

## T01 Special Session: HRA data analysis I

Tuesday 9/18/2018 10:30 AM Exploration

Chair: Ali Mosleh

### 29 SACADA Data for HEP Estimates

Yung Hsien James Chang, Carmen Franklin  
*U.S. Nuclear Regulatory Commission, Washington DC, USA*

### 60 Analyses Methods and Pilot Applications of SACADA Database

Mohamad Ali Azarm (a), Inn Seock Kim (b), Clifford Marks, and Faramarz Azarm (a)  
*a) Innovative Engineering and Safety Solutions, Germantown, MD, USA, b) ISSA Technology Inc., Germantown, MD, USA*

### 78 Methodology for Supporting the Determination of Human Error Probabilities from Simulator Sourced Data

Pamela F. Nelson (a), C.R. Grantom P.E. (b), and David Quintanar-Gago (a)  
*a) Universidad Nacional Autónoma de México, Facultad de Ingeniería, Departamento de Sistemas Energéticos, Mexico City, Mexico, b) CRG LLC, Huffman, Texas, USA*

### 412 A framework for Using SACADA to Enhance the Qualitative and Quantitative Basis of HRA

Katrina M. Groth  
*Systems Risk and Reliability Analysis Lab, Center for Risk and Reliability, Department of Mechanical Engineering, University of Maryland, College Park, MD*

## T02 Reliability Analysis II

Tuesday 9/18/2018 10:30 AM Discovery

Chair: Marcio Moura

### 136 Application of Reliability Analysis in Preliminary Design Stage of Digital I&C System

Wenjie Qin (a), Xuhong He (b), Xiufeng Tian, Dejun Du (c)  
*a) Lloyd's Register Consulting - Energy Inc., Shanghai, China, b) Lloyd's Register Consulting AB, Stockholm, Sweden, c) China Nuclear Power Engineering Co., Ltd., Beijing, China*

### 145 Reliability Modeling of Phased Mission Multi-State Systems via a Scenario Inference Method

Weiyang Men, Ying Chen, Yingyi Li, and Ze Wang  
*Beihang University, Beijing, China*

### 241 Reliability Analyses of Digital I&C Systems within the Verification and Validation Process

Mariana Jockenhövel-Barttfeld, Stefan Karg (a), Christian Hessler (b) and Herve Bruneliere (c)  
*a) Framatome GmbH, Erlangen, Germany, b) AREVA GmbH, Erlangen, Germany, c) Framatome SAS, Paris, France*

## T03 Uncertainty and Sensitivity Analysis I

Tuesday 9/18/2018 10:30 AM Illumination

Chair: Elaheh Rabiei

### 16 Application of Bayesian Optimal Experimental Design to Reduce Parameter Uncertainty in the Fracture Boundary of a Fuel Cladding Tube Under LOCA Conditions

Takafumi Narukawa (a,b), Akira Yamaguchi, Sunghyon Jang (a), and Masaki Amaya (b)  
*a) The University of Tokyo, Tokyo, Japan, b) Japan Atomic Energy Agency, Ibaraki, Japan*

### 22 A Conceptual Comparative Study of Flex Strategies to Cope with Extended Station Blackout (SBO)

Hak Kyu Lim  
*KEPCO International Nuclear Graduate School, Ulsan, Republic of Korea*

### 36 Sensitivity Analysis for the Evaluation of Failure Effects on an I&C Test System

Christian Müller, Ewgenij Piljugin, Jörg Peschke, Manuela Jopen, Dagmar Sommer  
*Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH, Germany*

## T04 Maritime and Offshore Technology I

Tuesday 9/18/2018 10:30 AM Legacy A

Chair: Montewka Jakub

### 86 Probabilistic Decision Support for Offshore Wind Operations: A Bayesian Network Approach to Include the Dependence of the Installation Activities

Georgios Leontaris (a), Oswaldo Morales-Nápoles (b), and A.R.M. (Rogier) Wolfert (a)

*a) Integral Design and Management, Civil Engineering and Geosciences, Delft University of Technology, Delft, the Netherlands, b) Hydraulic Structures and Flood Risk, Civil Engineering and Geosciences, Delft University of Technology, Delft, the Netherlands*

### 98 Reducing Risk in Aquaculture Through Autonomous Underwater Operations

Ingrid B. Utne, Ingrid Schjølberg, Stian Sandøy, Xue Yang (a), and Ingunn M. Holmen (b)

*a) NTNU Department of Marine Technology, 7491 Trondheim, Norway, b) SINTEF Ocean, 7465 Trondheim, Norway*

### 177 Study of Ship Piloting Risk Aversion Based on Human Reliability Analysis

Wei Hong-Bin

*China Waterborne Transport Research Institute, Beijing, China*

## T05 Risk Assessment Methods II

Tuesday 9/18/2018 10:30 AM Legacy B

Chair: Tsu-Mu Kao

### 143 Risk Assessment Study of Loss Profit for Integrated Maintenance Policy Based on Power Generation for a Wind Turbine

Maryem Bouzoubaa, Zied Hajej, and Nidhal Rezg

*LGIPM, UFR-MIM, University of Lorraine, Metz, France*

### 149 Leaving Mission Times Backstage and Taking Repair into Account in Long Term Scenarios

Anders Olsson

*Lloyd's Register, Malmoe, Sweden*

### 151 RASTEP – A Novel Tool for Nuclear Accident Diagnosis and Source Term Prediction based on PSA and Bayesian Belief Networks

Francesco Di Dedda (a), Anders Olsson (b), Joakim Klug and Anders Riber Marklund (c)

*a) Lloyd's Register, Gothenburg, Sweden, b) Lloyd's Register, Malmoe, Sweden, c) Lloyd's Register, Sundbyberg, Sweden*

### 165 Dynamic Modelling of Severe Accident Management for CANDU Reactors in Probabilistic Safety Assessment

Alexander V. Trifanov

*Kinectrics, Toronto, Ontario, Canada*

## T06 Water and Land Transportation II

Tuesday 9/18/2018 10:30 AM Pathways

Chair: Di Zhang

### 279 A Collision Risk-Based Ship Domain Method Approach to Model the Virtual Force Field

Tengfei Wang (a,b,c), Xinpeng Yana (b), Yang Wang and Qing Wu (a,b,c)

*a) Intelligent Transportation System Research Center, Wuhan University of Technology, Wuhan Hubei, China, b) National Engineering Research Center for Water Transport Safety, Wuhan Hubei, China, c) School of Logistics Engineering, Wuhan University of Technology, Wuhan Hubei, China*

### 287 Trend and Hotspot Analysis of Waterway Transportation Safety Based on Bibliometrics

Wang Guobo, Han Chao, Xu Liansheng (a), Wu Jing (b,a)

*a) China Waterborne Transport Research Institute, Beijing, China, b) North China Electric Power University, Beijing, China*

### 288 Risk Assessment of Dangerous Goods Areas in Ports

Wu Jing (a,b), Chen Fengyun, Hu Yuchang, Wang Guobo, Xu Liansheng (b), Mao Xianling (c)

*a) North China Electric Power University, Beijing, China, b) China Waterborne Transport Research Institute, Beijing, China, c) Beijing Institute of Technology, Beijing, China*

### 290 A Case of Quantitative Risk Assessment of Dangerous Goods Container Yard in Chinese Port

Zhijun Chen, Hong Fan, Yuan Gao, Qing Xia, Haiqi Tang, Yafei Zhou

*China Waterborne Transport Institute, Beijing, China*

**T07      Panel Session: Risk Communication with Mid-Level Decision Makers**

Tuesday      9/18/2018      10:30 AM      Laureatte