Radiation Measurements Cross Calibration (RMCC)
Project Background

All countries in the Middle East have nuclear monitoring and measurement capabilities associated with nuclear power and research reactors, and with radioactive sources used in medicine, commerce, and industry. Detecting the presence of radioactive sources, preventing the illicit use of radiological materials, responding to accidental radiation releases, and disposing of radioactive sources safely are common concerns.

Improving and standardizing nuclear monitoring and measurement capabilities in the Middle East are essential elements of developing an approach to such concerns. As a first step, The Cooperative Monitoring Center (CMC) of Sandia National Laboratories in collaboration with the International Atomic Energy Agency (IAEA) has initiated the Radiation Measurements Cross Calibration (RMCC) project to develop internationally recognized standards for laboratory radiation measurements, including radiochemistry techniques.

The CMC will assist selected radiation measurement laboratories to participate in the Department of Energy's Multi Analyte Proficiency Testing Program (MAPEP) (http://www.inel.gov/resl/mapep/). The MAPEP will send samples (soil, water, air filter, and vegetation) spiked with known amounts of radioisotopes to each participating laboratory. Each laboratory will have three months to analyze the test samples and report their measurements. MAPEP then compiles the data, performs an evaluation with respect to the known activity levels, and publishes them on its web site. Approximately 100 US and foreign laboratories currently participate in the MAPEP, including Sandia National Laboratories.

The group will conduct annual workshops in the region to discuss the results, identify areas where increased technical cooperation would be beneficial, and recommend future activities. These practical workshops are designed to encourage communication among the GCC radiological laboratories, develop internationally recognized laboratory standards, and provide training on relevant topics such as laboratory management, quality assurance, and gamma spectroscopy. The workshops provide opportunities for the regional participants to exchange insights into the radiological measurement problems they face in their home countries and build up the regional capacity to address these issues.

Benefits from the RMCC project include increased confidence in data quality across the region, availability of a network of qualified labs for radiological measurements, and improved scientist-to-scientist communication. The project will build up the capacity in the region to produce reliable radiological data and will provide a mechanism for sharing of agreed upon information. This will enable scientists in the region to work cooperatively to create indigenous solutions to the problems in the region. The effort builds confidence by encouraging technological transparency in the region and fosters the development of a network of scientific experts in the region.

The CMC worked closely with the Kuwait Institute for Scientific Research (KISR) and the Qatar Supreme Council for the Environment and Natural Reserves (SCENR) to conduct the first two

RMCC workshops held in October 2004 in Kuwait City, and November 2005 in Doha, respectively. The third workshop was hosted by the Oman Ministry of Regional Municipalities, Environment and Water Resources (MRMEWR) in Muscat, Oman in April 2007. We are currently seeking a regional organization to host the fourth workshop.