



## Final Seminar of the SAFIR2022 and KYT2022 Research Programmes 23.-24.1.2023

Dipoli, Espoo (Otakaari 24)

### Day 1 – 23.1.2023

- Morning session 9.00-12.50. Registration opens at 8.00.
- Lunch 12.50-13.50.
- Afternoon session 13.50-18.30.
- Dinner 18.30-20.30.

### Day 2 – 24.1.2023

- Morning session 8.30-12.30. Registration opens at 8.00.
- Lunch 12.30-13.30.
- Afternoon session 13.50-17.00

[SAFIR2022](#) - The Finnish Research Programme on Nuclear Power Plant Safety 2019 - 2022

[KYT2022](#) - Finnish Research Programme on Nuclear Waste Management 2019 - 2022

## Day 1 - Monday 23.1.2023

Time	Kaleva meeting room	Time	Lumituuli meeting room
<b>8:00</b>	<i>Registration</i>		
<b>9:00-9:40</b>	<b>Opening Session</b> <i>Chair Jorma Aurela and Linda Kumpula, MEAE</i>		
9:05	Opening of the seminar <i>Liisa Heikinheimo (MEAE) &amp; Petteri Tiippana (STUK)</i>		
9:20	Greetings from the Management Groups <i>Marja-Leena Järvinen &amp; Mia Ylä-Mella (STUK)</i>		
<b>9:40-10:40</b>	<b>Overall Safety and Organisation 1</b> <i>Chair Tomi Routamo, STUK</i>		
9:40	BORS - Building operational readiness of control room crews: preparing for the unexpected (VTT, FIOH)		
10:00	OSAFE - Development of framework for justification of overall safety (VTT, LUT) - <i>poster</i>		
10:10	PARSA - Participative development for supporting human factors in safety (FIOH, VTT) - <i>poster</i>		
10:20	EPIC - Effective improvement of leadership and safety culture (VTT) - <i>poster</i>		
10:30	SMRSIMA - Small Modular Nuclear Reactors (SMRs), Siting and Waste Management (VTT, GTK) - <i>poster</i>		
<b>10:40-11:10</b>	<i>Coffee Break</i>		

<b>Time</b>	<b>Kaleva meeting room</b>	<b>Time</b>	<b>Lumituuli meeting room</b>
<b>11:10-12:50</b>	<b>Overall Safety and Organisation 2</b> <i>Chair Jari Pesonen, TVO</i>	<b>11:10-12:50</b>	<b>Bentonite &amp; Host Rock</b> <i>Chair Ville Koskinen, STUK</i>
11:10	COSI - Co-simulation model for safety and reliability of electric systems in flexible environment of NPP (VTT, Aalto)	11:10	BROCTIO – Bentonite-Rock Interaction (VTT, GTK, JyU)
11:30	NAPRA - New developments and applications of PRA (VTT)		
11:50	PREDICT - Predicting extreme weather, sea level and atmospheric dispersion for nuclear power plant safety (FMI)	11:50	KARIKKO - Bedrock Fractures (GTK)
12:10	SEARCH - Safety and security assessment of overall I&C architectures (VTT, Aalto)	12:10	RAKKA - Water Conductivity of Fractured Rock (Aalto) - <i>poster</i>
12:30	URAN - Uncertainty management in fire risk analyses (VTT, Aalto)	12:20	BEEFS – Earthquake comparative analysis and development of earthquake fault rupture modeling (VTT & Rock Mechanics Consulting Finland Oy)
		12:40	MiRa-3D (UTU) - <i>poster</i>
<b>12:50-13:50</b>		<b>Lunch</b>	
<b>13:50-15:20</b>	<b>Structural Safety and Materials 1</b> <i>Chair Pekka Välikangas, STUK</i>	<b>13:50-15:20</b>	<b>Biosphere &amp; Spent Fuel</b> <i>Chair Pekka Kupiainen, Posiva</i>
13:50	AMOS - Advanced materials characterisation for structural integrity assessment (VTT)	13:50	NatLab-14C - Using volcanic-geothermal fields as natural laboratories to investigate transfer of 14C in soils and into terrestrial food webs (UEF)
14:10	ELMO - Extended lifetime of structural materials through improved water chemistry (VTT)	14:10	RABIO - Better Radioecology for Biosphere Modeling (UEF) - <i>poster</i>
14:30	FATIMA - Fatigue management for LTO (VTT) - <i>poster</i>	14:20	KÄRÄHDE - Spent Fuel Characterization and Source Term (VTT)
14:40	AM-NPP - Additive manufacturing in nuclear power plants (VTT) - <i>poster</i>	14:40	RASK - In-situ Experiments - Radionuclide Transport on Cement and Rock Interface (HU) - <i>poster</i>
14:50	CONAGE - Critical studies in support of the ageing management of NPP concrete Infrastructure (VTT, Aalto) - <i>poster</i>	14:50	ALES - Actanide-Lantanide Separation (HU) - <i>poster</i>
15:00	CONFIT - Modelling of aged reinforced concrete structures for design extension conditions (VTT, TAU) - <i>poster</i>	15:00	<i>Discussion</i>
15:10	VALERI - Valorisation of the recent probabilistic seismic hazard projects and results (VTT, AFRY, Univ Helsinki) - <i>poster</i>		

