

## Midterm Seminar of the SAFER2028 Research Programme

### 20.-21.1.2026

Paasitorni, Paasivuorenkatu 5 A, Helsinki

#### Day 1 – 20.1.2026

08:00-09:00	Registration and coffee
09:00-12:00	Morning sessions
12:00-13:00	Lunch
13:00-15:20	Afternoon sessions
15:20-16:30	Poster & mocktail session

#### Day 2 – 21.1.2026

08:00-09:00	Registration and coffee
09:00-12:00	Morning sessions
12:00-13:00	Lunch
13:00-14:40	Afternoon sessions
14:40-15:40	Poster & coffee session
15:40-16:20	Closing session

## Day 1 – 20.1.2026

08:00-  
09:00

Registration and coffee

### Meeting room: Juhlasali

09:00-  
10:15      **Opening session**  
*Chair: Suvi Karvonen, VTT*

9:00      Opening of the Seminar  
*Juho Korteniemi, MEAE & Petteri Tiippana, STUK*

9:20      Greetings from the Management Group  
*Tomi Routamo, STUK*

9:35      First years of the DENSE community - the Doctoral Education Network  
of SAFER  
*Jarmo Ala-Heikkilä, Aalto*

9:50      NEA supporting nuclear energy research activities  
*Ville Tulkki, OECD Nuclear Energy Agency*

## Meeting room: Juhlasali

**10:30-12:00**      **Nuclear waste management 1  
– Engineered barrier system**  
*Chair: Petri Jussila, STUK*

10:30      ABCRad - Alternative Buffer/Backfill Characterisation + Radionuclide Interactions, *HU*

10:50      DEHYDSU - Defects, hydrogen and susceptibility of Cu-OFP to stress corrosion cracking in sulphide containing environment, *VTT*

11:10      MOCRYCO - Model based on crystal plasticity for copper, *VTT*

11:30      SAGE - Sensitivity analysis guided disposal barrier experiments, *VTT, JyU, GTK*

11:50      TRIMO - Triaxial tests modelling, *Mitta*

## Meeting room: Karl Lindahl

**10:30-12:00**      **Mechanical and Structural Safety of Nuclear Power Plants 1  
- Materials and material testing**  
*Chair: Tarja Nuoranne, STUK*

10:30      AMANE - Additively Manufactured Materials in Nuclear Environments, *VTT*

10:50      BRIGHT - Barsebäck RPV investigation through thickness, *VTT*

11:10      CHAOS - Characterization of NPP structural integrity, *VTT*

11:30      MINERVA - Mitigation of corrosion and novel water chemistries in light water reactors, *VTT*

11:50      PRANCS - Practical solutions for sealant performance issues in nuclear power plants, *VTT*

**12:00-13:00**      **Lunch**

## Meeting room: Juhlasali

<b>13:00-15:20</b>	<b>Nuclear waste management 2 – Rock and Biosphere &amp; Low and Intermediate level waste</b> <i>Chair: Antti Poteri, Posiva</i>
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13:00 ECOLAB - Laboratory-based studies for radioecological modelling of 14C, *HU, FMI, UI, UEF, EnviroCase*

13:20 FLOP - Flow pathways within faults and associated fracture systems in crystalline bedrock, *UTU, GTK, JyU, Åbo Academi*

13:40 MIRKA - Scale-effect in fractured rock mass, *Aalto*

14:00 DODGE - Dark oxygen in the deep geobiosphere of the geological repository, *HU, VTT*

14:20 MICWEST - Influence of environment and microbes on corrosion behaviour of welded steels in the LILW repositories, *VTT*

14:40 POLYDEC - POLYelectrolyte gels for DEContamination, *HU*

14:50 AVOCADO - Advanced Oxidation Processes with Cavitation for Decontamination Processes, *HU*

15:00 DENSE: SurePhD - Increasing surety in the performance of present and future VLLW disposal – *HU*

15:10 DENSE: MOXSEAL - Metal Oxides for Group Separation of Actinides and Lantanides, *HU*

**15:20-16:30**

**Posters & mocktails**

## Meeting room: Karl Lindahl

<b>13:00-15:10</b>	<b>Mechanical and Structural Safety of Nuclear Power Plants 2 - Welds, fatigue and inspection &amp; Concrete</b> <i>Chair: Timo Kukkola, TVO</i>
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13:00 AI4NDE - Advanced and Intelligent Nondestructive Evaluation, *VTT, Aalto*

13:20 LOAD - Long-term Operation on Aging and environmental Degradation of nuclear reactor materials, *VTT*

