IAEA
International Atomic Energy Agency
Atoms for Peace and Development

Technical Meeting on Advances in Fuel Design, Manufacturing and Examinations for Pressurized Heavy Water Reactors

Hosted by the
Government of Argentina
through the
Comisión Nacional de Energía Atómica (CNEA)

4-8 November 2024
Ref. No.: EVT 2304645

PROGRAMME (draft 6)

Day 1 – 04 November 2024 - Constituyentes Atomic Center (CAC) - Auditorio Emma Pérez Ferreira			
13.00 to 14.00		Welcome and Registration	
Opening Session			
14:00	30m	Safety and General Instructions	**Host**
		Welcome from the Hosts	
		Welcome from IAEA	
		Scientific Secretary's introduction: Purpose, scope, expectations and outcome of the meeting	**A. Khaperskaia, E. Pelletier - IAEA Scientific Secretaries**
		Introduction of the Chair of the Technical Meeting and Brief Presentation of the Foreign Participants - Approval of the agenda	**A. Bussolini - Chair of the meeting**

14:30	30m	Nuclear Fuel Cycle Activities In Argentina (TBC)	**TBC**
15:00	45m (TBC)	Coffe Break	
Presentation of IAEA activities			
15:45	45m (TBC)	IAEA presentation of Nuclear Fuel Cycle and Materials Section (NFCMS)	**A. Khaperskaia**
16:30	45m (TBC)	IAEA presentation of Nuclear Installation Safety Division (NSNI)	**L. Valivetty**
17:15	30m (TBC)	IAEA presentation of Nuclear Power Technology Development Section (NPTDS)	**E. Pelletier**
17:45		Welcoming Celebration	
19:00		Daily adjourn	
Day 2 – 05 November 2024 - CNEA Headquarters - Salón de Actos Dan Beninson			
Technical Session 1: Current experience of Member States for design, manufacturing, testing, and irradiation of PHWR fuels Chair : María Olivera Muñoz - Argentina			
10:00	30m	Overview of the Canadian experience on design, manufacturing, testing, and irradiation of PHWR fuels	**Ike Dimayuga - Canada**
10.30	30m	Design and Manufacturing Aspects and challenges for Pressurized Heavy Water Reactor Fuel Bundle	**Waseem - Pakistan**
11.00	30m	Commercialization Experience of Modified 37-element Fuel into Wolsong NPP Site	**Dongwook Kho - Rep of Korea**
11:30	30m	Design, manufacturing, testing, and irradiation of PHWR fuel in Argentina (TBC)	**A. Bussolini - Argentina**
12:00	30m	Design of SEU Fuels for Atucha-2	**P. Tripodi - Argentina**
12:30	90m	Lunch break	
14:00	30m	SEU Project at Atucha-2	**Diego Dominguez - Argentina**
14:30	30m	Slightly Enriched Uranium (SEU) precursors PCI failure analysis for Atucha II Nuclear Power Plant	**Paula Belén Humero, Maria Elisa Montain, Analía Noemí Bonelli - Argentina**

15:00	30m	Performance assessment of Pressurized Heavy Water Reactor fuel bundles experiencing power ramp	**Ashwini KUMAR - India**
15:30	30m	Coffee-break	
16:00	30m	Simulation of PHWR fuel rods using DIONISIO: normal, accident and storage conditions .	**Ezequiel Goldberg - Argentina**
16:30	30m	LIBS analysis of weld between bracket and outer ring of Inconel 718 spacer from CNA-2	**Carlos Ararat-Ibarguen, Andrés Lucia, Yenner Gómez Sánchez, Rodolfo Pérez, Manuel Iribarren, María Olivera Muñoz - Argentina**
17:00	30m	New Argentinean Laboratory for the study of irradiated materials (LEMI)	**Mirandou, Marcela; Daverio, Nicolás; Caribaux Medina, Robby; Chao, Lucas; González, Rubén; Lugo, Constanza; Mainetti, Matías; Novak, Maximiliano - Argentina**
17:30		Daily adjourn	

Day 3 – 06 November 2024

A technical visit to the CONUAR Fuel Manufacturing Plant and the RA10 Reactor (under construction)
Only for Foreing Participants

