CHAPTER 3

IONISING RADIATION PROTECTION POLICY

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PRINCIPLES OF RADIOLOGICAL PROTECTION

1 For ionising radiation, the main principles of radiation protection are formulated by the International Commission on Radiation Protection (ICRP) who publish “recommendations”. ICRP also produce a great deal of practical information. Other aspects of radiation protection derive from other bodies, e.g. the International Atomic Energy Agency (IAEA) and environmental forums. Governmental bodies etc may act upon the ICRP’s recommendations, IAEA Conventions etc to produce legislation and other means of implementing a regime of radiological protection. Where appropriate, this could form the basis of MOD policy, e.g. in the absence of applicable legislation.

LEGISLATION

2 The main UK statutes and subordinate legislation of interest to MOD in radiological protection for ionising radiation are:

- Health and Safety at Work Act 1974
    - Ionising Radiations Regulations 1999
    - Radiation (Emergency Preparedness and Public Information) Regulations 2001
    - Ionising Radiations (Medical Exposures) Regulations 2000
    - Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007
- Radioactive Substances Act 1993 (RSA93)
    - Exemption Orders
- European Communities Act 1972
    - High Activity Sealed Radioactive Sources and Orphan Sources Regulations 2005 – that amend RSA93
    - Justification of Practices Involving Ionising Radiation Regulations 2004

3 Equivalent legislation may exist for the Devolved Administrations and UK overseas territories and dependencies.

4 The legislation varies in its application to MOD and defence activities and there are many other regulations etc on radiological protection.

5 Legislation is supported by a variety of publications, from statutory guidance and Approved Codes of Practice through Government, non departmental public bodies and agency advisory material to material from industry groups.

6 Given MOD's peculiar position under legislation – as opposed to operators in the civil sector – it should be borne in mind that it is Secretary of State's policy to comply with legislation or to introduce standards and management arrangements that are, so far as reasonably practicable, at least as good.

7 The Health and Safety at Work Act 1974 and its subordinate legislation generally applies to MOD.

8 The Radioactive Substances Act 1993 (RSA93) contains a disapplication in respect of certain defence sites. However, it is MOD's policy for the enforcing agencies to be provided with information as if the law applied and for them to issue approvals similar to those in the civil sector and to levy the same charges. MOD has negotiated MoUs with the agencies that enforce RSA93 that define how those agencies will fulfil their national responsibility to oversee the safe keeping and disposal of radioactive material in the MOD.

9 The Justification of Practices Involving Ionising Radiation Regulations 2004 do not apply to defence activities. If they did, they would have little impact until an entirely new "practice" was conceived. At present, most of MOD's practices appear in the list of existing practices that was issued at the same time as the regulations and is updated as new civil practices are authorised. There are some practices that are particular to MOD, such as the nuclear weapon and propulsion programmes.

NUCLEAR SAFETY

10 Nuclear safety is closely related to radiological protection and the latter can have a major impact. The Nuclear Installations Act 1965 (NIA65) does not bind the Crown (other than a single provision on damage and liability) and so the Secretary of State for Defence has appointed an internal regulator (DNSR, the Defence Nuclear Safety Regulator) in this area. DNSR sponsors *JSP 518 Regulation of the Naval Nuclear Propulsion Programme* and *JSP 538 Regulation of the Nuclear Weapon Programme*. However, the major defence nuclear contractors are covered by NIA65 which is enforced by the Nuclear Installations Inspectorate (NII) of the Health and Safety Executive (HSE).

COMPENSATION SCHEME FOR RADIATION LINKED DISEASES

11 MOD is a member of the Compensation Scheme for Radiation Linked Diseases (the Scheme). Using the Scheme, it is less arduous for the claimant, than going to law, to determine whether compensation should be paid in relation to MOD radiation workers (or their surviving dependants) who develop certain types of cancer or cataracts (which may be linked with exposure to ionising radiation at work). However, an application to the Scheme, whether or not a payment is made, does not prevent those persons seeking redress in law. Detailed information about the Compensation Scheme is in Volume 2.

RADIATION WORKER COUNSELLING

12 In response to a recommendation of the House of Commons Defence Committee (HCDC 12th report Radiological Protection of Service and Civilian Personnel), MOD offers counselling to radiation workers, former radiation workers and their families. The counselling provides an opportunity to discuss concerns with someone medically qualified to give advice. It does not involve any medical examination, or any form of medical surveillance or screening. Detailed information about the counselling scheme is in Volume 2.

DOSIMETRY

13 There are statutory requirements for employees to be subject to radiation dose assessment (dosimetry). A service for this is generally available from Approved Dosimetry Service (ADS) run by Dstl ESD at Alverstoke. Should any user wish to cease using the Dstl ADS then this must be agreed by the appropriate TLB and Head of SSD&C Division. Some sites may already be using their own or other dosimetry services.

