Nuclear Security Regulation

CONTENTS

The WINS Academy Elective on Nuclear Security Regulation is designed for regulatory staff who have responsibilities related to the licensing, regulation and oversight of security for nuclear and radioactive materials. This involves regulating a broad range of facilities that might include nuclear power plants, research and test reactors, waste management areas, and fuel fabrication/processing facilities. It could also include hospitals, universities, irradiators and other facilities that use or process radioactive materials in medical, academic and industrial applications. Staff who regulate nuclear security work in such areas as:

Licensing	Event Investigation and Causal Analysis
Compliance & Enforcement	Enforcement
Performance Assessment	Communications (Public and Industry)
Establishment of Rules and Regulations	Presentations at Hearings and Tribunals
Human Performance and Reliability	Implementation of International Legal Commitments
Inspection	

The module emphasises that regulation should be an integral part of the legislative and regulatory framework for protecting persons, property, society and the environment from malicious acts involving nuclear and other radioactive material. For this reason, nuclear security regulators must have the same lawful authority as nuclear safety regulators to carry out their mandate effectively, including the right to establish nuclear security regulations and responsibilities.

As a baseline, the module draws from international guidance produced by the International Atomic Energy Agency (IAEA), the Organisation for Economic Co-Operation (OECD) and many other sources to synthesise the key issues that help determine nuclear security regulatory effectiveness. Clearly the overall performance of nuclear safety and security is the result of the combined efforts of regulators and the licensees who are accountable for implementing the regulations. Their relationship and confidence in one another are key factors in determining safe and secure operations. However, ensuring the safety and security of nuclear and radiological materials is a balancing act: Safety regulations must not be implemented at the expense of security and vice versa. Accordingly, the relationship between safety and security regulators is of special concern and relevance.

By the end of the course, participants will understand:

- What regulation is, why it is commonly enacted, what causes it to fail, and some alternatives that can be used instead of regulation.
- How to build trust between themselves and the organisations they regulate and why it is so important to do so.
- What effective regulatory reporting consists of.
- What the regulatory cycle is and how to work within it.
- The three phases of regulation (permissioning, inspection and enforcement).
- How to use WINS' security event assessment scale as a useful framework for regulatory decision making.
- The difference between the performance-based/outcome-focused approach to regulation and the more prescriptive regulatory/direct and inspect approach.
- How to measure regulatory performance and ensure regulatory competence.

OUTLINE

UNIT 1: THE EVOLUTION OF REGULATORY REGIMES

- 1.1 What is meant by Regulation
- 1.2 Reasons for Regulation
- 1.3 Failures in Regulation
- 1.4 Alternatives to Regulation

UNIT 2: FACTORS CONTRIBUTING TO EFFECTIVE REGULATION

- 2.1 Building Trust between Regulators and Licensees
- 2.2 Regulatory Independence
- 2.3 Effective Regulatory Reporting

UNIT 3: THE REGULATORY CYCLE

- 3.1 The Design Basis Threat (DBT)
- 3.2 Phases of Regulation; Permissioning, Inspection and Enforcement
- 3.3 A Generic Enforcement Management Model (EMM)
- 3.4 A Security Event/Non-Compliance Assessment Scale
- 3.5 Other Regulatory Activities
- 3.6 New Regulations

UNIT 4: STYLES OF REGULATION

- 4.1 Prescription versus Performance
- 4.2 Self-Regulation and Co-Regulation
- 4.3 Licensee Assurance Programmes

UNIT 5: REGULATORY PERFORMANCE AND COMPETENCE

- 5.1 Measuring Regulatory Performance
- 5.2 Strategy Mapping and Performance Metrics
- 5.3 Competency Requirements for Nuclear Security Regulators
- 5.2 The Safety/Security Interface: Consequences for Regulation

UNIT 6: SCENARIO (MODEL ATTRIBUTES FOR A REGULATOR)