

Enlarged Halden HTO Programme Review Group (EHPRG) meeting 2026

Draft technical program. For more info: <https://ife.no/en/event/enlarged-halden-programme-review-group-meeting-ehprg-2026/>

Monday 12 th October			
08:30 – 11:30	Paper No.:	Opening session Opportunities and challenges in today's nuclear renaissance	Chair: Jacoline Hanekom, NRG PALLAS Secretary: Andreas Bye
08:30-08:40	Mo-00	Welcome and Introduction	Andreas Bye , IFE. Programme Manager, Halden HTO Project
08:40-09:00	Mo-01	Opening keynote (virtual)	William D. Magwood, IV , Director General, OECD Nuclear Energy Agency
09:00-09:15	Mo-02	New nuclear builds and programs in the Netherlands	Jacoline Hanekom , NRG PALLAS
09:15-09:40	Mo-03	Regulatory perspective on the future of nuclear in the U.S.	Christian Araguas , U.S. Nuclear Regulatory Commission
09:40-10:00	Mo-04	Canadian efforts and regulations in new nuclear	Edward Nakaza , CNSC
10:00-10:15	Mo-05	The energy and nuclear situation in Norway	Nils Morten Huseby , CEO, IFE
10:15-10:40		Coffee break	
10:40-11:00	Mo-06	Future needs of the U.S. nuclear industry, DOE programs and efforts	Bruce Hallbert , Idaho National Laboratory
11:00-11:20	Mo-07	NEA initiatives and perspectives on the future of the nuclear industry	Gabriela Miranda , Radiological Protection and Human Aspects of Nuclear Safety, OECD Nuclear Energy Agency
11:20-11:40	Mo-08	Progress in nuclear builds and safety research	TBD
11:40-12:00	Mo-09	Developments and status of the nuclear	TBD

12:00-13:30		Lunch		
13:00-15:40		Topic 1: Human Performance	Chair: Johan Enkvist, SSM Secretaries: TBD	Ref.:
13:00-13:30	Mo-1-1	Keynote address: Human Factors Engineering for new fleets of nuclear power plants in China (TBC)	Shuhui Zhang, SNERDI (TBC)	
13:30-13:50	Mo-1-2	Cognitive Failure Modes in Digital Control Rooms (TBC)	Michael Hildebrandt et al., IFE	HTOR
13:50-14:20	Mo-1-3	Impact of crew brief on crew dynamics and performance - Findings from a HAMMLAB study. Updated with additional crews	Magnhild Kaarstad et al., IFE	HTOR-127
	Mo-1-4	Scenario-based synthesis of crew dynamics and assumption-driven vulnerabilities	Magnhild Kaarstad et al., IFE	HTOR-128
14:20-14:50		Coffee Break		
14:50-15:10	Mo-1-5	Decision-Making in the Control Room: A Replication Study with Computer-Based Procedures	Salvatore Massaiu et al., IFE	HTOR-140
15:10-15:30	Mo-1-6	Sensemaking in learning from events: Capturing and interpreting failures and successes in a team learning context	Prosper A. Kwei-Narh et al., IFE	HTOR-119
15:30-16:10		Topic 2: Digital I&C – Safety Assurance	Chair: Anna Engelbrecht, Framatome Secretaries: TBD	Ref.:
15:30-15:50	Mo-2-1	Aspect-Oriented Property Graphs (AOPG) for Safety Assurance	Peter Karpati et al., IFE	HTOR-110
15:50-16:10	Mo-2-2	AI-Assisted Rapid Prototyping of a Novel Safety Assurance Paradigm	Peter Karpati et al., IFE	HTOR-111
16:30-18:30		HPRG meeting		
19:00-19:30		Refreshments		
19:30		Seated Dinner		

