Radiation Measurements Cross Calibration (RMCC) Project – Brief History and Achievements

Presented by
Dr. Amir H. Mohagheghi

Annual RMCC Workshop
Middle East Scientific Institute for Security (MESIS)

Amman, Jordan
June 17-19, 2013


Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy’s National Nuclear Security Administration under contract DE-AC04-94AL85000.

Overview

• Brief History
• RMCC Objective and Processes
• RMCC Project Benefits
• Past RMCC Workshops
• Future Plans
Radiation Measurements Cross Calibration (RMCC) Project – Motivations

- All countries in the Middle East have radiation measurement capabilities associated with (partial list):
  - Power and research reactors
    - Nuclear Security, Safeguards, and Safety
  - Radioactive sources in medicine, commerce, industry
    - Radiological Security and Safety
  - Responding to accidental or intentional radiation releases
  - Environment, health and safety
  - Disposing of radioactive sources
- Concern: Quality of Data/Information; Development of Capacity (laboratories, human resources)
- Improving and standardizing nuclear monitoring and measurement capabilities in the Middle East are essential elements of developing an approach to such concerns
RMCC Objective and Processes

- **Objective**: Develop a set of internationally recognized standards for laboratory radiation measurements in the Middle East
- **The project Processes consists of**
  - **Signup for the DOE proficiency testing program (MAPEP)**
    - Receive test samples
    - Analyze and report
    - Follow-up with regional workshops to discuss the results and identify technical assistance needs
  - Participate in targeted studies by the IAEA labs in Seibersdorf
  - Participate in Annual Workshops: Presentations and Group Discussions
    - On the Quality Assurance requirements and implementation
    - Methodologies for radioactive sampling and laboratory analyses
    - Environmental Monitoring Methods
    - Natural Radioactivity
    - Emergency preparedness – for laboratory analyses
    - Impact of nuclear accidents on laboratory analysis and operations

The RMCC Project Benefits

- **Increased confidence in data quality across the region**
- **Availability of a network of qualified labs for radiological measurements**
  - Build up the capacity in the region to produce reliable radiological data
- **Improved scientist-to-scientist communication**
  - Provides a mechanism for sharing of agreed upon information
  - Enables scientists in the region to work cooperatively to create indigenous solutions to the problems in the region
  - Fosters the development of a network of scientific experts in the region
- **Training Opportunities**
  - Austria – The IAEA Labs in Seibersdorf
  - Germany – Federal Bureau for Radiation Protection
  - USA – Sandia National Laboratories
  - Regional Opportunities
Past RMCC Workshops

- **RMCC-I**: Co-hosted by the Kuwait Institute for Scientific Research (KISR), October 2004
  - Participation from Kuwait, Saudi Arabia, Qatar, UAE, Bahrain, Oman, and Jordan

- **RMCC-II**: Co-hosted by the Supreme Council for the Environment and Natural Reserves (SCENR), Doha, Qatar, November 2005
  - Participation from Kuwait, Saudi Arabia, Bahrain, Qatar, UAE, Oman, Jordan, and Yemen

- **RMCC-III**: Co-hosted by the Ministry of Regional Municipalities, Environment and Water Resources (MRMEWR), Muscat, Oman, April 2007
  - Participation from Kuwait, Bahrain, Iraq, Qatar, Oman, Jordan, and Yemen

- **RMCC-IV**: Co-hosted by the University of Bahrain and the Marine Emergency Mutual Aid Centre (MEMAC), Kingdom of Bahrain, March 2008
  - Participation from Kuwait, Saudi Arabia, Bahrain, Qatar, Oman, UAE, and Jordan

- **RMCC-V**: Co-hosted by The Qatar University and The Qatar Petroleum, Doha, Qatar May 2010
  - First participation by France, and North Africa (Tunisia, and Morocco)

  - Participation by all RMCC Members from the Middle East and North Africa
  - Tour of the Jordanian Royal Scientific Society Laboratories

- **RMCC VII** – June 2012: Coordinated by the National Center for Energy Sciences and Nuclear Techniques [Centre National de l’Energie, des Sciences et Techniques Nucléaires] (CNESTEN), Rabat, Morocco
  - Participation by RMCC Members from the Middle East and North Africa
  - Tour of the CNESTEN
The RMCC Future

- Transfer of RMCC Ownership to the region
  - The Middle East Scientific Institute for Security (MESIS) to host the project
  - Regional support is required for success
  - Formation of RMCC Advisory Council?
  - Other thoughts?

Thank You

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(Shukran)