



## Technical Meeting on Low-Power Critical Facilities and Small Reactors

Ottawa, Ontario CANADA

2010 November 1-3

Organized by the CNS

in cooperation with the International Atomic Energy  
Agency



### FINAL PROGRAM

**Reception:** Sunday, October 31, 6:30 – 9:00 pm  
Canadian Museum of Science & Technology  
1867 St. Laurent Blvd, Ottawa, Ontario  
Registration in Lobby, 5:00 pm  
Departing Marriott Hotel at 6:15 pm (meet in Lobby at 5:45 pm)  
Wine & Cheese

#### Day 1: Monday, November 1

Time	Description	Speaker/Author(s)
07:30 – 08:30	Light Breakfast	
<b>Plenary Session</b>		
8:45-9:00	Welcome (from the General Chair and Patron Sponsor)	B. Sur/F. Doyle
9:00-9:30	Opening Address	R. Didsbury
9:30-10:00	Low-Power Critical Facilities and Small Reactors – The View of the Regulator	T. Jamieson
10:00-10:30	New Multi-Purpose Research Reactor	D. Ryan
10:30-11:00	Break	
11:30-12:00	IAEA Research Reactors Activities - A Look at the Role of Low Power Critical Facilities and Small Research Reactors and the Needs of Member States Considering Nuclear Energy Programme	R. Sollychin
12:00-12:30	A History of ZED-2	R. Jones
12:30-13:30	Lunch	
<b>Session #1: Design, Safety and Licensing</b> <b>Session Co-Chairs: F. Adams and R. Jones</b>		
13:30-13:50	Engineering Aspects of the Pool Test Reactor	J.T. Rogers
13:50-14:10	FIRST CRITICAL: The Original SLOWPOKE Reactor	J.W. Hilborn and P.D. Stevens-Guille
14:10-14:30	Overcoming the Challenges Encountered in Revising the ZED-2 Reactor Safety Analysis	G.B. Wilkin and K.R. Kumar
14:30-14:50	Training New Operators for the SLOWPOKE Reactor at École Polytechnique: Theory and Practice	G. Marleau, G. Kennedy and C. Chilian
14:50-15:10	Break	
15:10-15:30	Keeping Research Reactors Relevant: A Pro-active Approach for SLOWPOKE-2	L.R. Cosby, L.G.I. Bennett and K. Nielsen
15:30-15:50	The Role of the Test and Research Reactors in Supporting Regulatory Technical Assessments	G. Frappier, D. Serghuita and K. Conlon

15:50-16:10	ZED-2 Fuel Bundle Design for Qualification of Physics Design Tools of the ACR-1000 LEU Fuel	<u>B. Arsenault</u> and M. Zeller
16:10-16:30	Short, Medium and Long Term Consequences of Inadequate Defect Fuel Management	<u>J.G. Roberts</u> , R. Nashiem, M. McQueen, and G. Ma
16:30-17:00	Wrap-up	

**Banquet: Monday, November 1**  
**Marriott Hotel, Cartier II Room**  
**Cocktails - 6:30 pm**  
**Banquet - 7:00 pm**  
**Speaker – Dan Meneley**

