

# 'Nuclear Science' Programme and 'Research Reactors' sub-programme of the IAEA

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# IAEA: Structure of Major Programmes and Departments

**Major Programme 1 (MP-1) on 'Nuclear Power, Fuel Cycle and Nuclear Science'**  
**Manager: DDG-NE**

**MP-1 comprises 4 Programmes, A to D**

**Programme-D (Prog 1.4): Nuclear Science**  
**Manager: Dir-NAPC**

***6 Major Programmes***

***NE – MP 1***

***NA - MP 2***

***NS - MP 3***

***SG - MP 4***

***MT - MP 5***

***TC - MP 6***

# Nuclear Science Programme of IAEA

*Genesis:* Created after restructuring of some earlier activities (in 2001); effective from the 2002-03 P&B cycle

- Closely related to two Major Programmes, MP-1 and MP-2; Aligned accordingly with two Departments, NE and NA – Programmatically under NE's purview and Administratively under NA's purview
- Deals with activities related to both nuclear energy and non- power applications

# Nuclear Science Programme of IAEA

- ***Objective:* To increase MS capabilities in the application of nuclear science towards technological and economic development**
- Contributes to nuclear energy and non-power applications
- ***Advisory bodies: SAGNE; SAGNA***

# Sub-Programmes in Nuclear Science

- Atomic and Nuclear Data
- **Research Reactors (RR)**
- Accelerators and Nuclear Spectrometry for Materials Science and Analytical Applications
- Nuclear Fusion Research
- Support to the ICTP

*Advisory bodies: SAGNE & SAGNA; INDC & IFRC and from now TWG-RR*

# Research Reactor (RR) Sub-Programme

## *Objectives (2006-07 and 2008-09)*

- To increase the capabilities of interested MS to safely and reliably carry out scientific research and technology development at RR, conduct ageing management, decommissioning, refurbishment and modernization.
- To enhance the potential of interested MS to plan new facilities when needed, to cope with RR fuel cycle issues and reduce proliferation risks by core and target conversion and to repatriate fuel to the country of origin.

# Research Reactor (RR) Sub-Programme of the IAEA

Manager of RR Sub-Programme:  
Mr. Pablo Adelfang, NEFW

RR topics coverage in the sub-programme D.2

- **NAPC**: Support to RR applications and effective utilisation
- **NEFW**: Support to RR operations, modernisation and fuel cycle aspects; RR decommissioning

*Fine example of Synergy and Collaboration*

# Projects under RR Sub-Programme

2006-2007: 4 Projects

- D.2.01: Effective Utilization of RR (NAPC)  
*D.2.02 to D.2.04: NEFW*
- Supporting RR modernisation and innovation
- Addressing RR fuel cycle issues
- Facilitating transfer of know-how on decommissioning of RR and irradiated core materials

2008-2009: 5 Projects

- D.2.01: Enhancement of Utilization and Applications of RR (NAPC)  
*D.2.02 to D.2.05: NEFW*
- Supporting RR modernisation and innovation
- Addressing RR fuel cycle issues
- Facilitating transfer of know-how on decommissioning of RR and irradiated core materials
- RR operation, maintenance, availability and reliability

# IAEA RR Conferences

- **Seminar on RR utilisation, Mumbai, India (1996)**
- **International Symposium on RR utilization, Safety and Management, Lisbon, Portugal (1999)**
- **International Conference on RR utilisation, safety, decommissioning, fuel and waste management, Santiago, Chile (2003)**
- **International Conference on RR – Safe Management and Effective Utilization, Sydney, Nov 5-9, 2007**
- **African (AFRA) Conference on RR utilization - 3<sup>rd</sup> Conf, Rabat, Morocco (2003); 4<sup>th</sup> Conf, Accra, Ghana (2005); 5<sup>th</sup> Conf, Cairo, Egypt (2007)**
- **Cooperation: RERTR and RRFM Annual Meetings**

# Effective Utilization of Research Reactors

- *Topical technical meetings (TM)*
- *CRP*
- *Intl. Conf. on RR*
- *Cooperative support to RR Meetings*
- ***RR Regional Collaboration Initiatives***

## *Technical Support to TC Projects*

- National Projects (e.g. Egypt, Greece, Morocco, S.Africa)
- Regional Projects (RCA, AFRA); Several events held in 2004-06; more in 2007

# RR Facility Features vis-à-vis Prospects for Applications/Utilization

- Large Variations in the Features of Research Reactors (RR)
  - Neutron flux and profile
  - Power level
  - Irradiation facilities
  - Neutron beam facilities
  - Accessibility for NAA
  - Handling of target samples
  - Operational schedule
  - Instrumentation logistics
  - Others (Training Facilities)*
- Large differences in users profile, supportive infra-structure and resources available for RR – incl. national/governmental support



***Thank you***