



Office for
Nuclear Regulation

ONR Technical Inspection Guide (TIG)

Compliance Inspection of Transport Arrangements

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1. Introduction

1. ONR is the Competent Authority (CA) and Enforcing Authority for the civil carriage of Class 7 goods by road, rail and inland waterways within Great Britain (GB). ONR also acts on behalf of the other United Kingdom (UK) CAs with respect to the issuing of transport approvals namely:
 - The Secretary of State for Transport and the Maritime and Coastguard Agency for transport in UK waters.
 - The Civil Aviation Authority for air transport.
 - The Department of Agriculture, Environment and Rural Affairs for road transport in Northern Ireland.
2. Radioactive material packages are required to meet the regulatory requirements of GB statutes and regulations, which are aligned with International Atomic Energy Agency (IAEA) Safety Standards in particular Specific Safety Requirements SSR-6 [1].
3. Explanatory material supporting SSR-6 is contained in IAEA Safety Standard – Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material [2].
4. Regulation 5 of GB transport regulations the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 as amended (CDG09) mandates compliance with the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) (for road) and the Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) (for rail).
5. Although CDG09 applies to the carriage of dangerous goods by inland waterway and makes reference to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN), it is limited in its application (CDG09 Regulation 4(2) refers). Consequently, this guidance will only make reference to ADR and RID.

1.1. Purpose

6. This guide has been prepared as an aid to inspection activities carried out by ONR inspectors at dutyholder premises, and other relevant places (roadside stops and in-transit stores), in judging the dutyholder's compliance with the transport regulations.

7. This guidance provides a framework for inspection activities, within which the inspector is expected to exercise their discretion. This framework is provided to facilitate a consistent approach to compliance inspection against the requirements of the CDG09 (as amended).
8. The guidance is for use by inspectors in ONR. The guidance does not indicate when or to what extent inspections of the requirements of CDG09 should be carried out. This aspect is decided in the relevant inspection plan, which take account of priorities established by ONR.

1.2. Scope and Applicability

9. This guide covers all compliance inspections relating to the transport purpose (CDG09, ADR/ RID, The Ionising Radiation Regulations 2017 (IRR17) and The Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPiR) primarily) including nuclear and non-nuclear dutyholder compliance and compliance inspections carried out relating to package approvals.
10. This guide covers compliance of security in transport under CDG09/ ADR/ RID, but does not cover security under the Nuclear Industries Security Regulations 2003 (NISR)
11. This guidance is to be read in conjunction with the regulations and if there is conflict between the guidance and the regulations the regulations take precedent.
12. The terms “transport” and “carriage” are used throughout the regulations and requirements, in general they mean the same thing and, in this document, can be considered to be interchangeable.

1.3. Definitions

Table 1 – Table of Definitions

Term/Acronym	Description
ACOP	Approved Code of Practice
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	Agreement concerning the International Carriage of Dangerous Goods by Road
CA	Competent Authority
CAA	Civil Aviation Authority

Term/Acronym	Description
CDG09	Carriage of Dangerous Goods and Transportable Pressure Equipment Regulations 2009
CNSS	Civil Nuclear Security and Safeguards
DAERA	Department of Agriculture, Environment and Rural Affairs
DfT	Department for Transport
DGSA	Dangerous Goods Safety Advisor
GB	Great Britain
HSE	Health and Safety Executive
IAEA	International Atomic Energy Agency
IRR17	Ionising Radiation Regulations 2017
ISO	International Organisation for Standardisation
LC	Licence Condition
ONR	Office for Nuclear Regulation
PL	Professional Lead
PPE	Personal Protective Equipment
QA	Quality Assurance
REPPiR	The Radiation (Emergency Preparedness and Public Information) Regulations 2019
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
RPA	Radiation protection Advisor
RPP	Radiation Protection Programme
RRA	Radiation Risk Assessment
TCA	Transport Competent Authority
TIG	Technical Inspection Guide
UK	United Kingdom

2. Guidance on Arrangements

13. Transport regulations establish requirements that when satisfied ensure the safety and protection of persons, property and the environment from the effects of radiation in the carriage of radioactive material. This protection is achieved by requiring:
 - Containment of the radioactive contents,
 - Control of external radiation levels,
 - Prevention of criticality,
 - Prevention of damage caused by heat.
14. These requirements are satisfied by:
 - Applying a graded approach to contents limits for packages (including unpackaged radioactive materials) and conveyances and to performance standards applied to package designs depending upon the hazard of the radioactive contents,
 - Imposing conditions on the design and operation of packages and on the maintenance of packages, including a consideration of the nature of the radioactive contents,
 - Requiring administrative controls, including, where appropriate, approval by competent authorities.
15. Consequently ADR/ RID § 1.7.3 requires dutyholders to establish a Management System that is acceptable to the CA. Section 3 of this document includes guidance on specific requirements against thematic areas.
16. The management system for any particular organisation should be designed and developed to suit the organisation's needs and activities; certification to management system standards (for example, ISO 9001) is not mandatory.