Tuesday 13 th Oct				
08:30-10:00		Topic 2: Digital I&C – Safety Assurance, continued	Chair: Anna Engelbrecht, Framatome Secretaries: TBD	Ref.:
08:30-09:00	Tu-2-3	Keynote address:	TBD	
09:00-09:20	Tu-2-4	Proceedings of the Workshop series 2026 on Safety of Digital Systems	Coralie Esnoul et al., IFE	HTOR-113
09:20-09:40	Tu-2-5	Updating the State-of-the-art on Digital Systems: support to knowledge transfer	Coralie Esnoul et al., IFE	HTOR-114
09:40-10:00	Tu-2-6	STPA and HAZOP applied on an SMR case study	Charlotte Vrangsd, Ankur Shukla et al., IFE	HTOR-133
10:00-10:30		Coffee break		
10:30-11:40		Topic 3: Control Room Design & Evaluation	Chair: Brandon Elliott, AtkinsRéalis Secretaries: TBD	Ref.:
10:30-11:00	Tu-3-1	Keynote address:	TBD	
11:00-11:20	Tu-3-2	An empirical study of influences on human factors control room validation	Espen Nystad et al., IFE	HTOR-130
11:20-11:40	Tu-3-3	Situation Awareness as a Distributed Process: A Simulator Study of Multi-Unit SMR Operations	Aleksander Gundersen et al., IFE	HTOR-132
11:40-13:00		Lunch		
13:00-14:30		Topic 3: Control Room Design & Evaluation, continued	Chair: Brandon Elliott, AtkinsRéalis Secretaries: TBD	Ref.:
13:00-13:20	Tu-3-4	Operator Reliance on Overview Displays: Investigating Performance Impacts Through Display Loss in a Simulator Study.	Maren H. Rø Eitrheim et al., IFE	HTOR-107
13:30-13:50	Tu-3-5	Overview Displays in Multi-Unit SMR Control Rooms: Operators' Perspectives	Aleksander Gundersen et al., IFE	HTOR-115

13:50-14:10	Tu-3-6	Auditory Displays and Alarm Handling in Multi-Unit SMR Control Rooms	Jonas Andersson et al., IFE	HTOR-134
14:10-14:30	Tu-3-7	Virtual Reality for NPP Control Room Operator Training and Early System Validation – Equivalence Study	Michael Louka et al., IFE	HTOR-118
14:30-15:00		Coffee Break		
15:00-16:30		Topic 4: Human-Automation Collaboration and Multi-Unit Operation	Chair: Bruce Hallbert, INL Secretaries: TBD	Ref.:
15:00-15:30	Tu-4-1	Keynote address:	Niav Hughes Green, U.S. NRC	
15:30-15:50	Tu-4-2	Peer Checking in Multi-Unit SMRs: Practices and Operator Perspectives from Simulator Studies.	Maren H. Rø Eitrheim et al., IFE	HTOR-117
15:50-16:10	Tu-4-3	Control room work in SMR operations: Adaptation or transformation of the operator role (TBC)	Kine Reegård et al., IFE	HTOR-100
16:10-16:30	Tu-4-4	Operators' experiences of work in the advanced control room: insights to inform new ConOps	Prosper A. Kwei-Narh et al., IFE	HTOR-112
16:30-19:00		Exhibitions and Demonstrations		
19:00-21:00		Buffet Dinner		
Wednesday 14th October				
08:30-09:10		Topic 4: Human-Automation Collaboration and Multi-Unit Operation, continued	Chair: Bruce Hallbert, INL Secretaries: TBD	Ref.:
08:30-08:50	We-4-5	Making Sense of Automation	Gyrd Skraaning Jr. et al., IFE	HTOR-106
08:50-09:20	We-4-6	Cooperating with Adaptive Procedures	Michael Hildebrandt et al., IFE	HTOR-121-126
09:20-09:40	We-4-7	Error Modes in Multi-Unit SMR Operation	Awwal Arigi et al., IFE	HTOR-129
09:40-10:00		Coffee break		
10:00-11:30		Topic 5: Digital Systems for Operations and Maintenance	Chair: Sarah Lawrie, UKNNL Secretaries: TBD	Ref.:
10:00-10:30	We-5-1	Keynote address:	TBD	

