Global Material Security

Facilitated Panel Discussion – Identifying Transport Security Threats
SARTT

Office of Global Material Security

U.S. Department of Energy
National Nuclear Security Administration

NNSA National Nuclear Security Administration
U.S. DEPARTMENT OF ENERGY

Understanding the Transport Challenge

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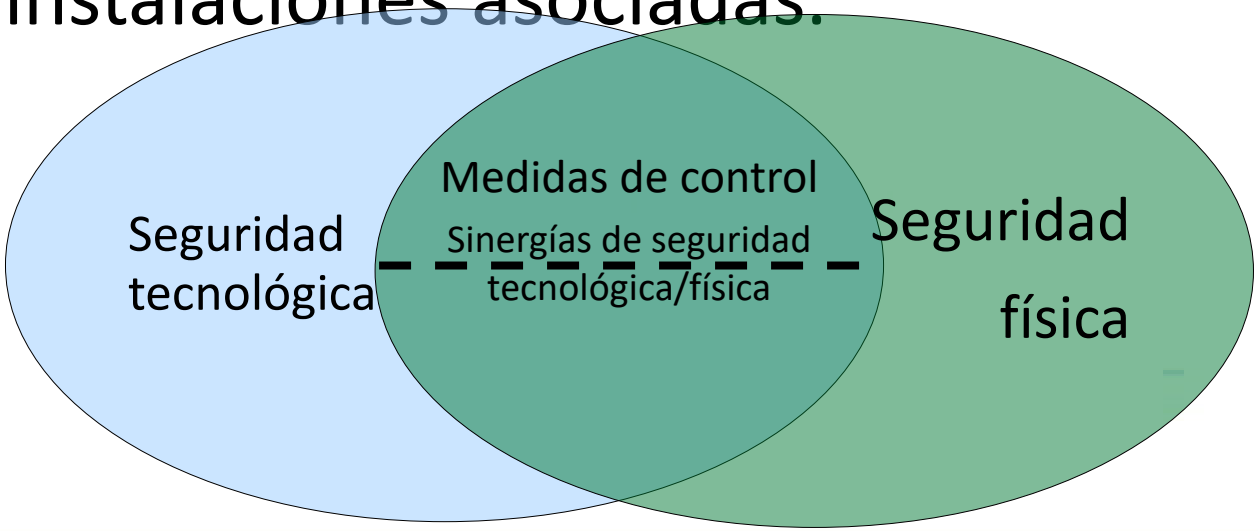
Volume: About 1,000,000 worldwide shipments each year (Category 1 and 2 radioactive sources).

Vulnerability:

- The Center for Nonproliferation Studies discovered 170 transport incidents with nuclear and radiological materials that were lost, stolen, or outside of regulatory control.
- According to the IAEA's ITDB 44% of the 479 theft-related incidents between 1993-2016 were transport related
- Transport occurs by water, road, rail, and air in the public domain
- Transport may involve modal and intermodal transfers where diversion is more easily accomplished

- **Seguridad física (nuclear):** La prevención y detección de y respuesta a, robo, sabotaje, acceso no autorizado, transferencia ilegal u otros actos con fines dolosos haciendo uso de materiales nucleares, otras sustancias radiactivas o sus instalaciones asociadas.



Key Definitions *(4 of 13)*

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- **Threat:** A characterization of an adversary capable of causing undesirable consequences, including the objectives, motivation and capabilities, e.g. number of potential attackers, equipment, training and attack plan.

- **Amenaza** es la caracterización de un adversario capaz de causar consecuencias indeseables, incluyendo objetivos, motivación y capacidades, por ej. un número de atacantes potenciales, equipo, entrenamiento y plan de ataque.

Key Definitions *(5 of 13)*

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Malicious Act: is a deliberate act to remove radioactive material from authorized control (theft) or an act directed against radioactive material (sabotage) that could endanger:

- Workers
- The public
- And the environment by exposure to radiation or the release or dispersal of radioactive material
- including the deliberate dispersion of radioactive material to cause economic and social disruption

Ataque con fines dolosos: es un acto intencionado de retirar material radiactivo de un control autorizado (robo) o un acto directo contra un material radiactivo (sabotaje) que podría poner en peligro a:

- Trabajadores
- El público
- Y el medio ambiente al exponer la o la emisión o dispersión de materiales radiactivos
- Incluyendo la dispersión intencionada de materiales radiactivos para causar trastorno económico y disruption social