RADIATION DOSE INFORMATION

14 MOD contributes anonymised radiation worker radiation dose statistics to the Health Protection Agency's for their periodic review of the ionising radiation exposure of the UK population.

15 The National Registry of Radiation Workers (NRRW) is a database containing data on radiation workers and their associated radiation exposure. Its purpose is to allow rates of cancer and other causes of death of radiation workers to be compared with those within the UK for each disease and tested against the level of radiation exposure to see if any relationship exists. The Ministry of Defence has been a major contributor since 1980.

RADIATION MONITORING EQUIPMENT

16 The Marine Environment, Survivability & Habitability IPT (MESH IPT) in DE&S has a MOD-wide responsibility for chemical, biological, radiological and nuclear equipment (particularly monitoring equipment). They sponsor *JSP 425 Examination and Testing of Ionising Radiation Monitoring (Including Protection) Instruments* that gives the MOD policy for the calibration of MOD radiation monitoring (including protection) instruments.

RADON MONITORING

17. Numerous statutory instruments have application in regard to workplace and domestic exposure to radon gas; for workplaces these are primarily the Ionising Radiations Regulations 1999 and the Management of Health and Safety at Work Regulations 1999. For rented accommodation the Housing Health and Safety Rating System (HHSRS) which is a requirement from the Housing Act 2004 does apply and enforcement on the landlord can be instigated where radon gas concentrations exceeds approximately 200Bqm^{-3}.

18. The responsibilities for radon monitoring and remediation within the various building management arrangements that exist in MOD determine where the responsibility lies. These are summarised below, more detailed information on the monitoring and remediation requirements can be found in Leaflet 32:

a. Workplaces and all other estate falls to one or other of MOD's Top Level Budget holders (TLBs) as:

(i) Building Occupier and/or Manager.

(ii) Public authority letting a contract, e.g. PFI.

b. Single Living Accommodation (SLA)

(i) Most Single Living Accommodation (SLA) is managed by the relevant TLB through a Regional Prime Contract (RPC) – see below.

(ii) Single Living Accommodation Modernisation (SLAM) is SLA that is being modernised by Defence Estates (DE) under the SLAM programme. SLAM management falls to DE through the Prime Contract; this includes the initial years of occupation until management is handed back to the TLB and it reverts to being normal SLA.

c. Service Family Accommodation (SFA).

(i) In England and Wales SFA is managed by DE through the Housing Prime Contract.

(ii) In Scotland SFA is managed by the relevant TLB through a Regional Prime Contract (RPC) – see below.

d. Volunteer Estate (non-workplace) – managed by 13 regional councils, each responsible for managing potential risks from radon exposure in their area.

19. In the UK maintenance activities are undertaken through a number of different contracting arrangements:

- Private Finance Initiative (PFI)/Public Private Partnership (PPP)
- Multi Activity Contract (MAC)/Super MAC
- Property Management (DCRE)
- Regional Prime Contract
- Functional Prime Contracts (Single Living Accommodation Modernisation (SLAM, Housing)
- Stand-alone Prime Contracts (MoDEL)
- DE&S Hybrids – Equipment and Infrastructure (Defence Information Infrastructure (DII))
- Others

20. The majority of the estate maintenance is managed by Defence Estates (DE) through their various contract arrangements. Within their organisations, TLBs have delegated, through their chain of command, the duty to manage the health and safety of the estate for which they are responsible to the Commanding Officers/Heads of Establishment (CO/HoE) supported by their CESO/CEstO organisations.

RADIATION WARNING LABEL

21 Within MOD there are a small number of radioactive sources, which if removed from their shielded containers, have the potential, from a short exposure, to cause serious injury, or even death. Such sources are those used in industrial radiography, radiation hardening examinations and in high exposure radiation instrument testing. The International Atomic Energy Agency has developed a universal radiation warning symbol with the message of "Danger-Stay Away" that anyone anywhere will understand. This is shown in Leaflet 4 Annex B. The new radiation warning symbol will supplement, not replace, the existing trefoil symbol.

22 In MOD establishments using such radioactive sources the warning symbol is to be placed on the device housing the source, as a warning not to dismantle the device or to get any closer. Where practical, it should be placed under the device cover such that it is not visible under normal use but would be visible if anyone attempts to disassemble the device. The symbol is not intended for doors, walls or shipping containers.

23 For new equipments the label should be included as part of the purchasing process. At establishments holding these sources the radiation warning symbol should be added during the maintenance period. Such small radiation warning labels would need to procured from a supplier of signs or manufactured by units in their local workshops.

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