

SAFIR2022-KYT2022 Interim Seminar 18.-19.3.2021

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

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

Day 1 - Thursday 18.3.

9:00-10:30	Joint Session - Chair Jorma Aurela, MEAE
9:00-9:10	Opening of the seminar Liisa Heikinheimo (MEAE) & Petteri Tiippana (STUK)
9:10-9:30	Greetings from the Management Groups Marja-Leena Järvinen & Jaakko Leino (STUK)
9:30-10:00	10 Years Severe Accident Research Activities in S/NRA/R Japan Miyuki Akiba, Akitoshi Hotta (Japan Nuclear Regulation Authority NRA)
10:00-10:30	Euratom and the Future Massimo Garribba (European Commission, Directorate-General for ENERGY)
10:30-10:40	Break
10:40-12:50	Parallel Joint Sessions
	Overall safety and organisation (RG1, SYSMET, OMT, SOLID) - Chair Tomi Routamo, STUK
10:40-10:50	BORS - Building operational readiness of control room crews: preparing for the unexpected (VTT, FIOH)
10:50-11:00	OSAFE - Development of framework for justification of overall safety (VTT, LUT)
11:00-11:10	PARSA - Participative development for supporting human factors in safety (FIOH, VTT)
11:10-11:20	EPIC - Effective improvement of leadership and safety culture (VTT)
11:20-11:40	Discussion
11:40-11:50	Break
11:50-12:05	SYSMET - Systemaattiset skenaariomenetelmät kokonaisturvallisuuden arvioinnissa (Systematic Scenario Methods in Overall Safety Estimation) (VTT, Aalto)
12:05-12:15	OMT - Overall safety, multibarrier system and transient phase (VTT)
12:15-12:30	SOLID - Acquiring Social License for Disposal: trust and acceptance (TUNI)
12:30-12:50	Discussion
	Fuel and reactor (RG3, SR6) - Chair Tuomas Rantala, TVO
10:40-10:50	CATS - Coupled analysis of transient scenarios (VTT)
10:50-11:00	INFLAME- Interdisciplinary fuels and materials (VTT)
11:00-11:10	LONKERO - Developing the working arms of Kraken, the next generation computational framework for reactor design and licensing analyses (VTT)
11:10-11:20	RACSA - Radiation shielding and criticality safety analyses (VTT)
11:20-11:30	EMBER - Enhanced multi-physics calculation capabilities for fuel behaviour and reactor analyses (LUT)
11:30-11:40	Discussion
11:40-11:50	Break
11:50-12:00	ALES - Aktinidi-lantanidi erotus- ja separointimateriaalit (Actanide-Lantanide Separation) (HY)
12:00-12:10	RASK - In-situ tutkimukset - radionuklidien kulkeutuminen sementin ja kallioperän rajapinnalla (In-situ Experiments - Radionuclide Transport on Cement and Rock Interface) (HY)
12:10-12:20	RABIO - Parempaa radioekologiaa biosfäärimalintamiseen (Better Radioecology for Biosphere Modeling) (UEF)

