

PROGRAMME

8-10 October 2024
Hotel Mercure Budapest Castle Hill
Budapest, Hungary

Symposium Chairs: Manuel Capouet (Ondraf/Niras, Belgium) and Ulrich Noseck (GRS, Germany),
co-Chairs of the Integration Group for the Safety Case (IGSC)

MONDAY 7 OCTOBER 2024 17:30-18:30		
MEETING OF THE YOUNG PROFESSIONAL NETWORK REPRESENTATIVES First in-person meeting of nominated young professionals who contributed to the Symposium planning Chairs: Julie Brown, Lucy Bailey and Sylvie Voinis		
DAY 1		
TUESDAY 8 OCTOBER 2024		
7:30		Badge pick-up at the venue main hall front desk
SESSION 1 – OPENING REMARKS Chairs: Manuel Capouet and Ulrich Noseck		
8:30	1.1	Welcome from Hungarian Ministry of Energy <i>Dr Márk Alföldy-Boruss, Deputy State Secretary of Ministry of Energy</i>
8:40	1.2	Welcome from the NEA <i>William. D. Magwood IV, Director-General, NEA</i>
8:50	1.3	Welcome from the Symposium co-Chairs and IGSC activities <i>Manuel Capouet and Ulrich Noseck, Symposium co-Chairs</i>
SESSION 2 – KEYNOTE LECTURE: SAFETY CASE DEVELOPMENT IN HUNGARY Chairs: Manuel Capouet and Ulrich Noseck		
9:00	2.1	The role of the safety case in the implementation of the Hungarian national programme <i>Balint Nos, PURAM (Hungary)</i>
SESSION 3 – ROLE AND EVOLUTION OF THE SAFETY CASE WHEN MOVING TO IMPLEMENTATION Chairs: Ann-Kathrin Leuz, Ulrich Noseck Rapporteur: Thomas Kämpfer		
9:30	3.1	Use of the performance assessment at WIPP over time <i>Anderson Ward, US-DOE and Tom Peake, US-EPA (United States)</i>
9:50	3.2	The safety case at the time of implementation and authorisation of a deep geological repository (DGR): Experience from Finland <i>Barbara Pastina et al.,* Posiva Oy (Finland)</i>
10:10	3.3	From construction towards operation: Regulatory perspective to deep geological disposal in Finland <i>Jarkko Kyllönen et al., STUK (Finland)</i>
10:30		COFFEE BREAK (30 min)

* NB: The speakers named in this programme will be presenting papers co-authored with other individuals. The full papers and list of authors will appear in the Symposium Proceedings.

11:00	3.4	Preparing the safety case for technology authorisation and co-existence with site investigations, construction and operation <i>Johannes Johansson and Allan Hedin, SKB (Sweden)</i>
11:20	3.5	Submission of the application for authorisation to create Cigéo the result of “one generation study”: Where do we come from? Where do we stand? <i>Sylvie Voinis et al., ANDRA (France)</i>
11:40	3.6	Lessons learnt from Cigéo licensing process in France <i>Muriel Rocher et al., IRSN (France)</i>
12:00	3.7	Questions & answers <i>Audience</i>
12:40	LUNCH BREAK (80 min)	
SESSION 4 – RETURN OF EXPERIENCES FROM NUCLEAR FACILITIES TO DGR Chairs: Sylvie Voinis, Philipp Herold Rapporteur: Andree Lommerzheim		
14:00	4.1	KEYNOTE LECTURE 1 - Operational and long-term safety of DGRs: The IAEA activities <i>Gerard Bruno, IAEA</i>
14:20	4.2	KEYNOTE LECTURE 2 - Learning from experiences in mining <i>Jonathan Kindlein, BGE (Germany)</i>
14:40	4.3	Development of the safety case for nuclear installations <i>John Nakoski (NEA Division of Nuclear Safety Technology and Regulation)</i>
15:00	4.4	Role of the safety case for the low and intermediate-level waste (LILW) repository in Loviisa, Finland <i>Olli Nummi, Fortum Power & Heat Oy, Espoo (Finland)</i>
15:20	4.5	Study of operational safety designs and assessment: Lessons learnt from NUMO safety case <i>Satoru Suzuki et al. NUMO (Japan)</i>
15 :40	4.6	Operational safety and safety assessment: Lessons learnt from the operation of existing facilities <i>Philipp Herold et al. BGE (Germany)</i>
16:00	4.7	Questions & answers <i>Audience</i>
16:15	COFFEE BREAK (30 min)	
SESSION 5 – YOUNG PROFESSIONAL SESSION Chairs: Julie Brown, Lucy Bailey, Sylvie Voinis Rapporteur: Jeremy Rimando		
16:45	5.1	Knowledge transfer and career development in the safety case community <i>Lucy Bailey and Lucia Gray, NWS (United Kingdom)</i>
17:05	5.2	Lessons learnt on the management of risks and uncertainties in the post-closure safety assessment and the use of features, events and processes (FEPs) in a top-down approach <i>Nicolas Bruyer et al., Andra (France)</i>
17:25	5.3	Lessons learnt on competence building from EURAD and looking forward to EURAD2 <i>Niels Belmans , EURAD</i>
17:45	5.4	Panel <i>Chairs: Julie Brown, Anne Gehrke, Hoda Javanmard</i> <i>Panelists: Lucy Bailey, Sylvie Voinis, Christophe Depaus, Niels Belmans</i>
18:15 END OF DAY 1		
GALA DINNER		

