

RERTR-2015 – 36th INTERNATIONAL MEETING ON REDUCED ENRICHMENT FOR RESEARCH AND TEST REACTORS

October 11-14, 2015

Seoul, South Korea



The U.S. Department of Energy / National Nuclear Security Administration's Office of Material Management and Minimization (M3) will host the "RERTR-2015 International Meeting on Reduced Enrichment for Research and Test Reactors" with the support of the IAEA. The 36th International Meeting on Reduced Enrichment for Research and Test Reactors is also supported by the Korea Atomic Energy Research Institute (KAERI) and organized by Argonne National Laboratory and Idaho National Laboratory. The meeting will be held at the Plaza Hotel Seoul in Seoul, South Korea from 11-14 October 2015.

Last modified: Oct. 5, 2015

Technical Program (Final)

This document is to be considered as FINAL. If there any adjustments to the Program because of the unavailability of presenters or the need for substitution of co-chairs, they will be announced at the RERTR-2015 International Meeting.

The Meeting Organizers:



RERTR-2015: 36th INTERNATIONAL MEETING ON REDUCED ENRICHMENT FOR RESEARCH AND TEST REACTORS

Sunday, October 11

Registration: 4:30 – 6:00 pm, The Plaza Hotel (Floor 22)

Welcome Reception: 6:00 – 8:00 pm

#	Session Title	Time	Paper Title	Presenter
Monday, October 12 Meeting Room: The Plaza Hotel Ballroom				
	Opening and Welcome Jordi Roglans-Ribas	8:30 am	Welcome to South Korea and the RERTR-2015 International Meeting	H. J. Moon Director General, Space, Nuclear and Big Science Policy Bureau (MSIP)
1	Global Progress in HEU Minimization Chaired by C. Landers	8:45 am	1. Welcome and Overview of Office of Material Management and Minimization (M ³) Goals and Objectives	P. Hanlon, Assistant Deputy Administrator, Office of Material Management and Minimization (DOE-NNSA)
			2. Progress and Challenges in HEU Minimization through Reactor and Mo-99 Conversions	J. Chamberlin (DOE-NNSA)
			3. IAEA Activities in Support of HEU Minimization: 2015 Update	J. M. Dix (IAEA)
			4. Progress on Conversion of the Jamaica Slowpoke UWI CNS Research Reactor to Operation with LEU Fuel	C. Grant (ICENS)
			5. WWR-K Reactor: Conversion Started	P. Chakrov (INP)
10:00 am Coffee Break				
	Global Progress in HEU Minimization (Continued)	10:30 am	6. China Support to Reactor Conversion of MNSR Reactors	Y. Li (CIAE)
7. The KJRR, the First Research Reactor Using High Density U-Mo Fuel			J. K. Kim (KAERI)	
8. Overview of Environmental Management Nonproliferation and Highly Enriched Uranium Minimization Mission Activities			G. DeLeon (DOE-EM)	
9. A Roadmap to Minimize and Eliminate Highly Enriched Uranium			M. Pomper (JMCNS)	
10. A Thumb and a Blanket			R. Burgul (INS)	
12:00 pm Lunch Break				
2	MNSR and European High Performance Conversions to LEU Operation Chaired by J. Morman	1:30 pm	1. Implementation of Reactor Core Conversion Program of GHARR-1	H. C. Odoi (NNRI-GAEC)
			2. Neutronics Analyses of Dispersion Fuels as Alternate Fuels for the Conversion of NIRR-1 to LEU Using MCNP	S. A. Jonah (ABU)
			3. NIRR-1 Fuel Conversion Programme: Challenges and Opportunities	G. Omeje (NNRA)
			4. Prospective Activities Outlined for Regulatory Approval in Ghana: Overview	R. G. Abrefah (NNRI-GAEC)
			5. HERACLES-CP: Towards the Conversion of High Performance Research Reactors in Europe	H. Breikreutz (FRM II)
3:00 pm Coffee Break				
3	Perspectives on Fuel Performance Issues Chaired by S. Van den Berghe	3:30 pm	1. Overview on RRSF Reprocessing from Spent Fuel Transportation to Vitrified Residues Storage	X. Domingo (AREVA-NC)
			2. Grain Growth and Bubble Evolution in U-Mo Alloy by Multiscale Simulations	A. M. Yacout (ANL)
			3. Feasibility of BR2 Fuel Cycle with Different Burnable Absorber Options	S. Kalcheva (BR2)
			4. Modeling of U-Mo/Al Dispersion Fuel Meat Swelling	Y. S. Kim (ANL)
5:00 pm Adjourn				

