



Tuesday, May 16

PLENARY SESSION: Chair- M.Dąbrowski, NCBJ, room *Żwirko and Wigura*

08:15	Registration
09:00	Opening
09:10	NCBJ general presentation Kurek, K. NCBJ
09:30	Overview of NUGENIA TA2/SARNET status Van Dorselaere, J.P. IRSN
09:45	EURATOM Research activities related to severe accidents within H2020 Passalacqua, R. EC/DG-RTD
10:00	Coffee break

Introductory talk

PLENARY SESSION: Chair- J.P.Van Dorselaere, IRSN, room *Żwirko and Wigura*

Title, presenter, affiliation, N°		
10:20	Recent Contributions of OECD-WGAMA to the Severe Accident Field Herranz, L.E. CIEMAT	101
10:45	Behaviour of radionuclides in continental hydrosystems next to a severe accident: theoretical, experimental and modelling approaches Matray, J.M. IRSN	102
11:10	The FASTNET project on emergency tools Vola, D. IRSN	104
11:35	Overview of the Severe Accident Analysis Program in Korea Kim, D.H. KAERI	103

12.00-13.35 Lunch

Ex-vessel corium interactions and coolability

Chair- P.Piluso, CEA , room *Żwirko*

Source term issues

Chair- L.E.Herranz, CIEMAT, room *Wigura*

Title, presenter, affiliation, N°			Title, presenter, affiliation, N°		
13:35	Corium spreading under water and its possible consequences	201	Source Term Mitigation in Suppression Pools under Jet Injection Regime: ASTEC-CPA Predictability	301	
	Fischer, M. AREVA		Herranz, L.E. CIEMAT		
14:00	Spreading on wet substrates in KATS experiments	211	Main results of the European PASSAM project on severe accident source term mitigation	302	
	Foit, J. KIT		Albiol, T. IRSN		
14:25	Stratified Steam Explosion Phenomena: Analysis of the SAFEST SES-S1 Test	203	Validation of COCOSYS fission product models by AREVA	303	
	De Malmazet, E. EDF		Funke, F. AREVA		
14:50	Concrete Decomposition Temperature relevant to MCCI Process on LCS concrete	202	Interaction and Depletion Behaviour of Representative Core Melt Aerosols in Presence of Fire Products	304	
	Foit, J. KIT		Kubelt, C. RWTH Aachen		
15:15	Experiment and Modeling of Jet Breakup in Fuel-Coolant Interactions	205	Results and Progress of Fundamental Research on FP Chemistry	305	
	Bang, K.-H. KMOU		Osaka, M. JAEA		

15:40 Coffee break

Coffee break

Ex-vessel corium interactions and coolability, cont'd

Chair- P.Piluso, CEA , room *Żwirko*

Source term issues, cont'd

Chair- L.E.Herranz, CIEMAT, room *Wigura*

Title, presenter, affiliation, N°			Title, presenter, affiliation, N°		
16:10	Study on thermal fragmentation characteristics of a superheated alumina droplet	206	Agglomeration of nuclear aerosols under the effect of intense acoustic fields as pre-condition for FCVS retention	306	
	Meignen, R. IRSN		Herranz, L.E. CIEMAT		
16:35	MC3D Premixing Analysis using X-Ray Radioscopy Experimental Data of KROTOS-SERENA Tests	207	Study of Volatile Fission Products speciation in nuclear fuels under Severe Accident Conditions	307	
	Leskovar, M. IJS		Le Gall, C. CEA		

17:00	Improvement of molten jet fragmentation modeling in MAAP	208	Modeling of Fission Product scrubbing in experiments and in integral severe accident scenarios	308
	Le Belguet, A. EDF		Rydl, A. PSI	
17:25	Towards CFD-grade measurements in a condensing boundary layer - first results of the new SETCOM facility	209	Experimental study of pressure drop in self-priming venturi scrubber	309
	Hundhausen, A. RWTH Aachen		Goel, P. HBNI	
17:50	Fabricating Fukushima Daiichi in-vessel and ex-vessel fuel debris simulants for the development and qualification of laser cutting technique	204	The effect of post-accident pH control on iodine behaviour in the containment	310
	Journeau, C. CEA		Nieminen, A. VTT	
18:15	Adjourn		Adjourn	

