Power Research Institute, William Parkinson - Electric Power Research Institute, David Worledge - Asset Performance Technologies, Inc.
- *Risk-Informed Regulation: Time for a Reality Check*
Tony Pietrangelo - Nuclear Energy Institute

PANEL DISCUSSION - Where Do We Go From Here?

PANELISTS:

Herschel Specter - RBR Consultants, Inc.
Ashok Thadani - U.S. Nuclear Regulatory Commission
Greg Krueger - ERIN Engineering and Research, Inc.
Tony Pietrangelo - Nuclear Energy Institute
Frank Rahn - Electric Power Research Institute
Hanh Phan - Energy Northwest

PLANT SECURITY - II

8:30 am - 11:30 am (Union Square Room)

SESSION CHAIRS:

Gregory Wyss - Sandia National Laboratories
John Gaertner - Electric Power Research Institute

PAPERS:

- *Probabilistic Safety Analysis Techniques Applied to Nuclear Power Plant Security Evaluation*
James Liming - American Nuclear Society, Andrew A. Dykes - ABSG Consulting Inc. (ABS Consulting)
- *Risk-Informed Physical Security: Dynamic Allocation of Resources*
Dave Blanchard - Applied Reliability Engineering, Dick Worrell - Logic Analysts, Bruce Varnado - Sandia National Laboratories
- *Estimating Threat Potential for Security Risk Analysis*
Betty Biringer - Sandia National Laboratories
- *Issues Regarding the Assessment of Security Risk*
Terry F. Bott - Los Alamos National Laboratory, Stephen Eisenhower - Los Alamos National Laboratory
- *An Approach to Integrating Non-Normative Information into the Characterization of Security Threats*
Jean B. Savy - Lawrence Livermore National Laboratory
- *Development and Application of RAMCAP Method for Characterizing Nuclear Power Plant Security Risk*
John Gaertner - Electric Power Research Institute, Grant Teagarden - ERIN Engineering and Research, Inc., Doug True - ERIN Engineering and Research, Inc.

Technical Sessions

WEDNESDAY, SEPTEMBER 14, 2005 (Continued)

SPACE - III

8:30 am - 11:30 am (Windsor Room)

SESSION CHAIRS:

William Kastenbergh - University of California, Berkeley
John Turner - NASA Space Shuttle Program

PAPERS:

- *Development of an HRA Tool for the International Space Station PRA*
Anthony J. Spurgin - IEEE - Systems, Man, and Cybernetics Society,
Michael Frank - Safety Factor Associates, Inc.
- *A Risk Management Framework for Space-Reactor Missions*
Michael Frank - Safety Factor Associates, Inc., William Kastenbergh -
University of California, Berkeley
- *A Trial Set of Quantitative Safety Goals for Nuclear Powered
Spacecraft*
William Kastenbergh - University of California, Berkeley, Michael Frank -
Safety Factor Associates, Inc.
- *Development of a Dynamic Simulation Approach to Mission Risk and
Reliability Analysis*
Ian Miller - GoldSim Technology Group, Andrew Burns - GoldSim
Technology Group
- *Application of PRA Techniques to Evaluate Space Mission Reliability*
Karl Fleming - American Nuclear Society, Michael Frank - American
Nuclear Society
- *A Proposed Framework for Analyzing Astronaut Health Risks*
Robert G. Fitzpatrick - Futron Corporation, Kwesi Ewool-Robotham -
Futron Corporation

ADVANCED PSA - III: Data/Uncertainty

8:30 am - 11:30 am (Franciscan Room)

SESSION CHAIRS:

Ricky Summitt - Ricky Summitt Consulting, Inc.
Wataru Mizumachi - JNES, Japan

PAPERS:

- *Japanese Component Failure Rates Using Bayesian Approach*
Chikahiro Sato - TEPCO Systems Corporation
- *Assessment of the Significance of Correlated Data in Uncertainty
Analyses*
Robert Kirchner - RFK Dynamics, Inc., Edward Burns - ERIN Engineering
and Research, Inc.
- *Influence Of Uncertainties On Level 1 PSA Results*
Nicolas Devictor - Commissariat à l'Energie Atomique, Paul Saignes -
Commissariat à l'Energie Atomique
- *Applicability of LERs from NUREG/CR-5750 for Entergy Nuclear South
Plants' Initiating Event Probability Calculations*
Loys K. Bedell - Entergy Operations, Inc., Yunlong Li - Entergy Nuclear
South Region
- *Evaluation of Transient Event Experience for Nuclear Power Plants in
Korea*
Jin-Hee Park - Korea Atomic Energy Research Institute, Sang-Hoon Han
Korea Atomic Energy Research Institute
- *Estimation of Failure Probabilities Based On Uncertain Binomial Event
Data*
Jussi K. Vaurio - Fortum Power and Heat Oy

