



International Joint Efforts to Address Training Needs in Nuclear Security

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Joint Training: Key Milestones

- ◆ In 2005 - under auspices of IAEA - the JRC, IAEA and SLD formed Border Monitoring Working Group (BMWG)
- ◆ In August, 2008 the BMWG conducted a pilot joint training with the State Border Guard Service of Ukraine at the National Border Guard Academy
- ◆ In March, 2009 a BMWG technical group met to better blend joint training curriculum.
- ◆ BMWG plans to jointly deliver improved curriculum sometime this summer.



**Joint training instructors
in Ukraine**



Border Monitoring Working Group (BMWG)

- ◆ **BMWG was created in 2005 by three major donor agencies: the IAEA, the European Union's Joint Research Centre (JRC) and the Department of Energy Second Line of Defense Program (SLD)**
- ◆ **Purpose is to coordinate efforts to strengthen the global capacity to combat the illicit trafficking of nuclear and other radioactive materials**
- ◆ **BMWG shares information on individual support programs and coordinates activities in the areas of equipment deployment, training, and sustainability**
- ◆ **Members and partner countries benefit from a coordinated technical approach: avoids duplication of efforts, plays to organizational strengths, and maximizes the impact of limited resources**



BMWG Members: The JRC



JRC functions as a centre of science and technology for the European Union (EU) - independent of special interests, both private and national - providing customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies

JRC's Institute for the Protection and Security of the Citizen provides research-based, systems-oriented support to EU security-related policies including non-proliferation, nuclear safeguards and **nuclear security**



Nuclear Security activities at JRC

- ◆ Under TACIS program and follow-on Instrument for Stability, projects focussed on the fight against illicit trafficking and border monitoring
- ◆ Ongoing projects: Armenia, Azerbaijan, Belarus, Georgia, Moldova, Russian Federation and Ukraine
- ◆ Projects include provision of equipment and training
- ◆ JRC provides coordination with other international support programs





BMWG Members: Second Line of Defense

MISSION: Strengthen the capabilities of partner countries to *deter, detect, and interdict* illicit trafficking of special nuclear and other radioactive materials at international border crossings, airports, seaports, and other points of entry.

STRATEGY: Establish and maintain strong collaborative relationships with partner countries and with other international organizations in order to ensure a sustained, global effort against nuclear terrorism

- Work with partner countries to deploy radiation detection systems and associated training.
- Focus strongly on sustainability to ensure that partner countries continue to effectively operate the equipment.



SLD Organization

- ◆ The SLD Program includes two components: the Core Program and the Megaports Initiative.
- ◆ The Core Program focuses on providing equipment to land border crossings, feeder seaports and international airports.
 - This work originally began in Russia and has since expanded to include Former Soviet States, the Caucasus, Eastern Europe and other key areas.
- ◆ The Megaports Initiative began in 2003 and provides equipment to scan containerized cargo as it moves through the global maritime shipping network.
 - In identifying ports of interest for engagement under the Megaports Initiative, SLD considers a number of factors, including volume of containers and regional terrorist threat.
- ◆ To date, SLD has completed deployments at over 230 sites around the world.



**Core installation
in Slovenia**



**Megaports installation
in Honduras**



BMWG Members: IAEA – Office of Nuclear Security

MISSION: Coordinate and implement the Agency's activities aiming at preventing, detecting and responding to acts of nuclear terrorism and threats thereof, through resources provided by a specific extra budgetary fund, called Nuclear Security Fund (NSF).

ORGANIZATION: 3 sections: Information Coordination and Management, Prevention, and Detection and Response.

DETECTION & RESPONSE TO MALICIOUS ACTS SECTION:

- ◆ Enhance capabilities to detect, interdict and respond to illegal acts involving nuclear and other radioactive material
- ◆ Improve nuclear security at major public events
- ◆ Coordinate research projects for detection equipment and nuclear forensics

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IAEA: Detection and Response *Improved Technical Capabilities*

- ◆ **Detection and response equipment:** The IAEA supports Member States with the acquisition of proper equipment for detection and response to malicious acts involving nuclear and other radioactive material at borders or at other strategic locations. The IAEA also facilitates provision of such equipment through the bilateral support programmes.
- ◆ **Databases and technical references:** The IAEA maintains databases including the collection and analysis of information about illicit trafficking incidents in the IAEA's Illicit Trafficking Database (ITDB) and the International Catalogue of Sealed Radioactive Sources and Devices. It also publishes important guidance in the Nuclear Security Series of documents.





