

OECD Nuclear Energy Agency (NEA) and Halden HTO Project
Summer school 2025
Implementation of Emerging Technologies

Byparken Halden, 31st August – 4th September 2025

Summer school Chair: Stine Strand, IFE (stine.strand@ife.no)

Summer school Practical arrangements: Ronja Sveen Bye (ronja.sveen.bye@ife.no)

Summer School Programme

Venue address: Jernbanetorget 2, 1767 Halden

Sunday August 31		
18:00-21:00	Social gathering: Getting acquainted and evening meal at Thon hotel Halden – meet in the reception area	
Monday September 1		
08:30-09:00	Registration	Ronja Sveen Bye, IFE
09:00-09:30	Welcome <ul style="list-style-type: none">• Introduction to Summer school• Introduction of participants	Andreas Bye, István Szőke, Stine Strand, IFE
09:30-10:30	Overview of OECD NEA's role and functions in nuclear safety	Pierre-Marie Plet, Nuclear Energy Agency
10:30-11:00	Coffee	

11:00-12:00	The NEA Halden HTO program and needs of the nuclear industry regarding implementation of emerging technologies	Andreas Bye, IFE
12:00-13:00	Lunch	
13:00-16:00 (Coffee 14:30-14:50)	The challenges of modernizing our nuclear plants <ul style="list-style-type: none"> • Climate change and the clean energy context • An evolving role for nuclear energy • Drivers for modernization and digitalization • The basics of I&C systems design • The challenges of digital I&C systems <p><i>Coffee Break</i></p> <ul style="list-style-type: none"> • The acceptance of digital I&C products • International standards for nuclear I&C • New and emerging digital technologies • Lifecycle design knowledge management • A practical exercise 	John de Grosbois, Conexus Nuclear Inc.
16:00-17:00	Panel session: Key takeaways from today's sessions: <ul style="list-style-type: none"> • Summaries by today's speakers • Takeaways from other speakers and the attendants 	Chair: S. Strand Today's Speakers: Pierre-Marie Plet John de Grosbois Andreas Bye
19:00	Social gathering at Drunken Chefs, Storgata 1, 1785 Halden, no dinner	

Tuesday September 2		
09:00-12:00 (Coffee 10:30-11:00)	Relevant standards and guidelines <ul style="list-style-type: none"> Human-centered design process, ISO-11064 Human Factors Engineering, NUREG-0711 Tools for Control room design & Verification 	Linda Lunde-Hanssen, IFE Andreas Bye, IFE Morten A. Gustavsen, IFE
12:00-13:00	Lunch	
13:00-16:00 (Coffee 14:30-15:00)	Wireless Instrumentation and Control (I&C) for nuclear facilities <ul style="list-style-type: none"> Introduction to wireless technologies Challenges and opportunities Operational Technology cyber security Hazard and Operability (HAZOP) study Wireless I&C Security Requirements 	Antonio Di Buono, UK National Nuclear Laboratory
16:00-17:00	Panel session: Key takeaways from today's sessions: <ul style="list-style-type: none"> Summaries by today's speakers Takeaways from other speakers and the attendants 	Chair: S. Strand Today's Speakers: Antonio Di Buono, Andreas Bye Morten Gustavsen Linda Lunde-Hanssen
18.00	Bus leaves Thon Hotel at 18.00. Social event, Dinner at Kongshallene, Fredriksten fortress	
Wednesday September 3		
09:00-10:25	Implementation activities for new concepts of operating nuclear power reactors	Ron Boring, Idaho National Lab
10:25-10:45	Coffee	
10:45-12:00	Using simulators to develop operational concepts for integrated energy systems	Tom Ulrich, Idaho National Lab

12:00-13:00	Lunch	
13:00-14:15	Emerging technologies & Cyber security <ul style="list-style-type: none"> • Cybersecurity Challenges and Emerging Threats • Security Standards, Regulations and Best practices • Emerging Technologies for Cyber Defence 	Ankur Shukla, IFE
14:15-14:45	Coffee	
14:45-16:00	Role of AI, Data robotics and Digital twins	István Szőke, Norwegian Nuclear Research Centre
16:00-17:00	Panel session: Key takeaways from today's sessions: <ul style="list-style-type: none"> • Summaries by today's speakers • Takeaways from other speakers and the attendants 	Chair: S. Strand Today's Speakers: Ron Boring, Tom Ulrich, Ankur Shukla, István Szőke
Thursday September 4		
08:30-11:30 (Coffee 10:30-10:45)	Visit to HTO-labs, Os Allé 5, 1777 Halden Demonstrations in <ul style="list-style-type: none"> • HAMMLAB • VR-Lab • Cyber-Lab • HADRON 	S. Strand/H. Jokstad S.K.Renganayagalu/E.Langstrand John Eidar Simensen Omar Zahra, IFE
11:30-12:00	Summary session & Key takeaways	Stine Strand, Andreas Bye, István Szőke, IFE
12:00	Adjourn and Lunch	