

SCHEDULE

Regulation 8

Radiation Emergencies and Notifiable Events

This Schedule sets out the Schedule to be substituted for Schedule 2 to the 2009 Regulations (in accordance with regulation 8 above)—

“SCHEDULE 2

Regulation 24

Radiation Emergencies and Notifiable Events

PART 1

Radiation Emergencies

Interpretation of Part 1

1.—(1) In this Part of this Schedule—

“the 2017 Regulations” means the Ionising Radiations Regulations 2017(1);

“Category 1 responder” has the meaning given in Part 1, 2 or 2A of Schedule 1 to the Civil Contingencies Act 2004(2);

“Category 2 responder” has the meaning given in Parts 3, 4 and 5 of Schedule 1 to the Civil Contingencies Act 2004(3);

“dose consequences” means the consequences to an individual of being exposed to a specific quantity of ionising radiation as the result of a radiation emergency;

“duty holder” means—

- (a) a consignor; or
- (b) a carrier;

“emergency exposure” means an exposure to ionising radiation of an employee engaged in any activity of, or associated with, the response to a radiation emergency or potential radiation emergency in order—

- (a) to bring help to endangered persons;
- (b) to prevent exposure of a large number of persons; or
- (c) to save a valuable installation or goods;

whereby one of the individual dose limits referred to in regulation 12 of the 2017 Regulations could be exceeded;

“emergency services” means those police, fire and ambulance services that are likely to be required to respond to a radiation emergency;

“emergency worker” means—

- (a) a Category 1 responder who has a defined role in an emergency plan;

(1) [S.I. 2017/1075](#).

(2) [2004 c. 36](#). Paragraph 1A to Part 1 of the Schedule was inserted by article 2 of [S.I. 2011/1233](#). Parts 1 and 2 of Schedule 1 have also been amended by paragraph 27 of Schedule 1 to the Health Service (Consequential Provisions) Act 2006 ([c. 43](#)), section 312 and Part 8 of Schedule 22 to the Marine and Coastal Access Act 2009 ([c. 23](#)), paragraph 132 of Schedule 5, paragraph 16 of Schedule 7 and paragraph 100 of Part 4 of Schedule 14 to the Health and Social Care Act 2012 ([c. 7](#)), article 2 of [S.I. 2008/3012](#), paragraph 429 of Part 1 of Schedule 2 to [S.I. 2013/755](#), and article 4 of Part 1 of Schedule 3 to [S.S.I. 2013/119](#). Part 2A of Schedule 1 was inserted by [S.I. 2018/644](#).

(3) Part 5 of Schedule 1 was inserted by [S.I. 2018/644](#).

Draft Legislation: This is a draft item of legislation and has not yet been made as a UK Statutory Instrument. This draft has been replaced by a new draft, *The Carriage of Dangerous Goods (Amendment) Regulations 2019* ISBN 978-0-11-117779-2

- (b) a person employed, whether or not by a duty holder, to assist in the transition from emergency state; or
- (c) any other person or organisation that is identified in an emergency plan as having a role in providing assistance in the handling of a radiation emergency;

“escort commander” means a person who is responsible for the escort of a package;

“health authority” means—

- (a) in relation to England, a clinical commissioning group established under section 14D of the National Health Service Act 2006⁽⁴⁾;
- (b) in relation to Wales, a local health board established under section 11 of the National Health Service (Wales) Act 2006⁽⁵⁾; and
- (c) in relation to Scotland, a health board established under section 2 of the National Health Service (Scotland) Act 1978⁽⁶⁾;

“ionising radiation” means the energy transferred in the form of particles or electromagnetic waves of a wavelength of 1000 nanometres or less, or a frequency of 3×10^{15} hertz or more, capable of producing ions directly or indirectly;

“radiation emergency” means a non-routine situation or event arising during the carriage of class 7 goods that necessitates prompt action to mitigate the serious consequences—

- (a) of a hazard resulting from that situation or event;
- (b) of a perceived risk arising from such a hazard; or
- (c) to one or more of the following—
 - (i) human life;
 - (ii) health and safety;
 - (iii) quality of life;
 - (iv) property;
 - (v) the environment;

“relevant local authority”—

- (a) in relation to an occurrence in London, means the London Fire Commissioner;
- (b) in relation to an occurrence in an area where there is a metropolitan county fire and rescue authority, means that authority;
- (c) in relation to an occurrence in the Isles of Scilly, means the Council of the Isles of Scilly;
- (d) in relation to an occurrence in any other area in England, means the county council for that area or, where there is no county council for that area, the district council for that area;
- (e) in relation to an occurrence in Scotland, means the council for the local government area; and
- (f) in relation to an occurrence in Wales, means the county council or county borough council for that area.