Wednesday, May 17

Invited Lecture

PLENARY SESSION: Chair- M.Dąbrowski, NCBJ, room *Żwirko and Wigura*

Title, presenter, affiliation, N°		
08:10	Severe Accident Mitigation and Modelling Requirements for New Build Reactors	1001
	Lillington, J.	AMEC FW

08:45 Coffee break

Containment behaviour incl. H₂ explosion risk

Chair- I. Kljenak, IJS, room *Żwirko*

In-vessel corium and debris coolability

Chair- A. Miassoedov, KIT, room *Wigura*

time	Title, presenter, affiliation, N°		Title, presenter, affiliation, N°	
08:55	The Role of CFD in Hydrogen Safety Management	401	Validation Progress and Exploratory Analyses of Three-Dimensional Simulation for BWR In-Vessel Core Degradation	501
	Shams, A.	NRG	Okawa, T.	NRA
09:20	Experimental Investigations on Containment Spray Performance under Severe Accident Conditions	402	CoreSOAR Core Degradation State-of-the Art Report Update: Status May 2017	502
	Gupta, S.	Becker Technologies GmbH	Haste, T.	IRSN
09:45	Thermofluid Dynamic Analysis for THAI Tests with Passive Hydrogen Recombiner	403	Status of the IVMR project: First steps towards a new methodology to assess In-Vessel Retention Strategy for high-power reactors	503
	Sato, M.	JAEA	Fichot, F.	IRSN

10:15 **Poster session and coffee break-room Conrad**

Poster session and coffee break-room Conrad

Containment behaviour incl. H₂ explosion risk, cont'd

Chair- I. Kljenak, IJS , room *Żwirko*

In-vessel corium and debris, coolability ,cont'd

Chair- A. Miassoedov, KIT, room *Wigura*

Title, presenter, affiliation, N°		Title, presenter, affiliation, N°		
11:00	Benchmark exercise TH27 on natural convection with steam injection and condensation inside the extended THAI facility Freitag, M. Becker Technologies GmbH	404	Modeling issues related to molten pool behavior in case of In-Vessel Retention Strategy Fichot, F. IRSN	504
11:25	The Influence of Thermal Radiation on the Free Convection inside Enclosures Dehbi, A. PSI	405	Contribution of CFD studies to IVR assessment Le Guennic, C. EDF	505
11:50	Coupling Approach for the CFD Code CFX and the Lumped Parameter Code COCOSYS and First Results Götz, L. RWTH Aachen	406	Rayleigh-Bénard and Bénard-Marangoni convection in a thin metallic layer on top of corium pool Saas, L. CEA	506
12:15	Modeling the start-up behavior of passive auto-catalytic recombiners in REKO-DIREKT Reinecke, E.-A. FZ-Jülich	407	In-vessel corium modelling in the MAAP5_EDF code Bakouta, N. EDF	507

12:40 Lunch

Lunch

Severe accident scenarios

Chair- S.Hermsmeyer, EC JRC, room *Żwirko*

In-vessel corium and debris coolability, cont'd

Chair- A. Miassoedov, KIT, room *Wigura*

Title, presenter, affiliation, N°		Title, presenter, affiliation, N°		
14:00	Simulation of thermal hydraulics accidental transients - New evaluations and acceleration of MAAP5.02 versus CATHARE Bittan, J. EDF	601	COMPASS - new modeling and simulation approach to PWR in-vessel accident progression Podowski, M. RPI	508
14:25	Studies on the Recriticality Potential during Fukushima Unit-3 Core Reflooding Darnowski, P. ITC WUT	602	Assessment and calibration of an algebraic turbulent heat flux model for high Rayleigh number flow regimes Shams, A. NRG	509

14:50	Sensitivity analysis for modeling of severe accidents with CC SOCRAT/B1	603	Modeling of melt pool formation during IVMR using the HEFEST-URAN code	510
	Nikolaeva, A. JSC OKB		Filippov, A. IBRAE	
15:15	In-Vessel Retention Analysis for PHWR Calandria under Severe Core Damage Accident Condition using ASTEC	604	Study on the distribution of boron in the in-vessel fuel debris in conditions close to Fukushima Daiichi Nuclear Power Station Unit 2	511
	Belon, S. IRSN		Ikeuchi, H. JAEA	

