



Office for
Nuclear Regulation

ONR Guidance Document

**Security requirements for the
carriage of Class 7 dangerous goods
(radioactive material) by road and
rail - Guidance for industry**

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Security requirements for the carriage of Class 7 dangerous goods (radioactive material) by road and rail - Guidance for industry

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1. Introduction

1. The carriage (transport) of dangerous goods by road and rail in Great Britain (GB) must comply with international regulations, specifically the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) [1] and the Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) [2].
2. In GB, these international regulations are applied through the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (Statutory Instrument 2009 No. 1348), also referred to as CDG09 [3]. Chapter 1.10 of ADR and RID identify security provisions for transport of Class 7 dangerous goods (radioactive material). If you transport Class 7 dangerous good by road or rail, or are involved in planning or supplying such services, you must comply with these security provisions.
3. The purpose of the dangerous goods security regime is to prevent terrorist incidents and protect the general population by reducing the possibility of dangerous goods being seized by criminals on the road or rail network.
4. Nuclear material as identified in CDG09 Regulation 18 is not subject to security requirements of CDG09, ADR and RID. It is subject to the Nuclear Industries Security Regulations (NISR) 2003 [4], for which Office for Nuclear Regulation (ONR) is the Enforcing Authority. If you are a Class A or B approved (by ONR) carrier transporting Category I, II or III nuclear material this guidance does not apply to you. The applicable guidance is [5].
5. If any approved Class A or B carriers transport radioactive material below the NISR 2003 nuclear material threshold (i.e. Class 7 dangerous goods / radioactive material), compliance with the ADR Chapter 1.10 security provisions will be necessary. Where any existing security requirements are in force the onus is on the dutyholder to demonstrate that these arrangements also satisfy the ADR¹ provisions.
6. ONR is the Competent Authority (CA) and Enforcing Authority for the civil carriage of Class 7 dangerous goods by road and rail within GB. Department for Transport (DfT) and Health and Safety Executive (HSE) regulate carriage of all other classes of dangerous goods against CDG09, including the security provisions within ADR Chapter 1.10. The Secretary of State for Defence is the CA for transport of radioactive material related to the research, development and use of instruments of war.
7. The keeping and use (including security) of sealed sources is regulated by the environment agencies (Environment Agency, Scottish Environment

¹ Within this document reference to ADR should be taken as reference to ADR and RID, unless specifically noted.

Protection Agency, Natural Resources Wales and Northern Ireland Environment Agency). This includes mobile radioactive apparatus both at the 'home base' and deployment on site. Security requirements are set out in a guidance document issued by National Counter Terrorism Security Office (NaCTSO) that is available to dutyholders².

8. Carriage and in transit storage³ of radioactive material (including sealed sources) undergoing carriage is subject to ADR and its security requirements, and is regulated by ONR. Guidance provided by the environment agencies [6] confirms the circumstances⁴ under which storage in transit becomes permanent (and may require a permit). Where the same premises are used for both permitted storage and in-transit storage, ONR liaises with the environment agencies to ensure consistency.
9. The security requirements for carriage of Class 7 dangerous goods are the same as those for other classes of dangerous goods, and ONR's understanding of these is aligned with DfT. DfT publishes guidance to industry [7] which is intended to facilitate compliance with CDG09; this is periodically reviewed and updated. ONR's guidance (this guidance) to industry on carriage of Class 7 dangerous goods is modelled on DfT's guidance, with the requirements specific to Class 7 dangerous goods included.
10. ONR's Transport Competent Authority (TCA) assesses compliance with the security provisions within ADR Chapter 1.10 via a programme of inspections. Whilst there are no regulatory requirements for consignors and carriers to inform ONR of the carriage of Class 7 radioactive material defined as high consequence dangerous goods, you will be required to confirm to ONR whether you are transporting high consequence radioactive material if requested. You should also ensure that you have a HSE Consent under Ionising Radiation Regulations 2017 (IRR17) if the high consequence radioactive material is also high activity sealed sources (HASS). We would encourage you to contact ONR at Class7@onr.gov.uk to ensure you are on our register of Class 7 dangerous goods dutyholders
11. Enquiries regarding the transport security of Class 7 dangerous goods by road or rail can be made via email: Class7@onr.gov.uk.