DAY 2 - WEDNESDAY 9 OCTOBER 2024

SESSION 6 - PARALLEL SESSIONS

		SESSION 6.1 – REGULATOR, IMPLEMENTER AND STAKEHOLDER DIALOGUE			SESSION 6.2 – DISPOSAL OF UNCONVENTIONAL AND LEGACY WASTE			SESSION 6.3 – UPDATES FROM NATIONAL PROGRAMMES AND SAFETY CASES
		Chairs: Lucy Bailey, Ann-Kathrin Leuz Rapporteur: Lucia Gray			Chairs: Manuel Capouet, Virginie Wasselin Rapporteur: Peter Molnar			Chairs: Sylvie Voinis, Ulrich Noseck Rapporteur: Joe Rustick
08:30	6.1-1	Stakeholder interaction: Lessons learnt by the state regulator of the waste isolation pilot plant <i>Megan McLean, New Mexico Environment Department (United States)</i>	6.2-1	Questions raised by the management of “in-between waste”: Challenging issues in application of the graded approach in France <i>Virginie Wasselin et al., Andra (France)</i>	6.3-1	Development of a site-specific safety case for a Canadian deep geological repository for used fuel <i>Mark Gobien, NWMO (Canada)</i>		
08:50	6.1-2	An “out-of-the-box” look into scenarios <i>Jarmo Lehtikoinen et al., STUK (Finland)</i>	6.2-2	IAEA technical publication on the challenges and options for the disposal of reactor graphite waste <i>Karina Lange, IAEA</i>	6.3-2	Preliminary considerations on integrated safety case development during the construction of Beishan URL in China <i>Xudong Liu and Ju Wang, Beijing Research Institute of Uranium Geology (China)</i>		
09:10	6.1-3	The meanings of “safety” <i>Stephan Hotzel and Martin Navarro, BASE (Germany)</i>	6.2-3	UK experience in enabling optimisation of site end-states and radioactive waste management <i>Juliet Long, NDA (United Kingdom)</i>	6.3-3	A Dutch rock salt conditional safety and feasibility study <i>Marja Vuorio et al., COVRA (Netherlands)</i>		
09:30	6.1-4	Optimising the safety case based on input from outside the safety case community – can it work? <i>Klaus J. Röhlrig et al., TU-Clausthal (Germany)</i>	6.2-4	Technical and regulatory considerations in the long-term management of unconventional and legacy radioactive waste <i>David Esh and Christopher McKenney, US NRC (United States)</i>	6.3-4	The status of, and challenges to, developing safety cases for disposal of spent nuclear fuel and high-level radioactive waste in the United States <i>Bret W. Leslie and Chandrika Manepally, US Nuclear Waste Technical Review Board (United States)</i>		
09:50	6.1-5	Shaping a generic roadmap for regulator-implementer dialogue in licensing deep geological repositories (DGRs) <i>Julie Brown et al., CNSC (Canada)</i>	6.2-5	Outcomes of the graded approach group <i>Cyril Hemery et al., ANDRA (France)</i>	6.3-5	Post-closure safety in site evaluation - UK GDF programme <i>Sarah Vines and Kurt Smith, NWS (United Kingdom)</i>		
10:10	6.1-6	Questions & answers with audience	6.2-6	Questions & answers with audience	6.3-6	Questions & answers with audience		
10:25	COFFEE BREAK (20 min)							

