

Class II Radiation Safety Officer Certification Exam Resources

Useful resources

The focus of the exam is on the knowledge needed for the position of radiation safety officer (RSO) for the facility in question. That is, the RSO must have knowledge of the hazards present at the facility and how they are quantified and mitigated: design and shielding, required safety systems, procedural controls, incident response, instrumentation and dosimetry, as well as the regulatory obligations that go along with this facility type.

Review topics

For the facility-specific portion of the exam, you should review:

- how your equipment works (very generally) and the hazards this equipment creates:
 - this includes the desired radiation, and any incidental radiation, activation, or other aspects of the equipment that may cause additional hazards
 - you should be able to link a particular radiation hazard to a control or mitigation measure
- your facility's policies and procedures, especially related to safety systems testing, maintenance and repairs of prescribed equipment and associated safety systems, and incident or event response
- any operating or servicing restrictions your facility is subject to
- your current licence (if applicable) and its conditions
- relevant sections of the *Nuclear Safety and Control Act*, associated regulations and regulatory documents that apply to your facility, including:
 - *Class II Nuclear Facilities and Prescribed Equipment Regulations*
 - *Radiation Protection Regulations*
 - *General Nuclear Safety and Control Regulations*
 - REGDOC-2.2.3, Personnel Certification: *Radiation Safety Officers*
 - *Packaging and Transport of Nuclear Substances Regulations* (if applicable)
 - *Nuclear Substances and Radiation Devices Regulations* (if applicable)
 - REGDOC-2.12.3, Security of Nuclear Substances (if applicable)

The following resources may be helpful in preparing for the radiation safety, radiation physics and some parts of the general Class II operations portions of the exam. Not all the information found in these resources is within the scope of the exam. The list is not exhaustive and should be used in conjunction with site-specific policies and procedures. By no means is it necessary to acquire every resource listed; the same information can be found in many other places. This list should be viewed as suggestions or starting points.

For neutron generator facilities and geophysical logging accelerators

Turner, J.E. *Atoms, Radiation and Radiation Protection*. 2nd Edition. John Wiley & Sons, 1995.

For isotope production accelerators

International Atomic Energy Agency (IAEA) TRS 468. *Cyclotron Produced Radionuclides: Characteristics and Production Methods*, 2006.

IAEA TRS 465. *Cyclotron Produced Radionuclides: Principles and Practice*, 2008.

Turner, J.E. *Atoms, Radiation and Radiation Protection*. 2nd Edition. John Wiley & Sons, 1995.

For radiotherapy (medical and veterinary) facilities

McGinley, P.H. *Shielding Techniques for Radiation Oncology Facilities*. 2nd Edition. Medical Physics Publishing, 2002.

Hall, E.J. *Radiobiology for the Radiologist*, 6th Edition. Lippincott Williams & Wilkins, 2005.

National Council on Radiation Protection (NCRP) 88. *Radiation Alarms and Access Control Systems*, 1986.

NCRP 151. *Structural Shielding Design and Evaluation for Megavoltage X- and Gamma-Ray Radiotherapy Facilities*, 2005.

NCRP 105. *Radiation Protection for Medical and Allied Health Personnel*, 1989.

For industrial and research accelerator facilities

Turner, J.E. *Atoms, Radiation and Radiation Protection*. 2nd Edition. John Wiley & Sons, 1995.

NCRP 88. *Radiation Alarms and Access Control Systems*, 1986.

NCRP 144. *Radiation Protection for Particle Accelerator Facilities*, 2003.

NCRP 151. *Structural Shielding Design and Evaluation for Megavoltage X- and Gamma-Ray Radiotherapy Facilities*, 2005.