² The NaCTSO guidance, issued in 2024, is available from NaCTSO via your CTSA. It is not available to download due to its security classification.

³ A 12-month period is considered the upper bounding case for a transport operation (unless a longer duration can be justified) and is the basis for ADR provisions. If a package has not been received by the consignee within a 12-month period, it would normally either need to be re-consigned (in accordance with whatever safety case underpins its use) or, if its location is unknown, it would be considered to be lost.

⁴ 'Storage in transit' becomes permanent storage (this coming within the remit of radioactive substances legislation) when: it is stored in one location for a period exceeding 14 days; or it is unpackaged; or it arrives at the destination where it will be used or disposed of.

2. Security measures

12. This guidance is primarily aimed at those in the non-nuclear sector transporting Class 7 radioactive material by road in GB. The security requirements are split into two levels:
 - general security requirements applicable to all Class 7 dangerous goods
 - the additional security requirements applicable to Class 7 high consequence dangerous goods (HCDG)
13. This guidance will help you determine the security requirements applicable to your activities. For the purposes of ADR Chapter 1.10, security means measures or precautions to be taken to minimise theft or misuse of dangerous good that may endanger persons, property or the environment.
14. HCDG are defined in ADR 1.10.3.1 as those with potential for misuse in a terrorist incident and which may, as a result, produce serious consequences such as mass casualties or mass destruction (whether to infrastructure, the environment or the economy), or particularly for Class 7, mass socio-economic disruption.
15. All Class 7 dangerous goods shall only be offered to carriers or organisations that have been appropriately identified⁵. Temporary storage sites must be properly secured, drivers and crew must carry means of photographic identification, and security awareness training must be identified.
16. For Class 7 HCDG, you need to create, adopt, implement and comply with a transport security plan. ONR does not prescribe a standard format for security plans but regards use of the template provided by DfT as good practice. DfT templates for a transport security plan, security risk assessment and driver advice sheet are at <https://www.gov.uk/government/publications/security-requirements-for-moving-dangerous-goods-by-road-and-rail>

3. Approach to compliance

17. For the purposes of the IAEA transport regulations upon which the provisions of ADR and RID are based 'transport' 'comprises 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-

⁵ Identified includes ensuring organisation is registered/has consent under IRR17 to work with the radioactive material being transported, has suitable risk assessments and emergency/contingency plans and where the driver is appropriately trained.

