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Recommendations for Radiation Safety Officers and Radiation Safety Committees

Department of
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About these Recommendations

Clause 30 of the *Radiation Control Regulation 2003* provides for the appointment of radiation safety officers and radiation safety committees in workplaces where ionising radiation or radioactive substances are used.

The Environment Protection Authority (EPA) may direct the appointment of a radiation safety officer or a radiation safety committee in a workplace, determine the qualifications of radiation safety officers, and direct what functions are to be exercised by radiation safety officers and radiation safety committees.

In April 2002, the EPA published a *Draft Radiation Guideline: Radiation Safety Officers and Radiation Safety Committees*. The *Draft Guideline* and the *Recommendations* were developed by the EPA in consultation with the Radiation Advisory Council to assist employers to meet their radiation safety responsibilities.

On 24 September 2003 the EPA became part of the Department of Environment and Conservation (NSW). However, certain statutory functions and powers, including those in the *Radiation Control Act 1990* and *Radiation Control Regulation 2003*, continue to be exercised in the name of the EPA.

Part I—Responsibilities

These *Recommendations* have been developed to assist employers to fulfil their responsibilities under the *Radiation Control Act 1990* and the *Radiation Control Regulation 2003* (the Regulation).

Under clause 30 of the Regulation the Environment Protection Authority (EPA) may direct an employer to appoint a radiation safety officer (RSO) or a radiation safety committee (RSC), determine the qualifications that must be held by an RSO, and direct what functions are to be exercised by an RSO or an RSC.

The *Recommendations* are designed to assist employers to whom the Regulation applies by providing information on the appointment, qualifications and functions of RSOs and RSCs. However, the *Recommendations* are not mandatory.

Responsibilities of the employer

The *Radiation Control Act 1990* and the Regulation assign certain responsibilities to employers to protect employees, members of the public and the environment from unnecessary exposure to radiation arising from their operations which use radiation apparatus and radioactive substances.

An RSO may assist an employer to meet their obligations under the Act by being delegated to conduct some or all of the duties assigned to the employer under the Act and the Regulation. This delegation does not, however, relieve the employer of their responsibilities.

Further guidance may be found in section 5 of the publication *National Standard for Limiting Occupational Exposure to Ionizing Radiation* [*NOHSC: 1013 (1995)*], republished in March 2002 by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) in Radiation Protection Series No. 1.

Appointment of a Radiation Safety Officer

Under the existing Regulation an employer is only required to appoint an RSO when the EPA directs the employer to do so. The EPA has not yet exercised this regulatory power. However, many organisations, especially larger employers that use ionising radiation (like hospitals and universities) choose to appoint an RSO.

The Regulation provides for the appointment of an RSO to advise and assist an employer in fulfilling their responsibilities for radiation safety.

An organisation which is required or chooses to appoint an RSO may employ a person to specifically fulfil the role, appoint an existing employee, or engage an external consultant. The resources required to reasonably fulfil the responsibilities of an RSO will vary depending on the size and activities of the organisation. An RSO need not necessarily be a full-time employee. Smaller employers that may need to appoint an RSO should take particular note of this.

Most employers that are affected by the Regulation should find that normally only one person is needed as the RSO for an organisation. However, large employers or those that use ionising radiation or radioactive substances over a geographically widespread area may need to appoint an RSO in each of their premises. Employers need to ensure and satisfy themselves that an appropriately qualified person is appointed in their workplace. The employer needs to be satisfied that the RSO is capable of carrying out their functions. Even though some of these functions may be delegated, it is up to the employer to ensure compliance.

Authority of a Radiation Safety Officer

There may be occasions when an activity using ionising radiation or radioactive substances presents an unacceptable risk. This could occur if:

- the operator lacks proper appreciation of the result of proposed actions, or
- operator oversight causes a dangerous situation.

It is recommended that the RSO have the authority to:

- stop any unsafe operations or proposed actions that come to his or her attention, and
- implement any necessary urgent actions following the occurrence of an accident.

Absence of a Radiation Safety Officer

On occasions when an RSO is absent from duty or unavailable the employer should appoint another suitably trained employee or consultant as an interim RSO to ensure that the functions of the RSO are maintained. Employers need to satisfy themselves that an interim RSO is capable of carrying out the functions of an RSO.

Organisations requiring a Radiation Safety Committee

An organisation whose size and scope of activities warrants it may be directed by the EPA to appoint a radiation safety committee (RSC).

An RSC has the following objectives:

- to act as an administrative and consultative body that reviews the radiation safety of all uses of ionising radiation and radioactive substances within the organisation
- to recommend implementation of a radiation safety policies within the organisation.

