

16 Local Orders for Radiation Safety

Scope

1. All Commanding Officers / Head of Establishment (CO / HoE) must provide employees with comprehensive information and instruction on the risks to their health and safety and the appropriate precautions and preventative and protective measures to be taken to ensure that exposure to ionising radiation is minimised so far as is reasonably practicable. The risks and measures will, in the first instance, be identified in the risk assessment (see Chapter 2). There is an additional statutory requirement for the CO / HoE in respect of designated areas (i.e. controlled and supervised areas as described in Chapter 4) to make and set down in writing local rules appropriate to the radiation risk and the nature of the operations undertaken in that area. Local orders for radiation safety must therefore meet the general requirement to provide information and instruction and also, in the case of designated areas, meet the statutory requirements for local rules. This Chapter details the necessary content of local orders (which can include local instructions, local memoranda, notices, signs etc) which will satisfy all of these requirements. Local orders for radiation safety can be standalone or can be part of general safety orders.

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:

- a. Ionising Radiations Regulations 2017 (IRR17).

Duties

3. Duties as detailed in Chapter 39 apply. In addition, the following duties also apply.

Radiation Safety Officer (RSO)

4. The Radiation Safety Officer (RSO) is to ensure that:

- a. local orders are kept up to date taking into account the findings of the risk assessment, changes to the assessment, recommendations from audits, regulatory inspections and RPA visits as they arise;
- b. local orders are brought to the attention of all staff as appropriate and all sections have access to the parts of local orders relevant to them;
- c. staff are provided with appropriate local training so that they understand and can comply with the local orders; and
- d. local orders are subjected to quality audits, sections are subject to compliance audits and systems are in place to follow-up on audit recommendations.

Radiation Protection Supervisor (RPS)

5. Where sites and establishments have controlled areas and, where appropriate supervised areas, the CO / HoE is to ensure that local rules are set down in writing. Whenever local rules are required, an RPS must be appointed for each designated area concerned. The prime duty of the RPS is to ensure compliance with the IRR17 in respect of work carried out in the designated area – in practice the RPS will achieve this by ensuring that work is carried out in accordance with the local orders for radiation safety, as the local orders must incorporate the requirements of local rules as required by IRR17 (see Annex A).

Workplace Supervisor (WPS)

6. In cases where work with ionising radiation is carried out but where the risk assessment shows that designated areas are not required, a WPS is to be appointed with duties to ensure that the work with ionising radiation is carried out in accordance with the local orders for radiation safety.

Employees

7. It is the responsibility of all employees to ensure that they are familiar with the content of local orders and comply with them. Employees must also bring to the attention of the appropriate supervisor or manager any shortcomings they identify in local orders.

Content of Local Orders for Radiation Safety

8. Local orders for radiation safety can be stand-alone documents or can be combined with general safety orders. Where sites have designated areas i.e. Controlled or Supervised areas, the local orders must also satisfy the statutory requirement for local rules (see paragraph 10). The local orders for radiation safety for several different areas may be combined in one document or issued as separate documents to each area. The orders are to be supplemented by separate instructions, memoranda, notices and signs. Local orders are to contain:

- a. radiation safety management organisation, including appointments and responsibilities of managers, supervisors and employees;
- b. names and contact details of local supervisors;
- c. location and description of work with ionising radiations covered by the orders;
- d. summary of or reference to work instructions and procedures to be followed for work with ionising radiations;
- e. summary of or reference to general precautions and principles of protection to be followed to restrict exposure to ionising radiation so far as is reasonably practicable (See Chapter 4);
- f. physical surveillance arrangements including arrangements and programmes for radiation and / or contamination monitoring or leak testing (See Chapter 4);
- g. personnel surveillance arrangements including any medical or radiation dosimetry requirements (See Chapter 6);

