Threat

- Trafficking of nuclear and other radioactive materials continues
- Comprehensive capacity to interdict is incomplete

Impact

- One undetected nuclear device in the hands of sub-national group = Failure
- Single viable SNM smuggling network is unacceptable security risk

Goal

- International coordination and collaboration imperative to meeting global nuclear security needs
- Layered approach to SNM threat detection capabilities
Collaborative Approach

- **National Level**
  - Law enforcement
  - Customs and Border Guards
  - Nuclear Regulatory Agencies

- **Regional Level**
  - Exercises, Workshops
  - Information Sharing

- **International**
  - World Customs Organization (WCO)
  - Second Line of Defense (SLD)
  - International Atomic Energy Agency (IAEA)
  - Border Monitoring Working Group (BMWG)
  - Global Partnership
Strategy

Build global capacity to reduce the risk of illicit trafficking through:

- **Deterrence** of trafficking in special nuclear and other radioactive materials by judicious deployment of fixed and mobile radiation detection equipment.

- **Detection** by instrument alarms and information alerts including locating, identifying and securing of source during alarm adjudication.

- Operational training, regulatory development, exercises and support for **interdiction** of radioactive materials out of regulatory control.
Defense in Depth: Equipment

- Layered network of detection
  - International border crossings
  - Border Checkpoints
  - Airports
  - Seaports
  - Internal locations

- Screening multiple modes of transport to maximize capability
  - Cargo
  - Rail
  - Pedestrian
  - Vehicle
Detection

Seaports

Rail Crossings

Vehicle Crossings

Second Line of Defense
Isotope Identification

ORTEC Detective

Spectroscopic Portal Monitor (SPM)

Flir Identifinder

Second Line of Defense
Mobile Detection Systems (MDS)

- MDS complements fixed detection equipment and are a critical component of a layered, defense-in-depth architecture.
- Powerful nuclear security tool for border controls and law enforcement operations:
  - Along “green” borders
  - Response to intelligence or information alert related to smuggling activity
  - Law enforcement sting operations
  - Political boundaries where fixed equipment installations are impractical, unauthorized or unwanted.
  - Temporary replacement for fixed RPM installation
  - Major public events

Roadside operations in Slovakia (white van in foreground)
Backpack used in field training exercise
Second Line of Defense
Transshipped containers at large container ports:

- To address the challenge of scanning transshipped containers, SLD developed two new technologies that are now commercially available:
  - **Radiation Detection Straddle Carrier (RDSC):** RDSC drives over containers as they are stacked in a port yard and scans them for the presence of radiation.
  - **Mobile Radiation Detection and Identification System (MRDIS):** can be driven throughout a port and strategically positioned to maximize scanning:
    - Allows for scanning as containers are discharged from vessel.
    - System can be relocated as needed (e.g., repositioned when the crane moves).
Defense in Depth: Personnel

- **Operators**
  - Vital to radiation detection
  - Regularly trained with periodic updates
  - Conduct Secondary Inspection

- **Management**
  - Ensure adequate resources available
  - Offer reachback support
  - Actively coordinate with other local authorities
Multi-Phase training takes place both during and after equipment installation

- Radiation Detection/Alarm Adjudication Training
- Maintenance Repair Training
- Train-the-Trainer
- Specialized Topics: Source Recovery (with other NNSA support)

Regional Workshops and Field Training Exercises

- Hones operator skills
- Creates cross-border coordination and communication
- Identifies difficulties and deficiencies in capabilities
Sustainability

A sustainability program integrates and organizes equipment, people, and processes to ensure long-term operations of the system.

- **Overall Guidance and Planning**
  - Estimating tools for costs and staffing
  - Support for alarm response procedures

- **Maintenance Responsibilities**
  - Identify and train local maintenance provider

- **System Performance**
  - Assurance visits and data analysis

- **Regulatory and Legal Framework**
  - Establish local SOPs and CONOPs
  - Identify roles and responsibilities for interagency
  - Contributes to national nuclear security approach
Ways SLD Can Help

- Radiation Detection System Deployments
- Technical Exchange Program
- International Partnerships
- Training
- Workshops
- Field Exercises
The global community will optimize progress in combating nuclear smuggling if:

- Detection systems are effectively integrated into a national, regional and global strategy for detecting illicit trafficking
- Information and experiences related to detection systems are appropriately shared to facilitate improved monitoring and deployment approaches
- Detection systems are routinely exercised and effectively operated through up-to-date training efforts
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