3. Guidance on Inspection of Arrangements

17. An organisation may be involved in more than one transport activity, ADR defines carriage as:

“all operations and conditions associated with and involved in the movement of radioactive material; these include the design, manufacture, maintenance and repair of packaging, and the preparation, consigning, loading, carriage including in-transit storage, unloading and receipt at the final destination of loads of radioactive material and packages.”

18. For the purposes of inspection, transport arrangements are generally broken down into the following thematic areas:

- 1) Management Systems.
- 2) Package Design and modification.
- 3) Package Manufacture and Supply Chain.
- 4) Package Maintenance and Operation.
- 5) Radiation Risk Assessment.
- 6) Radiation Protection Programme.
- 7) Radiation Protection Advisor.
- 8) Emergency/Contingency Planning and Testing.
- 9) Consignor Duties.
- 10) Consignee Duties.
- 11) Carrier Duties.
- 12) Training and Competence.
- 13) Dangerous Goods Safety Advisor (DGSA).
- 14) Security.
- 15) Incidents, Events and Reporting processes.
- 16) In-Transit Storage and REPPIR.
- 17) Vehicle equipment and Placarding/Markings.

19. Depending upon the duty holder's activities, all or some of the thematic areas may apply. In almost all cases there is significant overlap between thematic areas. The order the thematic areas are presented here is not based on priority and does not suggest an order in which they should be addressed in an inspection.
20. Details of the regulatory requirements and guidance for each thematic area are contained below.
21. Guidance provided in relevant licence condition technical inspection guides may be useful for inspection of specific topic area for all dutyholders. For nuclear licensees who are also transport dutyholders the licence conditions may also apply to transport activities.

3.1. Management Systems

3.1.1. Legal Requirements

- ADR/ RID § 1.7.3 requires a management system to be established and implemented for all transport activities.

3.1.2. Guidance

22. The Management System should enable an organisation to manage the inter-related parts of its business in order to achieve its objectives. These objectives include product or service quality, operational efficiency, environmental performance, health and safety in the workplace etc.
23. The level of complexity of the Management System will depend on each organisation's specific context. For smaller organisations, it may simply mean having strong leadership from the business owner, without the need for extensive documentation. More complex organisations may need extensive documentation and controls in order to fulfil their legal obligations and meet their organisational objectives.
24. An organisation may be involved in more than one transport activity, for example, design, manufacture, testing, maintenance and carriage, or involved in all phases from design to receipt as a consignee. The management system for any particular organisation should be designed and developed to suit the organisation's needs and activities.
25. Certification to Management System standards (for example, ISO 9001) is not mandatory, however any system used should be structured and formalised.
26. In most cases, radioactive material transport often involves a number of different people or organisations.
27. In the majority of cases there will be several management systems linked together (with clearly defined interfaces) which give the necessary assurances.
28. Specific points include:
 - Is the management system documented in a form which makes it easily available to personnel who need it to perform their duties?
 - Is the manager responsible for ensuring that the management system is implemented identified?
 - Are the role and responsibilities of the responsible manager clearly identified?
 - Are there adequate procedures for document issue, approval & change?

- Are there adequate procedures for work performed at locations other than the main base of operations?
- Does the duty holder perform planned, continuing and systematic evaluations or audits of factors which affect conformity and safety?
- Are quality assurance results fed back to the manager responsible for the function to ensure adequate corrective action?
- Are there sufficient competent personnel?
- Do the management arrangements of those organisations involved with a particular transport clearly define interfaces and responsibilities?
- Are quality measurements clearly identified by the supplier of product (e.g. package) or service (e.g. carrier)?
- Are there adequate procedures to ensure that released parts with deviations from applicable design data are reported to the Designer in a timely manner?
- Are there adequate procedures for vendor & subcontractor assessment, audit & control?
- Do supplier personnel satisfy the competency standards of the quality system of the organisation placing the contract?
- Are supplier records and reports showing conformity available for review and audit where appropriate.

3.1.3. Related documents

- NS-INSP-GD-017 - Nuclear Safety Technical Inspection Guide - LC 17-Management Systems [3]
- IAEA Safety Standards – The Management System for the Safe Transport of Radioactive Material – Safety Guide – TS-G-1.4 [4]
- IAEA Safety Standards - Compliance Assurance for the Safe Transport of Radioactive Material - Safety Guide TS-G-1.5 [5]

3.2. Package Design and Modification

3.2.1. Legal Requirements

- ADR/ RID Chapter 6.4 – defines the requirements for package/material construction, test and approval.
- ADR/ RID § 1.7.3 – requires manufacturers to provide facilities for inspection and demonstrate compliance to the competent authority.

