



SAFIR2014

March 21-22, 2013, Hanasaari, Espoo, Finland

Interim Seminar of the Finnish Research Programme on Nuclear Power Plant Safety 2011-2014, SAFIR2014, presenting the results of the entire programme obtained during the years 2011-2012. Presentations, panel and proceedings in English.

Seminar chairman: Jorma Aurela, MEE – Ministry of Employment and the Economy

Seminar Program:

Day 1 21.3.2013

9:00 – 9:40

Opening session:

Opening remarks, Herkko Pitä, MEE
Safety for all, Tero Varjoranta, STUK – Radiation and Nuclear Safety Authority
Overview of SAFIR2014 (years 2011-2012) – Kaisa Simola, VTT – Technical Research Centre of Finland

9:40 – 10:20

Research area 1: Man, Organisation and Society

9:40 – 10:00

Managing safety culture throughout the lifecycle of nuclear plants (MANSCU), Pia Oedewald

10:00 – 10:20

Sustainable and future oriented expertise (SAFEX2014), Krista Pahkin

10:20 – 10:40

Coffee break

10:40 – 11:40

Research area 2: Automation and Control Room

10:40 – 11:00

Coverage and rationality of the software I&C safety assurance (CORSCICA), Timo Varkoi

11:00 – 11:20

Human-automation collaboration in incident and accident situations (HACAS), Jari Laarni

11:20 – 11:40

Safety evaluation and reliability analysis of nuclear automation (SARANA), Keijo Heljanko

11:40 – 12:20

Research area 3: Fuel Research and Reactor Analysis

11:40 – 12:00

Criticality safety and transport methods in reactor analysis (CRISTAL), Karin Rantamäki

12:00 – 12:20

Three-dimensional reactor analyses (KOURA), Elina Syrjälähti

12:20 – 13:20

Lunch

13:20 – 14:00

Research area 3: Fuel Research and Reactor Analysis (cont.)

13:20 – 13:40

Neutronics, nuclear fuel and burnup (NEPAL), Jarmo Ala-Heikkilä

13:40 – 14:00

Extensive fuel modelling (PALAMA), Ville Tulkki

14:00 – 15:10

Research area 4: Thermal Hydraulics

14:00 – 14:20

Enhancement of safety evaluation tools (ESA), Ismo. Karppinen

14:20 – 14:50

Experimental studies on containment phenomena (EXCOP) & Numerical modelling of condensation pool (NUMPOOL), Markku Puustinen & Timo. Pättikangas

14:50 – 15:10

Improvement of PACTEL facility simulation environment (PACSIM), Juhani. Vihavainen

15:10 – 15:30

Coffee break

15:30 – 16:10

Research area 4: Thermal Hydraulics (cont.)

15:30 – 15:50

PWR PACTEL experiments (PAX), Vesa Riikonen

15:50 – 16:10

Modelling of pressure transients in steam generators (SGEN), Timo. Pättikangas



Open your mind. LUT.
Lappeenranta University of Technology



A!
Aalto University



Tekes



FENNO
VOIMA

Finnish Institute of
Occupational Health



Strål
säkerhets
myndigheten
Swedish Radiation Safety Authority



SAFIR2014

16:10 – 16:40 **Poster session break**

16:40 – 18:20 **Panel: international co-operation in nuclear power plant safety**

H. Plit (MEE, chairman), M-L. Järvinen (STUK), L. Heikinheimo (TVO), H. Tuomisto (FPH), J. Hyvärinen (Fennovoima), E.K. Puska (VTT), R. Kyrki-Rajamäki (LUT), R. Salomaa (Aalto), L. Skånberg (SSM), M. Martín-Ramos (EC)

18:30 – **Buffet dinner**



Open your mind. LUT.
Lappeenranta University of Technology



A!
Aalto University



Tekes



**FENNO
VOIMA**

**Finnish Institute of
Occupational Health**



**Strål
säkerhets
myndigheten**
Swedish Radiation Safety Authority



SAFIR2014

Day 2 22.3.2013

8:30 Opening

8:30 – 9:50 Research area 5: Severe Accidents

8:30 – 8:50 Core debris coolability and environmental consequence analysis (COOLOCE-E), Elina. Takasuo

8:50 – 9:10 Thermal hydraulics of severe accidents (TERMOSAN), Tuomo. Sevón

9:10 – 9:30 Transport and chemistry of fission products (TRAFI), Teemu. Kärkelä

9:30 – 9:50 Reactor vessel failures, vapour explosions and spent fuel pool accidents (VESPA), Niina. Könönen

9:50 – 10:20 Coffee break

10:20 – 12:00 Research area 6: Structural Safety of Reactor Circuits

10:20 – 10:40 Environmental influence on cracking susceptibility and ageing of nuclear materials (ENVIS), Ulla. Ehrnstén

10:40 – 11:00 Fracture assessment of reactor circuit (FAR), Pekka Nevasmaa

11:00 – 11:20 Monitoring of the structural integrity of materials and components in reactor circuit (MAKOMON), Tarja Jäppinen

11:20 – 11:40 Advanced surveillance technique and embrittlement modelling (SURVIVE), Matti. Valo

11:40 – 12:00 Water chemistry and plant operating reliability (WAPA), Timo. Saario

12:00 – 13:00 Lunch

13:00 – 13:50 Research area 7: Construction Safety

13:00 – 13:30 Impact 2014 (IMPACT2014) & Structural mechanics analyses of soft and hard impacts (SMASH), Ari Vepsä

13:30 – 13:50 Seismic safety of nuclear power plants. Targets for research and education (SESA), Ludovic Fülöp

13:50 – 14:50 Research area 8: Probabilistic Risk Analysis (PRA)

13:50 – 14:10 Extreme weather and nuclear power plants (EXWE), Hilppa Gregow

14:10 – 14:30 Risk assessment of large fire loads (LARGO), Simo Hostikka

14:30 – 14:50 PRA development and application (PRADA), Ilkka Karanta & Antti Toppila

14:50 – 15:10 Coffee break

15:10 – 15:50 Research area 9: Development of Research Infrastructure

15:10 – 15:30 Enhancement of Lappeenranta instrumentation of nuclear safety experiments (ELAINE), Heikki. Purhonen

15:30 – 15:50 Renewal of hot cell infrastructure (REHOT), Wade. Karlisen

15:50 – 16:30 Final discussion

16:30 Closing

Further information: kaisa.simola@vtt.fi

Poster presentations:

Safety requirements specification and management in nuclear power

Fatigue affected by residual stresses, environment and thermal fluctuations (FRESH), M. Chauhan





SAFIR2014

plants (SAREMAN), T. Tommila

Development of Finnish Monte Carlo reactor physics code (KÄÄRME),
J. Leppänen

Radionuclide source term analysis (RASTA), V. Tulkki

OpenFOAM CFD-solver for nuclear safety related flow simulations
(NUFOAM), T. Pättikangas

Uncertainty Evaluation for Best Estimate Analyses (UBEA), J. Kurki

Chemistry of fission products (FISKE), T. Kekki

RI-ISI analyses and inspection reliability of piping systems (RAIPSYS)

Aging management of concrete structures in nuclear power plants
(MANAGE), M. Ferreira

FinPSA knowledge transfer (FINPSA-TRAN), T. Mätäsniemi

Enhancement of Lappeenranta instrumentation of nuclear safety
experiments (ELAINE), H. Purhonen

Renewal of hot cell infrastructure (REHOT), W. Karlsen

