

EHPG Sandefjord 2019

Technical Program - Man-Technology-Organisation

		Monday May 20
0830-1130		Joint Opening Session Session Chair: Spencer Brown, FANR
	Paper No.:	
	01	Jon Kvalem, Halden Project: <i>"Welcome and Introduction"</i>
	02	Yeonhee Hah, Head of Division of Radiological Protection and Human Aspects of Nuclear Safety, OECD NEA: <i>"Moving Forward: Human, Technology and Organization"</i>
	03	Raymond Furstenau, Director of the Nuclear Regulatory Research US NRC: <i>"Change and Innovation in the Nuclear Industry"</i>
	04	Katharina Stummeyer, Head of Project Management, Gesellschaft für Anlagen- und Reaktorsicherheit (GRS): <i>"Nuclear Safety Research in Germany – challenges and perspectives"</i>
1010-1030		Coffee Break
	05	Libing Zhu, Shanghai Nuclear Engineering Research and Design Institute (SNERDI): <i>"Type Driven Technology in SNERDI for Future Nuclear Industry"</i>
	06	Gina Strati, Director of Energy Program, Canadian Nuclear Laboratories: <i>"SMRs in the Canadian Landscape"</i>
1130-1300		Lunch

1300-1545	Paper No.:		Authors:	Session MTO-1: Human Performance Session chairs: Jing Xing, US NRC / Jun Kawai, NRA Session secretaries: Gyrd Skraaning / Salvatore Massaiu, HRP
1300-1325	MTO-1.1		Y. Kim, S. Y. Choi, S. Kim, J. Park KAERI, Korea	Direction of the Human Reliability Analysis Method Development for Computer-based Control Rooms
1325-1350	MTO-1.2		J. Xing, US NRC, USA	Use of IDHEAS General Methodology to Generalize Operator Performance Data in Halden Experiments for Human Factors and Reliability Analysis Applications
1350-1415	MTO-1.3		J. Kawai, Y. Horiuchi NRA, Japan	Enhancement Framework for Human Factors Engineering Review Model on Beyond-Design Basis Events Conditions
1415-1445				Coffee Break
1445-1520	MTO-1.4		A.B. Skjerve, L. Holmgren, Halden Project	Towards an Approach for Training NPP Operators in Handling Unforeseen Events. Second Study
1520-1545	MTO-1.5		M. Hildebrandt, Halden Project	Assessment of Reader-Doer vs. RO-Directed Use of Emergency Procedures - Preliminary Results
1600-1800				Demo Session
	D1		H. Jokstad, Halden Project	Training Evaluation and Monitoring System (TEAMS)
	D2		R. McDonald, Halden Project	Operator interfaces for HAMMLAB's PWR simulator
	D3		M. Gustavsen, Halden Project	Virtual Reality for Control Room Design
	D4		T.R Bryntesen, Halden Project	Immersive VR for training
	D5		J. Bratteli, Halden Project	VRdose – A 3D Alara Job Planning Suite
	D6		P. Karpati, Halden Project	Creating and Assessing Safety Arguments using InStruct
	D7		K-M. Haugen, Halden Project	HRP Legacy Database

				Tuesday May 21
0830-1130				Session MTO-2: Human Performance, cntd. Session chairs: Andreas Kjellin, SSM / Jing Xing, US NRC Session secretaries: Per Øivind Braarud / Magnhild Kaarstad, HRP
0830-0855	MTO-2.1	HWR-1218	S. Massaiu, A. Fernandes, Halden Project	Identification Tasks Reliability in Digital and Analogue Interfaces
0855-0915	MTO-2.2	HWR-1267	M. Kaarstad, Halden Project	Spontaneous Grouping in Teams
0915-0945	MTO-2.3	HWR-1242	E. Nystad, M. Kaarstad, R. McDonald, Halden Project	Decision-making with Degraded HSI Process Information
0945-1015				Coffee Break