(2) In this Part of this Schedule any reference to an effective dose means the sum of the effective dose to the whole body from external radiation and the committed effective dose from internal radiation.

⁽⁴⁾ 2006 c. 41.

⁽⁵⁾ 2006 c. 42.

⁽⁶⁾ 1978 c. 29.

(3) For the purposes of this Part of this Schedule, a person assists in the handling of a radiation emergency if the person takes any steps that it is reasonable to take in the prevailing circumstances to reduce or prevent exposure.

(4) For the purposes of sub-paragraph (3), “prevailing circumstances” include—

- (a) the weather;
- (b) the time at which the emergency occurred;
- (c) the distribution of the local population;
- (d) the nature and contents of the package involved in the emergency;
- (e) the stability of the contents of that package;
- (f) the local geography and ecology;
- (g) any other hazards;
- (h) the relative importance of the emergency in relation to other calls that are being made upon the emergency services.

Evaluation and risk assessment

2. Where a duty holder carries out work involving the carriage of any package containing ionising radiation for the first time, that duty holder must comply with the provisions of regulation 8 of the 2017 Regulations as if that duty holder were an employer.

Emergency plans

3.—(1) Before the carriage of a package begins, the duty holder must make an adequate emergency plan designed to secure, so far as is reasonably practicable, the restriction of exposure to ionising radiation and the health and safety of persons who may be affected by a radiation emergency identified by the duty holder’s assessment under regulation 8(1) of the 2017 Regulations.

(2) But sub-paragraph (1) does not apply if the duty holder’s assessment reveals no radiation emergency may arise during the carriage of a package.

(3) When preparing an emergency plan, the duty holder must take into account—

- (a) the steps the duty holder has taken in accordance with regulation 8(3) of the 2017 Regulations; and
- (b) any variable factors which might affect the severity of the emergency.

(4) The emergency plan must—

- (a) contain the information specified in sub-paragraph (5); and
- (b) be drawn up having regard to the principles and purposes set out in paragraph 4.

(5) The information is—

- (a) the name or position of the person authorised to set emergency procedures in motion;
- (b) the name or position of the person in charge of and coordinating the mitigatory action;
- (c) for conditions or events which could be significant in bringing about a radiation emergency, a description of the action which should be taken to control the conditions or events and to limit their consequences, including a description of the safety equipment and resources available;
- (d) the arrangements for limiting the risks to persons likely to be affected by a radiation emergency including how warnings are to be given and the actions persons are expected to take on receipt of a warning;

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- (e) the arrangements for providing early warning of the incident to the relevant local authority in which the radiation emergency has occurred, the type of information which should be contained in an initial warning and the arrangements for the provision of more detailed information as it becomes available;
 - (f) the arrangements for providing assistance to the relevant local authority with mitigatory action;
 - (g) the arrangements for providing information about the incident to the GB Competent Authority;
 - (h) the arrangements for emergency exposures including the dose levels which have been determined as appropriate for the purposes of putting into effect the emergency plan;
 - (i) the arrangements in relation to doses or reference levels as required by paragraph 9(1); and
 - (j) the arrangements which the duty holder, or their agent, considers may assist in the transition from a radiation emergency to a situation where no further intervention is required.
- (6) In a case in which Category 1 or Category 2 responders form part of an emergency plan, each duty holder must give such information to those responders as will enable them to perform the functions which are allocated to them by the plan.
- (7) Each duty holder must ensure that any employee who may be involved with or may be affected by the arrangements in the emergency plan is or has been provided with—
- (a) suitable and sufficient information, instruction and training, and
 - (b) any equipment necessary to restrict that employee's exposure to ionising radiation including, where appropriate, the issue of suitable dosimeters or other devices.
- (8) Each duty holder with an obligation to prepare an emergency plan in accordance with this paragraph in relation to the carriage of a package must cooperate with any other person who is a duty holder in respect of that package so as to enable each of those duty holders to fulfil their obligations under these Regulations.

