APS journal article

International scientific collaboration: the Radiation Measurements Cross Calibration (RMCC) project

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Detecting the presence of radioactive sources, preventing the illicit use of radiological materials, supporting arms control treaties, responding to accidental radiation releases, and disposing of radioactive sources safely and securely are common concerns in the Middle East. The Radiation Measurements Cross Calibration (RMCC) project aims to improve radiation measurement capabilities across the region and establish common standards.

The RMCC project has been an ongoing initiative for the last twelve years. Its goal is to build core competencies in radioanalysis in the Middle East by facilitating the exchange of expertise and fostering dialogue to improve methods and strengthen a growing network. This year the Middle East Scientific Institute for Security (MESIS) in Amman, Jordan assumed leadership of the RMCC.

The RMCC project was launched in 2002 by the Cooperative Monitoring Center (CMC) at Sandia National Laboratories. The goal was to develop and share internationally recognized standards for laboratory analytical radiation measurements, including radiochemistry techniques. RMCC is sponsored by the Department of Energy's National Nuclear Security Administration and the Department of State's Cooperative Threat Reduction Office. It is implemented in collaboration with the International Atomic Energy Agency (IAEA) and the Comprehensive Test Ban Treaty Organization (CTBTO).

The RMCC project provides a number of benefits to regional laboratories. The project conducts annual workshops that include host-country laboratory tours where participants often identify opportunities for increased technical cooperation. The workshops provide training on relevant topics such as laboratory management, quality assurance, radiochemistry, mass spectrometry, and gamma spectroscopy. They encourage valuable discussion on radiological measurement challenges and on developing internationally recognized laboratory standards for destructive and non-destructive analytical methods. Discussions build confidence among participants by encouraging transparency and improving data sharing, reliability, and acceptance. The workshops increase the indigenous capacity to competently address radioanalysis-related issues in the Middle East.

The first RMCC workshops were conducted in 2004. They were developed in collaboration with the Kuwait Institute for Scientific Research (KISR) and the Qatar Supreme Council for the Environment and Natural Reserves (SCENR). Since then, workshops have been hosted by key organizations and institutes in Qatar, Oman, Bahrain, Jordan, and Morocco. The ninth RMCC

Workshop was hosted on 20-22 October 2014 by MESIS on the campus of the Royal Scientific Society in Amman.

Because MESIS had hosted the annual RMCC workshops in 2011 and 2013 and had managed the project website since 2005, it has a strong understanding of the project. This may have been the reason why members unanimously endorsed a proposal for MESIS to host and manage the project going forward. MESIS has developed a core competency in sustainable project management and is well-suited to take a leading role in transitioning the project to the region, with a plan for full indigenization.

The ninth RMCC Workshop was the first meeting held following this transition of project management. In attendance at the workshop were 26 participants from regional countries and several other international subject matter experts who hailed from the IAEA, the CTBTO, and US national laboratories. The workshop successfully met its primary goal, which is to set the project on course for further indigenization as a regionally owned initiative.

MESIS took the lead in developing the ninth RMCC workshop agenda and in moderating all sessions. The success of the workshop can be largely attributed to the emphasis on the transition phase of the project, which included revamped branding, workshop language, and new services offered to members. Revamped branding included a new logo and a website in both Arabic and English. The official language of the workshop was Arabic. Sessions were held almost entirely in Arabic, and Arabic was used as the primary language for all communications with members. Several English-speaking members voiced praise for their ability to engage experts in both languages through the help of translators who have worked with MESIS for a number of years and were provided at no additional cost by MESIS.

Several additional actions were taken to emphasize the transition of the project to the region and to promote ownership. The workshop included special sessions that focused on country analysis and relevant case studies. Regional speakers were given prominence, many speaking on the first day. Veteran participants were able to participate in the development of the new logo.

One of the primary challenges of the project is to ensure that participants remain actively engaged in RMCC throughout the year and not limit their participation to the annual workshop. Increasing awareness and promoting the benefits of RMCC membership will be key to generating stronger engagement and providing incentive to remain involved. In this regard, MESIS developed several new services to benefit RMCC members. A number of offered services are integrated in the new RMCC website in order to maximize interactivity among participating members. One addition is an “ask an expert” feature, where members can pose radiation-related questions. MESIS staff then develop and post an appropriate response. Several experts have volunteered their services to aid in providing scientifically sound answers for members.

Another key feature is publication assistance. Members who publish work elsewhere may share it with the network on a dedicated page. And members interested in developing their qualitative and quantitative research or hoping to publish work in established journals will be able to receive guidance and expert advice from a Review Committee. Likewise, there is a prize for the "Outstanding Publication of the Year."

Several participants at the ninth RMCC Workshop voiced their support for increased engagement with relevant institutions in the field, reaching beyond individual experts involved in the project. Further institutional engagement and support across the region will in turn help expand the project. It will also be key in securing active participation from members and ensuring their continued interest in the project.

An all-Arab Advisory Committee was formed to offer strategic guidance on the project. Twelve senior officials from the region were identified, and six of them met the day before the workshop to discuss the future structure and role of the project.

Financial sustainability will be to the future success of the RMCC project. Funding from the region is expected to increase at a gradual rate, but only in parallel with the growing interest generated by the project. The largest expense is the cost of hosting the annual workshop. To mitigate this challenge, several options were considered. Among them were an annual institutional membership fee, a workshop participation fee, and corporate sponsorship.

The transition of the RMCC project to MESIS will aid its ownership and acceptance. This will allow for more direct engagement by regional governments, universities, and agencies involved in nuclear energy.

For more information, visit the RMCC website at http://rmccnetwork.net/en.

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[1]Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy under contract DE-AC04-94AL85000. SANDXX-XXXX.

RMCC Workshop, Doha, Qatar