1015-1040	MTO-2.4	HWR-1243	E. Nystad, M. Kaarstad, C. Nihlwing, R. McDonald, Halden Project	Functionalities to Support Operation during Situations with Limited Process Information
1040-1105	MTO-2.5		J. Xing, M. Kichline, J. Hughey, M. Humberstone, US NRC, USA	Assessment of Performance Influencing Factors for Human Reliability Analysis of Implementing Flexible Coping Strategies
1105-1130	MTO-2.6	HWhP-070	C. Blackett, Halden Project	Operator Reliability for Actions Outside the Control Room: Scope & Research Direction
Tabled	MTO-2.7	HWR-1262	S. Strand, E. Nystad, R. McDonald, Halden Project	Operator Mental Fatigue – the Concept, its Relation to Performance and Mitigation Strategies
1130-1300				<i>Lunch</i>
1300-1600				Session MTO-3: Control Rooms & Human System Interfaces Session chairs: Hyun Chul Lee, KAERI / Jeffrey Joe, INL Session secretaries: Gyrd Skraaning / Alexandra Fernandes, HRP
1300-1320	MTO-3.1		J. C. Joe, C. R. Kovesdi, Idaho National Laboratory, USA	A Human Factors Evaluation of an Advanced Human System Interface for the Generic Pressurized Water Reactor Simulator
1320-1340	MTO-3.2		P. Ø. Braarud, Halden Project, J. Holgersson, Ringhals AB, Sweden	Review of Observer and Operator Measures for Simulator-based Control Room Evaluation
1340-1430	MTO-3.3	HWR-1245 HWR-1254	A.O. Braseth, M. H. R. Eitrheim, A. Fernandes, Halden Project M. H. R. Eitrheim, A. O. Braseth, Halden Project	A Theoretical Framework for Assessment of Large-Screen Displays in Nuclear Control Rooms The Impact of Large Screen Overview Displays on Human Performance: A Case Study at the Halden Boiling Water Reactor
1430-1500				<i>Coffee Break</i>
1500-1520	MTO-3.4		H. Jokstad, R. McDonald, J. Kvalem, Halden Project	Bringing HAMMLAB Systems and Prototypes to Market
1520-1540	MTO-3.5	HWR-1255	M. Gustavsen, A. O. Braseth, Halden Project	A Conceptual Framework for a Design Approach for Multi-Stage Control Room Design and Documentation
1540-1600	MTO-3.6	HWR-1261	P. Ø. Braarud, H. Svengren, C. Nihlwing, Halden Project	Human-System Validation Experiment 2018: Multistage Assessment, Operators Self-Evaluation, and Mental Workload Assessment

1600-1800				Demo Session
	D1		H. Jokstad, Halden Project	Training Evaluation and Monitoring System (TEAMS)
	D2		R. McDonald, Halden Project	Operator interfaces for HAMMLAB's PWR simulator
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	D7		K-M. Haugen, Halden Project	HRP Legacy Database

				Wednesday May 22
0830-1130				Session MTO-4: Decommissioning Session chairs: Juergen Hartung, GRS GmbH / Vladimir Fiser, NRI Session secretaries: Joachim Bratteli / Morten Gustavsen, HRP
0830-0855	MTO-4.1	HWR-1272	I. Szőke, Halden Project	Challenges and Opportunities for Digital Innovation of Nuclear Decommissioning
0855-0920	MTO-4.2	HWR-1257	N-K. Mark, Halden Project	Lessons Learned from Real-life Projects in Russia and Ukraine Introducing VR Based Applications in Decommissioning Planning and Training
0920-0945	MTO-4.3	HWR-1258	T-R. Bryntesen, Halden Project	Performance and Accuracy Evaluation of the Point-kernel Dose Calculation Method
0945-1015				Coffee Break
1015-1040	MTO-4.4	HWR-1180	E. Nystad, S. Renganayagalu, I. Szőke, C. Blackett, Halden Project	Current Practices and Opportunities for Improving Briefing and Training for Decommissioning: Result from Interviews and Literature Study
1040-1105	MTO-4.5	HWR-1253	P. Karpati, S. T. Edvardsen, Halden Project, M. Airila, VTT, Finland	Structured Safety Argumentation for Decommissioning: The InStruct Protoype Tool and a Case Study
1105-1130	MTO-4.6	HWR-1273	S. K. Renganayagalu, Halden Project	Effectiveness of VR in decommissioning training – a systematic review
1130-1300				Lunch