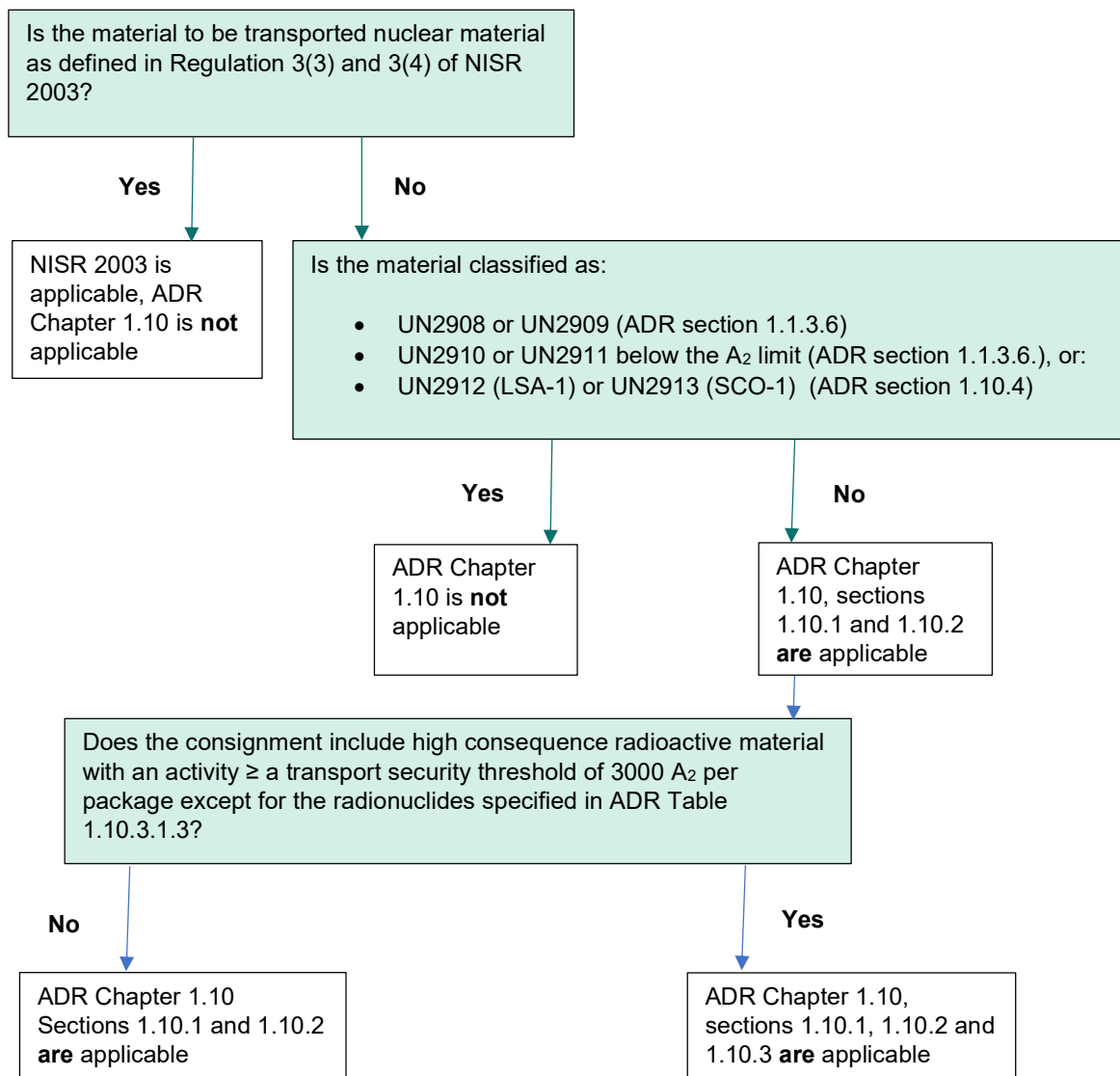
transit storage, unloading and receipt at the final destination of loads of radioactive material and packages. This guidance is applicable primarily to activities relating to the shipment of material including consigning, carrying, in-transit storage and receipt.

18. Compliance monitoring is conducted through a programme of announced inspections at company premises and/or at any point during transport, carried out by ONR TCA to assess compliance with the mandatory aspects of ADR Chapter 1.10. Inspectors will liaise with other agencies as necessary, for example with the environment agencies if a permitted store is also used for in-transit storage.
19. ONR, as CA, can also carry out unannounced inspections and investigations, as prescribed by schedule 8 of the Energy Act 2013. Those powers extend out to the whole of GB.

4. ADR regulations applicability

20. The ADR Chapter 1.10 security provisions do not apply when NISR 2003 is applicable and to the carriage of limited quantities and of particular loads below certain levels. Further information can be found in ADR sub-sections 1.1.3.6.2 and 1.10.4. Note nuclear material, as identified in CDG09 Regulation 18, is not subject to the security requirements of CDG09, ADR and RID. It is subject to NISR 2003 [4].
21. You should always refer to your Dangerous Goods Safety Advisor (DGSA) to confirm whether ADR Chapter 1.10 is applicable to you.
22. The flowchart at Figure 1 is intended to assist you in determining to what extent ADR Chapter 1.10 applies to you.

