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Addressing Response in Security Regulations

February 27, 2024

Global Material Security

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Objectives

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1. Discuss the international structure for developing security regulations
2. Understand the relationship between regulations governing security and those governing responders
3. Consider how existing regulatory content and structure can support radiological security objectives
4. ORS response methodology

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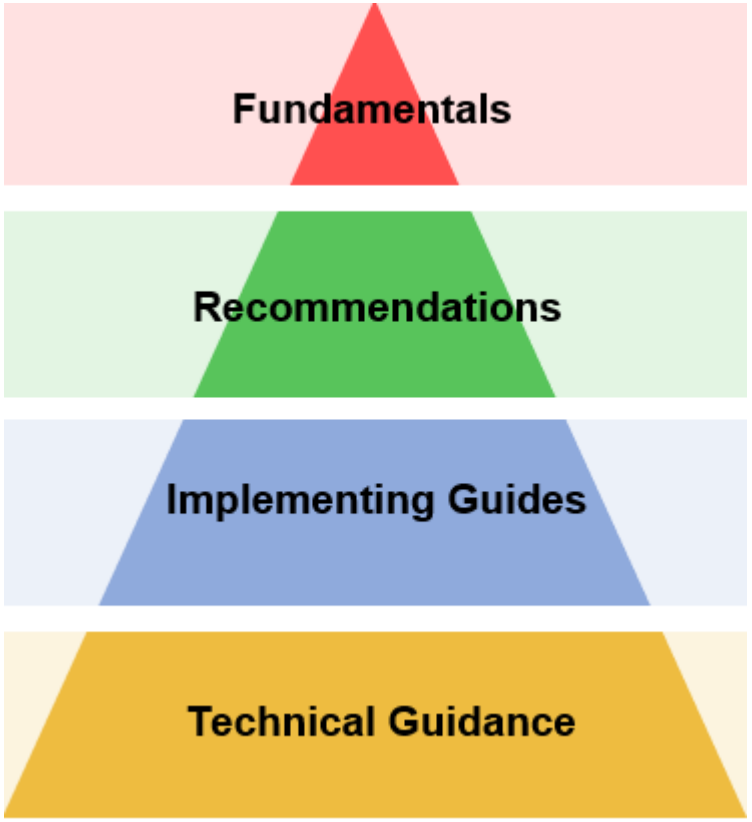
Introduction

- The IAEA Nuclear Security Series (NSS) provides guidance on nuclear security
- The NSS comprises a hierarchy of publications
- This presentation highlights the two NSS publications most relevant to developing regulations for the security of radioactive material
  - NSS No. 14 (Recommendations)
  - NSS No. 11 (Implementing Guide)



The Code of Conduct and Regulations

- International Atomic Energy Agency (IAEA) *Code of Conduct on the Safety and Security of Radioactive Sources* identifies steps to establish a legislative and regulatory framework for the safety and security of radioactive materials
- The *Code also defines several objectives for States:*
  - Achieve and maintain a **high level of safety and security** of radioactive sources
  - **Prevent unauthorized access** to prevent theft, or unauthorized access to radioactive sources
  - **Prevent malicious use** of radioactive sources to cause harm to individuals, society, or the environment
  - **Mitigate or minimize radiological consequences** of any accident or malicious act involving a radioactive source

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The Code of Conduct and Regulations

- Focuses on “potentially dangerous sources” which are listed in Annex 1
- Designed primarily for national governments
- Provides guidance for legislation, regulations, and the regulatory authority
- Intended to complement international safety standards

“Every State should have in place legislation and regulations that specify the requirements for the safety and security of radioactive sources.”

