

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

Byparken Halden, 31<sup>st</sup> August – 4<sup>th</sup> September 2025

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

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

## Summer School Programme

Sunday August 31		
18:00-21:00	<b>Social gathering:</b> Getting acquainted and evening meal	
Monday September 1		
08:30-09:00	<b>Registration</b>	Ronja Sveen Bye, IFE
09:00-09:30	<b>Welcome</b> <ul style="list-style-type: none"> <li>• Introduction to Summer school</li> <li>• Introduction of participants</li> </ul>	Andreas Bye, István Szőke, Stine Strand, IFE
09:30-10:30	<b>Overview of OECD NEA's role and functions in nuclear safety</b>	Pierre-Marie Plet, Nuclear Energy Agency
10:30-10:45	<b>Coffee</b>	
10:45-12:00	<b>The NEA Halden HTO program and needs of the nuclear industry regarding implementation of emerging technologies</b>	Andreas Bye, Stine Strand, IFE

<b>12:00-13:00</b>	<b>Lunch</b>	
<b>13:00-16:00</b>  (Coffee 14:30-14:45)	<b>The challenges of modernizing our nuclear plants</b> <ul style="list-style-type: none"> <li>• Climate change and the clean energy context</li> <li>• An evolving role for nuclear energy</li> <li>• Drivers for modernization and digitalization</li> <li>• The basics of I&amp;C systems design</li> <li>• The challenges of digital I&amp;C systems</li> </ul> <i>Coffee Break</i>  <ul style="list-style-type: none"> <li>• The acceptance of digital I&amp;C products</li> <li>• International standards for nuclear I&amp;C</li> <li>• New and emerging digital technologies</li> <li>• Lifecycle design knowledge management</li> <li>• A practical exercise</li> </ul>	John de Grosbois, Conexus Nuclear Inc.
<b>16:00-17:00</b>	<b>Panel session: Key takeaways from today's sessions:</b> <ul style="list-style-type: none"> <li>• Summaries by today's speakers</li> <li>• Takeaways from other speakers and the attendants</li> </ul>	
<b>19:00</b>	<b>Social gathering, no dinner</b>	
<b>Tuesday September 2</b>		
<b>09:00-12:00</b>  (Coffee 10:30-10:45)	<b>Relevant standards and guidelines</b> <ul style="list-style-type: none"> <li>• NUREG-0700, 0711</li> <li>• Advanced reactors</li> </ul>	Amy D'Agostino, U.S. NRC
<b>12:00-13:00</b>	<b>Lunch</b>	

<b>13:00-16:00</b>  (Coffee 14:30-14:45)	<b>Wireless Instrumentation and Control (I&amp;C) for nuclear facilities</b> <ul style="list-style-type: none"> <li>• Introduction to wireless technologies</li> <li>• Challenges and opportunities</li> <li>• Operational Technology cyber security</li> <li>• Hazard and Operability (HAZOP) study</li> <li>• Wireless I&amp;C Security Requirements</li> </ul>	Antonio Di Buono, UK National Nuclear Laboratory
<b>16:00-17:00</b>	<b>Panel session: Key takeaways from today's sessions:</b> <ul style="list-style-type: none"> <li>• Summaries by today's speakers</li> <li>• Takeaways from other speakers and the attendants</li> </ul>	
<b>17:30 -</b>	<b>Social event, Dinner at Kongshallene</b>	
<b>Wednesday September 3</b>		
<b>09:00-10:30</b>	<b>Evaluation and Safety and security assurance of emerging technologies</b>	TBC
<b>10:30-10:45</b>	<b>Coffee</b>	
<b>10:45-12:00</b>	<b>Emerging technologies and the control room design &amp; evaluation process</b>	TBC
<b>12:00-13:00</b>	<b>Lunch</b>	
<b>13:00-14:30</b>	<b>Emerging technologies &amp; Cyber security</b> <ul style="list-style-type: none"> <li>• Cybersecurity Challenges and Emerging Threats</li> <li>• Security Standards, Regulations and Best practices</li> <li>• Emerging Technologies for Cyber Defence</li> </ul>	Ankur Shukla, IFE
<b>14:30-14:45</b>	<b>Coffee</b>	
<b>14:45-16:00</b>	<b>Role of AI, Data robotics and Digital twins</b>	István Szőke, Norwegian Nuclear Research Centre

<b>16:00-17:00</b>	<b>Panel session: Key takeaways from today's sessions:</b> <ul style="list-style-type: none"> <li>Summaries by today's speakers</li> <li>Takeaways from other speakers and the attendants</li> </ul>	
<b>Thursday September 4</b>		
<b>08:30-11:30</b>  (Coffee 10:30-10:45)	<b>Visit to HTO-labs</b> Demonstrations in <ul style="list-style-type: none"> <li>HAMMLAB</li> <li>VR-Lab</li> <li>Cyber-Lab</li> <li>HADRON</li> </ul>	S. Strand/H. Jokstad M.Louka/E.Langstrand John Eidar Simensen Omar Zahra, IFE
<b>11:30-12:00</b>	<b>Summary session &amp; Key takeaways</b>	Stine Strand, Andreas Bye, István Szőke, IFE
<b>12:00</b>	<b>Adjourn and Lunch</b>	