Principles and purposes of emergency plans

- 4.—(1) The principles of intervention to which each duty holder is to have regard when drawing up an emergency plan are—
- (a) the necessity for the plan to respond to the particular characteristics of a given radiation emergency as those characteristics emerge;
 - (b) the necessity to optimise protection strategies to ensure that the proposed response, as a whole, is predicted to do more to mitigate the radiation emergency and facilitate transition from that emergency than to increase its duration or consequence, taking into account—
 - (i) the health risks arising from exposure to ionising radiation as a result of the radiation emergency, in both the long and the short term;
 - (ii) the economic consequences of the radiation emergency;
 - (iii) the effects of the disruption, both on the premises and the area immediately surrounding it, and on the public perception of the effects of the radiation emergency;
 - (c) the necessity of avoiding, so far as possible, the occurrence of serious physical injury to any person;
 - (d) the necessity of ensuring that an appropriate balance is struck between the expected harms and benefits of any particular protective measure so as to maximise the benefit of that measure.

(2) The purposes of intervention to which the duty holder is to have regard when drawing up an emergency plan are—

- (a) to reduce or stop the release of radiation;
- (b) to reduce the exposure to individuals and to the environment resulting from the release of ionising radiation;
- (c) if necessary, to ensure that provision is made for the medical treatment of those affected by the release of ionising radiation;
- (d) to prioritise the implementation of the plan in relation to a person exposed to dose consequences in excess of the reference level set out in paragraph 9(1).

Review and testing of emergency plan

5.—(1) If an emergency plan is to be used in relation to carriage on more than one occasion, each duty holder must, at suitable intervals not exceeding three years—

- (a) review and, where necessary, revise the plan; and
- (b) test the plan, taking reasonable steps to arrange for all those with a role in the emergency plan to participate in the test to such extent necessary to ensure that the test is effective.

(2) A review required under sub-paragraph (1)(a) must take into account—

- (a) changes occurring in the carriage of packages to which the plan relates;
- (b) changes within the emergency services concerned;
- (c) new knowledge or guidance, whether technical or otherwise, concerning the response to radiation emergencies;
- (d) any material change to the assessment on which the plan was based since it was last reviewed or revised; and
- (e) any relevant information derived from a report or review of the consequences of any radiation emergency.

(3) The test of a plan must take into account any lessons learned from—

- (a) past emergency exposure situations, whether arising during the carriage of packages on behalf of the consignor or by the carrier; and
- (b) the United Kingdom's participating in emergency exercises at national and international level.

(4) The test of the plan must be sufficient to test the ability to implement the plan in question but the duty holder must consider the extent of the testing required taking into account—

- (a) the length of time since the last test;
- (b) the extent of testing undertaken on the last occasion; and
- (c) any revisions made by the review required under sub-paragraph (1)(a).

(5) After completion of the test required by sub-paragraph (1)(b), the duty holder must prepare a report on the outcome of the test within 28 days of the conclusion of the test.

(6) A report made under sub-paragraph (5) must be sent to the GB Competent Authority within 28 days of its preparation.

Duties of drivers, escort commanders, masters, carriers and consignors in the event of a radiation emergency

6.—(1) The driver or escort commander of a vehicle or train, or the master of a vessel, carrying class 7 goods, in the event of a radiation emergency, or the occurrence of an event which could lead to such an emergency, involving those goods—

(a) must, as soon as reasonably practicable, notify the following—

- (i) the emergency services;
- (ii) the relevant local authority;
- (iii) the consignor; and
- (iv) the carrier;

(b) must initiate the emergency plan; and

(c) if a radiation emergency occurs, must assist in the handling of that radiation emergency.

(2) If the carrier of any class 7 goods becomes aware of the occurrence of a radiation emergency, or the occurrence of an event which could lead to a radiation emergency, involving those goods, the carrier—

(a) must, as soon as reasonably practicable, immediately notify the following of the event—

- (i) the emergency services and the relevant local authority, unless the driver, escort commander or master has already done so; and
- (iii) the GB Competent Authority; and

(b) if a radiation emergency occurs, must assist in the handling of that radiation emergency.

