
Radiation Protection and Source Control Training Course for Facility Managers

3 – 7 October 2027
Doha





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Programme Summary

Radiation protection and source control is the subject of this five-day training course for radiation protection leads, HSE managers and facility managers at managerial level, ending in a plan for one facility. Facilities that hold sealed and unsealed radioactive sources must keep doses low and every source accounted for. The approach moves from principles and dose quantities, through monitoring and area control, to source accountability and emergencies, and then to a worked plan. Mars Training Centre UK delivers this programme in radiation protection and source control.

The Business Case

A lost or damaged source, an unmonitored work area or an unplanned exposure can halt operations, trigger investigations and harm workers and the public. Facility managers carry accountability for these outcomes but often depend on specialist advice they cannot test. Managers who can read dose records, monitoring data and source registers can direct resources, challenge reports and keep the facility ready for inspection.

- Occupational Dose Records: Stay within planned levels as work is optimised before it starts.
- Source Accountability: Improves as inventories, storage and movements are reconciled.
- Incident Readiness: Improves as responses to lost or damaged sources are rehearsed.

Principles and Evidence Base

- IAEA GSR Part 3: Its principles of justification, optimisation of protection and dose limitation structure the control arrangements in Sessions 1 and 2.
- ALARA principle: Time, distance and shielding are applied to work planning in Session 3.
- IAEA guidance on the security of radioactive material: Its accountability and control requirements shape the inventory and storage work in Session 4.

Intended Participants

- Leaders who direct radiation protection arrangements for a facility.
- Managers who authorise work with sealed and unsealed radioactive sources.
- HSE managers who review monitoring results, incidents and audits.
- Facility managers accountable for source storage, movement and disposal.

The programme serves industrial radiography, medical, research and manufacturing organisations.



Learning Outcomes

1. Participants will be able to apply the principles of justification, optimisation and dose limitation to facility work.
2. Participants will be able to interpret dose quantities, units and monitoring results.
3. Participants will be able to design controlled and supervised area arrangements.
4. Participants will be able to evaluate a source inventory for accountability and storage gaps.
5. Participants will be able to prioritise controls for transport, storage and disposal.
6. Participants will be able to justify a radiation protection and source control plan to senior management.

Programme Structure

Day 1: Radiation Protection Principles and Hazards

Which principles govern the protection of workers and the public?

- IAEA GSR Part 3 Requirements Map
- Types of Radiation and Source Characteristics
- Dose Quantities and Units Sheet
- Justification, Optimisation and Dose Limitation Matrix
- Case Review of Two Source Incidents

Day 2: Monitoring and Work Area Control

How are exposures measured and work areas controlled?

- Personal Dosimetry Programme
- Area Survey Plan
- Controlled and Supervised Area Criteria
- Dose Constraint Setting
- Monitoring Results Review Template

Day 3: Optimising Protection with ALARA

How are doses kept as low as reasonably achievable in planned work?

- Time, Distance and Shielding Analysis
- Pre-Job Dose Planning Sheet
- Shielding and Barrier Options Comparison
- Work Permit Conditions for Radiation Tasks
- Worker Briefing Checklist



Day 4: Source Control and Emergency Arrangements

How are sources kept accounted for and emergencies managed?

- Source Inventory and Reconciliation Register
- Storage and Access Control Plan
- Transport and Disposal Route Review
- Lost or Damaged Source Response Procedure
- Security Measures Gap Review

Day 5: Applying Radiation Protection and Source Control to a Facility

Is the plan ready for senior management approval?

- Applying the Session 1 Principles to the Facility Profile
- Checking the Session 2 Monitoring Arrangements
- Testing the Session 3 Dose Planning on a Task
- Closing the Session 4 Inventory and Emergency Gaps
- Completing the Radiation Protection and Source Control Plan

Methodology

The programme is built around structured exercises and case analysis. Participants work in small teams with an anonymised facility profile, sample personal dosimetry records and a source inventory, plan a task, reconcile records and respond to a simulated lost source, then defend their plan before a simulated review panel. No physics degree is required.

- Suggested activity: Planning the dose for a sample industrial radiography task.
- Suggested activity: Reconciling a sample source inventory against storage and movement records.
- Suggested activity: Walking through the response to a simulated lost gauge.

Capstone Output

Each participant completes a radiation protection and source control plan for one facility. It contains a work area classification, a monitoring programme, a dose planning method, a source inventory and storage plan and an emergency response outline. It is used to brief senior management and to prepare for internal audit and inspection.



Frequently Asked Questions

Is radiation protection and source control training suitable for facility managers without a physics background?

Yes. Radiation protection and source control training is set at managerial level and assumes responsibility for a facility that uses radioactive sources, not a physics or engineering degree.

Which standards does radiation protection and source control rest on in this programme?

Radiation protection and source control rests on IAEA GSR Part 3, the ALARA principle and IAEA guidance on the security of radioactive material.

How is the radiation protection and source control plan used at work?

You use the radiation protection and source control plan to brief senior management, assign control responsibilities and prepare evidence for audit and inspection.