SAFETY CULTURE

8:30 am - 11:30 am (Carmel Room)

SESSION CHAIRS:

Jack Haugh - Electric Power Research Institute
Mike Golay - Massachusetts Institute of Technology

PAPERS:

- *Implementation of Safety Culture International Guidelines at a Research
Reactor*
Anna Mengolini - Joint Research Centre of the European Commission,
Luigi Debarberis - Joint Research Centre of the European Commission,
Peter Stoop - NRG Petten, The Netherlands
- *Organisational Factors' Impact on Safety - Pilot Study Starting from PSA*
Aura Voicu - Electricité de France, Pierre Le Bot - Electricité de France
- *Development of PRA Qualification Guidance and Curriculum*
William Burchill - Texas A&M University, Frank Rahn - Electric Power
Research Institute, Richard Anoba - Anoba Consulting Services LLC, Yehia
Khalil - Yale University, Ian Wall - Consultant
- *An Integrated Risk Management Paradigm*
Gene Hughes - ERIN Engineering and Research, Inc., Edward Burns - ERIN
Engineering and Research, Inc., Greg Krueger - ERIN Engineering and
Research, Inc., Jeff Gabor - ERIN Engineering and Research, Inc., Doug
True - ERIN Engineering and Research, Inc., Duane Wilson - ERIN
Engineering and Research, Inc.
- *Integrated Risk Management on Programs and Projects - Improving the
Paradigm*
John Turner - NASA Space Shuttle Program

What's Nearby?



Technical Sessions

WEDNESDAY, SEPTEMBER 14, 2005 (Continued)

GENERATION RISK/RCM

8:30 am - 11:30 am (Cypress & Monterey Rooms)

SESSION CHAIRS:

Doug True - ERIN Engineering and Research, Inc.
Luiz Gerez - Iberdrola Ingenieria, Spain

PAPERS:

- *Generation Risk Assessment at the Cooper Nuclear Station - Objectives and Results*
Kent Sutton - Nebraska Public Power District, Ole Olson - Nebraska Public Power District, Wesley Brinsfield - Applied Reliability Engineering, Inc., Dave Blanchard - Applied Reliability Engineering, Inc., Peter Szetu - Applied Reliability Engineering, Inc.
- *Power Plant Generation Risk Assessment (GRA)*
Dave Blanchard - Applied Reliability Engineering, Wesley Brinsfield Applied Reliability Engineering, Inc., Peter Szetu - Applied Reliability Engineering, Inc., George Sliter - Electric Power Research Institute
- *Prototype Long-term Asset Management Database (LAMDA)*
David Worledge - Asset Performance Technologies, Inc., George E. Sliter Electric Power Research Institute, William Parkinson - Electric Power Research Institute
- *GRA/RIAM Model Development at Darlington Nuclear Station*
Ranbir Parmar - Nuclear Safety Solutions Limited, Jacques Plourde - Ontario Power Generation
- *Risk and Economic Estimation of Inspection Interval for Periodically Tested Repairable Components*
Carlos E. Barroeta - University of Maryland College Park, Mohammad Modarres - University of Maryland College Park
- *Operational Level Models and Methods for Risk-Informed Nuclear Asset Management*
Elmira Popova - University of Texas at Austin, David Morton - University of Texas at Austin, Alexander Galenko - University of Texas at Austin, Ernest J. Kee - South Texas Project Nuclear Operating Company, Alice Sun - South Texas Project Nuclear Operating Company, Rick Grantom - South Texas Project Nuclear Operating Company



CONFIGURATION RISK - II

1:30 pm - 4:30 pm (Windsor Room)

SESSION CHAIRS:

Duncan Brewer - Duke Power Company
Jim Chapman - Scientech

PAPERS:

