

IAEA Activities in Support of Enhanced Research Reactor Utilization and Sustainability

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The underutilization of research reactors (RRs) around the world persists as one of the primary concerns to global nuclear research and technology development, and threatens the sustainable operation of individual RRs. The IAEA responds with a broad range of activities to address the strategic planning, execution, and utilization improvement of many of these facilities.

First of all, the revision of two critical documents for enlarging and diversifying a facility's portfolio of applications has been undertaken in order to keep this information up-to-date, corresponding to the dynamism of experimental techniques and research capabilities, including services and products RRs can provide. In 2014 the release of Nuclear Energy Series NP-T-5.3, "Applications of RRs" has replaced the well-known TECDOC 1234 (2001). The review process of the TECDOC 1212 "Strategic Planning for RRs"(2001) has been finalised, with a revised and enlarged publication expected in 2015.

Secondly, the IAEA continued supporting regional RR networks and coalitions, what helps foster the cooperation and assists facilities in expanding their stakeholder base and user community. Presently, the initiative accounts for 8 sub-regional entities created with more than 50 member states involved (including over 20 countries without such facilities).

Thirdly, a number of thematic networking activities focusing on specific applications of RRs are either continuing or starting, with a few selected examples listed below:

- In order to reflect the current status and trends in RR utilization and management, a group of international experts reviewed 37 strategic plan documents submitted by managers around the world. As a follow up to the review, two interregional workshops were organized in 2013 and 2014, which gave the opportunity to RR managers to share their experiences, lessons learned and good practices in developing and implementing strategic plans at their facilities.
- In neutron activation analysis (NAA), an extensive round of inter-comparison proficiency testing was completed (2010-2013), resulting in identification of poorly performing laboratories and implementation of necessary corrective measures through the follow up workshops, procurement of reference materials and dedicated expert review missions. Two new inter-comparison rounds are taking place in 2015. Additional support is ensured through an active CRP on "Development of an Integrated Approach to Routine Automation of NAA" (2012-2015).
- The first attempt towards standardization of digital neutron imaging was successfully completed in 2013 thanks to the Round Robin exercise organized and supported by the IAEA. Further improvement of the reference samples and measurement protocols were discussed in the follow up technical meetings. A dedicated CRP is planned in 2016. In addition, a series of training workshops are being organized with hands-on-training at the well-established neutron imaging facilities (in 2013 and 2015).
- In the area of the education and training, IAEA already supported 10 iterations of a six-week group fellowship training course on RR safety, utilization, O&M, hosted by RRs of the Eastern European Research Reactor Initiative (EERRI) and resulting in close to 80 young professionals trained since 2009. The Internet Reactor Laboratory project is another important initiative which presently is being extended to other regions after a successful pilot demonstration between NCSU/USA and JUST/Jordan.
- Other support and assistance are provided through close to 30 national and regional Technical Cooperation projects, all, among other areas, relevant to the applications and enhanced utilization of RRs.

This presentation will briefly describe the above efforts and introduce future activities in the area RR networking and regional/international cooperation.

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