15:40 Poster session and coffee break-room Conrad

Poster session and coffee break-room Conrad

Severe accident scenarios, cont'd

In-vessel corium and debris coolability, cont'd

Chair- S.Hermsmeyer, EC JRC, room *Żwirko*

Chair- A. Miassoedov, KIT, room *Wigura*

Title, presenter, affiliation, N°		Title, presenter, affiliation, N°		
16:35	Prevention of Core Damage due to Total Loss of Power and Extreme External Events by Independent Core Cooling in Swedish Nuclear Power Plants – Background and Design Principles	605	On the use of CALPHAD-based enthalpy-temperature relations in suboxidized corium plane front solidification modelling	512
	Frid, W. KTH		Le Tellier, R. CEA	
17:00	Severe accident code to code comparison for two accident scenarios in a spent fuel pool	606	New Modeling in the MAAP Code for the Oxidation of Zr-Based Fuel Claddings in Steam and Air-Steam Mix under Severe Accident Conditions	513
	Coindreau, O. IRSN		Torkhani, M. EDF	
17:25	Impact of Potential Accident Mitigation Strategies and Characteristics of Source Term Release for Representative SFP Severe Accident Scenarios	607	Experimental and Numerical Investigation of Molten Corium Behavior in Lower Head under External Subcooling and Boiling Conditions	514
	Ahn, K.-I. KAERI		Pandazis, P. GRS	
17:50	CFD modeling of molten metal injection in water pool	608	Comparison of turbulent heat flux models for a volumetrically heated liquid pool	515
	Mereu, R. Politecnico di Milano		Whang, S. POSTECH	
18:15	Adjourn			

20:00 Gala Diner - Kuźnia Smaku, Mazowiecka 10, Warsaw

Thursday, May 18

Invited Lecture

PLENARY SESSION: Chair- T.Kozłowski, NCBJ, room *Żwirko and Wigura*

Title, presenter, affiliation, N°		
08:30	How Polish safety requirements after severe accidents can be satisfied	1002
	Strupczewski, A.	NCBJ

09:10 Coffee break

Severe accident scenarios, cont'd

Chair- T.Kozłowski, NCBJ , room *Żwirko*

In-vessel corium and debris coolability, cont'd

Chair- F. Fichot, IRSN, room *Wigura*

Title, presenter, affiliation, N°		Title, presenter, affiliation, N°	
09:20	ASTEC Investigations of Accident Management Measures for a Station Black-Out (SBO) Scenario of a Generic German PWR Plant	609	Imaging of nuclear fuel debris using ultrasonic arrays
	Kretzschmar, F. KIT		Malkin, R. Univ. Bristol
09:45	Comparison of accident transients in AP600 and AP1000 "like" models based on a modified LBLOCA	610	The SAFEST project: towards pan-European Lab on Corium Behavior in Severe Accidents. Main Objectives and R&D priorities.
	Malicki, M. PAA		Miassoedov, A. KIT
10:10	Insight of core degradation simulation in integral codes throughout ASTEC/MELCOR crosswalk comparisons	611	Melting Test of Penetrating Tube through BWR-RPV Bottom Wall
	Belon, S. IRSN		Pellegrini, M. IAE

10:35 Coffee break

Severe accident scenarios, cont'd

PLENARY SESSION: Chair- T.Kozłowski, NCBJ, room *Żwirko and Wigura*

Title, presenter, affiliation, N°		
11:05	The Progress of ALISA Project	613
	Gaus-Liu, X. KIT	
11:30	In Vessel Melt Retention Strategy-Status of work for VVER 1000	614
	Batek, M. UJV Rez	

11:55	CESAM – Code for European Severe Accident Management, EURATOM project on ASTEC improvement	616
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Nowack, H.	GRS
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12:20	The Severe Accident Phenomenology Short Course (SAP): 12 years of excellence for dissemination of Severe Accident knowledge at international level	617
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Kljenak, I.	IJS
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12:25 Lunch

Afternoon session

PLENARY SESSION: Chair- J.P.Van Dorselaere, IRSN, room *Żwirko and Wigura*

Title, presenter, affiliation, N°

13:45	Outcome from the technical sessions Chairs of the sessions	
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14:15	The Tyranny of Severe Accident Management	701
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Sehgal, B.R.	KTH
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14:35	Focussing Severe Accident Research for Accident Management Applications	702
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Vayssier, G.	NSC
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14:55	Discussion with audience "'Strong' and weak' points of ERMSAR 2017	
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15:35	Announcement of next ERMSAR 2019	
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15:40	Closure of the ERMSAR 2017 meeting	
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16:00 Coffee break

Presenters are reminded that 10 minutes are included for discussion after each oral lecture

The Local Organizing Committee reserves rights to make some minor changes in the program.