Key Definitions

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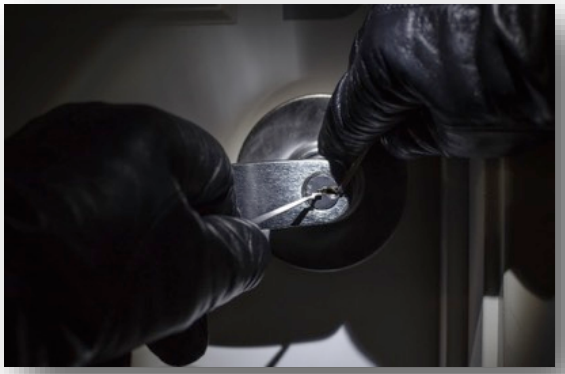
Unauthorized Removal: is the theft or other unlawful taking of nuclear and other radioactive material during transport and in-transit storage

- For nuclear material, the unauthorized removal could be undertaken by an individual or group with malevolent intent for use in the construction of a nuclear explosive device, or for subsequent exposure or dispersal leading to harmful radiological consequences
- For other radioactive material, the unauthorized removal of the material could be undertaken by an individual or group with malevolent intent for subsequent exposure or dispersal leading to harmful radiological consequence



Retirada no autorizada es el robo u otra toma ilegal de material nuclear u otro material radiactivo durante el transporte o en almacenamiento en tránsito

- Para materiales nucleares, la returada no autorizada podría ser efectuada por un individuo o grupo con intenciones malévolas para ser usados en la construcción de un dispositivo nuclear explosivo o para exposición o dispersión subsiguiente que lleven a consecuencias radiológicas perjudiciales
- Para otros materiales radiactivos, la retirada no autorizada del material podría ser efectuada por un individuo o grupo con in para subsiguiente esposición o dispersión que conduz consecuencias radiológicas perjudiciales

Key Definitions *(7 of 13)*

- **Sabotage:** is any deliberate act directed against radioactive material in transport which could directly or indirectly endanger the health and safety of personnel, the public or the environment by exposure to radiation or release of radioactive substances

- **Sabotaje** es un acto intencionado dirigido contra materiales radiactivos en transporte que pudieran poner en peligro directa o indirectamente la salud y seguridad del personal, el público o el medio ambiente mediante exposición a la radiación o emisión de sustancias radiactivas

Adversary Intent

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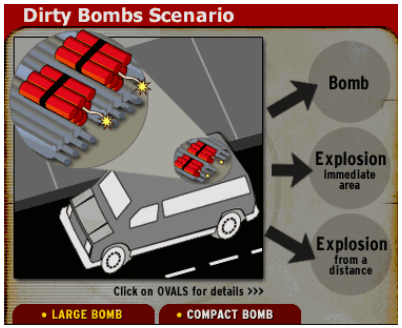
The Nuclear Option Holds No Fear for ISIS, August 5, 2015 (Syria)

- "…The question being posed by western intelligence services is: **what will Isis do next** ? It may be partly answered by an **article on dirty bombs** in a recent issue of the group's glossy magazine **Dabiq**. Such a bomb isn't particularly ingenious, it's not even a nuclear device – it packs high explosive together with radioactive material. Flown in a light plane and crashed into a western transport hub, it would be unlikely to cause mass casualties, but **it would paralyze cities, spread fear and distract from actions planned elsewhere**…"

http://www.thetimes.co.uk/tto/opinion/columnists/article4517360.ece (Times Online – United Kingdom)



Threats or Events Encountered During Transport

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There are a wide range of events or incidents that could occur during shipments of radiological materials:

- Vehicle breakdown
- Vehicle accident
- Equipment road damage
- Fire and emergency medical services
- Vehicle hijacking
- Equipment sabotage
- Protest
- Attack on the radiological cargo

How we respond to these type of events require planning.

Incident Response and Recovery

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How we address or respond to incidents while a shipment is in route reflects our safety and security posture, preparedness and ultimately our transport system effectiveness.

We view response under two categories, Non-tactical (Non-hostile, Fire, Emergency Services) and Tactical (Law Enforcement Response)

- Questions:

  Based on the previous slide, what would the response be within your respective countries?

Documenting Response Capabilities

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As recommended by the IAEA, contingency planning is one of the most important actions we take for shipments of nuclear and radioactive materials.

Documenting these response actions should reflect how they will be accomplished.

- Questions:
  - How are relationships with responding agencies established?
  - Are there written agreements or standing procedures between the regulatory body and responder agencies?
  - Are responding agencies aware of appropriate precautions for radiological shipments?

Implementing Response Capabilities

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Once established, coordination with response agencies should be an ongoing practice that communicates the types, forms, and category of materials transported.

- Questions:
  - Is training or familiarization provided by the regulatory body, carrier or shippers for response agencies, both Non-tactical and tactical?
  - Has a program for drills or exercises been established evaluating agency capabilities and timely response to incidents?