<b>Time</b>	<b>Kaleva meeting room</b>	<b>Time</b>	<b>Lumituuli meeting room</b>
<b>15:20-16:20</b>	<i>Poster Session 1 and Coffee</i>		
	<b>SAFIR2022 posters:</b> AM-NPP, CONAGE, CONFIT, EPIC, FATIMA, OSAFE, PARSA, VALERI <b>KYT2022 posters:</b> ALES, MiRa-3D, RABIO, RAKKA, RASK <b>SAFER2028 poster:</b> Doctoral Education Network (DENSE)		
	<i>(Dinner preparations in Kaleva 15:20-18:30)</i>	<b>16:20-17:20</b>	<b>Structural safety and materials 2</b> <i>Chair Timo Kukkola, TVO</i>
		16:20	FENIX - Reactor Pressure Vessel Repair Welding Collaboration (VTT, Aalto, TUNI)
		16:40	SAMPO - Safety criteria and improved ageing management research for polymer components exposed to thermal-radiative environments (VTT, RISE)
		17:00	RACoon - Non-destructive examination of NPP primary circuit components, machine learning and reliability of inspection (VTT, Aalto)
		<b>17:20-18:30</b>	<b>Panel discussion – Outlook on nuclear energy and research as a prerequisite</b> <i>Matti Hirvola, MEAE</i>
			<b>Panelists</b> Antti Vasara, VTT Atte Harjanne, Member of Parliament Juhani Hyvärinen, LUT Liisa Heikinheimo, MEAE Per Seltborg, SSM Petra Lundström, Fortum Petteri Tiippa, STUK Tiina Jalonen, Posiva Veli-Pekka Nurmi, TVO
<b>18:30</b>	<i>Dinner in Kaleva</i>		

## Day 2 - Tuesday 24.1.2023

<b>8:00</b>			
<b>Time</b>		<b>Registration Open</b>	
<b>Kaleva meeting room</b>		<b>Lumituuli meeting room</b>	
<b>8:30-10:00</b>	<b>Reactor Safety 1</b> <i>Chair Nina Lahtinen, STUK</i>		<b>Low and Intermediate Waste Management, Closure and Society</b> <i>Chair Heidi Lampen, Fortum</i>
8:30	CATS - Coupled analysis of transient scenarios (VTT)	8:30	DEMONI - Decommissioning Material Characterization and Final Disposal Studies (VTT, HU)
8:50	INFLAME- Interdisciplinary fuels and materials (VTT)	8:50	SURFACE- Surface repositories in Finland (VTT, HU)
9:10	LONKERO - Developing the working arms of Kraken, the next generation computational framework for reactor design and licensing analyses (VTT)	9:10	TERKOR - Corrosion of low and intermediate level steel wastes under in-situ disposal conditions (VTT) - <i>poster</i>
		9:20	ConLot - Durability Testing of Concrete in Long-Term Simulated Groundwater Conditions (Aalto) - <i>poster</i>
9:30	RACSA - Radiation shielding and criticality safety analyses (VTT)	9:30	YLYMU - Final disposal of nuclear waste and social memory (UTU) - <i>poster</i>
		9:40	CloMap - Closure of disposal facilities and research and development needs related to closure in Finland (VTT) - <i>poster</i>
9:50	EMBER - Enhanced multi-physics calculation capabilities for fuel behaviour and reactor analyses (LUT) - <i>poster</i>	9:50	KaMu - The effect of conditions on the formation of gases in the final disposal of low level waste (VTT) - <i>poster</i>
<b>10:00-10:30</b>		<b>Coffee Break</b>	

