



~~ENS~~ ~~RRFM~~ 2005

PROGRAMME

9th International Topical Meeting
Research Reactor Fuel Management (RRFM)

Hilton WestEnd Hotel, Budapest, Hungary
10-13 April 2005

Organised by
the European Nuclear Society (ENS)
in co-operation with the
International Atomic Energy Agency (IAEA)

SUNDAY 10 April 2005

14.00 - 17.00	Guided city walking tour , departure from Heroes Square (Hősök tere) next to the City park
15.00 - 19.00	Registration on the mezzanine floor of the Hilton WestEnd Hotel on the Pest Side, Váci út 1-3
19.00	Transfer by coach to the conference dinner. Departure from the Hilton WestEnd Hotel
20.00 - 23.00	Conference dinner at the Budavári Fortuna Restaurant in the Castle District, Hess András tér 4

MONDAY 11 April 2005

07.30 - 08.30	Registration
08.30 - 08.40	Welcome Address József Rónaky, Director General of the Hungarian Atomic Energy Authority
08.40 - 09.00	Opening Address Csaba Sükösd, President of the Hungarian Nuclear Society

Session 1 International Topics - Chair: I. Vidovszky, KFKI, Hungary

09.00 - 09.20	Status report of the utilization of research reactors in the new and candidate members states of the EU - <i>Invited paper</i>	I. Vidovszky, KFKI, Hungary
09.20 - 09.40	The International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO): General description and implications for the research reactor infrastructure needed for R&D - <i>Invited paper</i>	Y. Sokolov, IAEA
09.40 - 10.00	Status, progress and plans for the Department of Energy's Global Threat Reduction Initiative	A. Bieniawski, US DOE, USA
10.00 - 10.30	Coffee break and poster viewing <i>Posters will be on display throughout the conference. For a list of posters, please refer to page 4 of this programme. Plenary presentation on Tuesday 12 April, 11.00 - 11.30</i>	
10.30 - 10.50	NTI points of view on the Global Threat Reduction Initiative - <i>Invited paper</i>	L. Holgate, NTI, USA
10.50 - 11.10	The European Fusion Programme and the role of research reactors - <i>Invited paper</i>	R. Lässer, R. Andreani, E. Diegele, EFDA Clos Support Unit, Germany
11.10 - 11.30	Production of Mo 99 in Europe: Status and perspectives - <i>Invited paper</i>	H. Bonet, B. David, IRE, Belgium - B. Ponsard, SCK-CEN, Belgium
11.30 - 11.50	Irradiation of fuels and materials in the Jules Horowitz reactor: The 6th European Union JHR Co-ordination Action - <i>Invited paper</i>	D. Iracane, CEA Saclay, France, D. Parrat, CEA Cadarache, France
11.50 - 12.10	Status report on the cost and availability of enriched uranium for research reactors - <i>Invited paper</i>	H. Müller, J. Laucht, RWE Nukem, Germany
12.10 - 12.30	Discussion	
12.30 - 13.30	Buffet lunch at the Arrabona restaurant on the mezzanine floor	
13.30 - 13.50	Why a fast-flux for a research reactor? The Phénix experimental programme	J. Guidez, L. Martin, J. Dumesnil, CEA VALR-HO Marcoule, France
13.50 - 14.10	Business operations and decommissioning strategy for Imperial College London research reactor 'CONSORT' – A financial risk management approach	S. Franklin, Imperial College London, UK - D. Gardner, J. Mumford, R. Lea, J. Knight, PURE Risk Management, UK
14.10 - 14.20	Discussion	

RRFM 2005 Preliminary Programme

Session 2	Fuel development, qualification, fabrication and licensing Chair: J. Snelgrove - ANL, USA; co-chair: P. Lemoine, CEA Saclay, France	
14.20 - 14.40	High density U-Mo fuels - Latest results and reoriented qualification programmes - <i>Invited paper</i>	J. Snelgrove, ANL, USA - P. Lemoine, CEA Saclay, France - L. Alvarez, CNEA, Argentina
14.40 - 15.00	The French U-Mo group contribution to new LEU fuel development - <i>Invited paper</i>	J.M. Hamy, AREVA/Framatome-anp, France - P. Lemoine, CEA Saclay, France - F. Huet, CEA Cadarache, France - C. Jarousse, AREVA/CERCA, France - J.L. Emin, AREVA/COGEMA, France
15.00 - 15.20	Irradiation testing of monolithic fuel at Argonne National Laboratory - <i>Invited paper</i>	C. Curtis, S. Hayes, D. Wachs, M. Meyer, T. Wiencek, G. Hofman, M. Finlay, ANL, USA
15.20 - 15.30	Discussion	
15.30 - 16.00	Coffee break and poster viewing <i>Posters will be on display throughout the conference. For a list of posters, please refer to page 4 of this programme. Plenary discussion on Tuesday 12 April, 11.00 - 11.30</i>	
16.00 - 16.20	Main results and status of the development of LEU fuel for Russian research reactors	A. Vatulin, A. Morozov, V. Suprun, I. Dobrikova, VNIINM, Russia
16.20 - 16.40	Current status of the CNEA qualification program for the fabrication of high density MTR fuel	L. Alvarez, N. Boero, J. Fabro, CNEA, Argentina
16.40 - 17.00	Post-irradiation examinations on U-Mo full-sized plate: IRIS-2 experiment	F. Huet, J. Noirot, V. Marelle, S. Dubois, CEA Cadarache, France - P. Boulcourt, P. Sacristan, S. Naury, P. Lemoine, CEA Saclay, France
17.00 - 17.20	Mechanical calculations on U-Mo dispersion fuel plates with MAIA	V. Marelle, F. Huet, CEA Cadarache, France - P. Lemoine, CEA Saclay, France
17.20 - 17.30	Discussion	
17.30	Close of Day One	

