

39 Radiation Safety Duties of MOD Employees

Scope

1. This Chapter covers the specific radiation safety duties of MOD employees. The duties are those which derive mainly from the Ionising Radiations Regulations 2017 and the Environmental Permitting Regulations 2016 / Environmental Authorizations (Scotland) Regulations 2018. This Chapter does not cover the general safety duties of MOD employees which are detailed at Chapter 47 of JSP 375.

Statutory Requirements

2. In addition to the general requirements of the Health and Safety at Work etc. Act 1974 and the Management of Health and Safety at Work Regulations 1999, the following specific legislation applies directly or is applied indirectly through parallel arrangements designed to achieve equivalent standards:

- a. Ionising Radiations Regulations 2017 (IRR17) (apply directly);
- b. The Environmental Permitting (England & Wales) Regulations 2016 (EPR16) (as amended) (parallel arrangements);
- c. Environmental Authorisations (Scotland) Regulations 2018 (EASR18) (parallel arrangements); and
- d. Radioactive Substances Act 1993 (Northern Ireland) (RSA93) (as amended) (and associated Exemption Orders).

Radiation Safety Duties of All MOD Employees

3. Employees have radiation protection responsibilities under the IRR17. Their responsibilities are as follows:

- a. employees are not to intentionally or recklessly misuse or interfere with any radioactive substance or any other source of ionising radiations;
- b. employees are not to knowingly expose themselves or any other person to radiation doses greater than is necessary to undertake their work and are to exercise reasonable care in carrying out that work;
- c. as far as reasonably practicable, no unsealed radioactive substance or article containing a radioactive substance is to be held or directly manipulated in the hand;
- d. employees are to carry out work in accordance with local orders;

- e. employees are to wear protective clothing or respiratory protection as required in local orders or as instructed by the RSO or RPS / WPS and are to report any defects they may discover. They are required to return the equipment after use to the accommodation provided for it;
- a. employees are to wear personal dosimeters provided and are to look after them and inform the RSO or RPS immediately of any loss or damage to such a dosimeter;
- b. employees are to provide for analysis such biological samples that may be reasonably required (by the Commanding Officer / Head of Establishment (CO / HoE), AD (Appointed Doctor) or Approved Dosimetry Service (ADS)) or submit themselves to external radiation monitoring when so directed by the CO / HoE.
- c. employees must immediately report the following to the CO / HoE through the appropriate supervisor or line manager:
 - (1) where they have cause to believe that they or some other person has received an overexposure;
 - (2) where they become aware that radioactive material has been lost, stolen, spilled or dispersed to the environment;
 - (3) where a malfunction of X-ray generating equipment or industrial radiography equipment occurs which has led to or could have led to any person receiving an unusual radiation dose.
- d. employees are to submit themselves to medical examinations or tests as required by the CO / HoE and must provide the AD or employment medical adviser with such information concerning their health as may reasonably be required; and
- e. employees who are designated as classified persons (see Chapter 38) and are issued with a radiation passbook must not misuse the passbook or falsify or attempt to falsify any of the information contained in it.

Radiation Safety Duties of Commanding Officers and Heads of Establishment and Appointees

Commanding Officers and Heads of Establishment (CO / HoE)

- 4. The CO / HoE has a duty to the Secretary of State, and a personal responsibility, to protect the environment and secure the health, safety and welfare of their staff at work. The CO / HoE is also required to protect persons not in MOD employment (e.g. members of the public) against risks to their health and safety arising from the MOD work activities. This includes radiation safety. The CO / HoE authority (but not responsibility) for radiation safety management arrangements may be delegated to appropriate personnel, such as a Radiation Safety Officer (RSO).
- 5. The appointments which a CO / HoE may need to make are listed below. The appointments are to be made in writing. A detailed list of the CO / HoE duties is at Annex A.

Radiation Protection Adviser (RPA)

6. Where appropriate, the appointment of a Radiation Protection Adviser (RPA) is a statutory requirement under IRR17 and, with the exception of the certain establishments associated with nuclear programmes, this appointment is to be made at TLB level. The occasions on which the CO / HoE must consult with an RPA are detailed at Chapter 7.

Radioactive Waste Adviser (RWA)

7. A Radioactive Waste Adviser (RWA) is a specialist in radioactive waste disposal and environmental radiation protection and has been certified as such by an appropriate assessing body. An RWA is required where a unit or establishment has a permit issued by an environment agency to accumulate or dispose of radioactive material.

