Advanced Radiation Safety and Protection Training Course

1 – 5 February 2027
Singapore

AGILE LEADERS
Training Center

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Ref: 1381_202019 **Date:** 1 – 5 February 2027 **Location:** Singapore **Fees:** 5700 Euro

Overview

Advanced Radiation Safety and Protection Training Course is a one-week advanced course for radiation-safety, laboratory, industrial, healthcare-support, maintenance, supervision, and EHS functions who leave with an Integrated Radiation Safety Plan. Participants connect ionizing radiation hazards, exposure pathways, dose concepts, time-distance-shielding controls, source safety, workplace monitoring, contamination response, and assurance records to operating decisions. Agile Leaders Training Center presents radiation safety through risk-based protection and evidence-led control.

Who Should Attend

- Functions responsible for radiation protection and source safety
- Teams that operate or maintain radiation-generating equipment
- Laboratory and industrial functions that handle radioactive material
- Healthcare-support teams working near ionizing-radiation sources
- EHS functions that monitor exposure and workplace controls
- Supervisors responsible for controlled areas and incident readiness

The course assumes participants already support work involving ionizing radiation or radiation controls and leaves out clinical treatment planning, equipment engineering design, and regulator-specific licensing preparation.

Departments and Industries

The course serves departments and industries that use radiation sources or manage occupational exposure.

- Industrial inspection, testing, and process operations
- Healthcare imaging and treatment-support departments
- Research, education, and analytical laboratories
- Energy, mining, and materials-processing operations
- Maintenance, EHS, emergency, and operational-assurance functions

Learning Objectives

By the end of this course, participants will be able to:

- Analyze ionizing-radiation hazards and exposure pathways
- Apply time, distance, and shielding control decisions
- Build controlled-area and workplace-monitoring arrangements
- Evaluate source handling, storage, and inventory controls
- Diagnose contamination and abnormal exposure scenarios
- Build an Integrated Radiation Safety Plan

Course Agenda

Day 1: Radiation Hazards and Exposure Decisions

- Ionizing Radiation Type and Interaction Map
- Internal and External Exposure Pathway Model
- Activity, Absorbed Dose, and Effective Dose Guide
- Planned, Existing, and Emergency Exposure Matrix
- Radiation Risk Communication Decision Sheet

Day 2: Protection Principles and Source Controls

- Justification and Optimization Decision Framework
- Time-Distance-Shielding Control Calculator
- Radiation Source Use and Storage Checklist
- Engineering and Administrative Control Hierarchy
- Source Inventory and Accountability Register

Day 3: Controlled Areas and Monitoring

- Controlled and Supervised Area Zoning Map
- Workplace Radiation Survey Plan
- Individual Monitoring Assignment Matrix
- Monitoring Instrument Selection and Check Log
- Occupational Exposure Record Review

Day 4: Contamination and Incident Readiness

- Contamination Prevention Barrier Map
- Personnel and Workplace Contamination Survey
- Abnormal Reading Investigation Tree
- Source-Loss and Damage Response Checklist
- Radiation Incident Notification and Handover Map

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Day 5: Radiation Safety Practice

- Exercise: Evaluate a Radiation Work Scenario
- Exercise: Design a Controlled-Area Monitoring Plan
- Exercise: Investigate an Abnormal Exposure Reading
- Exercise: Test Source and Contamination Controls
- Capstone Exercise: Integrated Radiation Safety Plan

Practical Exercises

The course uses radiation-control scenarios from laboratories, industrial operations, healthcare support, and maintenance activities.

- Suggested activity: map radiation types, exposure pathways, tasks, people, and existing barriers for a work scenario.
- Suggested activity: select time, distance, shielding, zoning, and monitoring controls for a planned task.
- Suggested activity: investigate an abnormal instrument reading using source, workplace, personnel, and record evidence.
- Suggested activity: integrate responsibilities, controls, checks, records, response steps, and assurance reviews into a safety plan.

FAQs

Who suits advanced radiation safety training, and what does it assume?

Advanced radiation safety training suits functions that already support radiation work, source control, workplace monitoring, maintenance, supervision, or EHS decisions.

How does advanced radiation safety differ from radiation awareness training?

Advanced radiation safety develops control, monitoring, investigation, and planning decisions, while awareness training introduces basic hazards, signs, rules, and personal responsibilities.

How are occupational radiation exposure pathways assessed?

Occupational radiation exposure pathways are assessed by identifying radiation type, source condition, task, duration, distance, shielding, potential intake routes, contamination potential, and available monitoring evidence.

How should workplace radiation monitoring be planned?

Workplace radiation monitoring should connect survey locations, instruments, frequencies, checks, action criteria, records, responsibilities, and response steps to the expected exposure situation and work pattern.

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What evidence supports a radiation incident investigation?

A radiation incident investigation uses instrument readings, dosimetry, source inventory, task records, area controls, personnel locations, equipment condition, contamination surveys, and the chronology of actions.

Conclusion

The course integrates radiation hazards, dose concepts, protection decisions, source controls, area zoning, monitoring, contamination response, and assurance. Participants take back an Integrated Radiation Safety Plan that connects responsibilities, exposure pathways, controls, checks, records, triggers, and response steps. The plan improves coordination among radiation-safety, operational, maintenance, laboratory, healthcare-support, and EHS functions.