



# **Canadian Radiation Protection Association**

## **Professional Recognition/Registration**

### **‘CORE LEVEL COMPETENCY PROFILE’**

**Prepared by:** Gary Wilson BSc., RTNM, MEd.

**Reviewed by:** Radiation Safety Professionals Committee  
CRPA Board of Directors  
CRPA Membership via website  
Other professional organizations (CNSC, COMP, CAMRT)

**Original Date:** September 6, 2002

**Revision Dates:** May 15, 2003, March 20, 2014

**Approved Date:** May 27, 2003  
CRPA Annual General Meeting - Kananaskas, Alberta

# Core Level Competencies

<b>11</b>	<b>Program Administration</b> Manage a safety program that provides effective control of radiation protection activities in accordance with Federal and Provincial regulations.	
11.1	Manage radiation safety staff and operational budgets	
11.2	Ensure the role of a Radiation Safety Committee is incorporated in the organizational structure.	
11.3	Advise management and workers regarding issues related to the institute's use of radioisotopes and radiation emitting devices.	
11.4	Prepare corporate policies and procedures to assist management and workers to implement effective radiation safety practices.	
11.5	Develop administrative controls or procedures to ensure departments and individuals comply with radiation safety and regulatory requirements;	
11.6	Initiate revisions to corporate and department policies and procedures based on changes to license conditions or regulations.	
11.7	Conduct an annual review of the radiation safety program.	
11.8	Prepare an annual report of each licensed activity.	
11.9	Authorize the use, work procedures, and locations of use for radioactive material.	
11.10	Represent the Radiation Safety Program on committees and work groups.	
11.11	Maintain good relations with federal and provincial regulators and inspectors.	
<b>12</b>	<b>Radiation Safety Act and Regulations</b> Understand the overall acts and regulations and use them when developing specific radiation safety programs.	
12.1	Ensure the implementation of federal and provincial regulations governing sources of ionizing radiation.	
12.2	Interpret federal and provincial regulations relating to ionizing radiation.	
12.3	Provide advice and assistance to radioisotope users in understanding and complying with legislative requirements.	
<b>13</b>	<b>Licences</b> Have a general understanding of the requirements of a licence, different use types and applications and the mechanism to apply for a licence.	
13.1	Ensure the specific conditions of the licences are implemented.	
13.2	Ensure licenses for all sources of ionizing radiation are properly maintained.	
13.3	Review or prepare the organization's requests for initial licence or licence amendments.	
13.4	Prepare licence renewal applications.	
13.5	Ensure licensed areas are properly decommissioned when licence is not renewed.	
<b>14</b>	<b>Working Rules</b> Ensure that the work practices reflect the safe use of radioactive material, protection of the public and follow the principles to keep exposures as low as reasonable achievable.	
14.1	Establish working rules for all designated work areas where radioactive sources are used.	
14.2	Advise on the appropriate signs to post in work areas.	
14.3	Determine the procedures to be followed in order to maintain the security of	

	ionizing radiation equipment and sources.	
<b>15</b>	<b>Record Keeping</b> Establish a system where information regarding the use of radioactive material is documented, recoverable and available as needed.	
15.1	Prepare reports as required by legislation and organization policy.	
15.2	Ensure the required records are properly documented and stored.	
15.3	Submit records and reports required by the regulations.	
15.4	Dispose records in accordance with legal and regulatory requirements.	
<b>20</b>	<b>Employee Qualifications – Performance</b>	
20.1	Designate worker classification for employees based on duties and radiation exposure levels in the workplace.	
20.2	Assess the qualifications and performance of persons who apply to use, handle, ship or receive radioactive materials.	
20.3	Determine if individuals have the knowledge, skills and experience to effectively perform radiation protection practices associated with their work.	
20.4	Authorize persons to possess, use or handle radioactive materials or radiation devices.	
20.5	Ensure workers whose duties occasionally expose them to radioactive material receive appropriate training in radiation safety.	
20.6	Develop, implement and maintain radiation safety training programs to all staff based on observations and inspection results.	
20.7	Ensure radiation safety training is adequate, appropriate and effective for all staff who are required to use or handle radioactive material.	
20.8	Evaluate training programs/material on a regular basis and adjust training to meet the organization's changing needs.	
20.9	Promote a culture of safety so personnel actively develop and improve methods of meeting radiation protection objectives and goals.	
20.10	Develop and maintain educational information, training material and information distribution systems (web sites, notice boards) related to the safe use of ionizing radiation.	
20.11	Provide in-service and continuing education training programs on ionizing radiation.	
20.12	Act as an educational resource person.	
<b>30</b>	<b>Inspections-Audits-Investigations</b>	
<b>31</b>	<b>Inspections</b>	
31.1	Perform hazard evaluations.	
31.2	Control work activities if hazardous situations involving radioactive materials arise.	
31.3	Suspend operations if hazardous situations become dangerous to the health and safety of the worker or general public.	
31.4	Inspect licensed activities to ensure compliance with regulations.	
31.5	Ensure that all persons using ionizing radiation follow institute procedures to prevent occupational exposures in excess of the regulations and in accordance with the <i>ALARA</i> principle of dose limitation.	
31.6	Monitor the users of ionizing radiation to ensure that the licensee's operations, equipment and facilities comply with regulatory requirements.	