Radiation Safety Officer (RSO)

8. The Radiation Safety Officer (RSO) is not a statutory appointment under IRR17; this appointment is normally to be made by the CO / HoE as part of the local safety organisation. In some cases, it may be appropriate for one RSO to be appointed to cover a group of local units. For units where the risk from work with ionising radiation is low, the CO / HoE may dispense with this appointment – however the duties which are normally delegated to an RSO must be then carried out by the CO / HoE or delegated to another suitable person e.g. an RPS or WPS.

9. Where an RSO is appointed, they are to ensure that they are familiar with the specific radiation hazards at their unit and that adequate radiation protection arrangements are made to minimise the radiation hazard. RSOs act on behalf of the CO / HoE from whom they derive their authority and they are to have direct access to the CO / HoE. Further details of the RSO's duties are given at Annex B.

Radiation Protection Supervisor (RPS)

10. The appointment of an RPS for each area where it is necessary to designate work areas as controlled or supervised (see Chapter 4) is a statutory requirement.

11. The prime responsibility of an RPS is to supervise work in accordance with the local orders for radiation safety (which include the essential content of local rules for such controlled or supervised areas required by IRR17). They will normally report directly in this capacity to the RSO. In the absence of an RSO, the RPS will report directly to the CO / HoE on radiation protection matters.

12. The RPS is to be directly involved with the work with ionising radiations, preferably in a line management position that grants authority to exercise close supervision to ensure that the work is undertaken in accordance with the local orders, though they need not be present all the time. The RPS is to have an understanding of IRR17 in order to ensure compliance with these regulations. The RPS is to understand the necessary precautions to restrict exposure and also what to do in an emergency. A notice stating the name of the RPS and the appropriate telephone number is to be kept posted where it can be read conveniently by the persons working in the relevant controlled or supervised area.

13. The duties of the RPS are given at Annex C.

Workplace Supervisor (WPS)

14. Where a unit carries out work with ionising radiation but where it is unnecessary to designate controlled or supervised areas, it is not necessary to appoint an RPS. However, it is still necessary to have workplace supervision to ensure that work is carried out in accordance with local orders for radiation safety and hence a Workplace Supervisor (WPS) is to be trained and appointed to carry out this task. They will normally report directly in this capacity to the RSO. In the absence of an RSO, the WPS will report directly to the CO / HoE on radiation protection matters.

15. Where a unit holds radioactive material, a Workplace Supervisor (Radioactive Materials) is to be appointed for each area where those materials are stored and / or used. The duties of a WPS (Radioactive Materials) are given at Annex D.

16. Where a unit uses minor X-ray generators such as postal and baggage X-ray fluoroscopes, or uses high voltage equipment generating parasitic X-rays, a Workplace Supervisor (X-ray) is to be appointed for each area where such equipment is used. The duties of the WPS (X-ray) are (as appropriate):

- a. supervision of work involving postal and baggage X-ray fluoroscopes in accordance with local orders including the radiation safety arrangements described at Chapter 24; and
- b. supervision of work involving high voltage equipment (generating parasitic X-rays) in accordance with local orders including the radiation safety arrangements described at Chapter 23.

17. Where levels of radon in a workplace exceed 300 Bqm^{-3} , but there is no requirement to designate supervised or controlled areas, a Workplace Supervisor (Radon) is to be appointed. The WPS (Radon) is to supervise the radiation protection arrangements for protection against radon as detailed in Chapter 32.

Qualified Person for Testing Equipment

18. The CO / HoE of an establishment which has its own ionising radiation protection instrument examination and testing facility is to appoint in writing one or more qualified persons to carry out or to supervise the testing of ionising radiation protection instruments in accordance with JSP 425 and the Ionising Radiations Regulations 2017.

Training

19. The general training requirements for employees and appointees are given at Chapter 15. Specific advice on appointments and training is to be sought from the RPA.

Records

20. Records of appointments and training are to be retained locally by the RSO for a minimum of 2 years after termination of the appointment. At the end of this period, an assessment is to be made of the relevance of retaining the records in accordance with JSP 392 Volume 1 Chapter 3 and JSP 441 Managing Information in Defence. Personnel files are to be annotated with the dates of commencement and termination of the appointment and the training they received.