Part II—Qualifications

Knowledge and skills of a Radiation Safety Officer

The role of RSO requires a mix of scientific and technical expertise with appropriate personal qualities.

The necessary qualifications and experience of an RSO will depend on the type of organisation where the appointment is to be made. The recommended minimum qualifications and experience that may be needed by an RSO are outlined below.

An RSO should have:

1. attained an appropriate qualification in a discipline appropriate to the activity that they are required to undertake by their employer, for example:
    - an RSO in a large teaching hospital using many modalities of radiation may need to be qualified as a medical physicist or equivalent
    - an RSO in an industrial setting may need to be licensed in industrial radiography, or
    - an RSO employed in a radiological practice may need to be a radiographer
2. satisfactorily completed an appropriate training course in radiation protection
3. knowledge of NSW radiation control legislation and of relevant codes of safe practice, including:
    - the *Radiation Control Act 1990* and Regulation
    - relevant EPA radiation control guidelines
    - relevant documents in the NHMRC Radiation Health Series
    - relevant documents in the ARPANSA Radiation Protection Series
    - relevant codes of practice
    - relevant Australian Standards
    - other guidance material and information relevant to the duties of an RSO.

Additionally, It is desirable that an RSO have:

1. two years full-time-equivalent experience in operational radiation protection in one or more of the areas that require mandatory personal monitoring under the Regulation, with experience appropriate to their type of employment
2. demonstrated ability to research and resolve a wide range of diverse technical issues
3. demonstrated high-quality communication and interpersonal skills across a variety of client groups, and be able to:
    - liaise effectively with all levels of staff employed in the organisation
    - present radiation safety information in a clear manner
    - compile comprehensive reports on radiation safety matters encountered in the organisation.

Membership of a Radiation Safety Committee

The size and membership of an RSC will depend on the type and size of the organisation. For example, a major hospital or teaching institution probably needs a larger RSC than an industrial radiography firm. A model for membership of an RSC could be as follows:

1. Chairperson—a senior manager in the organisation
2. Secretary or executive officer—a person with a knowledge of radiation safety principles and practices
3. Members:
    - the RSO
    - a representative from each department in the organisation using ionising radiation or radioactive substances
    - the occupational physician (if one is employed by the organisation)
    - a representative of the nursing staff (in the case of a hospital)
    - a representative of the occupational health and safety committee (where one exists).

Part III—Functions

Functions of a Radiation Safety Officer

The function of an RSO is to advise and assist the employer to fulfil their responsibilities under the *Radiation Control Act 1990* and the Regulation. The specific functions of an RSO are at the discretion of the individual employer. An examples of how an RSO can assist the employer is by developing, implementing and monitoring the effectiveness of a radiation protection program. The following are functions that an RSO may carry out for an employer.

1. Ascertain the radiological hazards associated with the organisation and advise the employer about suitable radiation protection arrangements that should be implemented so that radiation exposures are as low as reasonably achievable:
    - for occupationally exposed employees in controlled areas[1]
    - for employees in supervised areas[2]
    - for members of the public, including those who have access to areas in or adjacent to the premises.
2. Arrange for the inspection of all monitoring devices in the organisation to determine whether they are in good working order and that they are appropriately calibrated.
3. Inspect and advise the employer on the adequacy of facilities and protocols for employees working with radioactive substances, including radiation monitoring and protective clothing.
4. Recommend the adoption of systems or procedures that ensure suitable external radiation monitors are worn and returned to the issuing organisation at appropriate intervals.
5. Advise the employer when personal monitoring of exposed persons for internal radiation exposure needs to be carried out.
6. Investigate any abnormally high external or internal radiation exposures of persons and report the results to the employer.
7. Recommend implementation of appropriate procedures to control the exposure of pregnant women in accordance with clause 5.1(m) of the aforementioned *National Standard for Limiting Occupational Exposure to Ionizing Radiation*.
8. Arrange for appropriate periodic monitoring of areas, equipment and operations associated with the use of ionising radiation and radioactive substances.
9. Arrange for all employees who work with ionising radiation or radioactive substances to be provided with appropriate induction and continuing radiation safety training, and maintain records of this training.
10. Recommend the adoption of systems or procedures that ensure all appropriate employees in the organisation are licensed as required by the radiation control legislation.
11. Recommend systems or procedures that ensure registration and all other pertinent requirements of the radiation control legislation are met.

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[1] Controlled area: an area to which access is controlled and in which employees are required to follow specific procedures aimed at controlling exposure to radiation.

[2] Supervised area: an area in which working conditions are kept under review but in which special procedures to control exposure to radiation are not normally operating.