Figure 1 – Applicability of ADR Chapter 1.10 to radioactive material transport



5. Complying with the regulations

23. This part of the guidance quotes the chapter of the ADR about the secure transport of dangerous goods and provides ONR's advice on the quoted rules, which are applicable to Class 7 dangerous goods. ONR's advice is based on DfT's guidance to industry including additional elements based on additional provisions applicable to the carriage of Class 7 dangerous goods. These additional elements are not within DfT's guidance as these are not applicable to other classes of dangerous goods.
24. ADR does not require carriers, consignors and other participants engaged in the transport of Class 7 non-high consequence dangerous goods to have Security Plans. However, ONR considers it good practice (but not a regulatory requirement) for dutyholders involved in the carriage of Class 7 non-high consequence dangerous goods to have processes and arrangements in place in order to mitigate security risks. ONR regards use of the DfT security plan template as relevant good practice (<https://www.gov.uk/government/publications/security-requirements-for-moving-dangerous-goods-by-road-and-rail>).

5.1. General provisions (applicable to transport of all Class 7 dangerous goods)

ADR 1.10.1.1 'All persons engaged in the carriage of dangerous goods shall consider the security requirements set out in this Chapter commensurate with their responsibilities.'

Advice

25. Chapter 1.10 refers to any person engaged in the carriage of dangerous goods, and includes administrative personnel, contractors and agency staff.
26. Anyone engaged in the transport of Class 7 dangerous goods must understand their responsibilities with regard to security. These responsibilities may include: identifying and reporting any person not authorised to be in a particular area or suspected of interfering with vehicles or wagons carrying Class 7 dangerous goods and completing risk assessments and implementing security plans.
27. Contractors may create new vulnerabilities and expose organisations to a greater 'insider' threat than they would face if relying on directly recruited staff. Contractors, including transport service providers, should undergo the same pre-employment screening process with their own employees; responsibility for implementing these checks will rest with the contractor. They should be able to demonstrate, from their records, that they have carried out these checks.

ADR 1.10.1.2 'Dangerous goods shall only be offered for carriage to carriers that have been appropriately identified.'

Advice

28. If your company subcontracts dangerous goods movements to another haulier or courier, or any other relevant service provider, you must ensure they are compliant, including evidence of a security plan where necessary, and that the security plan is reviewed and tested regularly.
29. Additional checks may include checking security and recruitment policies, staff training, and drivers documents, including their ADR vocational qualification.
30. Rail Freight Operating Companies hold a safety certificate issued by the Office for Rail Regulation (ORR) and this can form part of the appropriate identification process.

ADR 1.10.1.3 'Areas within temporary storage terminals, temporary storage sites, vehicle depots, berthing areas and marshalling yards used for the temporary storage during carriage of dangerous goods shall be properly secured, well-lit and, where possible and appropriate, not accessible to the general public.'

Advice

31. Temporary storage⁶ includes stops made necessary by the circumstances in a journey, as well as changes to modes of transport. Areas used for temporary storage of dangerous goods must be secured. This means that they should be controlled by a combination of physical barriers, security equipment, procedures and staff vigilance.
32. Additional fencing or patrols may be considered around areas where vehicles or trains are kept when loaded with HCDG. Sites shall be well illuminated and illumination should complement other security equipment such as CCTV and enable security patrols to be conducted effectively. Regular checks should be carried out to ensure that all security equipment and control measures are functioning correctly, and signage should be in place to identify areas with unauthorised access..
33. All reasonable steps should be taken to ensure unauthorised access to dangerous goods is prevented. Additional consideration should be given to shared access sites.
34. All good physical security regimes should be based on the 3D principle, deter, detect and delay.

⁶ For the purpose of ADR and RID, parking or necessary short stops (for example 'tacho breaks') during a journey are not considered temporary storage.

- deter – the overt physical and electronic security measures that might deter a would be intruder
 - detect – alarm systems, with visual (CCTV) verification, to detect the presence of an intruder
 - delay – physical security measures that delay the intruder long enough to allow a response force to attend
35. Many sites will incorporate perimeter security fencing to meet health and safety requirements, as well as security requirements, however this guidance recognises that perimeter fencing might not be applicable in all cases. It is important to remember that the implementation of security measures should be pragmatic, proportionate and sustainable.
36. More information about physical security measures is available at the following websites:

<https://www.npsa.gov.uk/cse-categories>

<https://www.redbooklive.com/>

ADR 1.10.1.4 'Each member of a vehicle crew shall carry with them means of identification, which includes their photograph, during carriage of dangerous goods.'