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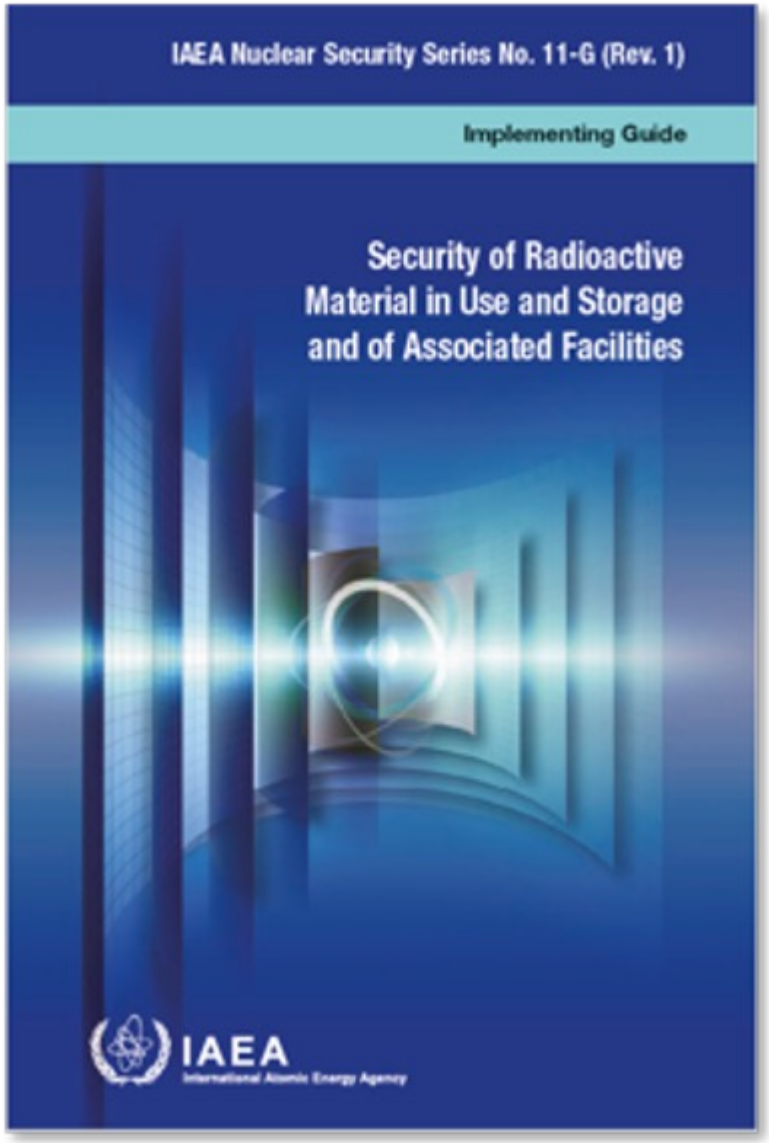
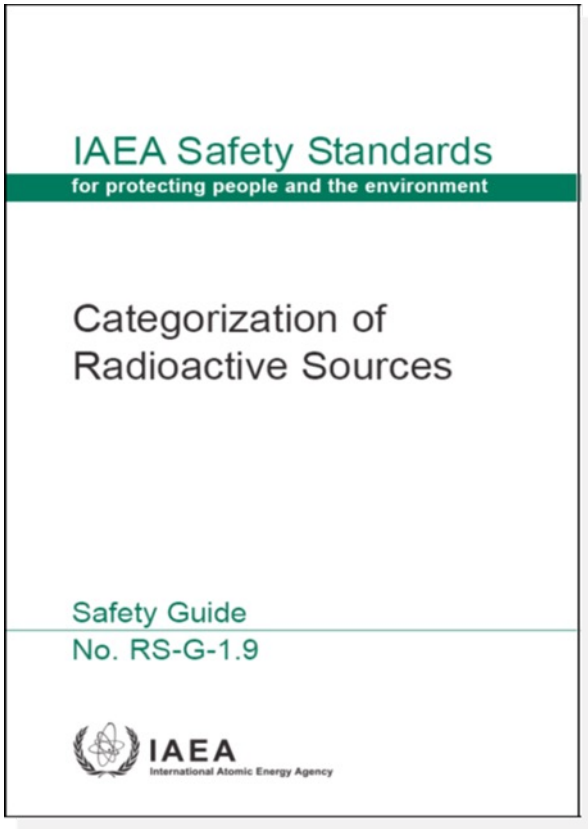
IAEA Nuclear Security Series 11-G

- NSS 11-G, *Security of Radioactive Material in Use and Storage and of Associated Facilities*
- This implementing guide explains how to implement the Code of Conduct and other guidance
- Defines security functions and measures to be addressed by regulations
  - Deterrence
  - Detection
  - Delay
  - Response



Determine Applicable Security Level

- Regulations should provide a basis for determining the security level applicable to given radioactive material that corresponds to the potential harm that could result from a malicious act
- As a starting point, consider adopting the “default arrangement” shown in NSS No. 11-G Table 7
- This table assigns radioactive material to security levels based on category as determined through the methods in IAEA Safety Guide No. RS-G-1.9 described in Module 5



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Import-Export Guidance

- The IAEA has issued supplementary guidance on the implementation of the Code's import-export provisions
- Applies to Category 1 and 2 radioactive sources
- Provides a common framework for authorizing imports and exports
- Originally published in 2005
- Revised version published in 2012