## Day 2: Tuesday, November 2

Time	Description	Speaker/Author(s)
07:00 – 8:15	Light Breakfast	
<b>Session #2: Analysis and Experimental</b> <b>Session Co-Chairs: D. Serghiuta and B. Wilkin</b>		
8:30-8:50	Rossi-Alpha Measurements in Plutonium Metal Assembly	<u>L. Xiaobo</u> , F. Xiaoqiang, and Y. Chengde
8:50-9:10	Modelling of 28-Element UO <sub>2</sub> Flux-Map Critical Experiments in ZED-2 Using WIMS9A/PANTHER	<u>M.T. Sissaoui</u> , K.S. Kozier and J.P. Labrie
9:10-9:30	Defueled Channel Experiments in ZED-2 in Support of ACR-1000 Regional-Over-Power (ROP) Analysis	<u>M.W. LaFontaine</u> , G.P. McPhee and M.B. Zeller
9:30-9:50	Physics Analysis of Experiments with ACR-Type Lattices in the ZED-2 Critical Facility	J. Pencer, F.C. Wong, B.P. Bromley, M. Zeller, J. Atfield, and <u>F.P. Adams</u>
9:50-10:10	Simulating Sample Irradiation in the SLOWPOKE Reactor Using the Lattice Code DRAGON	<u>G. Marleau</u> and P. Veyret
10:10-10:30	Break	
10:30-10:50	Fine-Structure Reaction-Rate Measurements Conducted in ZED-2	J. Atfield and <u>M. Zeller</u>
10:50-11:10	Reactor Physics Experiments at Kyoto University Critical Assembly (KUCA)	<u>T. Misawa</u> , H. Unesaki, C.H. Pyeon and K. Nakajima
11:10-11:30	Critical Experiments at Sandia National Laboratories	G.A. Harms, J.T. Ford, and <u>A.D. Barber</u>
11:30-11:50	Substitution Experiments in the ZED-2 Reactor	<u>F.P. Adams</u> and B. Wilkin
11:50-12:10	Bias Extension for CANDU Reactor Applications Using ZED-2 Critical Applications	<u>L. Blomeley</u> , F.P. Adams and P. Boczar
12:10 – 13:00	Lunch Break	
13:00-13:10	Presentation of Nuclear Historic Landmark Award for ZED-2	Joe Colvin, American Nuclear Society President
<b>Session #3: Applications</b> <b>Session Chairs: G. Marleau and B. Arsenault</b>		
13:10-13:30	Performance of High Temperature Gas-Cooled Test Reactor and Critical Facilities and the Use of Data for Benchmarking	B. Tyobeka
13:30-13:50	Use of Research and Test Reactors for Self-Powered Detector (SPD) Development and Calibration	M.W. Lafontaine
13:50-14:10	Overview of MNR: Where We Are and Where We Are Going	C. Heysel
14:10-14:30	Using the Neutrons That Got Away: From Atoms to Applications	<u>R. Rogge</u> , J. Katsaras, B. Sur, M.A. Gharghouri, R.L. Donabarger and J.H. Root
14:30-14:50	Modelling and Analysis of (ThPu) <sub>2</sub> O <sub>7</sub> Fuel Bundles in ZED-2 Using TSUNAMI	<u>T. Zhu</u> , R. Trudell and A. Buijs

14:50-15:10	Recent Activities at the Zero-Power Teaching Reactor CROCUS	<u>G. Girardin</u> and R. Chawla
15:10 – 15:20	Break	
15:20-15:40	Various Applications Using the SLOWPOKE-2 Facility at RMC	L.G.I. Bennett and <u>K. Nielsen</u>
15:40-16:00	Research and Industrial Applications at the McClellan Nuclear Research Center, University of California, Davis	B.M. Klein, <u>M. Lerche</u> , J.F. Shackelford and W.G. Steingass
16:00-16:20	The International Reactor Physics Experiment Evaluation Project and the International Criticality Safety Benchmark Evaluation Project	<u>J.B. Briggs</u> , J.D. Bess and J. Gulliford
16:20-16:40	Sandia Pulsed Reactor Facility Seven Percent Critical Experiment	<u>A.D. Barber</u> and G.A. Harms
16:40-17:00	Nuclear Blenders: Blended Learning from Rensselaer's Reactor Critical Facility	<u>T. Haley</u> , Y. Danon, P. Caracappa, T. Trumbull, W. Ji, M-P. Huguet, B. Sones, and D. Gillich
17:00-17:20	The Application of ZED-2 data in the Design and Analysis of the ACR-1000	<u>Y. Dweiri</u> and R. Robinson
17:20-17:30	Closing Remarks	B. Sur

### *Day 3 (Optional): Wednesday, November 3*

<b>Time</b>	<b>Description</b>
08:15	Depart for Chalk River Laboratories (bus pick-up at front door of Marriott Hotel)
11:00	Arrival at Chalk River Laboratories Outer Gate for Security Check. Proceed to Visitor Parking.
11:30 – 12:30	ZED-2 Reactor
12:45 - 13:30	Lunch
13:45 – 14:30	NRU
14:45	Regroup in B500 Rm 136
3:00	Depart Chalk River Laboratories
5:30	Return to Marriott Hotel

- Wear flat-soled, closed-toe shoes and long pants
- Advise of severe allergies, pregnancy or medical conditions / devices
- All cameras must be left at Security, including cell phones / BlackBerrys / PDAs if camera-equipped.