

DAY 2: TUESDAY, OCTOBER 24, 2023			
SESSIONS	PAPER TITLE	AUTHORS / PANELISTS	STARTING TIME (Central Time)
Session 4: AI and ML for condition-based risk assessment Co-Chairs: 1. Francesco Di Maio (francesco.dimaio@polimi.it) 2. John Beal (jabeal2@illinois.edu)	Engineering Applications of Artificial Intelligence and Machine Learning for Mechanical Systems and Component Performance	Matthew Homiack, John Matrachisia, Tristan Villareal, Aditya Savara, Stephen Verzi, Raj Iyengar	8:00
	A Review on Reinforcement Learning in Condition-based Maintenance	Quang Khai TRAN, Khac Tuan HUYNH, Antoine GRALL, Yves LANGERON, Elham MOSAYEBI OMSHI	8:30
	Predicting the Consequences of Hydrogen Releases: how a Machine Learning Approach May Improve Risk-Based Inspection Planning	Leonardo Giannini, Ernesto Salzano, Nicola Paltrinieri	9:00
	Using Condition Monitoring Data for Severe Accidents Management	Giovanni Roma, Francesco Di Maio, Enrico Zio	9:30
	An Adaptive Empirical Model for Real-time Condition Monitoring of Nuclear Power Plant Components	Ibrahim Ahmed, Enrico Zio	10:00
PANEL SESSION 2	AI/ML AND RISK ANALYSIS FOR THE NUCLEAR INDUSTRY	Panelists: Robert (Bob) J. Ledoux (ARPA-E), Matthew Dennis (NRC), Enrico Zio (Polimi), Fernando Ferrante (EPRI), Zahra Mohaghegh (UIUC), Bruce Hallbert (INL)	10:30
Virtual Booth Session (October 24, 2023)	Virtual Booth Sessions: VB1. U.S. Nuclear Regulatory Commission (NRC) – Office of Regulatory Research VB2. Idaho National Lab. - "AI/ML to Support Risk-Informed Approaches and Applications Applied to the Nuclear Field"	U.S. NRC (Latonia Enos-Sylla and Erick Ball) Idaho National Lab. WR S (Lana Lawrence)	12:00
Session 5: Uncertainty quantification for AI and ML technologies Co-Chairs: 1. Vicki Bier (vicki.bier@wisc.edu) 2. Ha Bui (habui2@illinois.edu) 3. Mohammad Albati (malbati2@illinois.edu)	Risk, Uncertainty and AI: non-probabilistic methods for anticipating and preventing AI risks	Alexander Gutfraind, Vicki M. Bier	15:00
	Uncertainty Quantification from Deep Hyperparameter Ensembles	Tanwi Mallick, Jane Macfarlane, Prasanna Balaprakash	15:30
	Uncertainty Quantification and Sensitivity Analysis of a Machine Learning-Based Spill Fire Model for Nuclear Power Plants	Elvan Sahin, Peter Henkes, Brian Y. Lattimer, and Juliana P. Duarte	16:00
	Automation Trustworthiness and Transparency in Nuclear Power Plants: A Literature Review	Muhammad Hammad Khalid, Ha Bui, Pegah Farshadmanesh, Zahra Mohaghegh	16:30
	Evaluation of Automation Trustworthiness in Nuclear Power Plants: A Risk-Informed Approach using Probabilistic Validation and Integrated Probabilistic Risk Assessment	Muhammad Hammad Khalid, Md Istiaque Ahmed, Samrendra Roy, Ha Bui, Seyed Reihani, Zahra Mohaghegh	17:00
Session 6: AI and ML to support risk analysis and risk-informed decision-making (III) Co-Chairs: 1. Jinkyun Park (kshpjk@kaeri.re.kr) 2. Tatsuya Sakurahara (sakurah2@illinois.edu)	Functional requirements to enhance the traceability of a deep-learning based reduced order model in PSA applications	Jinkyun Park and Hyeonmin Kim	17:30
	Development of Unknown Risk Scenario Identification System with the Reduced Order Model	Hyeonmin Kim and Jinkyun Park	18:00
	Development of Probabilistic Risk Assessment Methodology Using Artificial Intelligence Technology. 1. Automatic Fault Tree Creation	Satoshi FUTAGAMI, Hidemasa YAMANO, Kenichi KURISAKA, Hiroshi UJITA	18:30
	Development of Probabilistic Risk Assessment Methodology Using Artificial Intelligence Technology. 2. Automatic Fault Detection Method for Building Reliability Database	Hiroshi UJITA, Tatsuya MORIMOTO, Satoshi FUTAGAMI, Hidemasa YAMANO, Kenichi KURISAKA	19:00
	Fusion of Deep Learning Technology into Accident Diagnosis and Source Term Estimation	Sung-yeop Kim, Soo-Yong Park, Yun Young Choi	19:30
	Application of Artificial Intelligence to the Source Term Database: Clustering of Accident Scenarios and Prediction of Offsite Consequences	Kyungho Jin, Jaehyun Cho, Sung-yeop Kim, Wasin Vechgama	20:00