Advice

37. Photographic identification must be carried at all times during carriage by the vehicle driver and crew.
38. It may be appropriate for all staff involved in the carriage of dangerous goods to be issued with photo ID passes. Random spot checks of visiting drivers and crew member's photo ID passes should be carried out.
39. Staff challenge persons on site who are not familiar and who are not wearing a pass.

ADR 1.10.1.5 'Safety inspections in accordance with 1.8.1 and 7.5.1.1 shall cover appropriate security measures.' [NOTE: reference to 7.5.1.1 does not appear in RID]

Advice

40. Demonstration of security compliance may be requested during safety inspections carried out by the ONR.

ADR 1.10.1.6 'The competent authority shall maintain up-to-date registers of all valid training certificates for drivers stipulated in ADR 8.2.1 issued by it or by any recognised organisation.'

Advice

41. The records need to be available to the CA, which is the DfT (CDG09 Regulation 25 (3A), on request.

CDG09 Regulation 8 imposes an additional security requirement which is considered to be part of ADR Chapter 1.10⁷, as follows:

‘A person involved in the carriage of dangerous goods must take all reasonable steps to ensure that unauthorised access to those goods is prevented.’

Advice

42. If there are actions and/or processes that can be implemented, over and above those defined in ADR 1.10, which would reduce the risk of theft or loss of material, these should be put in place unless the cost/effort is considered to be disproportionate.

5.2. Additional provisions for security training (applicable to transport of all Class 7 dangerous goods)

ADR 1.10.2.1 ‘The training and the refresher training specified in ADR Chapter 1.3 shall also include elements of security awareness. The security refresher training need not be linked to regulatory changes only.’

Advice

43. ONRs recommends completing security refresher training annually. Training should be regularly reviewed and updated in line with evolving security threats. The refresher training schedule should be clearly defined and evidenced.
44. A suitable training programme should be implemented and provided to all employees involved in dangerous goods transport operations. ONR regards DfT’s guidance on training as relevant good practice - <https://www.gov.uk/government/publications/dangerous-goods-security-awareness-training/dangerous-goods-security-awareness-training>.
45. Dutyholders should also consider mandatory cybersecurity training for all employees based on the current threat to UK businesses. Please refer to the [National Cyber Security Centre - NCSC.GOV.UK](https://www.ncsc.gov.uk) (NCSC) for further guidance.

⁷ This additional requirement therefore does not apply where ADR Chapter 1.10 does not apply (refer to para. 20).

ADR 1.10.2.2. 'Security awareness training shall address the nature of security risks, recognising security risks, methods to address and reduce such risks and actions to be taken in the event of a security breach. It shall include awareness of security plans (if appropriate) commensurate with the responsibilities and duties of individuals and their part in implementing security plans.'

Advice:

46. Security awareness training covers the topics listed above. DfT have produced a training film 'Lockdown' to assist with delivering dangerous good security training. This can be used to supplement your in-house training material and copies are available from DfT on request (email: landsecurity@dft.gov.uk).

47. Additional security training can be obtained from external training suppliers of other government departments including:

<https://www.gov.uk/government/publications/security-requirements-for-moving-dangerous-goods-by-road-and-rail/NPSA>

<https://www.gov.uk/guidance/getting-training-and-advice-on-counter-terrorism> developed by NaCTSO

<https://www.protectuk.police.uk/>

ADR 1.10.2.3. 'Such training shall be provided or verified upon employment in a position involving dangerous goods transport and shall be periodically supplemented with refresher training.'

Advice

48. We recommend completing security refresher training annually. Training should be regularly reviewed and updated in line with evolving security threats. The refresher training schedule should be clearly defined and evidenced.

ADR 1.10.2.4. 'Records of all security training received shall be kept by the employer and made available to the employee or competent authority, upon request. Records shall be kept by the employer for a period of time established by the competent authority.'

Advice:

49. Employers must keep staff training records for a minimum of the period of validity of the training, or for three years.. The records must be made available to the employee or CA on request.