13:40 TOFFEE - Total fatigue life in plant environment, *VTT, Aalto*

14:00 FN-CAMP - Finnish Nuclear Concrete Ageing Management Project, *VTT*

14:20 PERCO2 - Long-term Performance Modelling of Concrete in Final Repositories of LILW Nuclear Waste, *Aalto*

14:40 RACEMAT - Radionuclide transport in cementitious materials, *HU, GTK*

15:00 VOLA - Accurate, precise and sensitive chlorine (Cl) analysis method development and analysis in steel and concrete, *VTT*

## Day 2 – 21.1.2026

08:00-  
09:00

Registration and coffee

### Meeting room: Juhlasali

09:00-  
10:05      **Infrastructure**  
*Chair: Mikko Lemmetty, TVO*

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| 9:00  | JHR2028 - Participation in the Jules Horowitz Reactor project, <i>VTT</i>                    |
| 09:15 | RADCNS - Radiological laboratory facility costs of the Centre for Nuclear Safety, <i>VTT</i> |
| 09:30 | DEMAIN - Development and maintenance of LUT thermal hydraulic infrastructure, <i>LUT</i>     |
| 9:45  | GRAF - Gravity driven flow experiments & NEXT – NEA experiments, <i>LUT</i>                  |

## Meeting room: Juhlasali

**10:20-11:40**  
**Reactor Safety and Fuel Lifecycle 1**  
**- Fuel and reactor physics**  
*Chair: Eero Virtanen, STUK*

10:20 DECAPOD - Deterministic safety analyses with Kraken, *VTT*

10:40 MATFINE - Methods for current and accident tolerant fuels modelling, *VTT*

11:00 NOTCO - Neutronics for fuel outside the reactor core, *VTT*

11:20 DENSE: REST - The reduction of large source term during severe nuclear accidents, *UEF*

11:30 DENSE: NCGDENSE - The measuring, modelling and development of non-condensable gas models for nuclear safety research, *LUT*

## Meeting room: Karl Lindahl

**10:20-12:00**  
**Overall Safety and Organisation 1**  
**- Human, organisation, system and society**  
*Chair: Paula Savioja, STUK*

10:20 RESPECT - Residents' Gendered Safety and Risk Expectations - The Case of SMRs in the urban area, *LUT*

10:40 SCALA - Safety Culture and Leadership in Sociotechnical Changes and Transitions, *VTT, Lillkoi*

11:00 TONUS - Towards Nuclear Human Systems Integration, *VTT, FIOH*

11:20 SEAMLES - Systems Engineering approaches for managing the life cycle of I&C systems, *VTT, Aalto*

11:40 SMRSiMa - SMR Siting and Waste Management, *VTT, GTK, LUT*

**12:00-13:00**

**Lunch**

## Meeting room: Juhlasali

<b>13:00-14:40</b>	<b>Reactor Safety and Fuel Lifecycle 2 - Thermal hydraulics and severe accidents</b> <i>Chair: Tommi Rämä, Fortum</i>
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13:00 ALISA - Analytical and experimental investigation of severe accident phenomena, *VTT*

13:20 CeReSa - CFD for Reactor Safety, *VTT*

13:40 C-FLOW - Critical Flow Separate-Effect-Test Facility & Experiments, *LUT*

14:00 ESPO - Analysis of Passive Safety Systems' Operations and Modelling, *VTT*

14:20 THEME - Computational Modeling of Thermal-Hydraulic Phenomena, *VTT*

**14:40-15:40**

**Posters & coffee**

## Meeting room: Karl Lindahl

<b>13:00-14:20</b>	<b>Overall Safety and Organisation 2 - Hazards</b> <i>Chair: Reko Rantamäki, Fortum</i>
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13:00 FASAANI - Fire behaviour and safety of nuclear infrastructure, *VTT, Aalto*

13:20 MAWECLI - Marine and Weather Events in the Changing Climate as Potential External Hazards to Nuclear Safety, *FMI*

13:40 PRALINE - Probabilistic Risk Assessment Labour, Improvements and Extensions, *VTT*

14:00 SERIOUS - Sensitivity and risk informed seismic hazard updates, *VTT, RMCF, AFRY, HU*



## Meeting room: Juhlasali

**15:40- Closing**

**16:20** *Chair: Suvi Karvonen, VTT*

15:40 Summary of the Seminar  
*SG Chairs*

16:00 SAFER2028 in 2026-2028  
*Tomi Routamo, STUK*