

Interdisciplinary research symposium on the safety of nuclear disposal practices

Research for resilient safety:
Gaps, Progress and Priorities



Preliminary Detailed Program

Time **Tuesday, September 12**

19:00 – 21:00 *Ice-Breaker*

Time **Wednesday, September 13**

09:00 – 09:05 Welcome C. Hamann (Head Press and Public Relations, BASE)

09:05 – 09:35 Opening Symposium safeND
S. Tidow (State Secretary, Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection)
J. Ahlswede (Head Division General Research, BASE)

09:35 – 10:15 Keynote A. Macfarlane (University of British Columbia, Canada)

10:15 – 11:00 Panel Discussion S. Kuppler (Karlsruhe Institute of Technology), J.-H. Meyer (Max Planck Institute for Legal History and Legal Theory), N. N.

11:00 – 11:20 *Coffee Break*

SESSION 03
Various aspects to
storage, conditioning
and transport

SESSION 13
Security and non-
proliferation aspects
in nuclear waste
management

WORKSHOP 07
Part I

WORKSHOP 08
Part I

11:20 – 11:40 Experimentally investigate elastic stresses of hydrogenated cladding tubes similar to interim dry storage conditions with neutron radiography (S. Weick)

Assessment of the behavior of spent nuclear fuel in Ukraine (V. Dolin)

Geodata for the public - best practice examples from GIS and web applications (U. Maurer-Rurack, M. Schilling)

Uranium mining – challenges and lessons to learn for nuclear disposal in view of participation and safety (C. Dietl, F. Kelle, A. von Oertzen)

11:40 – 12:00 Embedded sensors system to monitor cemented waste drums (L. Pasquato)

Antineutrino detection concepts for safeguards monitoring of spent nuclear fuel (Y.-J. Schnellbach)

1 Decommissioning of nuclear facilities & Storage, conditioning and transport of radioactive waste

2 Disposing of high-level as well as low- and intermediate-level radioactive waste & Selecting a repository site

3 Safeguards, non-proliferation and security issues & Alternative disposal methods

4 Communication processes, long-term information preservation and semiotics | Participation processes | Historical, economic, ecological and legal analyses

Time	Wednesday, September 13		Preliminary Detailed Program	
	SESSION 05 Container concepts and corrosion of canister materials	SESSION 07 The role of geomechanics and structural modelling in site selection and safety assessment	WORKSHOP 07 Part II	WORKSHOP 08 Part II
12:00 – 12:20	Concretization of host rock dependent canister concepts through the development of a consistent but variable multi-barrier system for the future engineered barrier system (T. Hassel)	The slip tendency of 3D faults in Germany (L. Röckel)		
12:20 – 12:40	Corrosion evaluation for engineered barriers in crystalline host rock - challenges for container development in the German site selection process (C. Stephan-Scherb)	Stress state estimation – new data and variability assessment of model results (K. Reiter)	Geodata for the public - best practice examples from GIS and web applications (U. Maurer-Rurack, M. Schilling)	Uranium mining – challenges and lessons to learn for nuclear disposal in view of participation and safety (C. Dietl, F. Kelle, A. von Oertzen)
12:40 – 13:00	The anaerobic corrosion of the carbon steel overpack under anoxic alkaline conditions representing the Belgian super-container concept (R. Gaggiano)	A seismic-reflection-based approach for determining the hydraulic permeability of rocks in a subsurface region (S. A. Shapiro)		
13:00 – 13:20	Stainless steel corrosion under anoxic, highly saline and elevated temperature conditions (N. Finck)	Geomechanical in situ testing of fault reactivation in argillite repositories (J. Birkholzer)		

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Time **Wednesday, September 13** **Preliminary Detailed Program**

13:20 – 14:20 *Lunch*

14:20 – 14:40 *Poster Pitch I (Sessions 01, 02, 03, 05, 07, 09, 13, 14)*

14:40 – 16:00 *Poster Session I (Sessions 01, 02, 03, 05, 07, 09, 13, 14)*

	PANEL 03	PANEL 01	WORKSHOP 04 Part I	PANEL 04
16:00 – 16:40	“Novel” Nuclear Reactors as Alternative Disposal Option (M. Engelbert)	'Key Performance Indicators' (KPIs) for environmental assessments in nuclear waste management (G. Geißler & J. Köppel)	Optimizing the safety case through transdisciplinary research? (A. Eckhardt)	Preserving awareness for oversight – towards a resilient system at social level over centuries and millennia (S. Hotzel & B. Offen)
16:40 – 17:00	<i>Coffee break</i>			