3.2.2. Guidance

29. The designer of a transport package needs to be able to demonstrate or assure the manufacturer, user, and certifying body that all necessary steps and design processes have been addressed during all phases of design.
30. For example, the designer needs the means to assure that the final design specifications, drawings, and procedures have been produced taking account of regulatory requirements, design bases, codes, and standards.
31. The designer also needs to demonstrate that any proposed changes, modifications or deviations from the accepted design are carefully considered, justified, controlled, documented and implemented in a quality assured manner, as well as being consistent with, or better than, the controls applied to the original design.
32. The designer should be able to demonstrate that it has a process for integrating human factors into the design and development of the package design and safety case
33. If the designer is responsible for prototype manufacture and testing, the quality assurance (QA) system needs to ensure that any prototype packages, including scale models, are specified correctly, made exactly as required, and are consistent with the production package's materials and fabrication methods.
34. ADR/ RID Chapter 6.4 contains the requirements for the construction, testing and approval of packages for radioactive material and for the approval of such material.

3.2.3. Related documents

- NS-INSP-GD-075 - Transport Inspection Type A packaging – demonstration of compliance of package design [6]
- NS-INSP-GD-022 - LC22 - Modification or experiment on existing plant [7]

- TRA-PER-GD-014 - Guidance for Applications for UK Competent Authority Approval [8]
- IAEA Safety Guide, SSG-66 [9]

3.3. Package Manufacture and Supply Chain

3.3.1. Legal Requirements

- ADR/ RID § 4.1.9.1.6 – details requirements for package conformity to design prior to use.
- ADR/ RID § 6.4.7.6 – design and manufacturing standards and requirements.

3.3.2. Guidance

35. Are there suitably documented arrangements between the Designer/ Manufacturer/ Tester/ Maintainer to ensure satisfactory co-ordination including:
- The timely transfer of all design data.
 - The responsibilities and procedures of the Manufacturer for developing and validating manufacturing data against supplied design data.
 - The arrangements to assist the Designer with traceability of parts & processes.
 - The procedures to deal adequately with non-conforming parts.
 - The procedures to ensure configuration control of parts to enable determination & identification for conformity.
 - Which persons or offices are responsible for controlling the above arrangements and associated data.
36. Is the above data kept up-to-date and made available to staff who need access to perform their duties?
37. Are test specimens and prototype models made under controlled conditions?
38. Are there adequate procedures to ensure that released parts with deviations from applicable design data are reported to the Designer in a timely manner?
39. Are there adequate procedures for vendor & subcontractor assessment, audit & control?
40. Are external suppliers identified by the quality system?
41. Are external suppliers controlled as appropriate to ensure conformity, including:
- Qualification and auditing of the supplier's system.

- Evaluation of capability to establish conformity to applicable design data.
 - First article inspection to verify conformity to applicable data.
 - Incoming inspection and test where appropriate.
 - A vendor rating system which gives confidence in performance and reliability.
 - Additional work, including inspection and checks needed to enable parts to be delivered as spares, which are not included in the normal production cycle.
 - Supplier personnel satisfy the competency standards of the quality system of the organisation placing the contract.
 - Quality measurements are clearly identified by the supplier.
 - Supplier records and reports showing conformity are available for review and audit.
 - Is the control of buyer furnished equipment included in the Quality system?
42. Are there adequate procedures for the verification of incoming materiel against applicable design data?
43. Are there adequate procedures for handling, storage & packaging (by suppliers and internally)?

3.3.3. Related documents

- NS-TAST-GD-077 - Supply Chain Management Arrangements for the Procurement of Nuclear Safety Related Items or Services [10]

3.4. Package Maintenance and Operation

3.4.1. Legal Requirements

- ADR/ RID § 4.1.9.1.8 – pre-transport maintenance and checks for packages.
- ADR /RID § 4.1.9.1.9 – requirement to have the instructions for closure and preparation of packages.
- ADR/ RID § 6.4.2.8 – consideration of ageing mechanisms

3.4.2. Guidance

44. Is the requirement to ensure that the package is maintained in accordance with the design intent clearly defined?
45. Are there adequate procedures for identification and traceability of packages and components?
46. Are there adequate procedures for package testing?
47. Are there adequate procedures for calibration of tools, jigs and test equipment (traceable to national standards) and are they implemented?
48. Are the following resources (as applicable) available and adequate for maintenance and operation related activities:
 - Accommodation and working environment.
 - Documentation (package certificates, operating instructions, maintenance records, quality plans and dose records).
 - Equipment and tools.
 - Special processes and associated materials.
 - NDT, welding equipment and facilities.
 - Inspection and test equipment and facilities.
 - Competent personnel.
49. Are there adequate arrangements for quarantining non-conforming parts/ items/ packages?
50. Are procedures written in a way that clearly identify the administrative and other controls that are safety related.