Tuesday, October 13
Meeting Room: The Plaza Hotel Ballroom

#	Session Title	Time	Paper Title	Presenter
4	Fuel Development – Fabrication Technology I Chaired by E. Wilson	8:00 am	1. U.S. Progress in U-Mo Monolithic Fuel Development	B. Rabin (INL)
			2. USHPRR Fuel Fabrication Capability Program Overview and Readiness for Fabrication of the MP-1 Experiment	J. Wight (PNNL)
			3. Y-12 National Security Complex U-Mo Fabrication for MP-1	H. Longmire (Y-12)
			4. Optimization of Zirconium Plasma Spraying for MP-1 Fabrication	D. E. Dombrowski (LANL)
			5. Design of Irradiation Tests for Monolithic Fuel Qualification	N. E. Woolstenhulme (INL)
			6. Design and Engineering Considerations in the Fabrication of TREAT LEU Fuel Elements	I. J. van Rooyen (INL)
			7. Manufacturing Progress Status of EMPIRE UMo Irradiation Experiment	B. Stepnik (AREVA-NP) (CERCA)
10:00 am Coffee Break				
5	High Performance Reactor Conversions Chaired by N. Iyer	10:30 am	1. Accident Analyses for the MIT Research Reactor (MITR) Conversion from Highly Enriched Uranium to Low Enriched Uranium Using an Unfinned Fuel Element	L.-W. Hu (MITR)
			2. Continuing LEU Conversion Activities at the High Flux Isotope Reactor	D. G. Renfro (ORNL)
			3. Accident Analyses for the Conversion of the University of Missouri Research Reactor from Highly-Enriched to Low-Enriched Uranium Fuel	L. Foyto (MURR)
			4. Completion of the Preliminary Safety Analysis Report for the Conversion of the NBSR to LEU Fuel	R. E. Williams (NIST)
			5. Progress Update on Activities Towards Conversion of the Advanced Test Reactor	R. Little (INL)
			6. U.S. High Performance Research Reactor LEU Fuel Element Designs	E. Wilson (ANL)
			7. TREAT Conversion Project Status Update	S. R. Morrell (INL)
12:45 pm Lunch Break				
6	Fuel Development – Fabrication Technology II Chaired by C. Jarousse	2:00 pm	1. A Comparative Post Ion-irradiation Study of ALD and PVD Coated ZrN U-7wt.% Mo Dispersion Fuel Microplates	G. Hofman (ANL)
			2. As-fabricated Nitride and Silicide Coated U-Mo Atomized Particles: Complementary Microstructural Analyses	H. Palancher (CEA-DEN-DEC)
			3. Design of Miniplate Experiments for Irradiation in the Advanced Test Reactor	I. Glagolenko (INL)
			4. Surface Modification of UMo Particles by Atomization Under Reactive Atmosphere	L. Olivares (CCHEN)
3:00 pm Coffee Break				
7	Conversion Analysis and Methods Chaired by S. Jonah	3:30 pm	1. The High Flux Isotope Reactor: Technical Challenges to Overcome in Conversion Analysis	A. Bergeron (ANL)
			2. Analyses for Primary Coolant Pump Coastdown Phenomena for Jordan Research and Training Reactor	Y. M. Alatrash (JAEC)
			3. Neutronics and Transient Calculations for the Conversion of the Transient Reactor Test Facility (TREAT)	D. C. Kontogeorgakos (ANL)
			4. Steady-State Thermal-Hydraulics Analyses for the Conversion of BR2 to Low Enriched Uranium Fuel	B. Dionne (ANL)
			5. Validation of the Laue-Langevin High Flux Reactor (RHF) Neutronic Model and LEU Design Risk Mitigation Activities	A. Bergeron (ANL)
			6. Application of CFD to the Steady-State Thermal-Hydraulics Analyses for RHF Fuel Conversion	B. Dionne (ANL)
5:30 pm Adjourn				
6:30 – 9:00 pm RERTR-2015 Banquet at The Plaza Hotel				

