How to do a radiation risk assessment

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HSE
• Paperwork vs control measures
• Documents prior to inspection
• Different formats
Legal basis

- IRR17 Reg 8
- HSWA74 Section 2 and 3
- MHSWR1999 Reg 3 and 5
- RPA involvement IRR17 Reg 14.
ACoP paragraph 70

(a) the nature of the sources of ionising radiation to be used, or likely to be present, including accumulation of radon in the working environment;

(b) estimated radiation dose rates to which anyone can be exposed;

(c) the likelihood of contamination arising and being spread;

(d) the results of any previous personal dosimetry or area monitoring relevant to the proposed work;

(e) advice from the manufacturer or supplier of equipment about its safe use and maintenance;

(f) engineering control measures and design features already in place, or planned;

(g) any planned systems of work;
ACoP paragraph 70 cont...

(h) estimated levels of airborne and surface contamination likely to be encountered;

(i) the effectiveness and the suitability of PPE to be provided;

(j) the extent of unrestricted access to working areas where dose rates or contamination levels are likely to be significant;

(k) possible accident situations, their likelihood and potential severity;

(l) the consequences of possible failures of control measures – such as electrical interlocks, ventilation systems and warning devices – or systems of work;

(m) steps to prevent identified accidents, or limit their consequences.
ACoP paragraph 71

(a) the action needed to make sure the radiation exposure of all people is kept as low as reasonably practicable (regulation 9(1));

(b) the steps necessary to achieve this control of exposure by the use of engineering controls, design features, safety devices and warning devices (regulation 9(2)(a)) and, in addition, to develop systems of work (regulation 9(2)(b));

(c) whether it is appropriate to provide PPE and if so, what type is adequate and suitable (regulation 9(2)(c));

(d) whether it is appropriate to establish any dose constraints for planning or design purposes and if so, what values will be used (regulation 9(4));

(e) the need to alter the working conditions of any employee who declares they are pregnant or breastfeeding (regulation 9(6));

(f) an appropriate investigation level to check that exposures are being restricted as far as reasonably practicable (regulation 9(8))
ACoP paragraph 71 cont…

(g) the maintenance and testing schedules required for the control measures selected (regulation 11);
(h) what contingency plans are necessary to address reasonably foreseeable accidents (regulation 13);
(i) the training needs of classified and non-classified employees (regulation 15);
(j) the need to designate specific areas as controlled or supervised areas and to specify local rules (regulations 17 and 18);
(k) the actions needed to make sure access is restricted and other specific measures are put in place in controlled or supervised areas (regulation 19);
(l) the need to designate certain employees as classified persons (regulation 21);
ACoP paragraph 71 cont…

(m) the content of a suitable programme of dose assessment for employees designated as classified persons and for others who enter controlled areas (regulations 19 and 22);
(n) the requirements for the leak testing of radioactive sources (regulation 28);
(o) the responsibilities of managers and workers (including outside workers) for ensuring compliance with these regulations;
(p) an appropriate programme of monitoring or auditing of arrangements to check the requirements of these regulations are being met.
Common omissions

- Training needs
- Lack of dose information
- Hierarchy of controls
- Imaging in radiotherapy
- QA sources
- Contingency plans and local rules
Other issues

- Co-operation and co-ordination
- RPA reports
- Reg 12(3) “estimation of doses to members of the public”