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Poster Session I

Preliminary Detailed Program

S01	The Missing Decision. Nuclear Decommissioning and the Issue of the Waste Repository in Late Twentieth-Century Italy, 1976-2001	M. Elli
S02	Automated contamination measurement in the decommissioning process of nuclear facilities	A. Wernke
S03	Investigations of aged metal seals for interim storage	M. Jaunich
S03	Investigations on the significance of a storage facility for high-level radioactive waste for the siting region	J.M. Neles
S03	Safety assessment of aged metal gaskets for transport conditions	A. Rolle
S03	Geopolymers as low carbon cementitious materials for managing radioactive waste.	B. P. Zlobenko
S05	Corrosion processes at the GGG40 steel-bentonite interface	A. G. Muñoz
S07	SpannEnD – A 3D geomechanical model of Germany for the prediction of the recent crustal stress state	S. Ahlers
S07	BARIK: Laboratory program within the framework of the development of an Extended Hoek-Brown-Based Anisotropic Constitutive Model for Fractured Crystalline Rock	M. Friedel
S07	Advanced analysis of ultrasonic investigations at sealing structures	V. Lay
S07	The anisotropy of the geomaterial granite	F. Müller
S07	About the influence of initial stress on final stress in data-calibrated numerical geomechanical models	T. Hergert
S07	Challenges for geomechanical laboratory analyses of claystones with regard to the time frame of the site selection process	S. Schumacher
S07	No Data instead of Big Data – a novel approach to stress modelling	M. O. Ziegler
S09	Cross-scale perspective on the Opalinus Clay: insights from the GeomInt2 project	T. Cajuhi
S09	Feasibility studies of continuum modelling approach using ubiquitous-joint model in modelling fractured crystalline rock	A. Gafoor
S09	AREHS: Effects of changing boundary conditions on the development of hydrogeological systems: Numerical long-term modelling considering thermal-hydraulic-mechanical (-chemical) coupled effects	R. Kahnt
S09	Numerical assessment of the barrier integrity for a generic nuclear waste repository in crystalline rock	C. G. Morel
S09	Challenges and best practices for modelling fractures in geological repositories	C. Müller
S09	Performance assessment of a generic repository in salt host rock based on the Task F of DECOVALEX-2023 – BASE's lessons learnt and future work	M. Pekala
S09	Open source Python library for modelling THM coupled processes	C. Rücker
S09	BARIK: An Extended Hoek-Brown-Based Anisotropic Constitutive Model for Fractured Crystalline Rock	R. P. L. Vargas
S09	Two-phase reactive transport modelling of heterogeneous gas production in low- and intermediate-level waste repository	F. Vehling
S09	A new constitutive model for simulating the coupled mechanical, hydraulic, and thermal material behaviour of claystone rock mass	R. Wolters
S13	The black swans of nuclear repositories - an overview of external events with a potentially serious impact on the long-term operation and safety	S. Hagemann
S14	Proliferation aspects of partitioning and transmutation (P&T) fuel cycles	F. R. Frieß
S14	Future Nuclear Fission Reactors – uncertainties, the effect of parameter choice and an application to SMR concepts (“small modular reactors”)	B. Steigerwald

Time	Wednesday, September 13		Preliminary Detailed Program	
	SESSION 02 Nuclear decommissioning and waste minimization	WORKSHOP 03	WORKSHOP 04 Part II	SESSION 18 Safety in law - legal bases for safety-related decisions in international comparison. Or: What's safety in your country?
17:00 – 17:20	Development of a robotic system for the automation of the decontamination process of nuclear power plants (S. Kazemi)			Safety in law - legal bases for safety-related decisions in international comparison. Or: What's safety in your country? (F. Emanuel)
17:20 – 17:40	EKONT-2: advancement of a demonstrator for dry-mechanical decontamination of corners and inner edges in nuclear facilities (E. Rentschler)	How to estimate the 3D stress state for a deep geological repository (O. Heidbach)	Optimizing the safety case through transdisciplinary research? (A. Eckhardt)	(De)politicization through safetization? Decision-making on nuclear waste management in Finland and France (M. Kojo)
17:40 – 18:00	The use of digital twins for waste estimation in nuclear facilities' dismantling and decommissioning: the PLEIADES project (M.-B. Jacques)			Solving problems collectively in nuclear waste governance (S. Enderle)
18:00 – 18:20	Wet sieving and magnetic separation for the treatment of radioactive secondary waste produced from water-jet abrasive suspension cutting (M. J. Chaudhry)			Biosphere modelling in the calculation basis for dose assessment for a final disposal of high-level radioactive waste (A. Diener)
18.20 – 18:40	Closing			