Duties of Commanding Officers and Heads of Establishment

1. The Commanding Officer / Head of Establishment (hereafter abbreviated to CO / HoE) has a duty to the Secretary of State, and a personal responsibility, to protect the environment and secure the health, safety and welfare of their staff at work. They are also required to protect persons not in MOD employment (e.g. members of the public) against risks to their health and safety arising from the MOD work activities. This includes radiation safety. The CO / HoE authority (but not responsibility) may be delegated to appropriate personnel, such as a Radiation Safety Officer (RSO). The CO / HoE detailed duties are described below:

- a. Radiation Protection Adviser (RPA): The CO / HoE is to ensure that the RPA is aware of all work involving ionising radiations carried out at their unit or establishment and that RPA visits occur at appropriate intervals. The RPA is to be provided with adequate information and facilities to undertake their work and is to be consulted when appropriate. The requirements for consultation with an RPA are given at Chapter 7;
- b. Appointed Doctor (AD): The CO / HoE is to ensure that, where applicable, the AD is aware of all work involving ionising radiations carried out at their unit or establishment. The requirements for medical surveillance of personnel are detailed at Chapter 6. The AD is to be provided with adequate facilities to carry out medical examinations. They are to be provided with copies of dose records and sickness absence records of personnel being examined and allowed access to working areas which they may inspect;
- c. Appointments: The CO / HoE is to make the appropriate radiation safety appointments in writing (see main body of this Chapter);
- d. Risk assessments and contingency plans: The CO / HoE is to ensure that risk assessments are carried out (see Chapter 2) and contingency plans prepared and documented (see Chapter 40) for all activities involving the use of sources of radiation and radioactive material;
- e. Notifications: The CO / HoE is to ensure that notification of the introduction and use of radioactive substances is undertaken in accordance with Chapter 3;
- f. Transfer and disposal of radioactive material or radioactive waste: The CO / HoE is to ensure that radioactive materials are transferred in accordance with Chapter 11 and radioactive waste is disposed of in accordance with Chapter 12. Where a permit to accumulate and dispose of radioactive material is held, the CO / HoE is to ensure that a Radioactive Waste Adviser (RWA) is appointed and consulted (see chapter 12). Transport of materials and waste off site is to be carried out in accordance with Chapter 10 and Dangerous Goods Manual;
- g. Local orders: The CO / HoE is to ensure that a complete set of local orders (see Chapter 16) governing work with ionising radiation is prepared, generally in consultation with the RPA. The local orders are to be referenced in the establishment's Safety, Health and Environment statement of organisation and arrangements. The CO / HoE is to ensure that the workforce is adequately supervised and that they work in accordance with the local orders for radiation safety;

- h. Restriction of exposure: The CO / HoE is to ensure that all reasonably practicable steps are taken to restrict the extent to which individuals are exposed to ionising radiations and to prevent any dose limit being exceeded (see Chapter 4);
- i. Information and training: The CO / HoE is to ensure that all personnel have been given information, instruction and training on the tasks that they are to undertake (see Chapter 15);
- j. Dosimetry: The CO / HoE is to ensure that the radiation doses received by all persons working in controlled areas are measured and recorded, and that the appropriate documentation is maintained. Arrangements are also to be made for the analysis and recording of biological samples or external radiation monitoring of personnel when recommended by the RPA. Detailed requirements for dosimetry are given in Chapter 6;
- k. Provision of facilities and equipment: The CO / HoE is to ensure that sufficient safety equipment and other facilities are provided and are in good working order to ensure adequate protection arrangements for persons working with ionising radiation;
- l. Co-operation with other employers: The CO / HoE is to ensure that appropriate information is supplied to other CO / HoE and employers of contractors regarding their visiting workers and of work to be undertaken at the unit or establishment by visiting workers. Further details for outside workers (classified persons) are given at Chapter 38 and for non-classified persons at Chapter 5;
- m. Investigations and reporting: The CO / HoE is to ensure that unusual radiation events are investigated and reported in accordance with Chapter 14; and
- n. Audits: The CO / HoE is to ensure that a compliance audit programme and systematic follow-up arrangements are in place.