- *Development of Risk Evaluation Software*
Ho Seok - Korea Power Engineering Company, Inc., Dong Kyu Kim - Korea Power Engineering Company, Inc., Sun Koo Kang - Korea Power Engineering Company, Inc.
- *Insights and Pitfalls in Using Equipment Out Of Service (EOOS) Risk Monitor Quantification and Component Mapping Options*
Yunlong Li - Entergy Nuclear, Deepak Rao - Entergy Operations, Inc., Chris Cragg - Data Systems & Solutions
- *Configuration Risk Management Using Risk Documents at Three Mile Island*
Brandon Irvin - ERIN Engineering and Research, Inc., Leo B. Shanley, III - ERIN Engineering and Research, Inc.
- *The EPRI Configuration Risk Management Forum*
Thomas Morgan - Maracor Software & Engineering, Inc., John Gaertner - Electric Power Research Institute, John Steinmetz - ERIN Engineering and Research, Inc.
- *Use of PSA for NPP Paks in Hungary*
Attila Bareith - VEIKI Institute for Electric Power Research, József Elter - Paks Nuclear Power Plant, Elod Holló - VEIKI Institute for Electric Power Research, Péter Siklóssy - VEIKI Institute for Electric Power Research

ADVANCED PSA - IV: Advanced Applications

1:30 pm - 4:30 pm (Cypress & Monterey Rooms)

SESSION CHAIRS:

Dave Blanchard - Applied Reliability Engineering
Jean Primet - Electricité de France

PAPERS:

- *Symptom-Based Diagnosis from Extended Fault Trees*
Juan Arellano-Gómez - Instituto de Investigaciones Eléctricas
- *Value-of-Information Analysis in Performance Assessment*
Robert W. Youngblood - Information Systems Laboratories, Inc.
- *Risk-Informed Concepts for Complex Systems*
Ed Jones - Lawrence Livermore National Laboratory
- *Developing the Probability Distribution of the Failure Limit of High-Burnup Fuels Via Simulation*
George Apostolakis - Massachusetts Institute of Technology, Lorenzo Pagani - Massachusetts Institute of Technology
- *Benchmark Development for Comparing Digital Instrumentation and Control System Reliability Modeling Approaches*
Jason Kirschenbaum - Ohio State University, Michael Stovsky - Ohio State University, Paolo Bucci - Ohio State University, Tunc Aldemir - Ohio State University, Steven A. Arndt - U.S. Nuclear Regulatory Commission
- *Integration of Reliability Models for Nuclear Power Plant Digital Instrumentation and Control Systems Into Probabilistic Risk Assessment Studies*
Tunc Aldemir - Ohio State University, Don W. Miller - Ohio State University, Audeen Fentiman - Ohio State University, Steven A. Arndt - U.S. Nuclear Regulatory Commission

Technical Sessions

WEDNESDAY, SEPTEMBER 14, 2005 (Continued)

FIRE RISK - I

1:30 pm - 4:30 pm (Union Square Room)

SESSION CHAIRS:

Bijan Najafi - Science Applications International Corporation
Raymond Gallucci - U.S. Nuclear Regulatory Commission

PAPERS:

- *Quantification Of Judgment: Defense-In-Depth and Safety Margin for Fire Protection*
Raymond Gallucci - U.S. Nuclear Regulatory Commission
- *Interdisciplinary Expert Collaboration Method (IECM) for Supporting Human Reliability Analysis in Fire PSA*
Jan-Erik Holmberg - VTT Industrial Systems, Kristiina Hukki - VTT Industrial Systems
- *Use of Fire PSA in As-Built Facilities in the Presence of Uncertainties*
Francisco J. Joglar - Science Applications International Corporation
- *Insights Gained from a Risk-Oriented Analysis of Fire Events Data*
Steven P. Nowlen - Sandia National Laboratories, Francisco Joglar-Biloch - Science Applications International Corporation, Mardy Kazarians - Kazarians and Associates, Bijan Najafi - Science Applications International Corporation
- *Observations and Lessons Learned from the NRC Revised Fire Protection Significance Determination Process*
Robert Perch - U.S. Nuclear Regulatory Commission

PSA STANDARDS - II

1:30 pm - 3:30 pm (Empire Room)

SESSION CHAIRS:

Robert Budnitz - Lawrence Livermore National Laboratory
Ravi Ravindra - ABS Consulting

PAPERS:

- *Approach to Determination of PSA Quality for Applications*
Irina Kouzmina - International Atomic Energy Agency
- *Status of the American Nuclear Society Fire PRA Standard*
Dennis Henneke - Duke Power Company
- *Identifying and Resolving Critical Issues in Seismic PSA Using the ANS Standard*
David L. Moore - David L. Moore Consulting, Robert D. Campbell - Consultant, Ivan Verbanic - NEK, Bozidar Krajnc - Krsko Nuclear Power Plant, Georges Dellopoulos - Westinghouse Electric Belgium, Marc Goffart - Westinghouse Electric Belgium
- *Quality of Risk-Informed Applications in the Era of Standards*
Gene Hughes - ERIN Engineering and Research, Inc., Doug True - ERIN Engineering and Research, Inc., Edwards Burns - ERIN Engineering and Research, Inc.