5.3. Provisions for High Consequence Dangerous Goods (applicable to transport of high consequence radioactive materials only)

ADR 1.10.3.1 - Definition of High Consequence Dangerous Goods

ADR 1.10.3.1.1 - High Consequence Dangerous Goods are those which have the potential for misuse in a terrorist event and which may, as a result, produce serious consequences such as mass casualties, mass destruction or, particularly for Class 7, mass socio-economic disruption.

Advice

50. In conjunction with their Dangerous Goods Safety Advisor (DGSA), dutyholders should establish if the substances are classified as HCDG, and ensure correct handling and that security measures are applied.

ADR 1.10.3.2 – not applicable – list of high consequence dangerous goods other than Class 7.

No advice is necessary

ADR 1.10.3.1.3 - For dangerous goods of Class 7, high consequence radioactive material (HCRM) is that with an activity equal to or greater than a transport security threshold of 3000 A₂ per single package (see also ADR Table 2.2.7.2.2.1) except for the following radionuclides where the transport security threshold is given in Table 1.10.3.1.3

Advice

51. Dutyholders, primarily consignors, involved in the carriage of dangerous goods should refer to ADR Table 1.10.3.1.3 (reproduced below as Table 1) to confirm if the material to be transported classifies as high consequence.
52. Other dutyholders, carriers, drivers, loaders etc. - should be able to recognise how to identify HCRM and understand how to manage it correctly.

Table 1 - ADR Table 1.10.3.1.3 – Transport Security Thresholds (per package) for Specific Radionuclides

Element	Radionuclide	Transport security threshold (TBq)
Americium	Am-241	0.6
Gold	Au-198	2
Cadmium	Cd-109	200
Californium	Cf-252	0.2
Curium	Cm-244	0.5
Cobalt	Co-57	7
Cobalt	Co-60	0.3
Caesium	Cs-137	1
Iron	Fe-55	8000
Germanium	Ge-68	7
Gadolinium	Gd-153	10
Iridium	Ir-192	0.8
Nickel	Ni-63	600
Palladium	Pd-103	900
Promethium	Pm-147	400
Polonium	Po-210	0.6
Plutonium	Pu-238	0.6
Radium	Ra-226	0.4
Ruthenium	Ru-106	3
Selenium	Se-75	2
Strontium	Sr-90	10
Thallium	Tl-204	200
Thulium	Tm-170	200
Ytterbium	Yb-169	3

ADR 1.10.3.1.4 - For mixtures of radionuclides, determination of whether or not the transport security threshold has been met or exceeded can be calculated by summing the ratios of activity present for each radionuclide divided by the transport security threshold for that radionuclide. If the sum of the fractions is less than 1, then the radioactivity threshold for the mixture has not been met nor exceeded.

Advice

53. Dutyholders involved in the carriage of dangerous goods should understand how to calculate whether the transport security threshold has been met or exceeded. This is calculated by summing the ratios of activity present for each radionuclide divided by the transport security threshold for that radionuclide. If the sum of the fractions are less than 1 the radioactivity threshold for the mixture has not been met or exceeded. The calculation can be made with the formula:

$$\sum_i \frac{A_i}{T_i} < 1$$

Where:

A_i = activity of radionuclide i that is present in a package (TBq)

T_i = transport security threshold for radionuclide i (TBq).

54. Dutyholders involved in the carriage of dangerous goods should determine whether the transport security threshold has been met or exceeded by correctly calculated the transport security threshold.

55. Seek advice from your DGSA.

ADR 1.10.3.1.5 - When radioactive material possesses subsidiary risks of other classes, the criteria of table 1.10.3.1.2 shall also be taken into account (see also 1.7.5).

Advice

56. Dutyholders involved in the carriage of dangerous goods should understand how use ADR Table 1.10.3.1.2 (and those it references) to take account of the subsidiary risks of other classes of dangerous goods, if the Class 7 dangerous goods to be transported contains these in quantities greater than those indicated.