Duties of the Radiation Safety Officer (RSO)

1. The RSO acts on behalf of the CO / HoE from whom they derive their authority. The RSO duties may include the following as delegated by the CO:
 - a. to provide first-line support on radiation safety to the CO / HoE and other personnel at their establishment;
 - b. to consult the RPA for radiation protection advice about matters for which the RPA has been appointed (see Chapter 7);
 - c. to monitor the RPSs and WPSs in the discharge of their duties;
 - d. to carry out regular reviews of radiation safety arrangements, including an audit of procedures and local orders, against the requirements of the appropriate regulations and Service publications. The frequency of audits is at the discretion of the RSO but annually at a minimum;
 - e. to obtain and distribute all necessary radiation safety information;
 - f. to maintain an effective liaison with the Appointed Doctor and other specialist officers and to manage co-operation with other employers on behalf of the CO / HoE;
 - g. to ensure that risk assessments have been carried out and to prepare the unit or establishment local orders and emergency procedures as directed by the CO / HoE, in consultation with the RPA (see Chapters 2 and 16);
 - h. to ensure that notification of the introduction and use of radioactive substances is undertaken in accordance with Chapter 3;
 - i. to co-ordinate all investigations in association with the RPA into known or suspected incidents of unusual radiation exposures or release, loss or theft of radioactive materials and to ensure that such incidents are reported in accordance with Chapter 14;
 - j. to ensure the compliance of visitors or visiting workers with local orders and written arrangements (see Chapter 5);
 - k. to ensure that all records are kept and maintained for the statutory and MOD policy period of time;
 - l. to co-ordinate the radiation safety training (including basic, on the job and continuation training) for personnel at the unit or establishment (see Chapter 15);
 - m. to procure sufficient safety equipment and to apply to the appropriate Delivery Team for radiation monitoring instruments to ensure satisfactory radiation safety standards. The RSO is to ensure repair, maintenance and calibration of the equipment is undertaken, and records of such are maintained (see Chapter 8);

- n. where the unit holds a relevant environment agency notification, the RSO is to monitor the holdings of radioactive material held by the establishment against the quantities stated in the unit's notification and ensure they are not exceeded (see Chapter 3);
- o. to co-ordinate the transfer of radioactive material (see Chapter 11), disposal of radioactive waste (in consultation with a Radioactive Waste Adviser) (see Chapter 12) and movement or transport of material or waste in accordance with Chapter 10 and the Dangerous Goods Manual; and
- p. other relevant duties designated by the CO / HoE.

Duties of the Radiation Protection Supervisor (RPS)

1. The Radiation Protection Supervisor (RPS) is appointed in respect of a controlled or supervised area and will normally report directly in this capacity to the RSO. In the absence of the RSO, an RPS will report directly to the CO / HoE on radiation protection matters.
2. The prime responsibility of an RPS is to ensure that work is carried out in accordance with local orders in the areas for which they are appointed. The principal duties of the RPS include, where appropriate, the following:
 - a. to be familiar with the areas, processes and equipment(s) for which they are appointed and be aware of the hazards under normal and abnormal working conditions;
 - b. to inform the CO / HoE through the RSO if any piece of equipment is unsafe from a radiation protection point of view or a process is carried out in a manner that exposes persons unnecessarily to ionising radiations;
 - c. to be aware of the radiation and contamination level in those areas for which they are RPS and to arrange a suitable monitoring programme in consultation with the RPA and RSO;
 - d. in consultation with the RPA and RSO, draw up and maintain local orders, including contingency plans for the areas for which they have been appointed (see Chapter 40);
 - e. to assist the RSO with or to undertake the investigation of any suspected radiation overexposure or any unusual radiation dose received by any individual (see Chapter 14);
 - f. to investigate the loss, theft, spillage or escape of radioactive material through an unauthorised route, and inform the RSO of their findings (see Chapter 14);
 - g. to inform the RSO of any fire or explosion occurring in any process involving radioactive material (see Chapter 14);
 - h. to be responsible for the administration of personal monitoring and surveillance of the workforce and visitors (see Chapter 6);
 - i. to be responsible for accounting for radioactive material used or stored in the areas for which the RPS is appointed;
 - j. to prepare and maintain records relating to radiation protection, including dosimetry records, source lists including leakage tests, instrument log cards, inspections of protective clothing, etc;
 - k. to ensure that all workers under their control have been suitably instructed in the hazards and radiation protection procedures and are aware of the relevant safety rules and instructions (see Chapter 15);

