



RERTR 2008 — 30TH INTERNATIONAL MEETING ON REDUCED ENRICHMENT FOR RESEARCH AND TEST REACTORS OCTOBER 5-9, 2008

The U.S. Department of Energy / National Nuclear Security Administration's Office of Global Threat Reduction is hosting the "RERTR 2008 International Meeting on Reduced Enrichment for Research and Test Reactors" in cooperation with the International Atomic Energy Agency (IAEA). The meeting is being organized by Argonne National Laboratory and will be held in Washington, D.C. USA from October 5-9, 2008. This will be the 30th annual meeting in a series on the same general subject regarding the conversion of reactors within the Global Threat Reduction Initiative (GTRI).

Final Technical Program

Please note that this version of the RERTR 2008 Technical Program:

- Is **final**.
- **Includes the list of Sessions for Monday Oct. 6, 2008.** The detailed list of Invited Presentations scheduled for Monday Oct. 6, 2008 is available as a separate pdf document to download at the RERTR 2008 website.

This document is to be considered as FINAL. The original can be downloaded at:
www.rertr.anl.gov/rertr08/agenda.html

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RERTR 2008 — 30th International Meeting on Reduced Enrichment for Research and Test Reactors
 Washington, DC, United States, October 5-9, 2008

TECHNICAL PROGRAM

Sunday				
Registration 3:00 – 6:00 p.m.				
Reception 6:00 – 9:00 p.m., Sponsored by The Babcock & Wilcox Company and Energy Solutions				
Session	Session Title	Time	Paper Title	Authors
Monday				
Meeting Room: Grand Ballroom — The Sphinx Club at Almas Temple				
Welcome to United States and RERTR-2008 9:00 AM				
10:00 - 10:15 am Coffee Break and Refreshments, Sponsored by Y-12 National Security Complex				
1	International Perspective on 30 years of HEU Minimization Program	10:15 AM		
12:15 - 1:30 pm - Lunch Break				
2	HEU Minimization Support Programs	1:30 PM		
3:30 - 3:45 p.m. Coffee Break and Refreshments, Sponsored by Y-12 National Security Complex				
3	HEU Minimization Programs Overview and Experience	3:45 PM		
5:30 p.m. Adjourn 6:00 p.m. Reception and Dinner — The Capitol Hilton, Sponsored by United States Transport Council				
Tuesday				
Meeting Room: Grand Ballroom — The Sphinx Club at Almas Temple				
4	Conversion Analysis - Part 1 <i>Co-Chairs: J. Roglans, P. Adelfang</i>	8:00 a.m.	1 Status of Reduced Enrichment Program for Research Reactors in Japan 2 2008 Progress Report on RERTR Activities in Argentina 3 Neutronic and Steady State Thermo-Hydraulic Computation of MARIA Reactor with LEU LTA 4 Progress in the Analyses of IRT, Sofia LEU Core: Neutronics and Steady-State Thermal-Hydraulic Analyses 5 Safety Analysis of LOFA-Type DBA in the WWR-K Reactor at Life Test of Lead Test Assemblies	T. Ohba, T. Inoue and H. Unesaki S. Balart, D. Cestau, P. Cristini, C. Fernandez, A. Gauna, A. G. Gonzalez, M. Lopes, O. Novara and H. Taboada K. Andrzejewski, T. Kulikowska, Z. Marcinkowska, W. Mielezczmko, K. Pytel, N. A. Hanan and P. L. Garner T. G. Apostolov, S. I. Belousov, N. A. Hanan and J. E. Matos F. Arinkin, P. Chakrov, L. Chekushina, Sh. Gizatulina, S. Koltochnik, N. Romanova and A. Shaimerdenov