SESSION 7 - PARALLEL SESSIONS

		SESSION 7.1 – SAFETY ASSESSMENT AND RESEARCH DEVELOPMENT AND DEMONSTRATION			SESSION 7.2 – WASTE FROM NEXT GENERATION REACTORS			SESSION 7.3 – SAFETY CASE: MOVING FORWARD IN THE FACE OF UNCERTAINTY
		Chair: Manuel Capouet Rapporteur: Johan Andersson			Chairs: Tom Peake, Ulrich Noseck Rapporteur: Jay Santillan			Chairs: Frederic Bernier, Doug Ilett Rapporteur: David Bennett
10:45	7.1-1	Regulatory research on copper corrosion processes in the context of a Canadian used fuel canister design, for deep geological disposal <i>Colleen O. Harper et al., CNSC (Canada)</i>	7.2-1	Overview presentation on TRISO, metallic fuel and their wastes, molten salt <i>Edward Matteo, SNL (United States)</i>	7.3-1	A systematic approach to scenario development for long-term safety assessments for a high-level waste (HLW) repository concept in German crystalline rock <i>Andree Lommerzheim et al., BGE-Tec (Germany)</i>		
11:05	7.1-2	Containment performance analysis for the surface repository at Dessel, Belgium <i>Elise Vermariën et al., ONDRAF/NIRAS (Belgium)</i>	7.2-2	Potential packaging options for advanced reactor spent nuclear fuel <i>Gordon Petersen, INL (United States)</i>	7.3-2	Methodology of scenario development for risk assessment of a deep geological repository for high-level radioactive waste in Korea <i>Jaehyeon Yang et al., KHU (Korea)</i>		
11:25	7.1-3	EURAD-GAS: Overview of knowledge gained on gas transport in clayey materials <i>Severine Levasseur et al., EURAD</i>	7.2-3	Considering disposal of spent fuel from small modular reactors (SMRs) and next generation reactors in Finland and a brief overview of the EURAD2 activities <i>Sami Naumer et al., VTT (Finland)</i>	7.3-3	Analysis of safety attributes of potential host rocks for geological disposal of intermediate-level waste (ILW) and high-level waste (HLW) <i>Christophe Depaus and Hervé Van Baelen, ONDRAF-NIRAS (Belgium)</i>		
11:45	7.1-4	Development of an integrated realistic radionuclide migration model for the entire geological disposal system <i>Keisuke Ishida et al., NUMO (Japan)</i>	7.2-4	Approaches being used in spent fuel and waste science and technology (SFWST) to evaluate the back-end of the fuel cycle aspects for the potential advanced reactor spent nuclear fuel (SNF) <i>Dave Sassani, SNL (United States)</i>	7.3-4	Sensitivity analyses in safety assessments for geologic disposal facilities: an international collaboration <i>Emily Stein et al., SNL (United States)</i>		
12:05	7.1-5	Study of hydrological conditions at the geosphere-biosphere interface and development of alternative models for biosphere assessment – a regulatory perspective <i>Shulan Xu et al., Xu Environmental Consulting AB (Sweden)</i>	7.2-5	Dry storage of spent TRISO fuel: 30 years of experience <i>Linus Bettermann, GNS (Germany)</i>	7.3-5	GeneSiS - Generic to Site-Specific: The evolution of the safety case <i>Lucia Gray et al., NWS (United Kingdom)</i>		
12:25	7.1-6	Questions & answers with audience	7.2-6	Questions & answers with audience	7.3-6	Questions & answers with audience		
12:40	LUNCH BREAK (80 min)							