51. Ageing management of packages and spares should be specifically identified and addressed in processes. This would include storage of single use packages prior to use.

3.4.3. Related documents

- NS-INSP-GD-028 - LC28 - Examination, Inspection Maintenance and Testing (EIMT) [11]

3.5. Radiation Risk Assessment

3.5.1. Legal Requirements

- CDG09 Schedule 2 Part 1 (2) – requirement to carry out risk assessment in accordance with IRR17 Reg 8 for transport.
- IRR17 Reg 8 - Radiation risk assessments – risk assessment requirements for working with ionising radiation.

3.5.2. Guidance

52. A suitable and sufficient Radiation Risk Assessment (RRA) is required for all transport activities including packing, loading, carrying including in transit storage, unloading, unpacking. Where multiple organisations are involved in the same transport operation (consignor, carrier, consignee being different) all parties must co-operate in exchanging information and expectations regarding the RRA.
53. Where a fixed facility has a RRA for non-transport operations these may overlap with transport activities, there is no requirement to duplicate the assessments but suitable cross referencing between documents is required.
54. Within HSEs Approved Code of Practice (ACOP), 'Work with ionising radiation' [12], paragraphs 70 and 71 provide information of the areas to be considered for an RRA.
55. The dutyholder must consult with a Radiation Protection Advisor (RPA) regarding the matters to be considered within an RRA (paragraph 72 in [12]).
56. ONR guidance [13] outlines the expectations of a transport RRA and contains further guidance and information.

3.5.3. Related documents

- HSE ACOP - Work with ionising radiation [12]
- TD-TCA-GD-003 Ionising Radiations Regulations 2017 (IRR17) Regulation 8 – Radiation Risk [13]

3.6. Radiation Protection Programme

3.6.1. Legal Requirements

- ADR/RID § 1.7.2 – Radiation protection programme requirements

3.6.2. Guidance

57. Section 1.7.2.1 within ADR states that the carriage of radioactive material shall be subject to a Radiation Protection Programme (RPP). IAEA Safety Guide [14] provides an overview of what is required within the RPP:

- Scope of the programme.
- Roles and responsibilities for the implementation of the programme.
- Dose assessment.
- Dose limits, constraints and optimization.
- Surface contamination.
- Segregation and other protective measures.
- Emergency response arrangements.
- Training.
- Management systems for the safe transport of radioactive material.

58. For transport dutyholders undertaking transport of radioactive material within GB they must be compliant with IRR17. Aspects of IRR17 provide the appropriate information for a suitable and sufficient RPP.

59. Consideration of controlled and supervised areas should be included within this section if not already addressed within the RRA review.

60. Majority of the RPP can be covered within the review of the dutyholders RRA (refer to section 3.5). Regarding Emergency response arrangements, refer to section 3.8, whilst for management systems, refer to section 3.1.

3.6.3. Related documents

- HSE Approved Code of Practice (ACOP) - Work with ionising radiation [12]
- IAEA Safety Standards – Safety Guide TS-G-1.3 - Radiation Protection Programmes for the Transport of Radioactive Material [14]

- NS-INSP-GD-054 - Nuclear Safety Technical Inspection Guide – The Ionising Radiations Regulations 2017 [15]
- IAEA Safety Standards – Occupational Radiation Protection – General Safety Guide GSG-7 [16]

3.7. Radiation Protection Advisor

3.7.1. Legal Requirements

- IRR17 Reg 14 – RPA requirements

3.7.2. Guidance

61. An RPA must be consulted and appointed if required. If appointment is not required, the reasons for this should be formally documented and revisited at suitable intervals to ensure the conclusion not to appoint remains valid. If appointment is required, a contract or formal letter identifying the appointment should be available during the inspection. There should be evidence of regular interactions (including physical site visits) and an expectation for the RPA to respond to dutyholder requests in a timely manner.
62. Where the RPA service is provided by an RPA body the dutyholder should understand the method by which the advice is being provided and overseen by the RPA body.
63. The RPA should be suitable – not only certified as an RPA but also demonstrate that they are experienced in radiation protection for transport activities.
64. The RPA should as a minimum be consulted on the matters outlined in IRR17 Schedule 4 'Matters in respect of which a radiation protection adviser must be consulted' which are as follows:
 - 1) The implementation of requirements as to controlled and supervised areas.
 - 2) The prior examination of plans for installations and the acceptance into service of new or modified sources of ionising radiation in relation to any engineering controls, design features, safety features and warning devices provided to restrict exposure to ionising radiation.
 - 3) The regular calibration of equipment provided for monitoring levels of ionising radiation and the regular checking that such equipment is serviceable and correctly used.
 - 4) The periodic examination and testing of engineering controls, design features, safety features and warning devices and regular checking of systems of work provided to restrict exposure to ionising radiation

65. And the matters required by [12], paragraph 249, which are as follows:

- a) the radiation risk assessment required by regulation 8;
- b) the designation of controlled and supervised areas as required by regulation 17, except where there is good reason to consider that such areas are not required, for example based on advice from the supplier of the radiation source or written guidance from an authoritative body;
- c) the handling of the various investigations required by the Regulations;
- d) the drawing up of contingency plans required by regulation 13;
- e) the dose assessment and recording required by regulation 22.