POSTER SESSIONS, room Conrad

Poster N°	Title	Author	Company/R&D Centre
Ex-vessel corium interactions and coolability			
251	Interpretation of recent MOCKA experiments on MCCI of a stratified melt with reinforced concrete by means of the MEDICIS code	Ivan Bakalov	GRS gGmbH
252	Experimental and mathematical assessment of ex-vessel melt pool coolability under bottom flooding	Nitendra Singh	Homi Bhabha National Institute
253	CFD modeling of molten metal injection in water pool	Riccardo Mereu	Politecnico di Milano
210	Analysis of melt-coolant energetic interaction in the course of the in-vessel phase of severe accidents on NPP with WWER	Dmitriy Gasparov	JSC OKB
Source term issues			
351	Tellurium Transport in Nuclear Power plants	Fredrik Espegren	Chalmers University of Technology
352	Integration of Pool scrubbing Research to Enhance Source-term Calculations (IPRESCA)	Sanjeev Gupta	Becker Technologies GmbH
353	Summary of the Nordic collaboration: Impact of air radiolysis, fission product and control rod species on the transport of ruthenium in the primary circuit of NPP in a severe accident	Teemu Kärkelä	VTT Technical Research Centre of Finland Ltd
Containment behaviour incl. H2 explosion risk			
451	Numerical Study on flame acceleration in obstructed duct using FLUENT	Fan Yang	NPIC
452	Simulation of Containment Gas and Water Flow using cosSA	Aijing Shen	SPIC Central Research Institute
In-vessel corium and debris coolability			
553	Thermal Load Analysis and IVR Margin Evaluation for Small Modular Reactor	Dahuan Zhu	Nuclear Power Institute of China
554	Cold crucible facilities in Rez	Hrbek Jan	Research Centre Rez
Severe accident scenarios			
651	Analysis of TMI-2 Scenario using CSPACE Computer Code	Rae-Joon Park	KAERI
652	The Express Method of Nuclear Safety Analysis at Modernization of VVER	Victor Kolykhanov	Odessa National Polytechnic University
653	Usability Evaluation and Qualification Methodology of Equipments for Severe Accident	Gaopeng Wang	China Nuclear Power Engineering Co.,Ltd
654	A Stand-alone Containment analysis of the Phébus FPT-0 test with the ASTEC and the MELCOR codes	Bruno Gonfiotti	University of Pisa

655	Analysis of steam generator heat exchanging tubes integrity on the in-vessel phase of severe accidents on NPP with WWER	Stanislav Pantiushin	JSC OKB
656	Development and Study of a SBO on CANDU6 Plant Model using Grape	Dominic Eugeniu Moraru	Innovative Systems Software
657	Modeling of the Fukushima Accident with MELCOR	Tuomo Sevon	VTT Technical Research Centre of Finland
658	Application of ATHLET-CD code for simulation of SBLOCA 50 cm ² severe accident scenario for a generic German PWR	Matthias Jobst	HZDR
659	Development of the SARCAM Computer Code	Piotr Darnowski	ITC WUT

Friday, May 19

Technical day - National Centre for Nuclear Research

8.00	Trip, bus from Novotel Airport to NCBJ, Swierk		
8.55	Welcome by NCBJ delegates		
9.15	MARIA Reactor (group 1)	NCBJ Education & Training Division (group 2)	CIŚ computing Centre (group 3)
10.30	MARIA Reactor (group 3)	NCBJ Education & Training Division (group 1)	CIŚ computing Centre (group 2)
11.30	MARIA Reactor (group 2)	NCBJ Education & Training Division (group 3)	CIŚ computing Centre (group 1)
12.30	LUNCH		
13.30	Trip to Warsaw (1h)		