TUESDAY 12 April 2005

Session 2	Fuel development, qualification, fabrication and licensing, <i>continued</i> - Chair: J. Snelgrove, ANL, USA; Co-chair: P. Lemoine, CEA Saclay, France	
08.30 - 08.50	Out of pile French research programme on the U-Mo/Al system: First results	S. Dubois, F. Mazaudier, J.P. Piron, P. Martin, J. Dumas, F. Huet, CEA Cadarache, France - H. Noël, O. Tougait, University of Rennes, France - C. Jarousse, AREVA/CERCA, France - P. Lemoine, CEA Saclay, France
08.50 - 09.10	An overall estimator to assess the development of very high density fuels for research and test reactors	H. Taboada, S. Balart, M. Mirandou, M. Mo-scarda, CNEA, Argentina
09.10 - 09.30	Qualification of high-density aluminide fuels for the BR-2 reactor	A. Beeckmans, P. Gubel, B. Ponsard, SCK-CEN, Belgium - T. Pin, J.L. Falgoux, AREVA/CERCA, France
09.30 - 09.40	Discussion	
Session 3	Reactor operation, fuel safety, core conversion Chair: T. Van der Hagen, Delft Reactor Institute, The Netherlands	
09.40 - 10.00	Reduced Enrichment for Research and Test Reactors Programme: Efforts within the Global Threat Reduction Initiative	P. Staples, US DOE, USA
10.00 - 10.20	Status report on the nuclear start-up of FRM-II - <i>Invited paper</i>	K. Schreckenbach, H. Gerstenberg, Munich Technical University, Germany

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10.20 - 11.00	Coffee break and poster viewing <i>For a list of posters, see below. Plenary discussion from 11.00 - 11.30.</i>	
	Posters, session 2: Fuel development, qualification, fabrication and licensing	
	The analysis of effect of gaseous fission products on serviceability of various types of fuel elements used in research reactors	A. Vatulin, G. Kulakov, A. Kosaurov, I. Dobrikova, A. Morozov, VNIINM, Russia
	An investigation on overcoming the interaction problem of U-Mo dispersion fuel by designing simpler monolithic U-Mo rod type fuels and adding third alloying elements to U-Mo	Y.S. Lee, C.K. Kim, K.H. Kim, J.M. Park, D.B. Lee, S.J. Oh, H.J. Ryu, D.S. Shon, KAERI, Korea
	Interdiffusion between U-Mo alloys and Al or Al alloys at 340°. Irradiation plan	A. Fortis, M. Mirandou, M. Ortiz, S. Balart, A. Denis, A. Moglioni, P. Cabot, CNEA, Argentina
	Irradiation and post-irradiation examination facilities in Argentina for testing of high density U compound plates	G. Ruggirello, S. Halpert, G. Estryk, J. Quintana, CNEA, Argentina
	Computational and experimental analysis of causes for local deformation of research reactor U-Mo fuel pin claddings in case of high burn-ups	V. Popov, M. Khmelevsky, IPPE, Russia - V. Lukichev, RDIPE, Russia - O. Golosov, IRM, Russia
	Posters, session 3: Reactor operation, fuel safety, core conversion, spent fuel	
	Evaluation of 3D energy distribution in a PWC-CCD fuel device combining thermal balance methods with MCNP & Origen-S calculation model	S. Kalcheva, Ph. Gouat, SCK-CEN, Belgium
	The Valmont programme: Improved experimental techniques to support the neutronic qualification of U-Mo/AL	J.P. Hudelot, Ch. Döderlein, M. Antony, J.M. Girard, V. Laval, Ph. Fougeras, G. Willermoz, P. Leconte, CEA Cadarache, France
	Core conversion study from silicide to molybdenum fuel in the Indonesian 30 MW multipurpose reactor GA Siwabessy (RSG-GAS)	T. Sembiring, I. Kunturo, BATAN, Indonesia
	Progress of activities with regard to reconstruction of the research reactor IRT-Sofia	T. Apostolov, E. Anastasova, D. Drenski, V. Anastasov, A. Stoyanova, E. Moskov, S. Belousov, S. Kadalev, INRNE, Bulgaria - L. Manev, M. Baltiyski, Atomenergoproekt, Bulgaria
	WWR-M reactor fuel elements as objects of permanent study and modernization	G. Kirsanov, K. Konoplev, A. Poltavski, A. Zacharov, Petersburg Nuclear Physics Institute, Russia
	CERCAs fuel elements instrumentation manufacturing.	G. Harbonnier, C. Jarousse, T. Pin, M. Febvre, P. Colomb, AREVA/CERCA, France
	Burnup measurements of LEU fuel for short cooling times	C. Pereda, C. Henriquez, J. Klein, J. Medel, CCEN, Chile
	ETRR-2 in-core fuel management strategy	M. Khalil, Alexandria University, Egypt - M. Belal, E. Amin, Atomic Energy Authority, Egypt
	Posters, session 4: Spent fuel management, back-end options, transportation	
	Status of the VIND programme, September 2004	M. Pesic, VINCA Institute of Nuclear Sciences, Serbia and Montenegro
	New cask for irradiated rods	D. Ohayon, P. Naigeon, AREVA/COGEMA, France
	Strontium and barium precipitation as carbonates in molten eutectic LiC-KCL	C. Caravaca, G. Córdoba, M. Tomás, CIEMAT, Spain