3.7.3. Related documents

- HSE Approved Code of Practice (ACOP) - Work with ionising radiation [12]

3.8. Emergency/ Contingency Planning and Testing

3.8.1. Legal Requirements

- CDG Reg 24 and Schedule 2 – Requirement to have an emergency plan if a radiation emergency is foreseeable.
- IRR17 Reg 13 Contingency Plans – requirement to have contingency plans
- ADR/ RID § 1.4.1.1 – general requirement to take appropriate measures for foreseeable dangers.
- ADR/ RID § 1.7.1 (notes 1 and 2) – expectations for dealing with emergency situations – references to IAEA guidance.

3.8.2. Guidance

66. The basis for the requirement to have a contingency or emergency plan comes from the output of the RRA – specifically IRR17 ACOP Para 70(k). A clear decision as to whether a radiation emergency can occur should be made (refer to section 3.5.2).
67. Where an emergency plan is required under CGD09 Schedule 2, this is considered to cover the requirement of the contingency plan requirement under IRR17. However, a dutyholder may wish to have both if they have some consignments that do not require an emergency plan.
68. **Consignor** - must have a written plan setting out emergency arrangements appropriate for carriage of the consignment that considers the potential radiological risk, avoids risk of injury to responders and the public, and ensures compliance with legal dose limits. For repeat consignments, the plan must be reviewed, revised and tested on a regular basis. The consignor must provide relevant information to the carrier, including at least the information required on the Transport Document.
69. **Carrier** – must have a written plan as well the consignor, which fulfils the same criteria. This can be a shared plan. The carrier must also ensure the vehicle is in good condition and equipped with safety equipment (refer to ADR § 8.1), and the driver is appropriately trained. Where a carrier is moving packages for multiple consignors, they must ensure that their emergency plan covers the range of packages carried and a bounding case total load on a vehicle. This may mean that a carrier requires an emergency plan even if individual consignors do not – due to load combining.

70. The plan must be prepared having regard to the extent that the plan is used in relation to carriage on more than one occasion, the consignor and carrier must review and, whenever necessary, revise the emergency arrangements and must ensure that at suitable intervals they are tested.
71. CDG09 Emergency plans must be tested every three years with a report provided to ONR on the testing carried out. Contingency plans are also required to be tested but no fixed timeframe is defined (regular test schedule should be defined) and there is no need to report to ONR the outcome of the test. Testing frequency should be related to the risk involved and need to ensure staff are training and competent as well as test the plan, therefore a more frequent period between tests may be required. In general, annual testing is considered to be an appropriate interval.
72. Dutyholders in a transport chain (consignor/ carrier/ consignee) should co-operate in the creation and testing of their respective emergency/ contingency plans where there are interfaces and interactions between them.

3.8.3. Related documents

- HSE Approved Code of Practice (ACOP) - Work with ionising radiation [12]
- ONR Guidance - Five steps to transport emergency planning [17]
- NS-INSP-GD-066 - The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 [18]
- IAEA Safety Standards Series SSG-65 – Preparedness and Response for a Nuclear or Radiological Emergency Involving the Transport of Radioactive Material [19]

3.9. Consignor Duties

3.9.1. Legal Requirements

- ADR/ RID § 1.4.2.1 – specific duties on consignors.
- ADR/ RID § 1.7.3 – consignor to provide facilities for inspection and demonstration of compliance to competent authority.
- ADR/ RID § 5.4.4.1 requires the consignor and the carrier to retain a copy of the dangerous goods transport document and additional information and documentation as specified in ADR/RID, for a minimum period of three months.

3.9.2. Guidance

73. The consignor is the primary dutyholder for any transport activity, they are responsible for ensuring the package is correctly packed, marked, labelled and produce the required documentation.
74. The consignor is the organisation or individual who is defined as such – this can sometimes be complex as organisations can pass their consignor duties to others via contractual arrangements. In these cases, the initial organisation needs to provide the consignor with the required information to be able to carry out the duties correctly.
75. Consignors may also rely on information given to them by other dutyholders such as packers/loaders – however there is still an expectation that the consignor is responsible for ensuring that these dutyholders are capable of carrying out those tasks on their behalf.
76. Consignors have responsibilities to report non-compliances (refer to section 1.1) and have security (refer to section 3.14) and emergency/ contingency (refer to section ☐) plans.
77. With regards to non-competent authority approved packages the consignor has the duty to demonstrate compliance of the package design [6].
78. Consignor should be able to provide copies of past three months transport documents – either physical copies or digital. Copies should be the completed versions with all signatures and detail completed.