10:00 - 10:15 a.m. Coffee Break and Refreshments				
5	Fuel Development - Part 1 <i>Co-Chairs: A. Izhutov, D. Wachs</i>	10:15 a.m.	1 Research and Development of Very High Density Fuels 2 The Status of Testing LEU U-Mo Full-Size IRT Type Fuel Elements and Mini-Elements in the MIR Reactor 3 INVAP's Achievements Using LEU 4 Fresh Fuel Characterization of U-Mo Alloys 5 Swelling of U ₃ Si ₂ During Irradiation	S. Balart, J. D. Hermida, M. López, M. Mirandou, A. G. González A. L. Izhutov, V.A. Starkov, V.V. Pimenov, V. Ye. Fedoseev, I.V. Dobrikova, A.V. Vatulin, V.B. Suprun, Ye. F. Kartashov, V.A. Lukichev, and V. M. Troyanov, A.A. Enin, D.V. Krylov J. P. Ordenez D. E. Burkes, D. M. Wachs, D. D. Keiser, J.-F. Jue, J. Gan, F. Rice, R. Prabhakaran, B. Miller and M. Okuniewski Y. S. Kim, G. L. Hofman, J. Rest and A.B. Robinson
12:15 - 1:30 p.m. Lunch Break				
6	Poster Session — Conversion Analysis <i>Organizer: J. Holland</i>	1:30 p.m.	1 Calculation of Argon-41 concentrations for the University of Florida Training Reactor Using Atmospheric Dispersion Modeling Codes: STAC2.1 and CALPUFF 2 Natural Circulation Flow Rate Calculation in PLTEMP/ANL Code 3 Assessing Performance Changes Due to Conversion at FRM-II With Combined Reactor and Virtual-Instrument Simulations 4 Neutronic Analysis for the Use of Silicide (U ₃ Si ₂ -Al) Fuel Elements in the Peruvian Research Reactor RP-10 5 The High Performance Research Reactor Fuel Development Hydraulic Test Loop 6 Upgrade of Uranium Self-Protection Against Unauthorized Re-Enrichment 7 An Approach to Quantitative Evaluation of Inherent Proliferation Resistance of Uranium Enriched up to 20% U-235 8 Preliminary Estimations on Conversion of the Research Reactor IRT MEPHl to Reduced Uranium Enrichment: Some Physics and Non-Proliferation Aspects 9 Transient Analysis for Insertion of LEU LTA in MARIA Reactor 10 NATIRT – Model of the Loss of Flow Transient for TAJOURA Research Reactor with LEU Fuel 11 Thermal Hydraulic Design of the First Operating of Tajoura Reactor with LEU Fuel at Thermal Power Level of 5 MW 12 Transient Analysis for Prototype MNSR HEU and LEU Core 13 Calculation for Miniature Neutron Source Reactor (MNSR) with LEU 14 Realization of the Core Conversion and Preliminary Study on Core Configuration with only LEU Fuel Assemblies for the DALAT Nuclear Research Reactor	V. S. Cornelson and G. Sjoden M. Kalimullah, A. P. Olson, and E. E. Feldman M. Englert and W. Liebert T. Cuya, M. Ravnik and I. R. Llamas Montoya W. R. Marcum, B. G. Woods and D. M. Wachs E. F. Kryuchkov, A. N. Shmelev, V. A. Apse, V. A. Yufereva and V. B. Glebov E.F. Kryuchkov, A.N. Shmelev, S.V. Masterov, V.B. Glebov and V.A. Apse E. F. Kryuchkov, V. B. Glebov, V. A. Apse, A. N. Shmelev and M. V. Shchurovskaya W. Mielezczenko, K. Pytel, P. L. Garner, and N. A. Hanan F. M. Bsebsu and N. S. Al-Fagaih F. M. Bsebsu G. Ke, Y. Li, Xia Pu and K. Du Y. Li, X. Pu, X. Houhua, P. Da, C. Defu and G. Ke P. V. Lam, N. N. Dien, V. V. Le, H. T. Nghiem, L. B. Vien and K. C. Nguyen
2:45 - 3:00 p.m. Coffee Break and Refreshments				

