

NEA Workshop
on
Digital Safety Case Integration
for
Radioactive Waste and Geological Disposal
PROVISIONAL PROGRAMME

23-24 April 2025

Boulogne-Billancourt

General information

Location

Nuclear Energy Agency (NEA)

46, quai Alphonse Le Gallo, 92100 Boulogne-Billancourt, France

Registration

Registration will open at NEA's web site.

Day 1 | 23 April 2025

Opening and Introduction of workshop

Chair: *Luca Abele Piciaccia, DSA*

9:00 **Opening remarks (10 min)**

Luca Abele Piciaccia, DSA, EGSSC Chair

9:10 **Workshop introduction: EGSSC works and the outcome from the 1st Digital SC Workshop in 2022 (20 min presentation + 10 min Q&A)**

NEA/EGSSC

Session 1: What does a holistic consideration of a digital safety case mean?

Chair: *Workshop Programme Committee*

09:40 **Creating a Digital Platform for Safety Case Development (20 min presentation + 10 min Q&A)**

Alexander Carter, NWS

10:10 **The digital general licence application (dRBG) Platform: A Centralized Digital Gateway to Nagra's Nuclear Waste Management (20 min presentation + 10 min Q&A)**

Mona Stockhecke, Nagra

10:40 Break (20 min)

Session 2: How can digital technologies help coordinate change management and configuration management for safety cases / licensing

Chair: *Workshop Programme Committee*

11:00 **Management of Knowledge Data for the Representative Preliminary Safety Assessment in the German Site Selection Procedure (20 min presentation + 10 min Q&A)**

Simone Tillmann, BGE

11:30 TBC

12:00 **Joint Project on AI Platform for Nuclear Research and Education (20 min presentation + 10 min Q&A)**

Oliver Buss, OECD/NEA

12:30 Lunch (90 min)

Session 3: Regulating safety in an increasingly digital world

Chair: *Workshop Programme Committee*

14:00 TBC

14:30 TBC

Session 4: The developing role of systems engineering and requirements management

Chair: *Workshop Programme Committee*

15:00 **Use of Discrete Event Simulation (DES) to Produce High-level Digital Twins of Nuclear Waste Disposal Programmes (20 min presentation + 10 min Q&A)**

Andreas POLLER, CSD Engineers

15:30 Break (20 min)

15:50 **NEUChain: Next Generation Digital Twin for Nuclear Energy System and AI-Based Knowledge Management System (20 min presentation + 10 min Q&A)**

Tomohiro Okamura, Institute of Science Tokyo

16:20 **Nagra's digital environment to manage post-closure safety and engineering requirements (20 min presentation + 10 min Q&A)**

Michael Köbberich, Nagra

16:50 Break (10 min)

Session 5: Discussion session

Chair: *Workshop Programme Committee*

17:00 **Discussion**

18:00 **Key takeaways from discussion**

18:20 **End of day remarks**

Luca Abele Piciaccia, DSA, EGSSC Chair

18:30 **End of day 1**

Day 2 | 24 April 2025

Session 6: Relevant Developments in underlying domains (part 1)

Topics:

- Digital Inventory and waste package records
- Site characterisation
- Common data and modelling environments

Chair: *Workshop Programme Committee*

9:00 **NEUChain: An Blockchain & AI-Based Secured Knowledge Management System for Nuclear Energy System (20 min presentation + 10 min Q&A)**

Takahiro Nishihara, Institute of Science Tokyo

9:30 **Exploratory Machine Learning Approaches for Physico-Chemical Characterization (20 min presentation + 10 min Q&A)**

Ilker Makine, ONDRAF/NIRAS

10:00 **BGE's Repository Search Navigator – an interactive online platform for siting (20 min presentation + 10 min Q&A)**

Jonathan Kindlein, BGE

10:30 Break (15 min)

Session 7: Relevant Developments in underlying domains (part 2)

Topics:

- Digital engineering and BIM
- Linking research to the safety case
- Use for internal and external communication

Chair: *Luca Abele Piciaccia, DSA*

10:45 **Integration of Advanced Digital Tools for the Realisation of an Optimised Repository in Switzerland (20 min presentation + 10 min Q&A)**

Alexandros Papafotiou, Nagra

11:15 **Digital Twin of Cigéo to support operating phase: goals, needs and work in progress (20 min presentation + 10 min Q&A)**

Guillaume Pepin, Andra

11:45 **TBC (20 min presentation + 10 min Q&A)**

Benjamin Girard, SPARTE

12:15 **Virtual and augmented reality as a cutting-edge technology for modelling of nuclear waste repositories (20 min presentation + 10 min Q&A)**

Kemal Yildizdag, BGE

12:45 Lunch (90 min)

14:15 **Development of Digital Technology for Building Smart Disposal Facility (20 min presentation + 10 min Q&A)**

Junsung Son, KORAD

14:45 **Enhancing User Access to Large Technical Documentations with LLMs (20 min presentation + 10 min Q&A)**

Mona Stockhecke, Nagra

Session 8: Moving toward a digital safety case

Chair: *Workshop Programme Committee*

15:15 **Developing a Digital Safety Case Architecture for the Radioactive Waste Industry**

James Grover, Capgemini

15:45 Break (15 min)

Session 9: Discussion session and conclusions

Chair: *Workshop Programme Committee*

16:00 **Discussion**

17:00 **Key takeaways from discussion**

17:30 **Summary of workshop and closing remarks**

Luca Abele Piciaccia, DSA, EGSSC Chair

18:00 **End of Workshop**