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Time	Thursday, September 14			
09:00 – 09:10	Opening	C. Hamann (Head Press and Public Relations, BASE)		
09:10 – 10:00	Keynote	M. Weißkopf (Table.Media)		
	SESSION 01 International organizational models in nuclear decommissioning	SESSION 11 Transport processes of radionuclides in radioactive waste repositories	WORKSHOP 02	WORKSHOP 11
10:00 – 10:20	Nuclear Decommissioning: Project Management and Leadership (S. Cecchi)	A long running in-situ experiment in clay: 12 years of the Bitumen-Nitrate-Clay interaction experiment at Mont Terri rock laboratory (K. Hendrix)		
10:20 – 10:40	Cross-country survey on the decommissioning of commercial nuclear reactors: status, insights, and knowledge gaps (R. Bärenhold)	Hydrogeochemical impact of Opalinus Clay system shown in migration lengths of uranium (T. Hennig)	Discourse deep geological repository – defining retardation moments and questioning the feasibility of prognostic approaches (W. Wartenberg)	Exploring the potential for transdisciplinary co-production in the case of nuclear waste disposal (W. Schulz, C. Drögemüller, R. Seidl, C. Walther)
10:40 – 11:00	Lessons for the Organization of Nuclear Decommissioning from the UK and the US: Risks, Challenges, and Opportunities (A. Wimmers)	Semi-analytical approach to modelling matrix diffusion in fractured media (A. Poller)		
11:00 – 11:20	Safety first: developing a scientifically based training program to enforce the safety-related competence of managers and employees for dismantling of nuclear power plants (L.Thomaschewski)	Experimental investigation of fission gas release from spent nuclear fuels under conditions expected in a deep geological repository (T. König)		

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Time	<i>Coffee break</i>			
	WORKSHOP 06	SESSION 08 Handling uncertainties in safety analyses for a geological repository for nuclear waste	SESSION 04 Activities in international research programs and collaborations	SESSION 17 Participation processes for projects involving nuclear safety and disposal
11:20 – 11:40		Requirements for inventory models of radioactive waste (M. Vespa)	IAEA support for the management of site investigations for radioactive waste disposal facilities (V. Havlova)	Public participation in nuclear waste storage and disposal: A comparative analysis of German and US approaches (D. Djokić)
11:40 – 12:00		The ¹⁴ C dose assessment model chain – ¹⁴ C source term definition and uncertainty quantification (S. Pudollek)	The role of international collaboration in the United States geologic disposal research program (J. Birkholzer)	Improvement by public participation? The case of the German calculation basis for the dose assessment for final disposal of HLW (V. Hormann)
12:00 – 12:20	Impact of extended interim storage of high-level radioactive waste on the safety of final disposal (C. Borkel & L. Maerten)	Pluralistic view of human-related uncertainties and their management – outcome of the EURAD strategic study UMAN (A. Strusińska-Correia)	Site selection in Switzerland: parallelization of implementer's data collection and technical-political decision-making (T. Vietor)	The importance of social science research in nuclear waste management shown by three projects on public participation (Z. Felder)
12:20 – 12:40		Extended Peer-reviews for resilient safety (A. Eckhardt)	Deep borehole disposal as a potential solution for HLW/ SNF in Norway (T. Fischer)	Last century's German citizens' dialogue on nuclear energy revisited? (J.-H. Meyer)
12:40 – 13:00		Exploring the bearing of subjective preferences on site selection processes (S. Hotzel)	Performing science, performative science: An STS reflection on the pioneering pathways of the HADES URL (R. Geysmans)	Perceptions of surface facilities of a potential disposal site and the role of place attachment (M. Mbah)
13:00 – 13:20				