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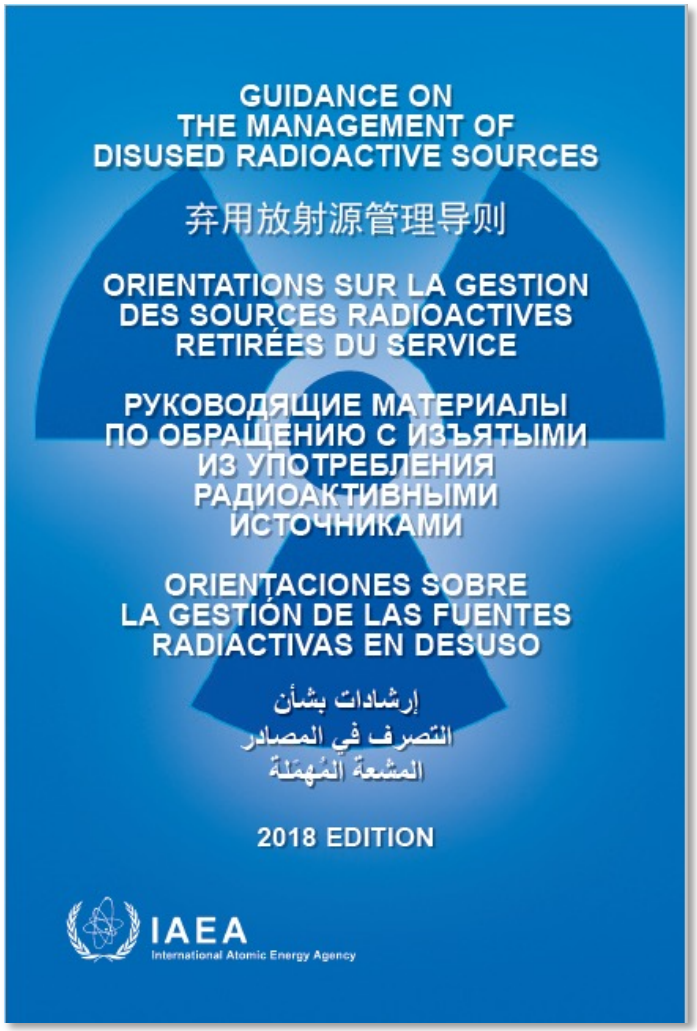
Disused Source Guidance



- The IAEA has issued supplementary guidance providing further details on the management of disused sources consistent with the Code
- Includes a section on legislation and regulations, calling for e.g.
  - Continuous regulatory control
  - Providing clear pathways for managing disused sources
  - Providing for short-term and long-term storage
  - Applying safety and security requirements throughout these processes
- Published in 2018

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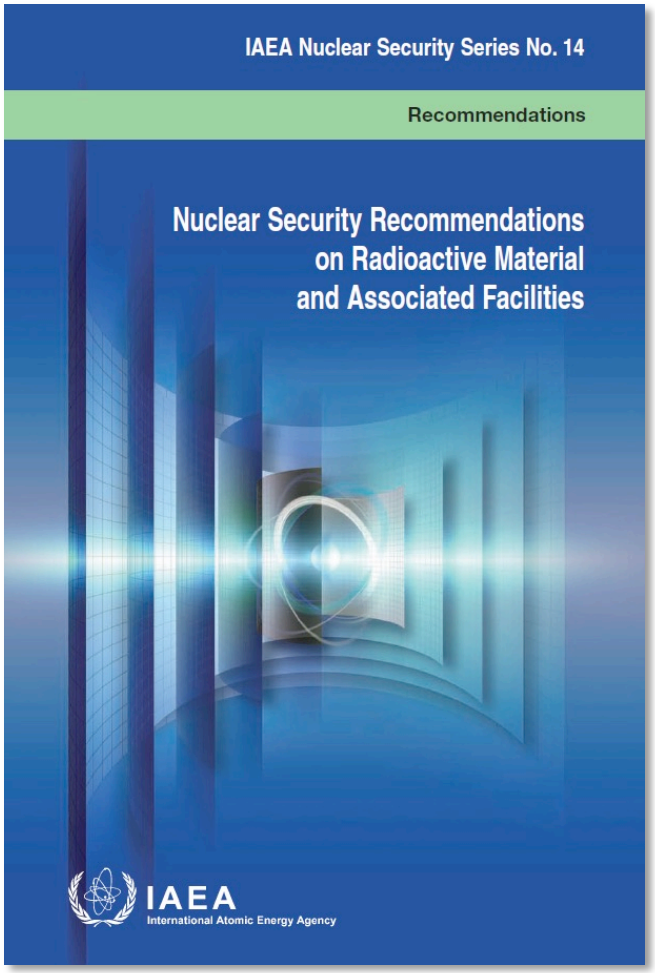
NSS No. 14