(3) If the consignor of any class 7 goods becomes aware of the occurrence of a radiation emergency, or the occurrence of an event which could lead to a radiation emergency, involving those goods, the consignor—

(a) must, as soon as reasonably practicable, notify the following of the event—

- (i) the emergency services, unless the driver, escort commander, master or carrier has already done so;
- (ii) the relevant local authority, unless the driver, escort commander, master or carrier has already done so;
- (iii) the GB Competent Authority, unless the carrier has already done so;

(b) must give the GB Competent Authority details of the relevant event; and

(c) if a radiation emergency occurs, must assist in the handling of that radiation emergency.

(4) The consignor must also notify the GB Competent Authority that the emergency plan is initiated, even if no action is taken pursuant to that plan.

(5) The carrier of any class 7 goods which are involved in a radiation emergency must, as soon as reasonably practicable—

(a) arrange for the examination of the load to determine whether any contamination has occurred; and

(b) if contamination has occurred—

- (i) arrange for the safe disposal of any part of the load which has been contaminated; and
- (ii) arrange for the decontamination of the vehicle, train or vessel.

(6) In addition, in the event of a radiation emergency occurring, or on the occurrence of an event which could give rise to a radiation emergency, the carrier and the consignor—

- (a) as soon as reasonably practicable, must make a provisional assessment of the circumstances and consequences of such an emergency, and for this purpose must consult—
 - (i) the emergency services;
 - (ii) the health authority in the area within which the radiation emergency or event took place;
 - (iii) the relevant local authority in the area within which the radiation emergency or event took place;
 - (iv) the National Health Commissioning Board and Public Health England, Public Health Wales or Health Protection Scotland (depending where the radiation emergency or event took place); and
 - (v) any other person, body or authority which has functions under the carrier or the consignor’s emergency plan;
- (b) as soon as reasonably practicable and in any event within 12 months beginning with the date on which the plan was initiated, or such longer period as the GB Competent Authority may agree, must make a full assessment of the consequences of the emergency and the effectiveness of the emergency plan put into effect as a result of the emergency; and
- (c) within 28 days of the completion of the assessment made under paragraph (b), must make a report of the findings of the assessment and retain a copy of that report for at least 50 years from the date on which it is completed.

(7) The carrier and the consignor must provide the GB Competent Authority with a copy of the report made under sub-paragraph (6)(c) within the period of 28 days beginning with the date on which it was completed.

(8) For the purposes of this paragraph “initiate the emergency plan” means take such steps as it is reasonable and practicable to take in order to put into effect the actions that have been planned for in the emergency plan.

Emergency exposures: employees

7.—(1) Where an emergency plan provides for the possibility of any employee receiving an emergency exposure, each employer must, in relation to the employer’s employees—

- (a) identify those employees who may be subject to emergency exposure;
- (b) provide those employees with appropriate training in the field of radiation protection and such information and instruction as is suitable and sufficient for them to know the risks to health created by exposure to ionising radiation and the precautions which should be taken;
- (c) provide such equipment as is necessary to restrict the exposure of such employees to ionising radiation;
- (d) make arrangements for medical surveillance by an appointed doctor or employment medical advisor to be carried out without delay in the event of a radiation emergency in respect of those employees who receive emergency exposures;
- (e) make arrangements with an approved dosimetry service for—
 - (i) dose assessments to be carried out without delay in the event of a radiation emergency in respect of those employees who receive emergency exposures, and a dose assessment made for the purposes of this paragraph must, where practicable, be made separately from any other dose assessment relating to those employees; and
 - (ii) the results of the dose assessments carried out under sub-paragraph (i) to be notified without delay to the employer and the GB Competent Authority;