57. Seek advice from your DGSA.

ADR 1.10.3.2 - Security Plans

ADR 1.10.3.2.1 - Carriers, consignors and other participants specified in 1.4.2 and 1.4.3 engaged in the carriage of high consequence dangerous goods (see Table 1.10.3.1.2) or high consequence radioactive material (see 1.10.3.1.3) shall adopt,

implement and comply with a security plan that addresses at least the elements specified in 1.10.3.2.2.

Advice

58. The security plan is based on the overall operation of the business, not on individual movements, and is tailored to suit the company's operational activities. It may be appropriate to have separate security plans in place for each site or location used during the carriage of HCRM. Plan(s) should reference other plans or documents that may be in place, such as maritime security plans or emergency plans for example.

ADR 1.10.3.2.2 - The security plan shall comprise at least the following elements:

Advice is provided against each point from (a) to (h).

- (a) *Specific allocation of responsibilities for security to competent and qualified persons with appropriate authority to carry out their responsibilities;*

Advice

59. All persons involved in dangerous goods security management operations should be listed by role and name in the security plan, with a summary of their responsibilities.

- (b) *Records of dangerous goods or types of dangerous goods concerned;*

Advice

60. A summary of the types of dangerous goods regularly carried or potentially carried should be included within the security plan, including: the radioisotope(s) being transported, the physical and chemical form of the material and the quantity being transported. The security plan should be reviewed and updated as necessary to ensure it accurately reflects the dangerous goods being carried. The summary could include a table which lists the UN Numbers and shipping names identifying which are high consequence dangerous goods.

61. A reference to the DGSA Annual Report could be made, which should include a summary of the dangerous goods moved over the previous 12 months. The consignor and the carrier should retain a copy of the dangerous goods transport document and additional information, for a minimum of three months from the date of carriage and where documents are kept electronically shall be able to reproduce the documentation in a printed form in accordance with the requirements of ADR 5.4.4.

- (c) *Review of current operations and assessment of security risks, including any stops necessary to the transport operation, the keeping of dangerous goods in the vehicle, tank or container before, during and after the journey and the*

intermediate temporary storage of dangerous goods during the course of intermodal transfer or transshipment between units as appropriate;

Advice

62. An overview of the current operation is included at the start of the security plan to describe its purpose and scope. This will set out the reasons for the plan, how and why it applies to the business and to the carriage of HCRM. The plan should be regularly reviewed to determine any changes to security procedures or arrangements that might be necessary.
63. An assessment of all security risks applicable to the dutyholder's dangerous goods operations should be included. This comprises:
- journey and vehicle
 - risks at site
 - cyber and information security
 - personnel risks
- (d) *Clear statement of measures that are to be taken to reduce security risks, commensurate with the responsibilities and duties of the participant, including:*
- *training;*
 - *security policies (e.g. response to higher threat conditions, new employee/employment verification, etc.);*
 - *operating practices (e.g. choice/use of routes where known, access to dangerous goods in intermediate temporary storage (as defined in (c)), proximity to vulnerable infrastructure etc.);*
 - *equipment and resources that are to be used to reduce security risks;*

Advice

64. The security plan must include these measures which help contribute to transport security. The specific instructions and guidance given to drivers and crew' plus what specific measures are taken in the event of unplanned or unusual circumstances should be included in this section. You may wish to reference the location of existing company policies and procedures.
65. Training: see section 2.2 of this guidance.
66. Security policies: A security policy statement is included in the security plan. Depending on the nature of the operation, and potential vulnerabilities, there are documented and predetermined arrangements for responding to

changes in the National Threat Levels. The security plan considers changes to business or national threat levels.

67. Employment checks: Suitable checks should be made of any potential new employees who will be involved in the transport of HCRM. ONR recommends completing DBS checks (basic or enhanced, according to role) for all staff. Documents should be checked to verify personal identity and right to work status. This should include agency or temporary staff. All checks should be carried out on original documents. A 5-year no-gap employment history is recommended.
68. Operating practices: The security plan documents how HCRM is accepted and the process for determining specific security requirements necessary for a particular movement such as how movements are controlled and monitored to ensure security. Additionally, the plan details how any problems with the movement are dealt with, for example security during unplanned intermediate stops, how road and rail interfaces are managed at intermodal depots and how public access to vehicles or trains has been restricted.
69. Equipment and resources: The security plan statement of measures identifies and records the equipment and resources deployed in the security arrangements for the transport of HCRM, such as CCTV, lighting, intruder detection, access systems and physical security equipment. It is possible that the equipment may not be solely for that purpose, e.g. lighting may be provided for operational safety and CCTV in place for preventing vandalism and criminal activity. Resources that are available and will be utilised when there are necessary breaks in a journey should be identified.
- (e) *Effective and up to date procedures for reporting and dealing with security threats, breaches of security or security incidents;*

