

KYT2022-SAFIR2022 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 Tiippa (STUK)
9:10-9:30	Greetings from the Management Groups, Marja-Leena Järvinen & Jaakko Leino (STUK)
9:30-10:00	Fukushima 10 years
10:00-10:30	Euratom and the Future, European Commission
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 N.N.
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 (Actinide-Lanthanide 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 biosfäärimallointamiseen (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 Linda Kumpula, 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 dIsposal 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)
10:45-11:00	Discussion
11:00-11:10	Break
11:10-14:10	Parallel Sessions
	SAFIR2022, Mechanical integrity & Structures and materials (RG5, RG6) - Chair Mikko Lemmetty, TVO
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, KaMu) - 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), PARSА (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