- (f) make arrangements, in respect of dose assessments to be carried out and notified pursuant to paragraph (e), to notify the results of such assessments without delay to the appointed doctor or employment medical adviser who is carrying out medical surveillance on the employee to whom the assessment relates; and
 - (g) identify those employees who are authorised, in the event of a radiation emergency, to permit any employee referred to in paragraph (a) to be subject to an emergency exposure and provide employees who are so authorised with appropriate training.
- (2) The duty holder must notify the GB Competent Authority of the dose levels which they have determined are appropriate to be applied in respect of an employee identified for the purposes of sub-paragraph (1)(a) in the event of an emergency.
- (3) A notification under sub-paragraph (2) must be given—
- (a) in relation to transport of class 7 goods by road, rail or inland waterway which is to be carried out once only, at least 28 days before the transport is carried out, or within such shorter time as the GB Competent Authority may agree;
 - (b) in relation to any other transport of class 7 goods by road, rail or inland waterway, at least 28 days before the transport is first carried out, or within such shorter time as the GB Competent Authority may agree.
- (4) Where the carrier and the consignor together determine that a dose level notified under sub-paragraph (2) is no longer appropriate to be applied in respect of an employee for the purposes of sub-paragraph (1)(a) in the event of such an emergency, and that a revised dose level is to be determined, the duty holder must, at least 28 days before formally determining the revised dose level, or within such shorter time as the GB Competent Authority agrees, notify the GB Competent Authority of the revised dose level which the operator considers is appropriate to be applied.
- (5) In any case where, in the opinion of the GB Competent Authority, the dose levels for emergency exposure notified pursuant to sub-paragraph (2) or (4) are too high, the carrier and the consignor must, if directed to do so by the GB Competent Authority, substitute such other dose level or levels as the GB Competent Authority considers appropriate.
- (6) Where an emergency plan is initiated, each employer must ensure—
- (a) that no employee of that employer who is under 18 years of age, no trainee or apprentice under 18 years of age, and no female employee who is pregnant or breastfeeding is subject to an emergency exposure;
 - (b) that no other employee of that employer is subject to an emergency exposure unless—
 - (i) that employee has agreed to undergo such exposure;
 - (ii) the requirements of sub-paragraph (1)(a) to (f) have been complied with in respect of the employee; and
 - (iii) that employee has been permitted to be so by an employee authorised for that purpose under sub-paragraph (1)(g); and
 - (c) that no employee of that employer involved in implementing an emergency plan is exposed to a dose of ionising radiation in excess of the dose level determined in accordance with sub-paragraph (2), (4) and (5).
- (7) The requirement imposed on the employer under sub-paragraph (6)(a) in respect of a female employee who is pregnant or breastfeeding does not apply until that employee has notified the employer in writing of that fact or until the date from which the employer ought reasonably to have been aware of that fact.
- (8) The requirement imposed by sub-paragraph (6)(c) does not apply in respect of an exposure of any employee who—

- (a) being informed about the risks involved in the intervention, agrees to undergo an exposure greater than any dose level referred to in that paragraph for the purpose of saving human life; and
- (b) is permitted to undergo such exposure by an employee authorised by the employer under sub-paragraph (1)(g) to give such permission.

(9) Where an employee has undergone an emergency exposure, the employer must ensure that the dose of ionising radiation received by that employee is assessed by an approved dosimetry service and that the dose assessed is recorded separately in the dose record of that employee or, where no dose record exists, in a record created for the purpose of this sub-paragraph complying with the requirements to which it would be subject if it were a dose record.

(10) An employer must, at the request of that employer's employee in circumstances where a dose record has been created for the purposes of sub-paragraph (9) and on reasonable notice being given, obtain from the approved dosimetry service and make available to the employee a copy of the record of the dose relating to that employee.

(11) In the event of a report being made under paragraph 6(6)(c) relating to the circumstances of an emergency exposure and the action taken as a result of that exposure, an employer must keep such a report (or copy of that report) until the person to whom the report relates has or would have attained the age of 75 years but in any event for at least 30 years from the termination of the work which involved the emergency exposure.

(12) In this paragraph—

- (a) “appointed doctor”, “approved dosimetry service”, “dose assessment”, “dose record” have the meanings given by the 2017 Regulations;
- (b) “medical surveillance” means medical surveillance carried out in accordance with the 2017 Regulations.

Disapplication of dose limits

8.—(1) Regulation 12 of the 2017 Regulations does not apply to an emergency worker, where that emergency worker—

- (a) is engaged in preventing the occurrence of a radiation emergency; or
- (b) is acting to mitigate the consequences of a radiation emergency.

(2) An emergency worker may be exposed to an effective dose not exceeding 500mSv whilst they are undertaking the activities set out in sub-paragraph (1).