3.9.3. Related documents

- NS-INSP-GD-075 - Transport Inspection - Type A packaging - demonstration of compliance of package design [6]

- NS-INSP-GD-068 - The Carriage of Dangerous Goods and use of Transportable Pressure Equipment Regulations 2009 [20] – Radiation and Contamination Monitoring, and Determination of Transport Index

3.10. Consignee Duties

3.10.1. Legal Requirements

- ADR/ RID § 1.4.2.3 – specific duties on consignees

3.10.2. Guidance

79. The consignee should have a process in place for accepting and handling any packages delivered to them. This should include security and safety aspects.
80. The consignee should not reject a package delivery except if they have a “compelling reason” to do so. Examples of compelling reasons include:
 - Unable to handle or store the material being delivered – i.e. facility not able to handle material delivered or already full.
 - Material delivered to wrong address – main office instead of manufacturing facility.
81. It's not acceptable for a consignee to reject a package just because they do not want the material anymore (for example hospital cancelling patient dose when already enroute). The consignee should accept the package and then arrange for the package to be returned correctly.
82. The consignee should also have a process in place to identify any non-compliance in packages received (wrong content, damage to package, incorrect or missing paperwork) and to report these (refer to section 1.1)

3.10.3. Related documents

83. None specific to this section

3.11. Carrier Duties

3.11.1. Legal Requirements

- ADR/ RID § 1.4.2.2 – specific duties on carriers
- ADR/ RID § 5.4.3 requires drivers shall carry a copy of the "instructions in writing" and for it to be readily available.
- ADR/ RID § 5.4.4.1 requires the consignor and the carrier to retain a copy of the dangerous goods transport document and additional information and documentation as specified in ADR/RID, for a minimum period of three months.
- ADR § 8.1 states general requirements concerning transport units and equipment on board. It includes requirements for fire fighting equipment, miscellaneous equipment and equipment for personal protection.
- ADR § 8.2 includes the requirements concerning the training of the vehicle crew.
- ADR/RID § 8.5 S12 allows for drivers to be trained internally in some cases.
- ADR/RID § 7.5.11 CV33 – specific requirements on stowage, delivery and vehicles.

3.11.2. Guidance

84. Carrier should be able to demonstrate training of all drivers and other staff. If internal training is used for drivers (ADR/ RID § 8.5 S12) then the course content should be available for inspection, as a minimum the scope and content list.
85. Where drivers require/have ADR training it should comply with the requirements of ADR/ RID § 8.2 and certificates should be retained by the drivers and copies held by the carrier.
86. Training of drivers should include all the duties defined in ADR/ RID § 1.4.2.2 including response to incidents.
87. The instructions in writing are contained within ADR/ RID § 5.4.3 and the version held by the carrier and drivers should be the current version. It should be an exact copy and not modified in any way, for example, it should include all class information and not be reduced to just class 7.
88. The carrier should be able to provide copies of the past three months transport documents – either physical copies or digital. Should be the completed versions with all signatures and detail completed.

89. The carrier is responsible for monitoring the vehicle and equipment used for transport of radioactive material (ADR/ RID § 7.5.11 CV33 (5.3)). This should be done in proportion to the risk of contamination from the materials being moved.
90. The carrier must have a process for managing packages that are undeliverable in accordance with (ADR/ RID § 7.5.11 CV33 (6)).

3.11.3. Related documents

- NS-INSP-GD-068 - The Carriage of Dangerous Goods and use of Transportable Pressure Equipment Regulations 2009 [20] – Radiation and Contamination Monitoring, and Determination of Transport Index

3.12. Training and Competence

3.12.1. Legal Requirements

- IRR17 Regulation 15 – requirements for training
- ADR/ RID §1.3.1 requires persons whose duties concern the carriage of dangerous goods, shall be trained in the requirements governing the carriage of such goods appropriate to their responsibilities and duties.
- ADR/ RID §1.3.2 identifies the nature of training required.
- ADR/ RID § 1.3.3 requires records of training received shall be kept by the employer and made available to the employee or competent authority, upon request.
- ADR/ RID § 1.7.2.5 requires workers to be appropriately trained in radiation protection (including the protection of others that may be affected by their actions).

3.12.2. Guidance

91. There is a lot of overlap in radiation protection and knowledge training requirements between ADR/ RID and IRR17. The general expectation is that individuals should be trained to a suitable level for the activities they are involved in. The level of training for differing roles needs to be identified and then the level of competence demonstrated.
92. Training in radiation protection may be required by individuals who are not directly involved in handling or radioactive material, but are responsible for organising transport, writing processes and/or preparing documentation.