PANEL DISCUSSION - ANS Standards: Ask The Authors Why
3:30 pm - 4:30 pm

PANELISTS:

Robert Budnitz - Lawrence Livermore National Laboratory
Ravi Ravindra - ABS Consulting
Dennis Henneke - Duke Power Company
Kenneth Kiper - FPL Energy Company
Mark Leonard - dycoda, LLC
Mary Drouin - U.S. Nuclear Regulatory Commission

ADVANCED REACTORS - II

1:30 pm - 4:30 pm (Carmel Room)

SESSION CHAIRS:

Timothy Leahy - Idaho National Laboratory
Mikhail Khorochev - International Atomic Energy Agency

PAPERS:

- *Development of Risk-Based and Technology-Independent Safety Criteria for Generation IV Systems*
William Kastenberg - University of California, Berkeley
- *A Framework for Assessing and Managing the Risk of Advanced Nuclear Energy Systems*
William Kastenberg - University of California, Berkeley
- *The IAEA International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO): Development of Probabilistic Approaches*
Yury Sokolov - International Atomic Energy Agency, Juergen Kupitz - International Atomic Energy Agency, Mikhail Khorochev - International Atomic Energy Agency
- *Challenges and Opportunities in the Performance of PRAs on New Reactors*
Karl N. Fleming - American Nuclear Society
- *Risk-Informed Licensing of New Nuclear Power Plant in Finland*
Ari Julin - Radiation and Nuclear Safety Authority of Finland
- *Risk-Informed Design Process of the IRIS Reactor*
Andrea Maioli - Politecnico di Milano Technical University, David J. Finnicum - Westinghouse Electric Company, Luca Oriani - Westinghouse Electric, Davide Lamperti - Politecnico di Milano Technical University

RISK-INFORMED APPLICATIONS - IV

1:30 pm - 4:30 pm (Franciscan Room)

SESSION CHAIRS:

William Burchill - Texas A&M University
Vincent Sorel - Electricité de France

PAPERS:

- *Risk Informed Regulation in Canada: Industry Perspective and Activities*
Steve S. Kaasalainen - Nuclear Safety Solutions Ltd., Keith Dinnie - Nuclear Safety Solutions Ltd., A. Oliva - CANDU Owners Group, Dan Austman - Ontario Power Generation Inc.
- *Integrated Risk-Informed Safety Management Programs for Commercial Nuclear Power Plants*
James K. Liming - American Nuclear Society, Andrew A. Dykes - ABSG Consulting Inc. (ABS Consulting)
- *Use of PSA in the Risk-Informed Design and Licensing for the HTR-PM in China*
Jiejuan Tong - Tsinghua University, Xuhong He - Tsinghua University, Dazhi Xue - Tsinghua University
- *Management of Nuclear Risks by Intrinsic Safety, Siting: Lessons Learned From The Chernobyl Accident*
Genn Saji - Secretariat of Nuclear Safety Commission of Japan
- *Evaluation of the Safety System Performance of Ulchin Unit 3 Using MSPI*
Daeil Kang - Korea Atomic Energy Research Institute, Kilyou Kim - Korea Atomic Energy Research Institute, Jinhee Park - Korea Atomic Energy Research Institute, Keyyoung Sung - Korea Institute of Nuclear Safety
- *Characteristics of Nuclear Power Plant Performance*
Steven Eide - Idaho National Engineering and Environmental Laboratory

THURSDAY, SEPTEMBER 15, 2005

CONFIGURATION RISK - III

8:30 am - 11:30 am (Carmel Room)

SESSION CHAIR:

Jeff Riley - Data Systems & Solutions

PAPERS:

- *Development of Leningrad NPP Unit 1 PSA-model in SAPHIRE 7.15 Code Format for Prompt Monitoring of Safety Level*
Bronislav Ivanovich Vinnikov - Russian Research Center, Sergei Cheremiskin - Leningrad Nuclear Power Plant
- *A Proposed Method for Fire Configuration Risk Management*
Leo B. Shanley, III - ERIN Engineering and Research, Inc., Doug True - ERIN Engineering and Research, Inc., Kiang Zee - ERIN Engineering and Research, Inc., John Gaertner - Electric Power Research Institute
- *Obtaining Risk Insights Using Advanced Features of PARAGON™*
Edward Parsley - ERIN Engineering and Research, Inc., Donald E. Vanover - ERIN Engineering and Research, Inc.
- *Defense-In-Depth Models Revisited*
Raymond J. Dremel - Maracor Software & Engineering, Inc., Diane M. Jones - Maracor Software & Engineering, Inc., Roland F. Dunn - South Texas Project Nuclear Operating Company, D. Shawn Pobst - Arizona Public Service Company, James A. Tunink - AmerenUE
- *PSA Contribution to Risk-based Technical Specifications Assessment*
Stanislav Hustak - Nuclear Research Institute Rez

THE USE OF COMPUTER POWER TO SUPPORT RISK ANALYSIS

8:30 am - 11:30 am (Windsor Room)

SESSION CHAIRS:

Stanley Levinson - Framatome ANP, Inc., USA
Shigeo Kojima - Computer Software Development Company, Japan

PAPERS:

- *Monte Carlo Simulation Enhancements to Steam Generator Burst and Leakage Models*
Stanley Levinson - Framatome ANP, Inc., Alan M. Brown - Framatome ANP, Inc.
- *Internal Flooding Analysis Methods Based on TIFA - A Tool for Flooding Analysis*
Ricky Summitt - Ricky Summit Consulting, Inc., Robert Young - Ricky Summitt Consulting, Inc.
- *FATCAT: A Tool for Fire Risk Analysis*
Ricky Summitt - Ricky Summitt Consulting, Inc., Bruce Logan - Ricky Summitt Consulting, Inc., Robert Young - Ricky Summitt Consulting, Inc.
- *EPRI HRA Calculator™ - Version 3*
Jeffrey A. Julius - Scientech LLC, Jan Grobbelaar - Scientech LLC, Frank Rahn - Electric Power Research Institute, Zouhair Elawar - Arizona Public Service
- *ATLAS™ Lite - An Immediate Access to PRA Bases Documents*
Duane Wilson - ERIN Engineering and Research, Inc., Doug True - ERIN Engineering and Research, Inc., Gene Hughes - ERIN Engineering and Research, Inc., Tom Daniels - ERIN Engineering and Research, Inc.
- *FinPSA - Tool for Living PSA*
Ilkka M. Niemelä - Radiation and Nuclear Safety Authority of Finland, Jorma Rantakivi - Radiation and Nuclear Safety Authority of Finland

RISK-INFORMED APPLICATIONS - V

8:30 am - 11:30 am (Empire Room)

SESSION CHAIRS:

Frank Rahn - Electric Power Research Institute
Dominique Vasseur - Electricité de France

PAPERS:

- *On the Issue of Integrated Risk - A PRA Practitioner's Perspective*
Karl N. Fleming - American Nuclear Society
- *Can We Trust PRA?*
Steven Epstein - ABS Consulting, Antoine Rauzy - Arboost Technologies
- *Including Uncertainty in Risk-Informed Decision Making*
George Apostolakis - Massachusetts Institute of Technology, Joshua Reinert - Massachusetts Institute of Technology
- *Technical Insights Resulting from the Mitigating Systems Performance Index Pilot*
Donald A. Dube - U.S. Nuclear Regulatory Commission, Corwin L. Atwood - Statwood Consulting, Steven A. Eide - Idaho National Laboratory, Bruce B. Mrowca - Information Systems Laboratories, Inc., Robert W. Youngblood - Information Systems Laboratories, Inc., Douglas P. Zeek - Idaho National Laboratory
- *Lessons Learned From the 14 Aug 2003 Grid Event*
Steven E. Farkas - Hudson Global Resources, Raymond E. Schneider - Westinghouse Owners Group
- *The NRC's SPAR Model Enhancement Program: Objectives, Status, Implications*
Selim Sancaktar - U.S. Nuclear Regulatory Commission, Patrick O'Reilly - U.S. Nuclear Regulatory Commission, F. Mark Reinhart - U.S. Nuclear Regulatory Commission

ADVANCED PSA - V: PRA Methodology

8:30 am - 11:30 am (Franciscan Room)

SESSION CHAIR:

Thomas Hook - Dominion Resources, Inc.