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	IR-100 research reactor and proposals for spent nuclear fuel management	S. Bulkin, V. Tikhonov, V. Parabin, RDIPE, Russia - S. Smirnov, V. Podtynnykh, SNINEI, Ukraine
11.00 - 11.30	Plenary discussion of poster presentations Chair: G. Damm, Research Center Jülich, Germany; co-chair: Ph. Beeley, Ministry of Defense, UK	
Session 3	Reactor operation, fuel safety, core conversion, <i>continued</i> Chair: T. Van der Hagen, Delft Reactor Institute, The Netherlands	
11.30 - 11.50	Status of the reduced enrichment programme for FRM-II. Status 2004/05 - <i>Invited paper</i>	A. Röhrmoser, W. Petry, N. Wieschalla, Munich Technical University, Germany
11.50 - 12.10	Status of the HFR conversion and licensing	F. Wijtsma, NRG, The Netherlands
12.10 - 12.30	Review of the accident source terms for aluminate fuel: Application to the BR2 reactor	F. Joppen, SCK-CEN, Belgium
12.30 - 13.30	Buffet lunch at the Arrabona restaurant on the mezzanine floor	
13.30 - 13.50	Results of out-of-pile tests of the MIR reactor irradiated fuel at high temperatures	A. Izhutov V. Alexandrov, A. Grachev, Y. Kosvintsev, A. Novoselov, Z. Chechetkina, RIAR, Russia
13.50 - 14.10	Analysis of power peaking in HEU and LEU fuel elements on the safety behavior of FRJ-2	R. Nabbi, G. Damm, I. Neuhaus, Research Center Jülich, Germany
14.10 - 14.30	HEU to LEU conversion experience at the UMass-Lowell research reactor	J. White, L. Bobek, University of Massachusetts Lowell, USA
14.30 - 14.40	Discussion	
Session 4	Spent fuel management, back-end options, transportation Chair: P. Adelfang, IAEA	
14.40 - 15.00	The United States Foreign Research Reactor Spent Nuclear Fuel Acceptance Programme: Proposal to modify the programme - <i>Invited paper</i>	C. Messick, US DOE, USA
15.00 - 15.20	R&D for the final disposal of irradiated research reactor fuel elements	H. Curtius, H. Brücher, Research Center Jülich, Germany
15.20 - 15.50	Coffee break	
15.50 - 16.10	Reprocessing U-Mo spent fuels: Dissolution experiments on non-irradiated and irradiated materials	N. Herlet, G. Ferlay, J.P. Dancausse, A. Juvenelle, CEA VALHRO Marcoule, France
16.10 - 16.30	HABOG: One building for high level waste and spent fuel in The Netherlands. The first year of experience	J. Kastelein, H.D.K. Codée, COVRA, The Netherlands
16.30 - 16.50	Spent fuel from the Finnish TRIGA research reactor in the surroundings of BWR spent fuel final disposal repository. Safety assessment and comparison to the risks of BWR fuel	S. Salmenhaara, H. Nordman, M. Anttila, VTT Processes, Finland
16.50 - 17.10	Update on NAC's transportation projects	C. Anne, J. Patterson, NAC International, USA
17.10 - 17.20	Discussion	
17.20	Summary and Closing Remarks - P. Gubel, SCK-CEN, Belgium, Conference Chairman	

WEDNESDAY 13 APRIL 2005

Post Conference Technical Visit (3 options)

Time schedule:

Budapest Research Reactor - Departure 09.30, return 12.30

Budapest University Training Reactor - Departure 09.30, return 13.00

Paks Nuclear Power Plant - Departure 08.00, return 15.00 (lunch included)

Busses will depart from the Hilton WestEnd Hotel.

Please take your passport with you.