Australian Government

Assessment Requirements for MEM13018 Work safely with ionizing radiation

Release: 1

Assessment Requirements for MEM13018 Work safely with ionizing radiation

Modification History

Release 1. Supersedes and is equivalent to MEM13013 Work safely with ionizing radiation.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting charts, specifications, relevant organisational policy and procedures and other applicable reference documents in the workplace when working safely with ionizing radiation
- employing appropriate ionizing radiation protective measures and personal protective equipment (PPE) relevant to the industrial application on at least two occasions
- determining minimum exposure rates and distances from calculations and charts
- undertaking numerical operations and calculations associated with determining minimum exposure rates and distances
- selecting and using appropriate tools and equipment necessary to monitor radiation on at least two occasions
- documenting all safety breaches and recording and reporting in accordance with SOPs
- demonstrating the ability to assess risks and handle emergencies.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of PPE
- International System of Units (SI) of radiation in accordance with the National Health and Medical Research Council (NHMRC) and statutory requirements
- production of X-rays and gamma rays in relation to radiographic testing activities
- principal radioactive sources used in industrial radiography
- attenuation factors
- known biological effects of radiation
- general principles of gas ionization, photographic effect and luminescence
- use of film, film badges, ionization chamber devices, quartz fibre and fluorescent
- electronic device accuracy limits including energy and range
- different SI units of radiation, including becquerel, sievert and gray

- exposure limits for personnel as laid down by the radiation authorities in Australia
- exposure reduction factors including:
  - time
  - distance
  - shielding
- procedures for establishing safe working barriers
- relevant techniques and checks
- emergency procedures
- safety procedures for:
  - types of X-ray equipment
  - types of isotope cameras
  - shielding materials
  - design and requirements for exposure areas
  - requirements for storage of radioisotopes
- emergency situations, causes and appropriate responses
- storage requirements of equipment and materials
- legal requirements including:
  - federal and state/territory regulations and codes of practice
  - International Commission on Radiological Protection (ICRP) recommended limits for various persons and various parts of the body for short-term, long-term and accumulated exposure
  - background radiation
  - duties of Radiation Safety Officer (RSO)
  - requirements for transport
  - International Air Transport Association (IATA) regulations
  - obligations of the licensee.

Assessment Conditions

- Assessors must:
  - have vocational competency in working safely with ionizing radiation at least to the level being assessed, with relevant industry knowledge and experience
  - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires.
- Where possible, assessment must occur in operational workplace situations. Where this is not possible or where personal safety and environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2