14:00	6.2.7	Rapporteur + Expert 1 panel parallel session A (Unconventional and legacy waste) <i>Participants: Virgnie Wasselin (ANDRA), Karina Lange (IAEA), Juliet Long (NDA), David Esh (NRC) and Olivier Lareynie (ASN)</i> <i>Moderator and rapporteur : Manuel Capouet (ONDRAF/NIRAS) and Peter Molnar (PURAM)</i>
14:45	7.2.7	Rapporteur + Expert 2 panel parallel session B (Waste from new technologies) <i>Participants: Edward Matteo (SNL), Dave Sassani (SNL), Gordon Petersen (NL), Linus Bettermann (GNS), Sami Naumer (VTT)</i> <i>Moderator and rapporteur :Ulrich Noseck (GRS) and Jay Santillan (EPA)</i>
15:30	COFFEE BREAK (20 min)	
SESSION 8: DERIVATION AND MANAGEMENT OF CRITERIA AND REQUIREMENTS Chairs: Thomas Kämpfer, Klaus J. Röhlrig Rapporteur: Xiaoshuo Li		
15:50	8.1	Keynote lecture - Interaction between safety analysis and technical requirements <i>Jonathan Kindlein and Matthias Mohlfeld, BGE (Germany)</i>
16:20	8.2	Importance of the interaction between developing the safety case and requirements management in the "design for safety" process for disposal solutions: A summary of work performed within EURAD, taking advantage of the collaboration with the NEA/IGSC <i>Piet Zuidema, EURAD</i>
16:40	8.3	Nagra's safety argumentation for the general licence application for the Swiss deep geological repository <i>Priska Hunkeler et al., Nagra (Switzerland)</i>
17:00	8.4	Repository construction and safety assessment: Towards a holistic approach. IGSC's MeSA-2 initiative <i>Klaus J. Röhlrig et al., TU-Clausthal (Germany)</i>
17:20	8.5	Questions & answers <i>Audience</i>
17:35	END OF DAY 2 presentations	
17:45-20:45	Poster session & reception	

DAY 3
THURSDAY 10 OCTOBER 2024

SESSION 9 – Information, data and knowledge management (IDKM)

Chairs: Alexander J. Carter, Doug Ilett

Rapporteur: Stephan Hotzel

08:30	9.1	Keynote lecture Advances in data management technology: Transferring the benefits from big tech to the nuclear knowledge management domain <i>James Grover, Solutions Architect, Capgemini (United Kingdom)</i>
08:50	9.2	The IDKM Working Party <i>Alexander J. Carter (IDKM WP Chair)</i>
09:10	9.3	Experiences on the preservation of essential information, data and knowledge gathered throughout repository implementation and operation <i>Ulrich Noseck et al. (EGAR)</i>
09:30	9.4	Digital safety cases: Digital approaches to managing safety case documents, data and models <i>Alexander J. Carter et al., NWS (United Kingdom)</i>
09:50	9.5	Designing a knowledge management approach for the French DGR project “Cigéo” to be integrated with Andra's organisational strategy for the preservation and transmission of key knowledge over time <i>Camille Arrignon et al., Andra (France)</i>
10:10	9.6	Questions & answers <i>Audience</i>
10:30	COFFEE BREAK (20 min)	
SESSION 10 – WRAP-UP AND CLOSING OF SYMPOSIUM		
Symposium co-Chairs: Manuel Capouet and Ulrich Noseck		
10:50	10.1	Feedback from parallel session rapporteurs (10 x 5 minutes per session rapporteur) <i>Session rapporteurs</i>
11:50	10.2	Feedback from young professionals <i>Rapporteurs from young professionals network</i>
12:10	10.3	Final discussion <i>Audience</i>
12:30	10.4	Closing remarks of the Symposium co-Chairs
12h40		SYMPOSIUM ADJOURN

For further information:

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Symposium webpage: www.oecd-nea.org/jcms/pl_79848.

