



factsheet

Radiological Source Security

Source security relates to the prevention, detection and response to criminal or intentional unauthorized acts involving or directed at radioactive material, associated facilities, and activities.



The radiation processing industry, specifically gamma irradiation using Cobalt-60 sources, has adopted robust security arrangements and has an exemplary track record. In addition to regulation, the industry has implemented its own initiatives and has comprehensive guidance available to it from various sources including the iia.



It is important to recognise that threats and risks exist, even if they are considered to be very low, and that the consequences of a security incident could be very high. Organisations should take a risk-informed approach to manage the security of their radioactive sources.

Security Policy & Security Plan

Organisations should take a company-wide approach to security. This should be defined in a Security Policy that lays the foundation for the management systems, resources and responsibilities allocated to security.

A Security Plan documents the design, operation and maintenance of the entire security system. Some information will be sensitive and should only be made available to authorised individuals with a need to know. The security plan should be reviewed and updated periodically, and a continual improvement approach should be taken.

Key areas of Security

Some of the key areas of security to be considered and implemented are the following:

- **Governance arrangements:** The risk management approach, policies and procedures, responsibilities and oversight, planning etc.
- **Physical protection:** Deter-detect-delay, access control, security by design, temporary arrangements (e.g Cobalt-60 loading and transport operations) etc.
- **Response to security incidents:** Response arrangements, onsite/offsite monitoring, communications, relationship with law enforcement, exercises etc.
- **Security awareness and culture:** Employee engagement in security matters, competences, professional development and training etc.
- **Cybersecurity:** Identification of the risk and mitigation measures, physical and cybersecurity integration etc.
- **Information security:** Identification and protection of sensitive information including access control arrangements, staff awareness and education.
- **Personnel security:** Human resource management, vetting procedures, insider threat mitigation.

The iia has worked directly with gamma irradiator operators and collaborated with radiological security experts to develop industry specific guidance that supports the security of radiation processing worldwide.



Security Regulations & Recommendations

The primary responsibility for security of radioactive sources rests with individual States that establish the overall regulatory framework and enact national laws and regulations that assign responsibility and requirements. The State is also responsible for creating one or more independent regulatory bodies with the legal authority to regulate radioactive sources.

The IAEA 'Code of Conduct on the Safety and Security of Radioactive Sources' (IAEA/CODEOC/2004) describes how States can safely and securely manage high risk radioactive sources. The IAEA Security of Radioactive Material in Use and Storage and of Associated Facilities (Nuclear Security Series No. 11-G (Rev.1)) provides guidance to States and their competent authorities on how to establish, implement and sustain the elements of the nuclear security regime related to radioactive material, associated facilities and activities.

Security Best Practice & Assessment

The iia, in collaboration with expert partners, has published the following guidance to complement domestic regulations and international recommendations. These documents provide practical industry specific guidance to operators of gamma irradiation facilities that use Cobalt-60 sources.

- [Best Practice Guide: Security of Radioactive Sources Used in Industrial Radiation Processing](#) ⁽¹⁾
- [Methodology for Assessing the Effectiveness of Security Arrangements at Gamma Irradiation Facilities](#) ⁽¹⁾
- [Cybersecurity Best Practices for Gamma Irradiation Facilities](#)
- [Guide for Assessing Cybersecurity Programs at Gamma Irradiation Facilities](#)

(1) Jointly published with the World Institute for Nuclear Security – www.wins.org