- l. to demarcate and provide notices for all controlled or supervised areas for which they are responsible (see Chapter 4);
- m. to ensure that sufficient numbers of suitable monitoring instruments in serviceable condition are provided, and used to ensure adequate radiation protection control over the work (see Chapter 8);
- n. to organise the transfer of radioactive material and disposal of radioactive waste (in consultation with an RWA) (See Chapters 11 and 12);
- o. to organise the movement and transport of radioactive material or radioactive waste in accordance with Chapter 10 and the Dangerous Goods Manual;
- p. to participate in the risk assessment process as required by the RSO (see Chapter 2); and
- q. other relevant duties as designated by the CO / HoE.

Duties of the Workplace Supervisor (WPS)

1. Where a unit holds or uses ionising radiation but where it is unnecessary to designate controlled or supervised areas, it is not necessary to appoint an RPS. However, it is still necessary to have work-place supervision to ensure that work is carried out in accordance with local orders for radiation safety and hence a Workplace Supervisor (WPS) is to be appointed to carry out this task for each radiation area concerned. A WPS may be classed as WPS (Radioactive Materials), WPS (X-Rays) or WPS (Radon). The WPS will normally report directly in this capacity to the RSO. In the absence of an RSO, the WPS will report directly to the CO / HoE on radiation protection matters.

2. The prime responsibility of a WPS is to ensure that work associated with the radioactive materials for which they are appointed is carried out in accordance with local orders for radiation safety. The principal duties of the WPS include, where appropriate, the following:

- a. to be familiar with the type(s) of radiation for which they are appointed and be aware of the hazards under normal and abnormal working conditions;
- b. to inform the CO / HoE through the RSO of any concerns from a radiation protection point of view or where work is carried out in a manner that exposes persons unnecessarily to ionising radiations;
- c. to be aware of the radiation levels associated with the radioactive materials;
- d. to provide input to local orders and contingency plans regarding the areas to which they have been appointed (see Chapters 16 and 40);
- e. to investigate the loss, theft, spillage or escape of radioactive material through an unauthorised route, and inform the RSO of their findings (see Chapter 14);
- f. to inform the RSO of any fire or explosion occurring in any process involving radioactive material (see Chapter 14);
- g. to account for the radioactive material for which they are responsible;
- h. to prepare and preserve records relating to radiation protection, including source lists, leakage tests, inspections of protective clothing, etc;
- i. to ensure that all persons carrying out work with radiation under their control have been suitably instructed in the hazards and radiation protection procedures and are aware of the relevant safety orders and instructions (see Chapter 15);
- j. to ensure that radioactive materials and their containers are suitably marked (see Chapters 4 and 9);
- k. to organise the transfer of radioactive material (see Chapter 11);

- l. to organise the movement and transport of radioactive material in accordance with Chapter 10 and the Dangerous Goods Manual;
- m. to participate in the risk assessment process as required by the RSO (see Chapter 2); and
- n. other relevant duties as designated by the CO / HoE.

Record Keeping

1. The following is a summary of the retention of common records related to radiation protection, together with their retention times. It is not intended to be an exhaustive list; further information should be sought from JSP 392 Part 1 Chapter 3 and JSP 441 Managing Information in Defence or your appointed RPA:

- a. HSE notification, registration, or consent of work with ionising radiation (current copy);
- b. Environment Agency notification and / or approval (current copy);
- c. Ship / site / establishment / equipment risk assessments (current copy);
- d. records of RSO audits / incidents / investigations (minimum of 2 years);
- e. annual holdings return (current copy);
- f. Dosimetry Laboratory certificates (minimum of 2 years);
- g. RPA reports (previous 2 reports);
- h. dosimetry quarterly dose records, F Med 291A (retain indefinitely);
- i. health record for classified persons, F Med 291F (retain indefinitely);
- j. radiation survey records (includes radon) (minimum of 2 years);
- k. written arrangements (current copy);
- l. equipment quality assurance procedures and results (minimum of 2 years);
- m. source lists / muster records (minimum of 2 years);
- n. leak test certificates (minimum of 2 years);
- o. instrument function check records (minimum of 2 years);
- p. instrument calibration certificates (current copy);
- q. MOD F Mov 1042 Dangerous Goods Note / internal transfer records (minimum of 2 years)