POSTER SESSION	
SESSION 4: LEARNING FROM OPERATING DISPOSAL FACILITIES (OPTIMISATION, OPERATIONAL SAFETY)	
P4.1	A study of operational safety countermeasures and risk assessment for the waste transport systems using shaft and straight ramp <i>Tetsuhiro Ichimura et al., NUMO (Japan)</i>
P4.2	Demonstrating long-term environmental safety of on-site disposals: Experience from the TRAWSFYNYDD MAGNOX reactor site <i>Christopher M. Herbert et al., GSL (United Kingdom)</i>
P4.3	Activities within the Expert Group on Operational Safety (EGOS) <i>Philipp Herold et al., BGE (EGOS chair)</i>
SESSION 5: YOUNG GENERATION NETWORK	
P5.1	Supporting and developing the next generation of young professionals at Nuclear Waste Service <i>Danielle Jackson and Celia Wighton, NWS (United Kingdom)</i>
P5.2	Microbial consumption of geological disposal facility (GDF) in lower strength sedimentary rocks and implications for long-term GDF performance <i>Bethan Payne, NWS (United Kingdom)</i>
P5.3	The management of risks and uncertainties in the post-closure safety assessment and the use of FEP's in a top-down approach <i>Nicolas Bruyer, Andra (France)</i>
P5.4	Creating a network for the next generation of safety case professionals <i>Anne Gehrke, GRS (Germany), Hoda Javanmard, NAGRA (Switzerland), Jeremy Rimando, CNSC (Canada) and Lucy Bailey, NWS, (United Kingdom), Sylvie Voinis, Andra, (France) and Julie Brown, CNSC (Canada).</i>
SESSION 6.1: REGULATOR, IMPLEMENTOR AND STAKEHOLDER DIALOGUE	
P6.1.1	Long-term information preservation and the safety case, a litmus test of the influence of social science on the licencing process? <i>Carl-Henrick Petterson, SSM (Sweden)</i>
P6.1.2	Expert Advisory Panel and its activities in the final site selection process in Czechia <i>Markéta Dohnálková, SÚRAO (Czechia)</i>
P6.1.3	Development of new Swedish regulations for nuclear safety and radiation protection in connection with geological disposal of spent nuclear fuel and other radioactive wastes <i>Bo Strömberg, SSM (Sweden)</i>
P6.1.4	Decisional reversibility and technical retrievability for a geological disposal : Ethical issues <i>Christophe Depaus, ONDRAF/NIRAS and Céline Kermisch, University of Brussels (Belgium)</i>
P6.1.5	The French summary memory file for the Manche repository: Combining stakeholder dialogue and expertise to meet safety-related regulatory requirements <i>Florence Poidevin, Andra (France)</i>
SESSION 6.2 DISPOSAL OF UNCONVENTIONAL AND LEGACY WASTE	
P6.2.1	A composite analysis supports a sitewide safety case at the Hanford Site <i>Matt Kozak et al., INTERA (United States)</i>
SESSION 7.1: SAFETY ASSESSMENT AND RESEARCH DEVELOPMENT AND DEMONSTRATION	
P7.1.1	IGSC GeneSiS safety function/concept catalogue <i>Tom Peake et al., GeneSiS project</i>
P7.1.2	Updating of the safety case for surface and near-surface radioactive waste repositories in operation (Richard, Bratrství and Dukovany): Part of the safety assessments, partial outputs 2022-2024 <i>Milan Touš et al., SÚRAO (Czechia)</i>
P7.1.3	Performance assessment for the Czech concept of a spent fuel waste disposal package <i>Zdena Lahodová, et al., SÚRAO (Czechia)</i>
P7.1.5	An alternative conceptual model for radiolysis effects on chemical conditions in salt repositories <i>Anderson Ward, US-DOE (United States)</i>
P7.1.6	Quality assurance methods in safety assessment <i>Slimane Doudou, Mark Crawford, GSL (United Kingdom) and Manuel Capouet, Ondraf/Niras (Belgium)</i>
P7.1.7	IGSC MeSA-2 results: Process view and evolution along a disposal programme <i>Lucy Bailey, (MeSA 2-project)</i>

