Nuclear Security for Scientists, Technicians and Engineers, Edition 3

WINS Academy

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WHO THIS MODULE IS FOR

This module helps Scientists, Technicians and Engineers (STEs) who work with nuclear and/or other radioactive materials to understand the importance of nuclear security and their responsibilities for contributing to it.

KEY ISSUES

Nuclear safety is fundamentally about protecting human beings from nuclear and other radioactive material, whereas *nuclear security* is fundamentally about protecting nuclear and other radioactive material from human beings with malicious intent. Having organisational arrangements that considers safety and security in unison and of equal importance enables operational, safety and security professionals to form a synergy that can provide effective strategies and working practices to counteract Threats. The greater the harmony, communication and interaction between areas of responsibility prior to an incident, the faster and more satisfactorily an event will be resolved.

KEY LEARNING OBJECTIVES

By the end of the course, participants will understand basic threats to nuclear and other radioactive material, including insider threat and cyber threat, and the contributory role of STEs; often in the first line of defence when it comes to protecting a facility or sensitive information from insider threats which may lead to theft or sabotage of material. Participants will also understand some basic physical security concepts, some of the numerous areas in which safety intersects with security, and some practical steps STEs and security personnel can take to begin bridging the gap between them.

By the time you have completed this module, you will understand:

- The importance of STEs, safety and security professionals working collaboratively
- The meaning of threat in the context of nuclear security
- The potential security risks posed by insider threats and how to mitigate them
- What security culture means and why it is of equal importance to safety culture
- How safety and security intersect within the nuclear industry lifecycle
- How security systems control and protect nuclear or other radioactive material
- How you can contribute towards improving security culture and helping to improve security
- What improvements have been made to enhance nuclear security through lessons learned.

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OUTLINE

UNIT 1: SECURITY AND SAFETY CULTURES

1.1 Nuclear Security and Nuclear Safety

1.2 STEs and Security Professional Cultures

1.3 Collaboration between STEs and Security Professionals

UNIT 2: UNDERSTANDING THE THREATS

2.1 Understanding Threats in the Context of Nuclear Security

2.2 Understanding Advanced Technology and Emerging Threat Capabilities

2.3 Understanding the Insider Threat and the Role of the STE in Mitigating Insider Threats

2.4 Understanding Cyber Threat and Cyber Actors

UNIT 3 SECURITY REQUIREMENTS

3.1 The Concept of Security by Design

3.2 Security Systems

3.3 How to Develop Security Systems

3.4 Understanding Information Security

UNIT 4: SECURITY AND SAFETY IN COLLABORATION

4.1 Understanding the Interfaces between Operations and Security Departments

4.2 Understand How Physical Protection Systems (PPS) are Used for Nuclear Security

4.3 Understand Why Nuclear Material Accountancy and Control is Required to Control the Movement of Material

4.4 Understanding the Purpose of Security Equipment Maintenance

UNIT 5: SECUTRITY BEYOND FACILITIES AND SITE BOUNDARIES

5.1 Supply Chain Management

5.2 Transportation and Nuclear Security

5.3 Emergency Preparedness and Response (EP&R)

5.4 Case Studies

COURSE SUMMARY