Wednesday, October 14
Meeting Room: The Plaza Hotel Ballroom

#	Session Title	Time	Paper Title	Presenter
8	Russian-Designed Reactor Conversions Chaired by J. Chamberlin	8:00 am	1. Testing of IRT-3M (U-Mo) LEU Lead Test Assemblies in the MIR Reactor	A. L. Izhutov (JSC "SSC RIAR")
			2. Acceptance Tests for the LEU IVG.1M Reactor Fuel	A. Zh. Miniyazov (IAE NNC)
			3. Analysis of Steady States and Transients for WWR-K Reactor with LEU Fuel	S. Koltochnik (INP)
			4. Neutronics, Steady-State, and Transient Analyses for the Kazakhstan VVR-K Reactor with LEU Fuel	P. L. Garner (ANL)
			5. Testing Plan for LEU Fuel and Beryllium Oxide for Conversion of IGR Reactor	Ye. Kozlovskiy (IAE NNC)
10:00 am Coffee Break, Poster Area				
9	Poster Session Refreshments Chaired by J. Holland	10:00 am	1. Metallographic Preparation of Uranium-Molybdenum	Ch. Steyer (FRM II)
			2. Nigerian Roadmap for Core Conversion and HEU Core Removal	K. J. Adedoyin (NNRA)
			3. Amorphization Behavior of the UMo-Al Interaction Layer Produced by High-Energy Ion Irradiation	A. Yacout (ANL)
			4. Criticality Calculations for the IAEA 10 MW Research Reactor Using Nodal Diffusion Methods	M. K. Jaradat (JAEC)
			5. Kirkendall Void Formation in the Interaction Layer of U(Mo)/Al Dispersion Fuel	G. Y. Jeong (UNIST)
			6. Performance Evaluation of an Active Residual Heat Removal System for Research Reactor	I. S. Jun (UNIST)
			7. Effects of the Formation of U ₃ MoSi ₂ as a Diffusion Barrier between U-7Mo-1Ti and Al	S. Kim (KAERI)
			8. The Design Evaluation of a Low Enriched Uranium (LEU) Dispersion Target for Mo-99 Production	E. H. Kong (KAERI)
			9. Damage Propagation of Plate Type Fuel by Flow Blockage Accident of a Research Reactor	B. Lee (KAERI)
			10. CNEA Developments in U-Mo-Zry-4 Miniplates, Dog Bone Studies and Plates Co-rolling Control	M. López (CNEA)
			11. High-Energy Synchrotron Study of In-Pile-Irradiated U-Mo Fuels	A. M. Yacout (ANL)
			12. First Results of MC type LTA and Fuel Elements Sipping Tests After Conversion in MARIA Reactor	M. Migdal (NCBJ)
			13. Post-irradiation Examination of Burnable Absorbers for U-Mo Dispersion Fuel in KOMO Irradiation Tests at HANARO	H. J. Ryu (KAIST)
			14. Investigation of Welding Condition for the HANARO Fuel Rod Weld Zone	W. J. So (KAERI)
			15. Sputter-coating of Monolithic UMo: A Status Report	Ch. Steyer (FRM II)
			16. PIE Results of Mini-plate Irradiation Test HAMP-1 for U(Mo)-Al(Si) Dispersion Fuel	Y. W. Tahk (KAERI)
			17. Post Irradiation TEM Investigation of Si and ZrN Coated UMo Particles Prepared Using FIB	A. Leenaers (SCK•CEN)
			18. Implementation of Reactor Regulating System in Safety Analysis of Research Reactor	S. B. Yum (KAERI)
			19. Burnup Determination of Irradiated U-Mo Dispersion Fuel by Neodymium Monitor Methods	J. S. Kim (KAERI)
			20. Regulatory Review Processes of Ghana Research Reactor-1 (GHARR-1) Core Conversion	S. Adu (GAEC)
			21. Fabrication Characteristics of U-7Mo Fuel Coated by Atomic Layer Deposition	A. M. Yacout (ANL)
			22. Thermal Conductivity Modeling of U-Mo/Al Dispersion Fuel	Y. S. Kim (ANL)
			23. Status on Silicide Fuel Reprocessing at AREVA La Hague (2015)	J. F. Valery (AREVA NC)
12:00 pm Lunch Break				

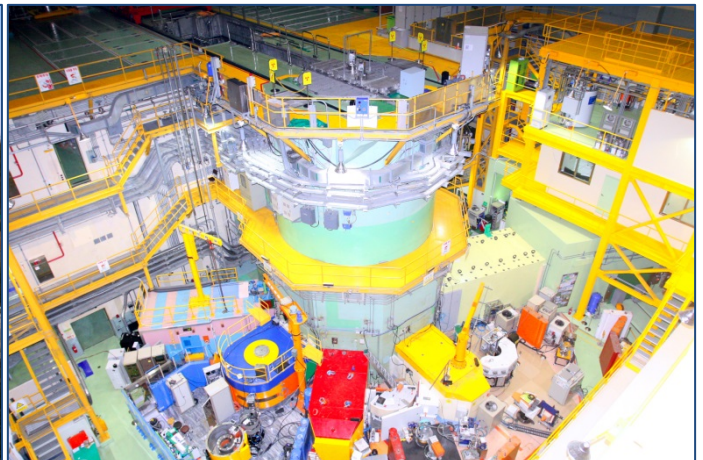
Wednesday, October 14 (continued)
Meeting Room: The Plaza Hotel Ballroom

#	Session Title	Time	Paper Title	Presenter
10	Fuel Irradiation Testing and Characterization Chaired by H. Breitzkreutz	1:30 pm	1. Destructive Post-irradiation Examination of the RERTR-12 and AFIP-6 MKII	A. B. Robinson (INL)
			2. Recent Results of Microstructural Characterization of Irradiated U-Mo Fuels	D. D. Keiser (INL)
			3. KJRR Fuel (U-7Mo) Qualification Plan and Its Status	J. S. Yim (KAERI)
			4. Non Destructive Post-irradiation Examination of the RERTR-12 and AFIP-6 MKII Experiments	W. J. Williams (INL)
			5. TEM Characterization of High Burnup U-10Mo Monolithic Fuel Plate	J. Gan (INL)
3:30 pm Coffee Break				
11	4:00 pm Summary and Closure John Stevens (ANL) and Jong Man Park (KAERI)			
5:00 pm Adjourn				

**Thursday,
October 15**

Optional Technical Tour of KAERI Facilities
(Bus transportation and lunch provided)

Buses will depart the Plaza Hotel at 8:30 am and return by 6 pm.



High-Flux Advanced Neutron Application (HANARO) Reactor