- One of three recommendations-level publications
  - NSS No.13 addresses physical protection of nuclear material and facilities
  - NSS No. 15 addresses nuclear and other radioactive material out of regulatory control
- Provides guidance to States and regulatory authorities establishing a nuclear security regime for radioactive material, associated facilities, and associated activities
- States **what** such a regime should include
- Published in 2011



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Developing Security Regulations

Follow these basic steps:

1. Determine radiological materials of concern in your country
2. Assess potential threats and vulnerabilities
3. Understand graded security levels with corresponding goals
4. Determine the security level applicable to given radioactive material
5. Develop regulatory requirements based on a prescriptive, performance-based, or combined approach
6. Coordinate with responding agencies

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Determine Relevant Legal Authority

- A key consideration in developing complete regulations for source security is to determine who has necessary authority.
  - Security of sources in use and storage may be the responsibility of the Ministry of Health.
  - Regulations governing the actions of law enforcement may be the responsibility of another ministry.

Understand the Operating Environment

- Understand applications for which radiological material are used.
- Know the security requirements the operators implement.
  - Visit facilities
  - Review their applicable regulations

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What Must I Protect Against?

- Security systems are designed to protect against the **threat**: a person or group of persons with motivation, intention, and capability to commit a malicious act
- **Who:** an individual or a group of adversaries (e.g. terrorists, criminals)
- **Motivation:** why these adversaries would want to commit a malicious act, e.g.
  - To make a political statement
  - To acquire a radioactive source for personal use or sale to a third party
  - To cause fear and panic
- **Capabilities:** what resources the adversaries have, e.g.
  - The number of individuals
  - Skills and training
  - Knowledge of the target and the security system
  - Willingness to accept harm to themselves
  - Weapons, explosives, tools

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Determine Applicable Security Level

- Consider such factors as the following in determining security levels:
  - Mobile, portable, and remote devices
  - Increased threat
  - Short and long half-life radionuclides
  - Ease of handling
  - Large volumes of activated radioactive material or contaminated objects
  - Location of radioactive material (accessibility)
  - Radioactive waste

Consider Existing Response Regulations

- It is important to document the roles and responsibilities responders in case of attempted theft of radioactive material.
- Any additions to response regulations must conform to existing regulatory norms.
  - Formatting
  - Level of the document (a government decree? Or an operating procedure?)
  - What “rad response” responsibilities are actually broader law enforcement duties that are already spelled out?

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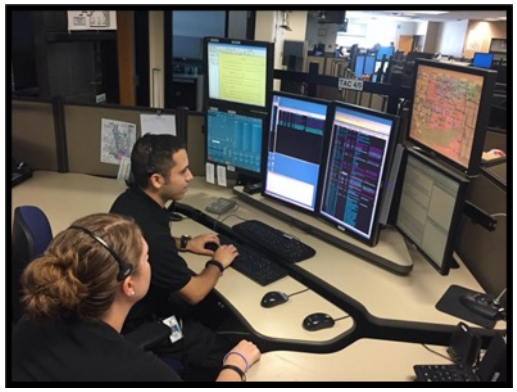
Implementing the Regulations

After regulations are developed, responders must be prepared to implement them.

- Breakdown to procedures or operating orders
- Develop necessary training materials
  - Radiation awareness and safety
    - Stand off distances, officer safety
  - Tactical & Dispatcher training
- Equipment
  - Personal radiation detectors
  - PPE
- Awareness of the potential response locations
  - Site walks
  - Target folders
- Coordinate and maintain contact
  - Communicate
  - Joint training and exercises



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ORS Protect Strategy Overview

- ORS provides security assistance:
  - Voluntary security upgrades (e.g., access control, door sensors, motion detectors, CCTV cameras, etc.)
  - Specialized training for on-site security and responders
  - Transport security
- Sustainable Security
  - National and site level workshops/training
  - Site assessments

Overview of Response Offerings

- Responder Based Training
  - Roll-Call Videos
  - International Radiological Security Awareness and Response (I-RSAR) Training
  - Workshops and E-Learning
    - Patrol
    - Special Operations
    - Communications

- Development and Conduct of Exercises
  - Single or multi-agency tabletop and full-scale exercises to examine procedures and build relationships
- Other Resources
  - Training aids and awareness videos
  - ORS provides regulatory guidance training

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Summary

- Regulations for radiological source security must be complemented with regulations for responders.
- International guidance exists to facilitate regulatory development.
- Regulations for response to radiological theft should conform to existing regulations.
- After regulations are developed, modify operations to incorporate the new activities and requirements.
- Coordinating with, training, and preparing first responders is critical
- ORS programs focus on facilitating this process

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Questions?

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