Some Concrete achievements of the BMWG

- ◆ In Ukraine, JRC and SLD coordinated their selection of border crossings to be equipped with detection, resulting in better use of the available resources.
- ◆ SLD and JRC are currently implementing a joint project in Georgia where the JRC will fund the installation of the SLD-provided equipment at a jointly selected border location.
- ◆ SLD, the IAEA and JRC have provided their first joint training session for front line officers last August in Ukraine



JRC joins SLD on site survey in Georgia





BMWG Joint Training: Curriculum Design Principles

- ◆ SLD, IAEA and JRC already have successful, independent training programs
- ◆ Programs are based on adult learning principles and progressive training methodologies that include
 - subject matter expert instructors,
 - table top exercises
 - customized and realistic training props and
 - job aids
- ◆ Programs are generally participatory and create a challenging, yet safe, learning environment using PowerPoint presentations, learning games and practical exercises
- ◆ Program are designed to be responsive to partner country needs:
 - the specific operational requirements,
 - cultural attributes and
 - technical infrastructure



Instruction by subject matter experts



Table top exercises



Job aids



Joint Training: Target Audience and Requirements

- ◆ **Training programs are designed for Customs, Border Patrol, Border Police and other Front Line Officers**
- ◆ **The requirements driving the design of the training programs include:**
 - **dire consequences of a missed/failed interdiction creates an work environment with zero tolerance for human error,**
 - **while many new equipment-related tasks are rule-based, there are critical cognitive processes,**
 - **the trainees present a wide diversity and range of aptitudes (most operators possess non-technical backgrounds) and**
 - **the time available for instruction is often short (2 to 5 days).**



Pilot Joint Training in Ukraine

- ◆ Pilot joint training was conducted in August, 2008 with the State Border Guard Service of Ukraine at the National Border Guard Academy in Khmelnytsky, Ukraine.
- ◆ In addition to SLD, JRC and IAEA, the State Border Guard Service of Ukraine (SBGSU) and Aspect (equipment manufacturer) participated in the training.
- ◆ SLD had worked with SBGSU to install radiation equipment at the Border Guards Academy in Khmelnytsky
 - One vehicle RPM and one pedestrian RPM networked with a single central alarm workstation.



Joint training class



Pilot session included both lecture sessions and hands-on/ field exercises



Classroom lectures used expert instructors, interpreters and translated materials



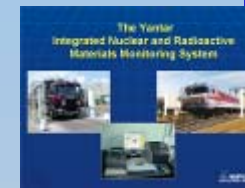
Session included equipment maintenance training



Practical Exercises with handheld detectors

Joint Training Agenda Topics

- ◆ Introduction to Weapons of Mass Destruction/Nuclear Smuggling (SBGSU)
- ◆ Basic Radiation Physics (JRC)
- ◆ Radiation Screening Equipment Overview (SBGSU)
- ◆ Introduction to Safety, Survey and Identification Instruments (SLD/ASPECT)
- ◆ Search Methods and Practical Exercises
- ◆ Radiation Portal Monitor System Overview (SBGSU)
- ◆ Response Depending on Nature of Seized Materials (JRC)
- ◆ Security and Nuclear Forensic Considerations for Secondary Inspections (JRC)
- ◆ CAS Response Procedures (ASPECT)
- ◆ Profiles Quiz/Casino Game (SLD)
- ◆ Radioactive Materials Transportation/Response Handbook (SLD)
- ◆ IAEA Illicit Trafficking Database (IAEA)
- ◆ Basic Maintenance for Operators (ASPECT/SLD)



Interactive casino game



Lessons learned

- ◆ **At the conclusion of the three-day course, the trainees and the instructors discussed training effectiveness**
- ◆ **Added value of joint training included:**
 - opportunity to address the three organizations at the same place and time,
 - listening to complementary approaches,
 - a global view of international efforts and
 - coordination and integration becomes a more concrete concept by the end of the training session.
- ◆ **Clear benefit in the participation in the lecture sessions of the partner organisation (SBGSU).**
 - The trainees immediately feel more directly involved
- ◆ **Both trainees and instructors identified opportunities for improvement**
 - The joint training curriculum should be better blended to
 - avoid duplication, identify gaps and
 - ensure that the technical content and level are consistent and appropriate.
 - simultaneous translation was recommended





Follow-up actions

- ◆ Agreed at recent BMWG held in Vienna, January 2009 to pursue further joint training
- ◆ In March 2009, a BMWG technical working group with representatives of the three organizations met at JRC in Ispra to review and adapt the course material.
- ◆ The joint curriculum is being finalized with plans for the repetition of a joint training session sometime this summer.
- ◆ Possible extension to other topics are envisioned including a train-the-trainer course, maintenance and sustainability training, and expert level and management sessions.



BMWG technical group meeting at JRC in March 2009



Closing Comments

BMWG has become an effective tool for avoiding duplication and maximizing and targeting resources

Joint Training in Ukraine was a successful pilot effort to apply this approach in the training arena; efforts are now underway to improve and expand this effort.

This collaborative approach will better meet the increasing global need for training related to nuclear security.

BMWG members anticipate that new and growing areas of cooperation will strengthen global capacity to combat illicit trafficking.