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13:20 – 14:20	<i>Lunch</i>			
14:20 – 14:40	<i>Poster Pitch II (Sessions 06, 08, 10, 11, 12, 15, 17)</i>			
14:40 – 16:00	<i>Poster Session II (Sessions 06, 08, 10, 11, 12, 15, 17)</i>			
	SESSION 10 Geosciences behind regulatory, technical and social challenges: best practices and lessons learned	WORKSHOP 05 Part I	PANEL 02 Part I	WORKSHOP 10
16:00 – 16:20	Collection, digitization, interpretation and publication of geological data in the German Site Selection Procedure – status and challenges (S. Reiche)	Identifying safety-relevant knowledge gaps concerning radionuclide mobility – bringing together fundamental research and application in repository safety analysis (T. Philipp & M. Pekala)	Safeguarding nuclear waste management (I. Niemeyer)	Let's do science communication: how can science communication support the search for a nuclear waste repository? (E. Kähler, K. Wagenknecht, M. Weißpflug & S. Hellebrandt)
16:20 – 16:40	Model-based performance assessment of repository-induced effects: contribution to the site-selection process in Switzerland (C.Li)			
16:40 – 17:00	Using a multi-criteria approach for a regional differentiation of the likelihood of future volcanic activity in Germany (L. Rummel)			

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Poster Session II

Preliminary Detailed Program

S06	NMR relaxometry – a new reliable and non-destructive method to estimate the fluid content of rock salt	R. Dlugosch
S06	GeM-DB – A basis for planning surface exploration programs	L. Richter
S08	Development of a method for scenario-based identification of calculation models (EMS)	G. Frieling
S08	Towards conditioning discrete fracture network models: a Monte-Carlo simulation approach with existing site data	C. G. Gärtner
S08	Climate scenarios, groundwater models, and uncertainties in long-term safety (project REDUKLIM)	M. Johnen
S08	Deep-future climate change scenarios for site selection of nuclear waste disposal in Germany	C. Kaufhold
S08	Systematic laboratory investigations concerning the reduction of uncertainties related to the modeling of the material behavior of crushed salt	S. Lerche
S08	Methods for the quantification of uncertainties in THM simulations for safety analyses and influence of modelling decisions	T. Nagel
S08	How do uncertain parameters affect the analysis of host rock integrity? – Methods and preliminary results for a generic clay rock-site	J. Thiedau
S10	GeoLaB – Geothermal Laboratory in the crystalline Basement: Synergies with research for a nuclear waste repository	T. Kohl
S10	Potential and challenges of applying artificial intelligence (AI) in geosciences to the search for a high-level waste repository in Germany	F. Magri
S10	Mitigating Uncertainty in the Site Selection Process for a German Deep Geological Repository through a Risk-based and Multi-Criteria Decision Making Approach	H. El Fatih
S11	Experimental investigation of uranium release from spent nuclear fuels under conditions expected in a deep geological repository	M. Herm
S11	Influence of microbial uranium reduction processes on the final disposal of radioactive waste	S. Hilpmann
S11	Retention of trivalent actinides (Am, Cm) and lanthanides (Eu) by Ca feldspars	J. Lessing
S11	Immobilization of technetium by iron corrosion phases: lessons learned and future perspectives	N. Mayordomo
S11	X-ray absorption fine structure (XAFS)-based radionuclide research at the KIT Light Source	J. Rothe
S11	Permeability and diffusion of Tritium in bentonite	G. Uroić
S11	THEREDA - Thermodynamic Reference Database	L. Wissmeier
S11	Simulation of groundwater flow and radionuclide transport in a fractured rockmass at the low and intermediate radioactive waste disposal site in Korea	J.S. Yoon
S12	Hydration and response of an experimental sandwich shaft-sealing system at the Mont Terri rock laboratory	M. Hinze
S12	Applicability of multi-criteria decision analysis in the site selection procedure for high-level radioactive waste final disposal: robustness-oriented comparison of emplacement concepts	K. Diedrich
S12	BGzEro – backfilling measures with low CO ₂ footprint	H. Räuschel
S12	Evaluation of retrieval concepts for high-level radioactive waste from a deep geological disposal in operation	E. Hartwig-Thurat
S15	Communicating results and uncertainties of radioecological modelling – a transdisciplinary workshop	A. I. Kogiomtjidis
S15	Communicating scientific uncertainties	R. Seidl
S15	Procedures to involve knowledge providers for capturing the state-of-knowledge in radioactive waste management: insights from EURAD KM	A. Tatomir
S17	Transdisciplinary research with respect to trust/confidence building by longer-term, near-field monitoring of a geological repository – part II	J. A. Othmer