PAPERS:

- *Pyrrhic Risk Assessment in A Procrustean Regulatory Arena - A Pragmatic Viewpoint*
Ching Guey - Florida Power and Light
- *An ISLOCA Methodology for PWRs Combining NUREG/CR-5102 and NUREG/CR-5744*
J. Russell Sharpe - Maracor Software and Engineering, Inc.
- *A Time-Phased Risk Model for a Degraded Emergency Diesel Generator*
Christopher Pupek - ERIN Engineering and Research, Inc., Donald E. Vanover - ERIN Engineering and Research, Inc., Robert F. Kirchner - RFK Dynamics, Inc.
- *Issues Related to LPSD Risk Assessments*
Kenneth Kiper - FPL Energy Company, Jeffrey A. Julius - Scientech LLC, William Burchill - Texas A&M University
- *Discussion of SDP Issues*
Yu Shen - Nuclear Management Company

Technical Sessions

THURSDAY, SEPTEMBER 15, 2005 (Continued)

FIRE RISK - II

8:30 am - 11:30 am (Cypress & Monterey Rooms)

SESSION CHAIRS:

Dennis Henneke - Duke Power Company
Steven Nowlen - Sandia National Laboratories

PAPERS:

- *Risk-Significance of Degraded One-Hour Fire Barriers Using the Nuclear Regulatory Commission's Fire Protection Significance Determination Process*
Daniel Frumkin - U.S. Nuclear Regulatory Commission
- *Application of PSA-Model of Leningrad NPP Unit 1 in SAPHIRE 7.15 Code Format for Analysis of Fire Consequences*
Bronislav Vinnikov - Russian Research Center "Kurchatov Institute", Nikolai Stebenev - Leningrad Nuclear Power Plant
- *Actual Results from a Fire PSA Performed with an Advanced Methodology for an Older German BWR*
Marina L. Roewekamp - Gesellschaft fuer Anlagen-und Reaktorsicherheit (GRS) mbH, Heinz Peter Berg - Federal Office for Radiation Protection, Germany, Michael Tuerschmann - GRS mbH, Joachim Von Linden - GRS mbH
- *Risk-Informed Fire Protection for Duke Power's Oconee, Catawba and McGuire Nuclear Plants*
Dennis Henneke - Duke Power Company
- *Some Pitfalls in Applying the IPEEE Fire Risk Analyses in Significance Determination Process (SDP) Evaluations*
Loys K. Bedell - Entergy Operations, Inc., Deepak Rao - Entergy Operations, Inc.
- *Detailed Evaluation Technique for Main Control Room Internal Fire Analysis*
Ricky Summitt - Ricky Summit Consulting, Inc.

COMMON CAUSE FAILURE

8:30 am - 11:30 am (Union Square Room)

SESSION CHAIRS:

Ali Mosleh - University of Maryland
Aline Elia-Hervy - Framatome ANP, Inc., France

PAPERS:

- *Consistent Mapping of Common Cause Failure Model Parameters*
Jussi K. Vaurio - Fortum Power and Heat Oy
- *Modeling and Quantification of Common Cause Failures Among Pumps with Different Operation Histories*
Young G. Jo - Southern Nuclear Operating Company
- *Importance Factors and Common Cause Failure : Which Impact on Preventive Maintenance Optimization*
Dominique Vasseur - Electricité de France, Berenguer Christophe - Université de Technologie de Troyes, Huyart Thierry - Electricité de France, Voicu Aura - Electricité de France, Grall Antoine - Université de Technologie de Troyes, Dieulle Laurence - Université de Technologie de Troyes
- *Recent Work for the Update of Common Cause Parameters at Electricité de France*
Aura Voicu - Electricité de France, Dominique Vasseur - Electricité de France, Jean Primet - Electricité de France, Marie Gallois - Electricité de France, Jean Dewailly - Electricité de France
- *CCF Factor Estimation Under Mixed Testing Schemes Within a Same CCF Group*
Meejeong Hwang - Korea Atomic Energy Research Institute, Joon-Eon Yang - Korea Atomic Energy Research Institute
- *Techniques for Modeling Initiating Events Arising from Common Cause Failure of Electrical Busses*
Parviz Moieni - Southern California Edison Company, Eric J. Jorgenson Maracor Software and Engineering, Inc.



*Thank You For Attending PSA '05
Have A Safe Trip Home!*