12:20-12:30	KÄRÄHDE - Käytetyn polttoaineen karakterisaatio ja lähde-termi (Spent Fuel Characterization and Source Term) (VTT)
12:30-12:40	PORA - Polttoaineen mikrorakenne ja radiumin liukoisuus (Fuel microstructure and radium solubility) (VTT)
12:40-12:50	Discussion
12:50-13:50	Lunch break
13:50-15:20	Parallel Sessions
	SAFIR2022, Plant level analysis & Severe accidents (RG2, RG7) - Chair Lasse Tunturivuori, TVO
13:50-14:00	COSI - Co-simulation model for safety and reliability of electric systems in flexible environment of NPP (VTT, Aalto)
14:00-14:10	NAPRA - New developments and applications of PRA (VTT)
14:10-14:20	PREDICT - Predicting extreme weather, sea level and atmospheric dispersion for nuclear power plant safety (FMI)
14:20-14:30	SEARCH - Safety and security assessment of overall I&C architectures (VTT, Aalto)
14:30-14:40	Break
14:40-14:50	URAN - Uncertainty management in fire risk analyses (VTT, Aalto)
14:50-15:00	ANSA - Analytical severe accident research (VTT)
15:00-15:10	MANTRA - Mitigation and analysis of fission products transport (VTT)
15:10-15:20	Discussion
	SAFIR2022, Thermal hydraulics (RG4 + IDEAL) - Chair Timo Toppila, Fortum
13:50-14:00	CFD4RSA - CFD methods for reactor safety assessment (VTT)
14:00-14:10	PAHE - Passive heat exchanger experiments (LUT)
14:10-14:20	PATE - PWR PACTEL tests (LUT)
14:20-14:30	SPASET - Sparger separate effect tests (LUT)
14:30-14:40	Break
14:40-14:50	THACO - Safety through thermal-hydraulic analyses and cooperation (VTT)
14:50-15:10	IDEAL - Infrastructure development at LUT safety research laboratory and LUT Thermal Hydraulics Laboratory presentation (LUT)
15:10-15:20	Discussion
	KYT2022, Host rock & alternative solutions (RAKKA, MiRa-3D, KARIKKO, ALES) - Chair Ari Luukkonen, STUK
13:50-14:10	RAKKA - Rakoilleen kalliomassan vedenjohtavuus (Water Conductivity of Fractured Rock) (Aalto)
14:10-14:30	MiRa-3D - Mikrorakenteiden 3-D -mallinnus (3D Modeling of Microstructures) (UTU)
14:30-14:40	Break
14:40-15:05	KARIKKO - Kallioperän Rikkonaisuus (Bedrock Fractures) (GTK)
15:05-15:20	Discussion
15:20-15:30	Closure of the Day

Day 2 - Friday 19.3.

9:00-9:50	Joint Session - Chair Liisa Heikinheimo, MEAE
9:00-9:10	Opening of the day Jari Hämäläinen & Suvi Karvonen, VTT
9:10-9:20	Experiences of Nordic Collaboration Monika Adsten, Energiforsk
9:20-9:50	Nuclear waste management and decommissioning in Sweden Allan Hedin, SKB
9:50-10:00	Break
10:00-11:00	Parallel Joint Sessions
	Research infrastructure - Chair Eero Vesaoja, Fortum
10:00-10:15	JHR - Participation in Jules Horowitz Reactor project - towards first criticality in 2022 (VTT)
10:15-10:30	CNS - VTT Centre for Nuclear Safety (VTT)
10:30-10:45	BRUTE - Barsebäck RPV material used for true evaluation of embrittlement (VTT)
10:45-11:00	Discussion
	Low and Intermediate level waste management - Chair Jarkko Kyllönen, STUK
10:00-10:15	DEMONI - DEcommissioning Material characterizatiON and final dsposal studies (VTT, HY)
10:15-10:30	SURFACE - Maaperäloppusijointus Suomessa (Surface deposition in Finland) (VTT, HY)
10:30-10:45	TERKOR - Teräksisten matala- ja keskiaktiivisten jätteiden korroosio loppusijoituksen in-situ olosuhteissa (Corrosion of low and intermediate level steel wastes under in-situ disposal conditions) (VTT)
10:45-10:55	Kamu - Effect of existing conditions to gas formation in low level waste repositories (Olosuhteiden vaikutus kaasujen muodostumiseen matala-aktiivisen huoltojätteen loppusijoituksessa) (VTT)
10:55-11:00	Discussion
11:00-11:10	Break
11:10-14:10	Parallel Sessions
	SAFIR2022, Mechanical integrity & Structures and materials (RG5, RG6) - Chair Martti Vilpas, STUK
11:10-11:20	AMOS - Advanced materials characterisation for structural integrity assessment (VTT)
11:20-11:30	ELIAS - Effect of long-term operation on aging and environmentally assisted cracking of nuclear power plant component materials (VTT, Aalto, TAU)
11:30-11:40	ELMO - Extended lifetime of structural materials through improved water chemistry (VTT)
11:40-11:50	FEVAS - Fatigue and evolving assessment of integrity (VTT, Aalto)
11:50-12:00	RACoon - Non-destructive examination of NPP primary circuit components, machine learning and reliability of inspection (VTT, Aalto)
12:00-12:10	FATIMA - Fatigue management for LTO (VTT)
12:10-12:20	Discussion
12:20-13:20	Lunch break
13:20-13:30	AM-NPP - Additive manufacturing in nuclear power plants (VTT)
13:30-13:40	CONAGE - Critical studies in support of the ageing management of NPP concrete Infrastructure (VTT, Aalto)
13:40-13:50	CONFIT - Modelling of aged reinforced concrete structures for design extension conditions (VTT, TAU)
13:50-14:00	SAMPO - Safety criteria and improved ageing management research for polymer components exposed to thermal-radiative environments (VTT, RISE)
14:00-14:10	Discussion
	KYT2022, Engineered barrier system, interactions and microbiology - Chair Tuire Haavisto, Fennovoima
11:10-11:35	BROCTIO - Bentoniitti - kallio vuorovaikutus (Bentonite - Rock Interaction) (VTT, GTK, JyU)