<b>Time</b>	<b>Kaleva meeting room</b>	<b>Time</b>	<b>Lumituuli meeting room</b>
<b>10:30-11:30</b>	<b>Guest Speakers</b> <i>Chair Liisa Heikinheimo, MEAE</i>		
10:30	Addressing future nuclear safety challenges in the EU  <i>Hans Rhein, Head of Unit, Nuclear Safety Coordination and International Relations at European Commission</i>		
10:50	Current and upcoming safety challenges, and related research to support expertise  <i>Jean-Christophe Niel, Director General of Institut de radioprotection et de sûreté nucléaire (IRSN) and Chair of NEA Committee on the Safety of Nuclear Installations (CSNI)</i>		
11:10	Radiation safety research in Sweden  <i>Per Seltborg, Research Director, Strålsäkerhetsmyndigheten (SSM)</i>		
<b>11:30-12:30</b>	<b>Reactor Safety 2</b> <i>Chair Timo Toppila, Fortum</i>		<b>Microbiology and Multibarrier System Interactions</b> <i>Chair Petri Jussila, STUK</i>
11:30	CFD4RSA - CFD methods for reactor safety assessment (VTT)	11:30	Transition to Lumituuli
11:50	PATE - PWR PACTEL tests (LUT)	11:40	MoToPro - Multibarrier System Performance - Microbiological and Chemical Processes (VTT, GTK)
12:10	THACO - Safety through thermal-hydraulic analyses and cooperation (VTT)		
<b>12:30-13:30</b>	<b>Lunch</b>		
<b>13:30-14:30</b>	<b>Reactor Safety 3</b> <i>Chair Juha Poikolainen, TVO</i>		<b>Canister and Cast Iron Insert</b> <i>Chair Petri Koho, Posiva</i>
13:30	ANSA - Analytical severe accident research (VTT)	13:30	KAPSELI - Canister Performance Assessment (VTT, Aalto)
13:50	CONTSA - Containment safety research (VTT) - <i>poster</i>		
14:00	CRITFLO - Critical flow separate effect test facility (LUT) - <i>poster</i>		
14:10	MANTRA - Mitigation and analysis of fission products transport (VTT) - <i>poster</i>		

14:20	JHR2022 - Participation in Jules Horowitz Reactor project - towards first criticality in 2022 (VTT) - poster		
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Time	Kaleva meeting room		
<b>14:30-15:30</b>	<b>Poster Session 2 and Coffee</b> <b>SAFIR2022 posters:</b> CONTSA, CRITFLO, EMBER, JHR2022, MANTRA <b>KYT2022 posters:</b> ConLot, CloMap, KaMu, TERKOR, YLYMU <b>SAFER2028 poster:</b> Doctoral Education Network (DENSE)		
<b>15:30-16:30</b>	<b>Research infrastructure</b> <i>Chair Mikko Lemmetty, TVO</i>		
15:30	BRUTE - Barsebäck RPV material used for true evaluation of embrittlement (VTT)		
15:50	IDEAL - Infrastructure development at LUT safety research laboratory (LUT)		
16:10	CNS – VTT Centre for Nuclear Safety (VTT)		
<b>16:30-16:45</b>	<b>SAFER2028 presentation</b> <i>Tomi Routamo</i>		
<b>16:45-17:00</b>	<b>Final discussion</b> <i>Chairs Marja-Leena Järvinen and Mia Ylä-Mella</i>		
<b>17:00</b>	<b>End of the Final Seminar</b>		