- h. a dose investigation level: Where the effective dose to an employee exceeds this level, an investigation is to be carried out. The purpose of this investigation is to trigger a review of working conditions to make sure that exposure is being restricted as far as is reasonably practicable. Although the maximum level set by IRR17 is 15 mSv, MOD requires that the level be no higher than 6 mSv but the CO / HoE (in consultation with the RPA) should set a lower level if appropriate. The report of this investigation is to be retained locally for at least 2 years;
- i. reference to maintenance and testing arrangements for equipment (see Chapter 8) associated with radiation safety, including radiological monitoring equipment, personal protective equipment (PPE) (including respiratory protective equipment (RPE)), safety and hygiene features, warning devices, storage areas, work surfaces and work areas;
- j. contingency plans and emergency procedures – these can be standalone documents but reference to them must be included in the local orders;
- k. procedures (or references) for procurement, receipt or despatch of radioactive materials, equipment containing radioactive materials or equipment capable of generating radiation including internal / external notification or approval requirements (see Chapters 1 and 3);
- l. procedures (or references) for storage and accounting for radioactive sources and materials (See Chapter 9);
- m. procedures (or references) for investigating and reporting of accidents, incidents or occurrences involving radiation or radioactive material (See Chapter 14);
- n. training requirements and arrangements for employees and supervisors to include both external and local training (See Volume 1 Chapter 9); and
- o. record keeping requirements - local orders are to include details of records to be kept, who is to keep them and for how long. Such records can include monitoring instrument log cards, monitoring survey records, radiation dose records, health records, source accounting records, radioactive waste records, incident reports, records of maintenance and examination of PPE and engineering controls. Detailed instructions regarding maintenance of the above records are provided in the appropriate Chapters – overall record keeping policy is at Volume 1 Chapter 3.

9. Copies of relevant local orders (or parts thereof) are to be made available to all personnel working in those areas to which they apply. Personnel are to be made aware of the content of local orders and are to sign and date as evidence that they have been read and understood. The CO / HoE or their nominated representative is required to take all reasonable steps to ensure that local orders are observed.

Additional Requirements of Local Rules (Applies to Designated Areas)

10. IRR17 requires, for the purposes of enabling work with ionising radiation to be carried out, that every CO / HoE shall, in respect of any controlled area, or where appropriate, any supervised area make and set down in writing such local rules as are appropriate to the radiation risk and nature of the operations to be undertaken in that area. Although many of the requirements for local rules are encompassed in the general requirements for local orders stated above, there are a number of additional considerations which must be addressed. Detailed guidance for local rules is provided at Annex A.

Contingency Plans

11. Where the risk assessment (See Chapter 2) has identified reasonably foreseeable radiation accidents, contingency plans and emergency procedures designed to restrict exposure to ionising radiation must be drawn up. Contingency plans can be contained within local orders or referred out to the appropriate documents which are to be made available to any person who might be affected by the accidents or occurrences. Such persons are also to be provided with training and instructions appropriate to the actions that they are to take. General instructions on contingency plans are given in Chapter 40.

Review of Local Orders

12. Local orders shall be reviewed by a unit or establishment whenever the risk assessment or review of the risk assessment (see Chapter 2) indicates that a change to local orders is required, or whenever there have been other significant changes e.g. changes to the methods of work or practices carried out in relation to the work with ionising radiations.

Standard Local Orders

13. Dstl has produced a number of template sets of local orders that can be tailored by the RSO / RPS / WPS to suit the individual requirements of their units or establishment. Please contact the RPA to request the templates.

Records

14. Reference copies of local orders are to be retained for a minimum period of 2 years after they are superseded. At the end of this period, an assessment on the relevance of retaining the document is to be made in accordance with MOD policy at Volume 1 Chapter 3.

Provision of Local Rules for Controlled or Supervised Areas

Introduction

1. For the purposes of enabling work with ionising radiation to be carried on in accordance with IRR17, the Regulations require that every radiation employer (e.g. CO / HoE) shall, in respect of any controlled area, or where appropriate any supervised area provide a written set of local rules as are appropriate to the radiation risk and the nature of operations undertaken in that area.
2. It is also a requirement of the Regulations that an RPA is consulted regarding the implementation of requirements as to controlled and supervised areas, and therefore regarding the content of local rules which describe measures to be taken in such designated areas.

Local Rules

3. Local rules will vary between units and establishments, both in detail and in format, depending on the complexity of the work and the radiation risk involved, but in general they must detail, as necessary, the information shown below. Note that these requirements of local rules are in addition to the MOD requirements for local orders specified in Chapter 16.