10:30-10:50	We-5-2	Digital Twins for NPP Steam Generator O&M: Multi-Fidelity Modelling, Fault Detection, and Experiment Dashboard - Findings from a Prototype Testbed	Sathiya K.Renganayagalu et al., IFE	HTOR-138
10:50-11:10	We-5-3	Maintenance Optimization for NPPs: Operational range of AI/ML models	Mario Hoffmann et al., IFE	HTOR-142
11:10-11:30	We-5-4	Shifts in responsibility for safety during nuclear plant maintenance: Worker perceptions under increased use of technologies	Prosper A. Kwei-Narh et al., IFE	HTOR-120
11:30-11:50	We-5-5			
12:00-13:30		Lunch		
13:30-17:00		Social activity		
19.00-21:00		Buffet Dinner		
Thursday 15th October				
08:30-10:00		Topic 6: Sustainable Decommissioning	Chair: Spencer Brown, FANR Secretaries: TBD	
08:30-09:00	Th-6-1	Keynote address: TBD	TBD	
09:00-09:20	Th-6-2	Safety Culture and Human and Organisational Factors in Decommissioning: Insights from Event Investigations and Expert Interviews	Michael Passens , Christian Lambertus, GRS	Paper
09:20-09:40	Th-6-3	Fleet-Ready Visual SLAM: Low-Cost Solutions for Nuclear Facility Mapping and Monitoring	Abdenour Benkrid et al., IFE	HTOR-143
09:40-10:00	Th-6-4	Precision at Scale: Autonomous Small-Part Manipulation for Nuclear Robotics	Omar Zahra et al., IFE	HTOR-144
10:00-10:20	Th-6-5	Safety and Readiness of AI, Data and Robotics in Nuclear Applications: TECOP, HAZOP and STPA perspectives	Istvan Szöke et al., IFE	HTOR-137
10:00-10:30		Coffee Break		

10:30-11:30		Topic 7: Cyber Security for Main Control Rooms	Chair: Jinkyun Park, KAERI Secretaries: TBD	Ref.:
10:30-11:00	Th-7-1	Keynote address:	TBD	
11:00-11:30	Th-7-2	Supply Chain Cybersecurity Risks and Requirements for Grey-Box, Black-Box, and COTS Technologies: A Systematic Review and Gap Analysis	Ankur Shukla et al., IFE	HTOR-105
11:30-13:00		Lunch		
13:00-14:00		Topic 7: Cyber Security for Main Control Rooms, continued	Chair: Jinkyun Park, KAERI Secretaries: TBD	Ref.:
13:00-13:30	Th-7-3	Cybersecurity of Grey-Box, Black-Box, and COTS Technologies: Insights from Expert Interviews in Safety-Critical Systems	Ankur Shukla et al., IFE	HTOR-135
	Th-7-4	Cybersecurity Assessment of Grey-Box/Black-Box Technologies: A Case Study Using LLM-Based Systems	Ankur Shukla et al., IFE	HTOR-136
13:30-13:50	Th-7-5	Distinguishing Attacks and Faults: Observations on Detection, Response, and Operational Practices from Expert Interviews	Sabarathinam Chockalingam , Stine Aurora Mikkelsplass, IFE	HTOR-139
13:50-14:10	Th-7-6	Distinguishing Attacks and Faults: An Experimental Study	Aleksander Lygren Toppe, Emilie Greaker, Sabarathinam Chockalingam et al., IFE	HTOR-141
14:10-14:30	Th-7-7	Cyber situational awareness in the control room	Espen Nystad et al., IFE	HTOR-131
14:30-14:50	Th-7-8	Govern and trust your data: are Data Spaces something for the Nuclear Industry?	Rossella Bisio et al., IFE	Paper
15:00-15:30		Coffee break		
15:30-17:00		Panel session with Main take-aways from EHPRG	Chair: Jacoline Hanekom, NRG PALLAS Secretary: Andreas Bye Panel: Topic chairs	
19:00		Aperitif		
19:30		Banquet dinner		