

M21 HRA for Digital Interfaces

Monday 8/17/2018 3:30 PM Exploration

Chair: Andreas Bye

235 HRA Data for Performance Shaping Factors Reflecting Digital MCR

Sun Yeong Choi, Yochan Kim, and Jinkyun Park

Korea Atomic Energy Research Institute, Daejeon, Rep. of Korea

72 Some insights for assessing diagnosis error probabilities of operators in advanced MCRs

Ar Ryum Kim, Seung Woo Lee, Namcul Cho, Ji Tae Kim, Dohyoung Kim, and Sok Chul Kim

Korea Institute of Nuclear Safety, Daejeon, Republic of Korea

227 Expanding GOMS-HRA from Analog to Digital Human-Machine Interfaces

Thomas A. Ulrich and Ronald L. Boring

Idaho National Laboratory, Idaho Falls, USA

M22 Structural Reliability Analysis Methods

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Chair: M. Pourgol-Mohammad

82 Comparison of Non-Standard Simulation Methods for Performing Extremely Low Probability Assessments

Robert E. Kurth, Cédric J. Sallaberry

Engineering Mechanics Corporation of Columbus (Emc2) Columbus, OH, USA

178 Thermodynamic Entropy Generation Model for Metal Fatigue Failure

Hossein Salimi, Mohammad Pourgol-Mohammad, Mojtaba Yazdani

Sahand University of Technology, Tabriz, Iran

103 Efficient Sampling Strategies to Estimate Extremely Low Probabilities

Cédric J. Sallaberry, Robert E. Kurth

Engineering Mechanics Corporation of Columbus (Emc2) Columbus, OH, USA

381 A Case Study on Influence of Subgrade Slope Blasting on Existing Bridge Safety

Haoran Song and Dianliang Xiao

China Academy of Transportation Sciences, Beijing, China

M23 Dynamic PSA/PRA I

Monday 8/17/2018 3:30 PM Illumination

Chair: Matthew Denman

- 48 **Case Study of Major Accident to Demonstrate the Possibility of Prediction of Conditions for Accidents**
Tiantian Zhu, Stein Haugen (a), Yiliu Liu, Kim Hyungju (b)
a) Department of Marine Technology, Norwegian University of Science and Technology, Trondheim, Norway, b) Department of Mechanical and Industrial Engineering, Norwegian University of Science and Technology, Trondheim, Norway
- 54 **Addressing Critical Dependencies in the Probabilistic Performance Assessments of Multi-Purpose Systems with PyCATSHOO**
Hassane Chraïbi, Dominique Vasseur, Tu Duong Le Duy And Mickaël Hassanalay
EDF, Paris Saclay Lab - PERICLES - Palaiseau, France
- 85 **Mitigation Coverage Evaluation of Passive Systems Based on Causality Estimation Using Multi-Level Flow Model**
In Seop Jeon, Junyung Kim, Robby Christian, Hyun Gook Kang
Rensselaer Polytechnic Institute, Troy, USA
- 76 **EMERALD, Dynamic PRA for the Traditional Modeler**
Steven Prescott, Curtis Smith, and Leng Vang
Idaho National Laboratory, Idaho Falls, USA

M24 Internal Hazards PSA/PRA I

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Chair: Keiichi Ishida

- 61 **Application of Fire PSA in Defining System Reliability Criteria: Detection and Suppression Systems in I&C Electrical Panel Room**
Marcos Coelho Maturana (a,b), Luciano Lucas Bruno (a), and Marcelo Ramos Martins (b)
a) CTMSP, Sao Paulo, Brazil, b) LABRISCO/USP, Sao Paulo, Brazil
- 92 **Insights from Internal Fire PSA of UK ABWR in Generic Design Phase**
Yuki Ishiwatari, Daichi Shiota (a), and Paul Guymer (b)
a) Hitachi-GE Nuclear Energy, Ltd., Hitachi, Japan, b) Jacobsen Analytics Ltd, Congleton, United Kingdom
- 100 **Analysis of Turbine Missile & Turbine-Generator Overspeed Protection System Failure Probability at NPPs: A case study from PSA perspective**
Duško Kančev, Stefan Heussen, Jens-Uwe Klügel, Thomas Kozlik, Pere Drinovac
NPP Goesgen-Daeniken AG, Kraftwerkstrasse CH-4658 Daeniken, Switzerland
- 160 **Monte Carlo Simulation of NUREG/CR 6850 Appendix L Model for Main Control Board Fires and Resulting Insights**
Paul Boneham, Paul Guymer, Mike Wright
Jacobsen Analytics Ltd, Congleton, United Kingdom

M25 Accident Analysis and Modeling I

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Chair: Futoshi Tanaka

- 164 **Qualitative PRA Insights from Operational Events**
Nathan Siu, Ian Gifford, Zeechung Wang, Meredith Carr, and Joseph Kanney
U.S. Nuclear Regulatory Commission, Rockville, MD, USA
- 215 **MELCOR2.2/SNAP Analysis of Oxidation Response during Spent Fuel Pool Quenching**
Wei-Yuan Cheng, Yu Chiang (a), Jong-Rong Wang (b), Shao-Wen Chen (a), Chunkuan Shih (b)
a) Institute Of Nuclear Engineering And Science, National Tsing Hua University, Hsinchu, Taiwan, b) Nuclear And New Energy Education And Research Foundation, Hsinchu
- 42 **The methodology of Plant Damage State and Containment Event Tree development in the Low Power Shutdown Probabilistic Safety Assessment Level 2 using T/H analysis code**
Jae Gab Kim, Myung Ro Kim, Bae Hyuk Kwon
KEPCO-E&C, Integrated Engineering Department, Korea
- 370 **Containment Isolation System Analysis and its Contribution to Level 2 PSA Results in Doel 3 Unit**
Marius Lontos, Stanislas Mitailé, And Shizhen Yu, Jérémy Bulle
TRACTEBEL ENGIE, Brussels, Belgium

M26 Mathematical Methods in Reliability & Safety I

Monday 8/17/2018 3:30 PM Pathways

Chair: Mihai Diaconeasa

67 Improved Bayesian Update Method for Components Failure Rates

Ali Ayoub (a), Valerio Ariu and Olivier Nusbaumer (b)

a) ETH Zurich, Laboratory of Nuclear Energy Systems, Zurich, Switzerland, b) Kernkraftwerk Leibstadt, Department Support Safety & Engineering, Leibstadt, Switzerland

282 Large Satellite Bus Reliability

Teri Hamlin and Bruce Reistle

NASA Johnson Space Center, Houston, USA

406 A Fault Prediction Approach Based on Bayesian Network for System

Tianyu Si, Weiwei Hu, Yuna Liu, and Jiamin Liu

School of Reliability and System Engineering, Beihang University, Beijing, China

M27 Special Session: Global and Catastrophic Risks

Monday 8/17/2018 3:30 PM Laureatte