1300-1610				Session MTO-5: Digital Instrumentation & Control Session chairs: Janne Valkonen, VTT / Terje Sivertsen, Bane NOR Session secretaries: Sizarta Sarshar / John Eidar Simensen, HRP
1300-1320	MTO-5.1	HWR-1246	F. Sechi, A. A. Hauge, Halden Project	Safety and Security in DI&C Design – Industrial Review
		HWR-1247	A.A. Hauge, R. Fredriksen, F. Sechi, Halden Project, J. Linnosmaa, VTT Finland	Safety and Security in DI&C Design – Systematic Literature Review
1320-1340	MTO-5.2		E. Engum, Secure-NOK, Norway	Protecting Industrial Infrastructure from Cyber Threats
1340-1400	MTO-5.3		M. A. Lundteigen, B. A. Gran, NTNU, Norway	The Need of Improved Methods to Handle Functional Safety and Cybersecurity in Critical Industrial Infrastructures
1400-1430				Coffee Break
1430-1450	MTO-5.4		J. Linnosmaa, J. Valkonen VTT Finland, P. Karpati, A. A. Hauge, F. Sechi, B. A. Gran, Halden Project	I&C Architecture Modelling for Nuclear Applications
1450-1520	MTO-5.5		T. Sivertsen, Bane NOR, Norway	A Railway RAMS Perspective on the Establishment and Management of Technical Rules and Regulations
1520-1550	MTO-5.6	HWR-1259	A.A. Hauge, P. Karpati, Halden Project	Current State of Safety Demonstration Practice Internationally
		HWR-1248	P. Karpati, S. A. Olsen, B. A. Gran F. Sechi, A. A. Hauge, Halden Project	Structured Safety Argumentation – APR 1400 Case Study
1550-1610	MTO-5.7	HWR-1234	S. A. Olsen, S. Sarshar, J. E. Simensen, Halden Project	Human Factors in Digital I&C Safety Analysis – Systematic Literature Review
Tabled	MTO-5.8	HWR-1249	B. A. Gran, A. A. Hauge, S. A. Olsen, P. Karpati, J. E. Simensen, Halden Project	Report on the Halden Project Workshop on International Assessment of Safety Assurance Approaches
Tabled	MTO-5.9	HWR-1244	J. E. Simensen, S. Sarshar, A. A. Hauge, S. A. Olsen, F. Sechi, Halden Project	Turbine Enclave – Technical Specification Documentation

				Thursday May 23
0830-1130				Session MTO-6: Automation & Future Operational Concepts Session chairs: Francois Jeffroy, IRSN / Asriel Eisinger, Framatome Session secretaries: Alexandra Fernandes / Espen Nystad, HRP
0830-0855	MTO-6.1		D. Lee, J. Kim, Chosun University, Korea	Autonomous Operating System for Nuclear Power Plants by Using Deep Learning
0855-0945	MTO-6.2	HWR-1250	G. Skraaning Jr., Halden Project, G. A. Jamieson, F. Rajabiyazdi, N. Mirjalali, University of Toronto, Canada G. Skraaning Jr., Halden Project, G. A. Jamieson, F. Rajabiyazdi, N. Mirjalali, University of Toronto, Canada	New Angles on Automation Transparency Automation Transparency: Seeing Through or Seeing Into?
0945-1015				Coffee Break
1015-1040	MTO-6.3	HWR-1251	M. H. R. Eitrheim, Halden Project	Operation of Multiple Reactors from a Single Control Room: Experiences from Nuclear and Other Industries
1040-1105	MTO-6.4		V. Katta, Halden Project	Introduction to Cyber Security Concerns in Control Rooms
1105-1130	MTO-6.5		J. Kvalem, Halden Project	MTO Programme Proposal 2021-2023
1130-1300				Lunch
1300-1535				Session MTO-7: Plant Operation & Maintenance Session chairs: Ole Ravn, DTU / Olli Saarela, VTT Session secretaries: Jan Erik Farbrot / Håkon Jokstad, HRP
1300-1325	MTO-7.1	HWR-1265	H. P-J. Thunem, Halden Project	Collaborative Decision Making – Updates and Additions to the MFM Software Prototypes
1325-1350	MTO-7.2		O. Saarela, VTT Finland, J. E. Hulsund, M. Sirola, Halden Project	Detecting and Identifying Long-term Degradation
1350-1415	MTO-7.3	HWR-1252	M. Sirola, J. E. Hulsund, Halden Project	Methods for Event Identification and Prognostics Using Machine Learning in Degradation Estimation at NPPs
1415-1445				Coffee Break
1445-1510	MTO-7.4		E. Wingstedt, Halden Project	Lessons Learned from On-line Monitoring Activities at the HRP
1510-1535	MTO-7.5		P. Kvalvik, Halden Project	Using Data Lake Technology for HRP Legacy Data