Day 4 – 07 November 2024 - CNEA Headquarters - Salón de Actos Dan Beninson

Technical Session 2: New visions, trends and possibilities for PHWR fuel manufacturing and testing
Chair: David Seijas - Argentina

09:30	30m	Laser Marking Qualification for Atucha-2 (CNA-2) Fuel Cladding	**M. Olivera, A. Minetti, C. Sosa, A. Bussolini y D. Delfino - Argentina**
10:00	30m	The Application of the Visual Check Technology in the production of the Nuclear Fuel for Heavy Water Reactor	**Yang Lu - China**

10:30	30m	Implementation of Quality Control Processes Using Artificial Intelligence in PHWR Fuels	**Cecilia Campobasso - Argentina**
11:00	30m	Development of Automated Machine Vision Systems – A Paradigm Shift in QA Approach in Nuclear Fuel Fabrication in India	**Swarup Acharya, R.K. Chaube, Komal Kapoor - India**
11:30	30m	Semi-automatic fault detection using AI and photometric stereo imaging of nuclear fuel pellets	**Silvina Dengra , Cativa Tolosa, Sebastián, Luis Agustín - Argentina**
12:00	30m	Optimized QC for the Production of UO2 Powder for PHWR Fuels (TBC)	**DIOXITEK (TBC)**
12:30	90m	Lunch break	
Technical Session 3: Concepts, Tools and Developments for Advanced Fuel design, verification and operation **Chair : E. Pelletier - IAEA**			
14:00	30m	Improving the efficiency of Pressurized Heavy Water Reactors: The Thermal-hydraulic design optimization of fuel elements	**Marcel, C.P.; Masson, V.P.; García, A.E. - Argentina**
14:30	30m	Evaluation of the influence on hydraulic characteristics of fuel elements due to the presence of debris in the primary circuit of PHW	**Alberto Martin Ghiselli - Argentina**
15:00	30m	Dancoff factors calculation for different symmetries and fuel materials for Embalse NPP advanced fuel designs	**P. Gomiz , A. Fernandez Zuvich , A. Bevilacqua - Argentina**
15:30	30m	Coffee Break	
16:00	30m	Reactivity and spent fuel source terms for Embalse NPP advanced fuel designs with natural uranium, slightly enriched uranium (SEU) and SEU with burnable	**Afra Fernandez Zuvich - Argentina**
16:30	30m	Vibration Monitoring of Embalse CANDU Reactor Fuel Channels and Internal Components Using Neutron Noise Analysis	**L. Wentzeis, K. R. Bonifacio Pulido, M. D. Calvo, N. Roqueiro, J. Gasanego Barbuscio, M. Mendivil, F. Gómez Fava, M. Pomerantz, J. Villar, H. Damiani - Argentina**
17:00	30m	High Pressurre Water Loop for Advances Fuel Design Verification	**Andres Caillet - Argentina**
17:30		Daily adjourn	
TBC		Hospitality dinner (TBC)	

Day 5 – 08 November 2024 - CNEA Headquarters - Salón de Actos Dan Beninson			
Discussions Session 1: **Specifics of ATF approach for PHWRs, characteristics and definitions.** **Chair Iuliana-Elena VISAN - Romania**			
10:00	30m	Potential benefits and challenges associated with PHWR/CANDU-6 accident tolerant fuels	**Iuliana-Elena VISAN - Romania**
10:30	30m	Exploration of accident Tolerant fuel for PHWRs – Theoretical and experimental estimations	**Anuj Kumar Deo - India**
11:00	30m	Discussion	**All participants**
Discussions Session 2 **Qualification challenges and potential international collaborations to foster future implementation of new fuel designs.** **Chair : Ike Dimayuga - Canada**			
11.30	30m	Canadian Perspective on Qualification Challenges and potential international collaboration for advanced fuels	**Ike Dimayuga - Canada**
12:00	30m	Nuclear Fuel Plant Pitesti - a manufacturer perspective on building a sustainable future for tomorrow's generation	**Andrei Tomescu, Romania**
12:30	30m	Discussion	**All participants**
13:00	90m	Lunch break	
Wrap-up session			
14:30	60m	Discussion: Current challenges and future prospects, IAEA support to Member States. Documentation strategy	**All participants**
15:30	60m	Summary report of the meeting and discussion	**Chairs of the sessions, Chair of the TM, all participants**
16:30		Closure of the meeting	