Time	Thursday, September 14			Preliminary Detailed Program
17:00 – 17:20	<i>Coffee break</i>			
	SESSION 06 Surface based site investigation: collecting a reliable data base for decision making	WORKSHOP 05 Part II	PANEL 02 Part II	WORKSHOP 12
17:20 – 17:40	Acceleration potential of a Swiss-inspired approach to the Site Selection Procedure (B.Schuck)	Identifying safety-relevant knowledge gaps concerning radionuclide mobility – bringing together fundamental research and application in repository safety analysis (T. Philipp & M. Pekala)	Safeguarding Nuclear Waste Management (I. Niemyer)	Fostering interdisciplinary knowledge (A. Bergmans et al.)
17:40 – 18:00	Determination of the in-situ hydraulic parameters of the Callovo-Oxfordian Clay rock in a long-term hydraulic interference testing at ANDRA's CMHM Underground Research Laboratory (J. Croisé)			
18:00 – 18:20	A note on the duration of claystone exploration programs (T. Mann)			
18:20 – 18:40	<i>Closing</i>			
19:00 – 22:00	<i>Conference Dinner</i>			

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Time		Friday, September 15		
09:00 – 09:10	Opening	C. Hamann (Head Press and Public Relations, BASE)		
09:10 – 10:00	Keynote	N. Gotcheva (VTT Technical Research Centre of Finland)		
	WORKSHOP 01 Part I	SESSION 12 Repository design, construction and operation: Practicalities, geotechnics, barrier performance	WORKSHOP 13	WORKSHOP 09
10:00 – 10:20		Demonstrating the possibility of safe operation in the first phase of the site selection procedure in Germany (M. Werres)		
10:20 – 10:40	Intra- vs. inter-generational justice trade-offs in nuclear waste storage (R. Seidl, C. Drögemüller & R. Sierra)	Features, Events and Processes (FEPs) analysis of the interactions between repository monitoring systems and multi-barrier systems (S. Parsons)	Putting nuclear waste on the sustainability agenda- integration into the concept of planetary boundaries (F. Böse & C. von Hirschhausen)	Learning through participation processes (I. Hölzle & P. Krütli)
10:40 – 11:00		Bentonite buffer under high temperature: laboratory experiments and coupled process modeling (L. Zheng)		
11:00 – 11:20		State of the art of hydraulic packer testing in clay rocks in the Swiss national radioactive waste disposal program (A. Dausse)		

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Time	Friday, September 15		Preliminary Detailed Program	
11:20 – 11:40	<i>Coffee break</i>			
	WORKSHOP 01 <i>Part II</i>	SESSION 14 Challenges in radioactive waste management based on new nuclear reactor concepts and other disposal pathways	SESSION 09 Recent advances in computational methods and process coupling (THMCB)	SESSION 16 Long term information and awareness preservation
11:40 – 12:00		Technological readiness of alternative reactor concepts (C. Pistner)	Characterizing a rock fracture rough surface using spatial continuity and kriging: streamlining meshing for coupled Thermo–Hydraulic–Mechanical–Chemical (THMC) models (G. Cunha & C. McDermott)	Selection of essential records from a repository program to inform future generations: Insights from a study for the Konrad repository (Noseck et al.)
12:00 – 12:20	Intra- vs. inter-generational just-ice trade-offs in nuclear waste storage (R. Seidl, C. Drögemüller & R. Sierra)	Economics of new nuclear power plant – assessment of investments into generation III, SMR and non-light water reactors (F. Böse)	Compaction of crushed salt for safe containment – a summary of the KOMPASS projects (L. Friedenberg)	Historical contextualization of the site selection process for the German HLW repository as tool for information and awareness preservation (A. Tiggemann)
12:20 – 12:40		Scenario based analysis of reactor based waste management (M. Englert)	AREHS: Effects of changing boundary conditions on the development of hydrogeological systems: Numerical long-term modelling considering the THM(C) coupled effects (R. Kahnt)	The role of nuclear cultural heritage in long-term nuclear waste governance (V. Noka)

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11:20 – 11:40	<i>Coffee break</i>			
	WORKSHOP 01 II	SESSION 14 Challenges in radioactive waste management based on new nuclear reactor concepts and other disposal pathways	SESSION 09 Recent advances in computational methods and process coupling (THMCB)	SESSION 16 Long term information and awareness preservation
12:40 – 13:00	Intra- vs. intergenerational justice trade-offs in nuclear waste storage (R. Seidl, C. Drögemüller & R. Sierra)	Nuclear disposal pathways under conditions of uncertainty (D. Scheer)	Reactive transport modelling for assessing coupled hydro-geochemical processes at interfaces in deep geological repositories: from the laboratory to the real world (J. Poonoosamy)	Basis for a research project on marking strategies for a deep geological HLW repository in Germany (B. Offen)
13:00 – 13:20		Thinking in alternatives and reflecting possible futures in German nuclear waste management: Insights from technology assessment (P. Hocke)	Multi-phase flow modeling at the component level for the Swiss deep geological repository (D. Zbinden)	Independent of technology and generating curiosity – paper as an age-resistant data store medium (H. J. Schaffrath)
13:20 – 13:40	<i>Closing</i>			
13:40 – 14:20	<i>Lunch/ Take Away</i>			

