

# **RISK MANAGEMENT**

Expanding Horizons  
in Nuclear Power  
and Other Industries

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Robert B. Lee  
Robert L. Long  
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Power and Other Industries**

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**RISK MANAGEMENT –**  
**Expanding Horizons in Nuclear Power and Other Industries**  
A Symposium Conducted on 6-7 September 1989 in Whippany, NJ  
by GPU Nuclear Corporation (Parsippany, New Jersey)

**PLENARY SESSION**

Session Moderator: *Robert L. Long (GPU Nuclear Corp.; Parsippany, NJ)*

Session Organizer: *Robert B. Lee (GPU Nuclear Corp.; Parsippany, NJ)*

Risk Management Symposium Welcoming Remarks / *Philip R. Clark (GPU Nuclear Corp.; Parsippany, NJ)*

Risk Management at GPU Nuclear / *Robert L. Long (GPU Nuclear Corp.; Parsippany, NJ)*

Risk Assessment and Risk Management - Basic Concepts and Terminology / *Stan Kaplan (Pickard, Lowe & Garrick, Inc.; Huntington Beach, CA)*

Guidelines for Communicating About the Risks of Nuclear Energy Effectively, Responsibly, and Ethically / *Vincent T. Covello (Columbia University; New York, NY)*

Decision and Risk Analysis at Westinghouse / *Robert K Perdue (Westinghouse Electric Corporation; Monroeville, PA)*

Lessons Learned from Man-Made Catastrophes / *Edwin L. Zebroski (Aptek Engineering Services; Sunnyvale, CA )*

Twenty Year Retrospective on Risk Management / *Chauncey Starr (President Emeritus, Electric Power Research Institute; Palo Alto, CA)*

**SESSION I - ORGANIZATIONAL SAFETY CULTURE**

Session Moderator: *Sonja Haber (Brookhaven National Laboratory; Upton, NY)*

Session Organizer: *Victoria Broadhead Briant (GPU Nuclear Corp; Parsippany, NJ)*

Risk Management Through Cultural Intervention: Experiences with *Positive Discipline* / *Alan W. Bryant (General Electric – Nuclear Energy; San Jose, CA)*

Risk Management Through Concurrency: A New Work Culture for Improving Safety and Performance / *John R. Childress (Senn-Delaney Leadership Consulting Group; Long Beach, CA) and Victoria Broadhead Briant (GPU Nuclear Corp.; Parsippany, NJ)*

Merging Two Safety Cultures / *Samuel Mirshak (Management Consulting Services, Chadds Ford, PA)*

Overview of SKI Organizational Assessment Project / *Frank Landy (Landy, Jacobs and Associates; State College, PA) and Kerstin Dahlgren (Swedish Nuclear Power Inspectorate; Stockholm, Sweden)*

## **SESSION II - MANAGEMENT SYSTEMS AND FEEDBACK**

Session Moderator: *Warren F. Witzig (Professor Emeritus; Pennsylvania State University; State College, PA)*

Session Organizer: *Jeffrey A. Mahn (GPU Nuclear Corp.; Parsippany, NJ)*

Airline Industry Safety Management Systems and Feedback / *Captain David A. Simmon (United Airlines; Elk Grove Village, IL)*

Virginia Power's Human Performance Evaluation System (HPES) / *William E. Patterson (Surry Power Station – Virginia Power Corporation; Surrey, VA )*

An Integrated Approach to Safety, Including the Human Factors Element / *Annick Carnino (Electricité de France; Paris, France)*

Quality Improvement at GPU Nuclear Through Application of the Deming Management Method / *Robert W. Keaten (GPU Nuclear Corp.; Parsippany, NJ)*

## **SESSION III - ROLE OF HUMAN PERFORMANCE**

Session Moderator: *G. William Hannaman (Science Applications International Corp.; San Diego, CA)*

Session Organizer: *V. Broadhead Briant (GPU Nuclear Corp.; Parsippany, NJ)*

Cockpit Crew Research / *Barbara G. Kanki (NASA – Ames Research Center; Moffett Field, CA)*

Team Skills Training: The Critical Next Step at GPU Nuclear / *Richard P. Coe and Donald R. Carl (GPU Nuclear Corp.; Parsippany, NJ)*

Risk Sensitivity to Human Error / *James C. Higgins (Brookhaven National Laboratory; Upton, NY)*

Human Reliability Methods for Enhancing Performance / *G. William Hannaman (Science Applications International Corp.; San Diego, CA)*

Accident Prevention - Control and Quality Research Themes / *Josette Larchier-Boulanger (Electricité de France; Paris, France)*

## **SESSION IV - APPLICATIONS OF QUANTITATIVE RISK ASSESSMENT**

Session Moderator: *David Carlson (Sandia National Laboratories; Albuquerque, NM)*

Session Organizer: *Ronald A. Knief (GPU Nuclear Corp.; Parsippany, NJ)*

The Approach to Risk Analysis in Three Industries: Nuclear Power, Space Systems, and Chemical Process / *B. John Garrick (Pickard, Lowe & Garrick, Inc.; Huntington Beach, CA)*

The Integrated Use of Probabilistic Safety Assessment in Reactor Design / *Guy Freeman (Rolls Royce and Associates Limited; Derby, England)*

Risk-Based Plant Performance Indicators / *John L. Boccio, M. A. Azarm, William E. Vesely, and R. E. Hall (Brookhaven National Laboratory; Upton, NY)*

Two Successful Applications of Probabilistic Risk Analysis to Address Regulatory Issues / *Patrick M. Donnelly (Big Rock Point Plant – Consumers Power Company; Charlevoix, MI)*

Something Important is Missing from PRA / *David A. Ward (Consultant; North Augusta, GA)*

## **SESSION V - SYSTEMATIC RISK MANAGEMENT**

Session Moderator: *G. Bruce Varnado; ERC Environmental and Energy Services Co.; Albuquerque, NM*

Session Organizer: *Ronald A. Knief; GPU Nuclear Corp.; Parsippany, NJ*

A Programmatic Approach to Chemical Risk Management / *J. J. Cramer (Stone & Webster Engineering Corporation; Cherry Hill, NJ)*

Episodic Risk Management at Union Carbide / *Duane Marsh (Union Carbide Corporation; Danbury, CT)*

MORT-Based Risk Management / *Glenn J. Briscoe (EG&G Idaho Inc.; Idaho Falls, ID)*

Basic Elements of a Risk Management Program / *David M. Ericson, Jr. and G. Bruce Varnado (ERC Environmental and Energy Services Co.; Albuquerque, NM)*

A View on Risk Management / *Vojin Joksimovich (Accident Prevention Group; San Diego, CA)*

Framework for Systematic Risk Management / *Ronald A. Knief, Jeffrey A. Mahn, Victoria Broadhead Briant, Robert B. Lee, and Robert L. Long (GPU Nuclear Corp.; Parsippany, NJ)*

## **WRAP-UP**

Session Moderator: *Robert L. Long; GPU Nuclear Corp.; Parsippany, NJ*