<b>32 Audits</b>	
32.1	Determine deficiencies in the organization's radiation safety program.
32.2	Assess radiation protection program and analyze trends to identify and correct areas of program weakness and deficiencies in personnel performance.
32.3	Critically review the adequacy of safety procedures related to ionizing radiation.
32.4	Conduct audits of safety practices in accordance with the <i>ALARA</i> principle of dose limitation.
32.5	Recommend remedial actions or changes to correct areas of program weakness or deficiency.
<b>33 Investigations</b>	
33.1	Investigate radiation hazards, incidents, overexposures, contamination and loss of radioactive material.
33.2	Evaluate incidents and determine pertinent facts or events surrounding investigations.
33.3	Investigate situations where the organization's radiation safety action levels are triggered.
33.4	Diagnose and initiate corrective action for unusual conditions during routine work and accident situations.
33.5	Recommend appropriate actions or revisions to the radiation protection program in order to prevent recurrences.
33.6	Analyze trends of events and incidents.
33.7	Prepare reports on investigations and trends for the appropriate regulator or committee.
<b>40 Exposure and Dose Control</b>	
40.1	Manage radiation exposure levels through an effective <i>ALARA</i> program
40.2	Conduct radiation contamination surveys of laboratories and work surfaces.
40.3	Conduct radiation exposure surveys of rooms, devices and storage areas.
40.4	Conduct workplace hazard assessment and evaluation before work with radiation is started.
40.5	Identify high hazard work areas and establish procedures scaled to the hazard level.
40.6	Establish personnel traffic patterns, controlled work areas and work practices to protect staff and the general public from high radiation levels.
40.7	Monitor radiation levels throughout the institution and make recommendations regarding ways of reducing radiation exposure.
40.8	Monitor access control (security) and recommend changes to ensure the security of radiation devices and sources.
40.9	Evaluate shielding of areas where radioactive material and radiation devices are used.
<b>50 Instrumentation and Equipment</b>	
50.1	Ensure equipment is assessed to determine that it is appropriate for its intended use.
50.2	Administer the use, and maintenance of personnel monitoring devices and instruments.
50.3	Ensure radiation survey instruments are calibrated and serviced as required.

50.4	Perform efficiency tests and document count rates corresponding to contamination levels for each isotope likely to be used with that instrument.	
50.5	Document results of equipment calibration and service.	
50.6	Analyze equipment results for trends that indicate sub-optimal performance.	
50.7	Advise on the use of personnel protective equipment.	
50.8	Assess personal monitoring devices and assess new devices as they become available.	
<b>60</b>	<b>Radioactive Inventory Management</b> Manage a complete inventory control program to ensure the security and safe handling of radioactive material from purchase and storage to use and disposal.	
<b>61</b>	<b>Purchasing</b>	
61.1	Ensure the purchase of radioactive material permits only authorized users to place orders.	
61.2	Provide procedures to ensure inventory limits are not exceeded.	
61.3	Review requests for authorization to purchase radioactive material.	
61.4	Maintain an up to date inventory of radionuclides and sealed sources	
<b>62</b>	<b>Receiving</b>	
62.1	Ensure radioactive material shipments follow regulations relating to radiation safety and security.	
62.2	Receive and open packages using radiation safety and transport guidelines.	
62.3	Evaluate delivery or package inconsistencies.	
62.4	Log all radioactive material received into the inventory record.	
<b>63</b>	<b>Transportation</b>	
63.1	Package radioactive material in accordance with the regulations.	
63.2	Prepare shippers declaration and other documentation required by regulations.	
63.3	Ensure the organization's obligations to transport radioactive material are fulfilled.	
63.4	Ensure properly trained individuals transport radioactive material within the organization.	
<b>64</b>	<b>Storage</b>	
64.1	Maintain storage areas for both short term and long term radioactive waste.	
64.2	Ensure the locations where ionizing radiation is used comply with the regulations in such areas as signage, space, security and shielding.	
64.3	Assess space and security requirements of storage areas for radioactive material.	
<b>65</b>	<b>Waste Management</b>	
65.1	Identify waste streams and relate to regulatory conditions.	
65.2	Develop procedures for the disposal of liquid, solid, gaseous radioactive wastes or sealed sources.	
65.3	Develop procedures to monitor waste to determine if it can be disposed.	
65.4	Prepare requests to adjust release limits and waste disposal process.	
<b>70</b>	<b>Personnel Dosimetry</b>	
70.1	Evaluate potential internal and external personal radiation exposure hazards.	

70.2	Develop procedures to minimize radiation exposure hazards.	
70.3	Understand regulatory requirements regarding screening and bioassay related to the potential for internal radiation exposure.	
70.4	Monitor the occupational radiation exposures received by employees and where records indicate that exposures are unnecessarily high,	
70.5	Recommend measures to reduce radiation exposures in the workplace.	
70.6	Assign personal monitoring devices.	
70.7	Develop and respond to action levels regarding personal radiation dose records.	
70.8	Develop a policy to ensure that pregnant workers can maintain their occupational radiation exposure within regulatory limits.	
70.9	Advise departments on changes to work practices required if an individual declares a pregnancy.	
<b>80 Contamination Control</b>		
80.1	Design and implement radioactive decontamination programs.	
80.2	Coordinate, or participate in, emergency responses to accidents involving radioactive materials.	
80.3	Respond to radiation safety emergencies or spills.	
80.4	Conduct contamination surveys or leak tests of laboratories, devices and storage areas.	
80.5	Evaluate procedures intended to prevent or minimize contamination.	
<b>90 Emergency Procedures</b>		
90.1	Develop procedures for dealing with emergencies involving radioactive material.	
90.2	Advise on the handling of contaminated individuals to the Emergency Department.	
90.3	Advise departments on the handling of deceased patients who have had recent treatment and are a potential radiation source.	
90.4	Act as a resource for those responding to transport or other accidents involving radioactive material.	
90.5	Establish an emergency response team and conduct practice drills.	
<b>Specialty Area Competencies</b>		
To be developed as needed		