P7.1.8	Actinide sorption on iron: Considerations for safety cases in salt repositories <i>Jay Santillan, US-DOE and Janet Schramke, BSC&A Arlington (United States)</i>
P7.1.9	Overview of Canada's independent and strategic regulatory research on geological disposal <i>Jeremy Rimando et al., CNSC (Canada)</i>
P7.1.10	Is illitisation a safety concern for a bentonite backfilled engineered barrier system for a repository of high-level radioactive waste? <i>Liange Zheng, US-DOE (United States)</i>
P7.1.11	Semi-probabilistic radiological consequence analysis <i>László Molnár et al., PURAM (Hungary)</i>
P7.1.12	Geosphere model calibration in safety assessment based on detailed site-specific data <i>Gyula Danko et al., PURAM (Hungary)</i>
P7.1.13	Application of machine learning for a systematic simplification process of a realistic 3D radionuclide migration model for post-closure safety assessment <i>Takafumi Hamamoto, NUMO (Japan)</i>
SESSION 7.3: SAFETY CASE: MOVING FORWARD IN THE FACE OF UNCERTAINTY	
P7.3.1	The role of a probabilistic uncertainty and sensitivity analysis in the safety case for the Loviisa LILW repository 2018 <i>Frans Jansson, Fortum Power & Heat Oy, Espoo (Finland)</i>
P7.3.2	From generic to site-specific safety cases: Development of topic-specific guidance <i>Ulrich Noseck et al. GeneSiS project</i>
P7.3.3	Reducing key safety case uncertainties in a multibarrier system with poorly indurated clay and concrete <i>Erika Neeft et al., COVRA (Netherlands)</i>
P7.3.4	Human intrusion scenarios in the safety case: Comparing and contrasting repositories in crystalline rock versus sedimentary basins <i>Jonathan Major, US-DOE (United States)</i>
P7.3.5	Scenario development: A systematic approach to scenario development and assessment <i>Oliver Hall et al., NWS (United Kingdom)</i>
P7.3.6	GeneSiS and EGSSC: Developing a safety case ontology <i>Lucia Gray (NWS) et al. (GeneSiS project chair)</i>
P7.3.8	Enhancing decision-making in the site selection process for a deep geological repository in Germany: An application of the Analytic Network Process (ANP) decision technique <i>Hajar El Fatihi et al., RWTH-Aachen (Germany)</i>
P7.3.9	Inadvertent human intrusion: Applying the HIDRA methodology <i>Oliver Hall (NWS), Tim Hicks (GSL), Sally Scourfield (GSL), Slimane Doudou (GSL) and Lucy Bailey (NWS) (United Kingdom)</i>
P7.3.10	Human reliability in the German site selection for a nuclear waste repository <i>Fabian Fritsch, Oliver Sträter, University of Kassel (Germany)</i>
SESSION 8: DERIVATION AND MANAGEMENT OF CRITERIA AND REQUIREMENTS	
P8.1	An integrated approach to environment, safety, security and safeguards (E3S) and the role of requirements in safety-led design <i>Tom Jackson-Burton et al., NWS (United Kingdom)</i>
P8.2	IGSC MeSA-2 results: Information flow when producing a safety case and design requirements <i>Jonathan Kindlein et al., BGE (Germany)</i>
P8.3	Hierarchical safety function system to derive design criteria <i>Zoltán Bóthi, WSP Hungary Consulting Zrt.(Hungary)</i>
SESSION 9: IDKM	
P9.1	Set of Essential Records (SER): A mechanism to preserve essential information about a repository to future generations <i>Jozsef Fekete et al. (EGAR)</i>
P9.2	The impact of digitalisation (AI, digital twins, robotics) on waste management, safety and stakeholder engagement <i>Réka Szöke et al., IFE (Norway)</i>