93. Individuals who are involved in the transport process should have an awareness proportionate to their responsibilities. This may include individuals such as receptionists and/or security staff who are involved in directing or escorting drivers to collection/delivery locations.
94. Drivers have specific training requirements (refer to section 1.1)
95. Training should be kept current and refreshed at an appropriate, identified, time period.
96. All training should be recorded, and individuals provided with certificates if required. Copies of all training material should be retained, as a minimum, for the period of validity of any course.

3.12.3. Related documents

- NS-INSP-GD-010 - LC10 – Training [21]
- NS-INSP-GD-012 - LC12 - Duly authorised and other suitably qualified and experienced persons [22]

3.13. Dangerous Goods Safety Advice

3.13.1. Legal Requirements

- ADR/ RID § 1.8.3 – requirements for having a safety advisor and their qualifications and responsibilities.
- ADR/ RID §1.3.1 requires persons whose duties concern the carriage of dangerous goods, shall be trained in the requirements governing the carriage of such goods appropriate to their responsibilities and duties.

3.13.2. Guidance

97. Dangerous Goods Safety Advisors (DGSA) should be appointed in writing (unless DGSA appointment is not required) and the dutyholder should ideally have copies of the DGSAs certificate of qualification.
98. If DGSA appointment is not required, the basis for this should be formally documented and revisited at suitable intervals to ensure the conclusion not to appoint remains valid.
99. The DGSA should be qualified in accordance with ADR/ RID § 1.8.3 requirements.
100. DGSAs should also be experienced in aspects of Class 7 dangerous goods, it is recommended that additional class specific training be undertaken by DGSAs who provide services relating to radioactive material.
101. There should be evidence of regular interaction between dutyholders and DGSAs, not just a once yearly visit. The DGSA is responsible for monitoring compliance against ADR/ RID and should be carrying out site visits and meetings based on the amount and risk of dutyholder transport activity.
102. The DGSA is required to produce an annual report into the dutyholder transport activity and compliance.
103. The Dutyholder/ DGSA should be able to provide the annual reports for the last five years.

3.13.3. Related documents

- TD-TCA-GD-001 - Dangerous Goods Safety Advisers Annual Report [23]
- DfT guidance on employing a dangerous goods safety adviser (DGSA) [24]
- HSE guidance on ADR, CDG regs and DGSAs [25]

3.14. Security

3.14.1. Legal Requirements

- ADR/ RID Chapter 1.10 – security requirements
- CDG09 Reg 8 – additional security requirements
- CDG09 Reg 18 – dis-application of chapter 1.10/ reg 8 and application of NISR for specific radioactive material

3.14.2. Guidance

104. Nuclear material as identified in CDG09 Reg 18 is not subject to security requirements of CDG09 or ADR/ RID. It is subject to the NISR 2003 and regulated by ONR CNSS.
105. Dutyholders should be able to identify if they are moving High Consequence Radioactive Material or not. If they are then they should have a security plan in place meeting the requirements of ADR/ RID § 1.10.3.2.2.
106. Basic security checks on employees and sub-contractors should be carried out and recorded.
107. All staff involved in radioactive material transport should be given security training commensurate with their duties, this includes staff not directly involved in material handling. Training should be kept current and refreshed regularly.
108. Security of vehicles and in-transit storage areas should be assessed based on risk.

3.14.3. Related documents

- DfT guidance on security for dangerous goods [26]
- TD-TCA-GD-002 - Security Guidance on the Carriage of Class 7 Radioactive Material [27]
- NS-INSP-GD-072 - The Carriage of Dangerous Goods and use of Transportable Pressure Equipment Regulations 2009 – Inspection of Transport Security Requirements [28]

3.15. Incidents, Events and Reporting processes

3.15.1. Legal Requirements

- CDG09 Schedule 2 – reporting criteria for radiation emergencies
- ADR/ RID § 1.8.5 – reporting of incidents
- ADR/ RID § 1.7.6 – reporting of non-compliances
- ADR/ RID § 1.4.2.2.4 – resolution of non-compliances mid journey
- ADR/ RID § 5.1.5.1.4 - Notifications

3.15.2. Guidance

109. Dutyholders should have reporting criteria and processes included in all their arrangements. Emergency/contingency plans should especially have reporting activities included within the arrangements.
110. Reporting can be a legal requirement and failure to report is an offence, in some cases there is no legal duty to report incidents but ONR's expectation is that suitable management arrangement (ADR/ RID §1.7.3) would include reporting incidents to ONR based on ONR's guidance for incident reporting.
111. Notifying ONR in advance of movement of material is required in a number of cases, the process for doing so should be clear and correct. The dutyholder should have evidence of having provided reports and retain any confirmation and/or limitations provided by ONR in response.
112. The following are key aspects of reporting arrangements:
 - ONR contact details correct – phone number and email
 - Awareness of ONR reporting criteria
 - Process includes information on how and when to report including internal management of reporting process.
 - Records of incidents (reported or not) and reports on incident cause and remedial actions are kept.
113. Dutyholders should be able to discuss previous incidents and demonstrate how remedial actions have been incorporated into arrangements and/or training.