			2	Return of HEU fuel from the Portuguese Research Reactor	J.G. Marques, N. P. Barradas, A. Kling, A. R. Ramos, C. Anne and V. Garcia
			3	The U.S. Role in Promoting HEU Minimization	A. Loukianova and C. Hansell
			4	HEU Guidelines, Codes of Conduct, Resolutions, and Other Measures to Promote HEU Minimization	C. Hansell
			5	The United States Foreign Research Reactor (FRR) Spent Nuclear Fuel (SNF) Acceptance Program: 2008 Update	C. Messick, J. Taylor and J. D. Chamberlin
12	Fuel Development - Part 2 <i>Co-Chairs: C. K. Kim, J. Snelgrove</i>	5:00 p.m.	1	The Role of Friction Bonding in the RERTR-10B Experiment	D. E. Burkes, N. P. Hallinan, M. D. Chapple, and J. Chapman
			2	Characterization of the Interaction Layer Between Decomposed UMO7 and Aluminum Using Micro-Focused XRD on a Single Particle	H. Palancher, E. Welcomme, C. Sabathier, P. Martin, F. Mazaudier, C. Valot, S. Dubois, R. Tuoucoulou and P. Lemoine
			3	Characterization of Si-rich Layers in As-Fabricated and As-Irradiated RERTR Dispersion Fuel Plates: Recent Results	D. D. Keiser, J. F. Jue, J. Gan, A. B. Robinson and B. D. Miller
6:30 p.m. Adjourn					
Thursday Meeting Room: Grand Ballroom — The Sphinx Club at Almas Temple					
13	Fuel Development - Part 3 <i>Co-Chairs: E. Welcomme, D. Keiser</i>	8:00 a.m.	1	Irradiation Behavior of Atomized and Ground U(Mo) Dispersion Fuel	A. Leenaers, S. Van Den Berghe, M. Ripert, J. Noiro, M.-C. Anselmet, P. Lemoine, A. Röhrmoser and W. Petry
			2	Post-Irradiation Analysis of U-Mo Miniplates Tested to Date	G. L. Hofman, Y. S. Kim, J. Rest, T. Totev and A. B. Robinson
			3	LEU U ₃ Si ₂ Fuel Manufacturing for MARIA Reactor (Poland)	P. Colomb, L. Halle, G. Krzysztoszek, W. Miesleszczenko, F. J. Blom, F. Roelofs and C. J. J. Beemsterboe
			4	Update on Integral Performance Modeling of RERTR Experimental Fuel Plates	P. Medvedev and Y. S. Kim
			5	Advances in the Characterization of Annealed Atomized UMo/Al Particles Using Synchrotron Radiation	H. Palancher, E. Welcomme, P. Martin, C. Valot, P. Bleu, R. Tuoucoulou and P. Lemoine
10:00 - 10:15 a.m. Coffee Break and Refreshments					
14	Conversion Analysis - Part 3 <i>Co-Chairs: J. Marques, J. Matos</i>	10:15 a.m.	1	Experimentally Determined Hydraulic Characteristics of HEU and LEU Fuel Assemblies for MARIA Reactor	W. Miesleszczenko and A. Moldysz
			2	Progress in the Analyses of IRT, Sofia LEU Core: Accident Analyses	T. G. Apostolov, S. I. Belousov, N. A. Hanan and J. E. Matos
			3	The Impact of Conversion of MNSR to LEU on Neutron Spectrum Parameters	S. A. Jonah and U. Sadiq
			4	Applicability of WIMS-ANL to Generate Cross Sections for Very High Density UMo Fuel in Proposed MURR LEU Assembly	B. Dionne, J. Stillman and J. Stevens
			5	Investigation of Multi-Dimensional Effects in Steady-State Thermal Hydraulic Modeling of Core Conversions	P. L. Garner and N. A. Hanan
			6	U.S. Domestic Reactor Conversion Program	E. Woolstenhulme
12:15 - 1:30 p.m. Lunch Break					
15	Poster Session — Mo-99 Development <i>Organizer: J. Holland</i>	1:30 p.m.	1	Design of Remotely Operated Disassembly Device for Annular Targets During Production of Mo-99	A. S. El-Gizawy, J. Cardona, J. L. McCord and C. W. Allen
			2	Predictive Modeling of Solution Chemistry in an Aqueous Homogeneous Reactor Used for Mo-99 Production	J. L. Jerden Jr. and George Vandegriff
			3	Hydrodynamic Measurements in Irradiation Position for Mo-99 Production LEU Target	G. L. Solbrekken, J. Scott and C. Allen
			4	Status and Progress of Foil and Target Fabrication Activities for the Production of Mo-99 from LEU	T.C. Wienczek, G. F. Vandegriff, A. Bakel, A. A. Leyva and A.S. Hebden
			5	Mo-99 Recovery from Aqueous-Homogeneous-Reactors Fuel—Behavior of Termodic Sorbents	A. Ziegler, D. Stepinski, J. Krebs, S. D. Chemerisov, A. Bakel and G. Vandegriff
			6	Radiolysis Effects on the Composition and Rate of Gas Generation in an Aqueous Homogeneous Reactor.	S. Chemerisov, A. Gelis, A. Bakel and G. Vandegriff
			7	Radiolysis Effects on Molybdenum Oxidation State and Recovery from Aqueous-Homogeneous-Reactors Fuel	A. Gelis, S. Chemerisov, A. Bakel and G. Vandegriff
			8	Development of Robust Technology for Assembling Annular Targets Carrying LEU Foils for Production of Mo-99	A. S. El-Gizawy, J. Cardona, C. W. Allen and G. F. Vandegriff
			9	An Outlook on New Sources of Mo-99 and other Medical Radionuclides	R. W. Atcher, R. W. Brown and J. P. Norenberg
2:45 - 3:00 p.m. Coffee Break and Refreshments					
16	Fuel Development - Part 4 <i>Co-Chairs: C. Clark, G. Hofman</i>	3:00 p.m.	1	Analyses on Interaction Products of U-Mo/Al-Si Dispersion Fuel for an Estimation of the Required Silicon Content	H. J. Ryu, J. M. Park, C. K. Kim and Y. S. Kim
			2	Monolithic Fuel Fabrication Process Development at the INL	G. A. Moore, F. J. Rice, N. E. Woolstenhulme, W. D. Swank, D. C. Haggard, J. F. Jue, B. H. Park, S. E. Steffler, N. P. Hallinan, M. D. Chapple, and D. E. Burkes
			3	Production of Depleted U-10 Wt.% Mo Foils	T. Muth and B. Oakley
17	Round Table, Summary and Closure <i>Co-Chairs: J. Roglans and P. Adelfang</i>	4:15 p.m.			
5:00 p.m. Adjourn					