11:35-12:10	KAPSELI (BECOLT, MECAN, OXCOR, CRYCO, SUCCESS) - Canister Performance Assessment (VTT, Aalto)
12:10-12:20	Discussion
12:20-13:20	Lunch break
13:20-14:00	MoToPro (VaVu, KUKO, MiBe, BIKES, MIMOSA) - Moniestejärjestelmän toimintakyky - Mikrobiologiset ja kemialliset prosessit (Multibarrier System Performance - Microbiological and Chemical Processes) (VTT, GTK)
14:00-14:10	Discussion
14:10-14:20	Break
14:20-15:00	Joint Session - Chair Marja-Leena Järvinen, STUK
14:20-14:40	Summary
14:40-15:00	Joint research programme 2023-2028, Liisa Heikinheimo, MEAE

SAFIR2022 (2019-2020) RG's and Projects

RG1 Overall safety and organisation - BORS (SG1), OSAFE (SG1), PARSA (SG1), EPIC (SG1)

RG2 Plant level analysis - COSI (SG1), NAPRA (SG1), PREDICT (SG1), SEARCH (SG1), URAN (SG1)

RG3 Reactor and fuel - CATS (SG2), INFLAME (SG2), LONKERO (SG2), RACSA (SG2), EMBER (SG2)

RG4 Thermal hydraulics - CFD4RSA (SG2), PAHE (SG2), PATE (SG2), SPASET (SG2), THACO (SG2)

RG5 Mechanical integrity - AMOS (SG3), ELIAS (SG3), ELMO (SG3), FEVAS (SG3), RACoon & ANDIE+ (SG3), FATIMA (SG3)

RG6 Structures and materials - AM-NPP (SG3), CONAGE (SG3), CONFIT (SG3), SAMPO (SG3)

RG7 Severe accidents - ANSA (SG2), MANTRA (SG2)

RG8 Research infrastructure - BRUTE (SG4), IDEAL (SG4), JHR2022 (SG4), LABWAST (SG4)

KYT2022 (2019-2020) SR's and Projects

SR1 Buffer / rock interface, BROCTIO

SR2 Canister, KAPSELI (ml. OXCOR)

SR3 Release barrier interactions and microbiology, MoToPro, KaMu

SR4 Safety factors, SYSMET, OMT

SR5 Host rock studies, RAKKA, MiRa-3D, KARIKKO,

SR6 Other safety research, ALES, RASK, RABIO, KÄRÄHDE, PORA

SR7 Low and intermediate waste management, DEMONI, SURFACE, TERKOR

SR8 Alternative technologies, ALES

+ Social science research, SOLID