12. Liaise with all employees in the organisation who may be exposed to ionising radiation during the course of their work, and their supervisors, to ensure that radiation doses are as low as reasonably achievable.
13. Advise on the provision of engineering controls and maintenance schedules for equipment.
14. Recommend systems or procedures to ensure that local rules for safe work practices with ionising radiation and radioactive substances are prepared and available to appropriate employees.
15. Advise on arrangements for the proper identification and indication of all controlled and supervised areas.
16. Arrange for access by authorised persons to controlled areas.
17. Inspect all areas where ionising radiation or radioactive substances are used, or are proposed to be used, and make reports and recommendations to the employer on radiation safety.
18. Arrange for the display of radiation warning signs as required by the radiation control legislation and for their removal when no longer needed.
19. Investigate, record and report to the employer and the EPA, as appropriate, any accidents or unsafe practices that affect radiation safety.
20. Advise on the safe storage of radioactive materials in accordance with the requirements of the EPA.
21. Advise on the safe storage and disposal of radioactive wastes in accordance with the requirements of the EPA.
22. Arrange for records of effective doses of ionising radiation received by individual workers to be maintained for the period required by the EPA.
23. Arrange for any necessary medical services to be provided. Arrange for medical records to be maintained in accordance with any existing legislative requirements.
24. Devise and establish a protocol for independent safety assessment of:
    - new plant, premises or operations in which ionising radiation or radioactive substances are to be used
    - modifications that may affect radiation safety to existing plant, premises or operations in which ionising radiation or radioactive substances are used.
25. Arrange for radioactive substances to be transported in accordance with the requirements of the radiation control legislation.
26. Arrange for station officers of the local fire brigade to be notified of the location of radioactive substances on the premises.
27. Arrange for the preparation and execution of contingency plans for any foreseeable radiological accidents or emergencies in the organisation.
28. Perform any other tasks necessary to maintain a high standard of radiation safety.

Not all of these functions are necessarily to be carried out personally by the RSO. These functions may be delegated to other employees.

Functions of a Radiation Safety Committee

An RSC, on behalf of the employer, should carry out the following functions:

1. Develop, document and implement a radiation protection program commensurate with the scope of licensed activities.
2. Use procedures and engineering controls based on sound radiation protection principles, to the extent practicable, so that doses to employees and members of the public are as low as reasonably achievable.
3. Ensure that each proposed new operation in the organisation that involves the use of ionising radiation or radioactive substances:
    - is subjected to an independent safety assessment to ensure its radiation safety
    - meets all other safety aspects
    - fulfils all regulatory requirements and is subjected to any necessary pre-operational tests before its commencement.
4. Review and endorse safe working rules for each workplace in the organisation.
5. Consider the requirements of radiation legislation, relevant standards and codes of practice, and monitor their compliance within the organisation.
6. Review and recommend appropriate radiation safety training for all employees who use ionising radiation or radioactive substances.
7. Review the results of the personal monitoring program.
8. Review and endorse radiation emergency guidelines for each workplace in the organisation.
9. Review all investigations of radiation incidents and accidents.
10. Receive and consider reports from the RSO on:
    - personal radiation doses
    - area radiation surveys
    - incidents and accidents involving ionising radiation or radioactive substances
    - inspections of areas where ionising radiation or radioactive substances are used
    - licensing of users of ionising radiation or radioactive substances, and
    - any other relevant matters concerning the uses of ionising radiation or radioactive substances and related facilities.
11. Inform the employer immediately of any unsafe working practice or deficiency in equipment or apparatus brought to its notice that affects radiation safety, and recommend immediate remedial action.
12. Review discharges and disposal of radioactive substances from the organisation and ensure compliance with legislative requirements.
13. Provide the employer with a radiation safety report, at least annually, which reviews the current radiation safety status of the organisation.

Radiation Safety Committee administrative arrangements

The RSC should meet regularly (for example, quarterly). A special meeting may be called at any time it is required.

Arrangements should be made for persons to deputise for the Chairperson, the Secretary or Executive Officer and the RSO if any of them are unable to attend a meeting.

A quorum of members should consist of at least half of the committee membership, including the Chairperson (or deputy) and the RSO (or deputy).

At each meeting of the RSC, the RSO should present a report on the state of radiation safety in the organisation.

Any subcommittee of the RSC should report its activities to the RSC.

A copy of the minutes of the RSC meetings should be issued to all members of the RSC. Any member of staff should be able to see a copy of the RSC minutes on request.

The RSC should report to the senior management of the organisation.

A channel of communication with the organisation's occupational health and safety (OH&S) committee (if one exists) should be maintained. The OH&S officer may be a member of the RSC, but the two are distinguished by the fact that, among other things, OH&S committees are not designed to deal specifically and exclusively with radiation safety issues.