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Overview

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Time

Overview	Preliminary Detailed Program	Time
Topic 1: Decommissioning of nuclear facilities		
S01: International organizational models in nuclear decommissioning		Thu. 10:00 – 11:20
S02: Nuclear decommissioning and waste minimization		Wed 17:00 – 18:20
Topic 2: Interim storage, conditioning and transport of radioactive waste		
S03: Various aspects to interim storage, conditioning and transport		Wed 11:20 – 12:00
W01: Trade-offs in nuclear waste management concerning intra- vs. intergenerational justice		Fri 10:00 – 12:40
Topic 3: Site selection and final disposal of radioactive waste		
S04: Activities in international research programs and collaborations		Thu 11:40 – 13:20
S05: Corrosion of canister materials in deep geological repositories		Wed 12:00 – 13:20
S06: Surface based site investigation: collecting a reliable data base for decision making		Thu 17:20 – 18:20
S07: The role of geomechanics and structural modelling in the site selection process		Wed 12:00 – 13:20
S08: Handling uncertainties in safety analyses for a geological repository for nuclear waste		Thu 11:40 – 13:20
S09: Recent advances in computational methods and process coupling for geological disposal		Fri 11:40 – 13:40
S10: Geosciences behind regulatory, technical and social challenges in geological disposal		Thu 16:00 – 17:00
S11: Transport processes of radionuclides in radioactive waste repositories		Thu 10:00 – 11:20
S12: Advances in designing geotechnical barrier materials		Fri 10:00 – 10:20
W02: Defining retardation moments and questioning the feasibility of prognostic approaches		Thu 10:00 – 11:20
W03: How to estimate the 3D stress state for a deep geological repository		Wed 17:00 – 18:20
W04: Optimizing the safety case through transdisciplinary research?		Wed 16:00 – 18:20
W05: Identifying safety-relevant knowledge gaps concerning radionuclide mobility		Thu 16:00 – 18:20
W06: Impact of extended interim storage of HAW on the safety of final disposal		Thu 11:40 – 14:20
P01: Key Performance Indicators for environmental assessments in nuclear waste management		Wed 16:00-16:40
Topic 4: Safeguards, non-proliferation and security issues		
S13: Security and non-proliferation in nuclear waste management		Wed 11:20 – 12:00
P02: Safeguarding nuclear waste managing; Part I and Part II		Thu 16:00 – 18:20
Topic 5: Alternative disposal methods		
S14: Waste management of new nuclear reactor concepts and other disposal pathways		Fri 11:40 – 13:20
P03: “Novel” Nuclear Reactors as Alternative Disposal Option		Wed 16:00 – 16:40
Topic 6: Communication processes, long-term information preservation and semiotics		
S15: Communicating uncertainties in nuclear waste management		Wed 14:20 – 16:00
S16: Long term information and awareness preservation		Fri 11:40 – 13:20
W07: Geodata for the public - best practice examples from GIS and web applications		Wed 12:20 -13:20
P04: Preserving awareness for oversight		Wed 16:00 – 16:40
Topic 7: Participation processes		
S17: Participation processes for projects involving nuclear safety and disposal		Thu 11:40 – 13:20
W08: Uranium mining – lessons learned for waste disposal in view of participation and safety		Wed 11:20 – 13:20
W09: Learning through public engagement		Fri 10:00 – 11:20
W10: How can science communication support the search for a nuclear waste repository?		Thu 16:00 – 17:00
W11: Exploring potentials for transdisciplinary coproduction for nuclear waste disposal		Thu 10:00 – 11:20
W12: Fostering interdisciplinary knowledge		Thu 17:20 – 18:20
Topic 8: Historical, economic, ecological and legal analyses		
S18: Safety in law - legal bases for safety-related decisions in international comparison		Wed 17:00 – 18:20
W13: Integration of nuclear waste into the concept of planetary boundary		Fri 10:00 – 11:20