

Border Monitoring Equipment Evaluation Best Practices Workshop

The Border Monitoring Working Group (BMWG) was established in 2006 by the International Atomic Energy Agency (IAEA), European Union (EU) and United States (US) to share information for the purpose of harmonizing border monitoring activities in the areas of radiation detection equipment deployment, training and sustainability. Such coordination prevents the duplication of efforts, exploits organizational strengths and maximizes the impact of limited resources. Since its establishment, the BMWG has proven to not only be an effective tool for avoiding duplication and maximizing resource targeting, but also through a subordinate Technical Working Group to serve as a forum to address common technical concerns while jointly developing capacity building tools.

An important issue that the BMWG tackles is ensuring that radiation detection equipment capability and performance is commensurate with end-user needs and constraints. In fact, the group is currently active in the testing of the radiation-detection equipment that is used in EU, US, and many IAEA Member States receiving assistance from BMWG donor members. Recently, BMWG participants from NSDD and the IAEA developed and carried out an IAEA workshop to share technical information that might help partner countries build their own capability for evaluating radiation-detection equipment. The workshop focused on best-practice information sharing on the testing, evaluation, and development of test methods for radiation detector performance characterization. The inaugural session of The Testing and Evaluation of Spectrometric Handhelds Workshop was held at IAEA's Seibersdorf Laboratory outside of Vienna, Austria, 25-29 June 2018. The workshop included seventeen participants from nine countries: India, Poland, Korea, China, Ukraine, Hungary, Indonesia, Malaysia, and Thailand. Additionally attending were: seven facilitators from the U.S. Department of Energy Office of Nuclear Smuggling Detection and Deterrence (NSDD), four facilitators from IAEA, three observers from BMWG and members from Germany, France and the United Kingdom.

The principles and practical aspects of developing and implementing radiation detection test methods were effectively delivered through scenario-based activities and discussion. The participants moved through four process-related technical scenarios:

1. Collection of high-precision spectral measurements of various sources, including HEU, to provide input data for the Modeling and Simulation exercises;
2. Modeling and simulation activities focusing on the use of a newly-available Replicative Assessment of Spectroscopic Equipment (RASE) software product enabling realistic, simulated instrument algorithm testing;
3. Measurement of the probability of false identification rates for the RIIDs being tested; and
4. Measurement of the probability of identification as a function of flux (or distance), along with demonstration of testing automation.

The scenario approach using small groups with hands-on activity proved to be a very practical approach to meeting the workshop objectives.

Outcomes from the well-received workshop included sharing previously collected test data, the execution of practical performance test methods, and the distribution of tools that the nine participating Member States immediately began applying to their nuclear security efforts. This workshop is a successful example of how the BMWG collaboration and relationships continue to be well positioned to meet the needs of global security through practical, beneficial assistance, in an agile manner that is also responsive to emerging trends based on an evolving understanding of capabilities and gaps.

Gender

Male

State

Other

Author: Mr DIMMERLING, Paul (US DOE NNSA)

Co-authors: Dr MASSEY, Charles (IAEA); Mr HARRIS, Tyrone (IAEA); Dr ANDERSON, Stephen (Los Alamos National Laboratory); Mr DEMBOSKI, Mike (Pacific Northwest National Laboratory)

Presenter: Dr MASSEY, Charles (IAEA)

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