Reference levels

9.—(1) The carrier and consignor must ensure the emergency plan prioritises keeping doses below a 100 mSv reference level or the emergency specific reference level if applicable.

(2) Where the response to a radiation emergency is underway, specific reference levels, to optimise the response, may be determined by the relevant local authority in whose area the radiation emergency has taken place and in whose area the response is taking place.

(3) In determining a specific reference level under sub-paragraph (2), the relevant local authority must take advice from the person coordinating the response to the radiation emergency.

Packages involved in a radiation emergency

10. A package which has been involved in a radiation emergency must not be carried or caused to be carried, unless—

- (a) the consignor or the consignor's agent has examined the package; and

- (b) the consignor has issued a certificate indicating that the consignor is satisfied the package complies with the requirements of these Regulations.

Prior information to the public

11.—(1) The GB Competent Authority must make available to the public information about the nature and effect of a radiation emergency.

- (2) The information to be provided under sub-paragraph (1) must include—
 - (a) basic facts about radioactivity and its effects on persons and on the environment;
 - (b) the consequences of a radiation emergency;
 - (c) emergency measures envisaged to alert, protect and assist the general public in the event of an emergency;
 - (d) appropriate information on action to be taken by the general public in the event of a radiation emergency; and
 - (e) the authority or authorities responsible for implementing the emergency measures and actions referred to in paragraphs (c) and (d).

Duty to provide handover report to the authority responsible for recovery following a radiation emergency

- 12.**—(1) The consignor of class 7 goods involved in a radiation emergency must—
- (a) prepare a handover report; and
 - (b) provide a copy of the handover report to the recovery authority.
- (2) For the purposes of this paragraph “handover report” means a report about a radiation emergency which—
- (a) includes the details of the incident giving rise to the emergency;
 - (b) states whether the emergency plan was initiated and if so, state the actions (if any) taken by the driver, the escort commander, the carrier, the master and the consignor to assist in the handling of the radiation emergency;
 - (c) states whether any part of the load involved in the emergency was contaminated and if so, state the steps taken by the consignor to arrange for—
 - (i) the safe disposal of the relevant part of the load; and
 - (ii) the decontamination of the relevant vehicle, train or vessel;
 - (d) states any anticipated effects of the radiation emergency on the environment;
 - (e) includes any other information which the consignor considers may assist in the transition from an emergency state.
- (3) The consignor must consult the carrier of the relevant class 7 goods when preparing the handover report.
- (4) The consignor must prepare the handover report and deliver it to the recovery authority as soon as reasonably practicable after the completion of the examination required by paragraph 6(5).
- (5) In this regulation, “recovery authority”—
- (a) in relation to a radiation emergency occurring in England, means the Secretary of State;
 - (b) in relation to a radiation emergency occurring in Wales, means the Welsh Ministers;
 - (c) in relation to a radiation emergency occurring in Scotland, means the Scottish Ministers.

PART 2

Notifiable Events

Duties of drivers, carriers and consignors in the event of a notifiable event

13.—(1) The driver of a vehicle or train, or the master of a vessel, carrying class 7 goods who discovers, or has reason to believe, that a notifiable event has occurred in relation to the vehicle, train or vessel must, as soon as reasonably practicable, notify—

- (a) the police; and
- (b) the consignor.

(2) If the carrier of any class 7 goods becomes aware of the occurrence of a notifiable event in relation to those goods the carrier must, as soon as reasonably practicable, notify—

- (a) the police, if the driver, escort commander or master has not already done so; and
- (b) the GB Competent Authority.

(3) If the consignor of any class 7 goods becomes aware of the occurrence of a notifiable event in relation to those goods the consignor must, as soon as reasonably practicable, notify—

- (a) the police, unless the driver, the escort commander, the carrier or the master has already done so; and
- (b) the GB Competent Authority, unless the carrier has already done so.

(4) If a notifiable event occurs the carrier must ensure that, as soon as reasonably practicable, a report is made to the GB Competent Authority.

(5) The report required under sub-paragraph (4)—

- (a) must be in a form approved by the GB Competent Authority; and
- (b) must contain all relevant information which the GB Competent Authority has communicated to the carrier that it considers necessary.

(6) In this paragraph, “notifiable event” means the theft or loss of the class 7 goods being carried.”