3.15.3. Related documents

- Process for incident notification to ONR [29]
- ONR incident notification guidance for transport dutyholders [30]

3.16. In-Transit Storage and REPPIR

3.16.1. Legal Requirements

- ADR/ RID § 1.2.1 – definition of “Carriage” including definition of intermediate temporary storage.
- REPPIR Regulation 3 – Application of the regulations to dutyholders

3.16.2. Guidance

114. Storage is only considered temporary or in-transit if it meets the following criteria:
- Packages are being stored for the purpose of changing transport mode/means of transport.
 - Packages are not opened (apart from for inspection by authorities).
 - Transport documentation is available detailing the origin and final destination.
115. A storage facility may be both a permanent store and in-transit store at the same time or alternate between states depending on the material within it. This should be clearly identified by the dutyholders management arrangements and risk assessments. Permanent storage is permitted by the relevant environmental agency, however there is an exemption for in-transit storage up to 14 days of storage.
116. Where an in-transit store is in use it should be covered by the appropriate radiation risk assessments and arrangements, including security.
117. Where the amount of material within an in-transit store could reach the limits defined in REPPIR then the appropriate assessments and plans are required to be put in place. These should be clearly assessed in the dutyholders arrangements, including regular review period to ensure assessments and plans remain valid.
118. Note that there are exemptions, from REPPIR, for material in temporary storage in Type B and C packages as well as special form material.
119. Where a store is used for both in-transit and normal storage there may be an overlap in regulations with the relevant environment agency – specifically with regards to security requirements for the environmental permit.

3.16.3. Related documents

- HSE ACOP and guidance on The Radiation (Emergency Preparedness and Public Information) Regulations 2019 [31]
- ONR guidance note - Transit premises used in connection with civil transport of radioactive material by road and rail [32]

3.17. Vehicle equipment and Placarding/Markings

3.17.1. Legal Requirements

- ADR/ RID § 5.3 – Placarding and markings
- ADR/ RID Chapter 8.1 – vehicle equipment

3.17.2. Guidance

120. When available a vehicle should be inspected to ensure that it meets the regulatory requirements. If a vehicle is not available for inspection, then the requirements should be discussed with the dutyholder who should be able to confirm that they are compliant.
121. Vehicle placarding should be in accordance with ADR/ RID § 5.3.1, including the following:
 - Class 7 placards affixed to both sides and rear of vehicle.
 - Placards of correct size and orientation.
 - Placards should be weather-resistant and remain affixed and visible during normal operations.
 - Magnetic placards may meet these requirements if in good condition and mounted correctly.
122. Orange plates should be in accordance with ADR/ RID §5.3.2, including the following:
 - Orange plates front and rear of vehicle.
 - Plates of correct size and orientation – size can be dependant on vehicle shape and design, but should be of the larger size if possible.
 - Plates should be weather resistant and durable.
 - Plates should not become detached from the vehicle if exposed to a 15 minute fire or if the vehicle overturns during an incident.
 - Magnetic plates are unlikely to meet these requirements.
123. Vehicle equipment requirements are identified in ADR/ RID Section 8.1, in general should include (but not limited to):
 - Fire Fighting equipment:
 - Number and size are dependant on the size of the vehicle (Section 8.1.4)

- Should be of a suitable standard and in date for test.
 - They should be available for the driver to access if required – not hidden behind/ under other equipment or within the load bay (unless reachable from outside the vehicle).
 - Vehicle items:
 - Wheel chocks – appropriate to the size of the vehicle wheels
 - Two Warning signs
 - Eye wash liquid – in date and accessible
 - PPE for crew (per crew members):
 - Reflective jacket
 - Torch/lighting unit
 - Note that this should not have a metal external surface that could generate sparks (Section 8.3.4)
 - Gloves
 - Eye protection
124. Equipment should be in good condition and readily available for use by the crew. If a dutyholder has multiple vehicles for use and only a single kit this may be managed via storage in a box/bag on site and issued to drivers when required. However, the equipment should be secured within the vehicle in appropriate locations when onboard.
125. Drivers and crew should be trained in the use of all equipment provided, training should be kept current and refreshed regularly.

3.17.3. Related documents

126. None specific to this section

4. Further Reading

127. The following links may be of interest and background information.

- DfT website on transport of dangerous goods [33]
- HSE website on carriage of dangerous goods [34]
- CAA website on dangerous goods [35]
- MCGA website on dangerous goods [36]
- DAERA-NI website on dangerous goods [37]
- ONR guidance document TRA-INSP-GD-001 - Managing the Regulatory Process of Authorised Police Constabularies Undertaking the Functions Set Out in the Relevant Agency Agreements on Behalf of ONR [38]

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