Essential contents of local rules

4. The Health and Safety Executive (HSE) have identified a number of areas that must be addressed in local rules these are as follows:
 - a. Investigation level: The dose level at which the CO / HoE will carry out an investigation shall be specified in the local rules. The purpose of this investigation is to trigger a review of working conditions to make sure that exposure is being restricted as far as is reasonably practicable (see Chapter 4). It is MOD policy that the investigation level shall not exceed 6 mSv;
 - b. Contingency plans and emergency procedures: The rules shall also contain or refer to detailed contingency plans and emergency procedures, indicating the reasonably foreseeable accidents to which they relate. Examples of such procedures are: recovery of a jammed radiography source; searching for and reporting of a lost source; dealing with the non-termination of an X-ray exposure; and first aid treatment. Reference shall also be made to first aid and emergency medical arrangements;
 - c. Name(s) of the appointed radiation protection supervisors;
 - d. Location and description of areas covered: Each area covered shall be identified and described together with its designation (controlled / supervised). The designation of supervised and controlled areas is described in Chapter 4; and

e. Summary of Work Instructions: The written local rules shall identify the key working instructions intended to restrict any exposure in that controlled or supervised area. The summary shall cover instructions for restriction of access, storage, handling etc of radioactive substances, dose reduction methods, the use of PPE, RPE and safety equipment, written arrangements for unclassified persons entering a controlled area, permits to work and systems of work. Where detailed written working instructions are contained within operations manuals etc it is sufficient for the local rules to refer to the relevant sections of these documents.

Optional content of local rules

5. The HSE have identified a number of other areas which have to be addressed to comply with IRR17. These areas can be covered in separate documents, included in or referred to in local rules. They are thus termed an optional content of local rules and are as follows:

a. management and supervision of the work: The RPS and other employees must be made aware of management and supervision arrangements including arrangements for monitoring and auditing compliance with the Regulations. Provided this information is included in general safety instructions, it would not need to be reproduced in local rules;

b. testing and maintenance: A summary of the arrangements for testing and maintaining engineering controls and design features, safety features and warning devices;

c. radiation and contamination monitoring: Local rules are to detail (or refer to) standard operating procedures for workplace radiation and contamination monitoring, together with appropriate frequencies where applicable. Examples are; monitoring for contamination of areas where luminised equipment is routinely handled; monitoring of benches where tracer isotopes are prepared; monitoring gamma dose rates at the boundaries of source stores; monitoring of X-ray security equipment;

d. examination and testing of radiation monitoring equipment: All instruments that are to be used for radiological measurements are required to function correctly. To this end local rules are to include (or refer to) the procedures for regular functional checks of each instrument and arrangements for annual calibration in accordance with Chapter 8. Consultation with the RPA on calibration and checking of instruments is a statutory requirement;

e. personal dosimetry: With certain exceptions, all persons entering a controlled area are to wear radiation dosimeters issued by the Approved Dosimetry Service (normally Dstl ESD). Local rules are to express the dosimetry requirement for each work area or task. The arrangements for Outside Workers are to be included (see Chapters 4 and 6); and

f. arrangements for pregnant and breast-feeding staff: A reference is to be made to the requirement for a pregnant member of staff to notify their CO / HoE that they are pregnant or breast feeding. Local rules shall also refer to the arrangements to be put in place such that, once the CO / HoE has been notified of pregnancy, the conditions of exposure are set such that the dose to the foetus is unlikely to exceed 1 mSv during the remainder of the pregnancy. Reference shall also be made to any arrangements necessary to prevent bodily contamination to an employee who is

breastfeeding;

- g. medical surveillance: Local rules are to include instructions or reference to requirements for any medical examinations or health reviews, which can be necessary statutorily (See Chapter 6);
- h. risk assessments: A summary of the significant findings of the risk assessment are to be included or a reference as to where it can be found (See Chapter 2);
- i. ALARP reviews: Local rules are to include the programme for reviewing whether doses are being kept as low as reasonably practicable and whether local rules remain effective;
- j. investigations and reporting: Local rules are to include the requirements for and the procedures for initiating investigations and reporting the outcome (see Chapter 14);
- k. training: Local rules shall detail the procedures for ensuring that employees have received sufficient information, instruction and training; and
- l. RPA consultation: Local rules are to include the requirement and procedures for contact and consultation with the appointed RPA.

Making Local Rules Effective

- 6. When producing local rules, a balance will need to be struck between the provision of necessary details and the inclusion of excessive information to the extent that the people to whom they relate can be discouraged from reading them fully.
- 7. Local rules are likely to be effective if they:
 - a. are brief, concentrating on areas with the greatest risks;
 - b. focus on work instructions to be followed to keep radiation doses As Low As Reasonably Practicable (ALARP);
 - c. contain clear instructions which reflect actual work practice; and
 - d. are reviewed periodically to ensure that they remain relevant.