Advice

70. Dutyholders must implement an incident reporting procedure or policy, and the subsequent review process.
71. ONR's procedure for incident reporting [8] includes incident category TS02 'Theft (actual or attempted) or loss (permanent or temporary) of the Class 7 goods in carriage. ADR does not require reporting of loss of documentation unless it causes a secondary breach of regulations (for example losing consignment notes during transport or within three months). You are encouraged to report dangerous goods transport documentation loss as good practice.
- (f) *Procedures for the evaluation and testing of security plans and procedures for periodic review and update of the plans;*

Advice

72. ADR requires security plans to be periodically reviewed and tested but does not specify the periodicity at which security plans should be tested. The requirement for testing of security plans should be documented, for example within existing quality and management systems. The periodicity of the testing should be justified and documented, ONR recommends testing on an annual schedule, in line with testing of emergency plans and arrangements.
73. Testing procedures can be extended to include access control or staff vigilance tests at locations where HCRM are stored during transport. Testing of the security plan can be in the form of a desk top exercise (e.g. of theft, hijack, protestor activity scenarios) or any other test which adequately tests the security measures in place, for example a penetration test, a cybersecurity response exercise, an information security exercise or an unattended item test.
74. As well as keeping a record of tests and investigating any 'failures', it is good practice to review and, if necessary' update security plans on a regular basis, preferably annually, to ensure the accuracy of its content. Updating the security plan following any security incident or test where lessons have been learned or a change of operations or in response to an event has been considered.
- (g) *Measures to ensure the physical security of transport information contained in the security plan; and*

Advice

75. A summary of measures to protect sensitive company information (hard-copy or electronic), including security plans, transport documentation and personnel records must be included in the security plan. This may include the following: a cybersecurity risk assessment, cybersecurity training, access control measures and archiving and destruction of documents.
- (h) *Measures to ensure that the distribution of information relating to the transport operation contained in the security plan is limited to those who need to have it. Such measures shall not preclude the provision of information required elsewhere in ADR.*

Advice

76. The security plan should advise how the distribution of information about the dangerous goods transport operations is restricted to those who need the information.

Note: Carriers, consignors and consignees should co-operate with each other and with competent authorities to exchange threat information, apply appropriate security measures and respond to security incidents.

Advice

77. The above note is for all participants engaged in the carriage of HCRM by road or rail. Sources of information include BTP, Network Rail, ORR, NCSC, NPSA, DfT, Protect UK, CSSC, the Police, DVSA, ONR, trade associations and DGSAs.

ADR 1.10.3.3 - Devices, equipment or arrangements to prevent the theft of the vehicle carrying high consequence dangerous goods (see Table 1.10.3.1.2) or high consequence radioactive material (see 1.10.3.1.3) and its cargo, shall be applied and measures taken to ensure that these are operational and effective at all times. The application of these protective measures shall not jeopardize emergency response.

Advice

78. A summary of measures which could be taken to ensure the security of vehicles includes: journey planning, tracking devices, double crew, escort vehicle, stabling location, immobilisers, cargo locks, isolators, vehicle CCTV, vehicle brake locks and vehicle key control. Drivers should carry a [dangerous-load-card.pdf \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/61222/dangerous-load-card.pdf) to use if stopped by an unmarked vehicle.

Note: When appropriate and already fitted, the use of transport telemetry or other tracking methods or devices should be used to monitor the movement of high consequence dangerous goods (see Table 1.10.3.1.2) or high consequence radioactive material (see ADR 1.10.3.1.3).

Advice

79. A repair and maintenance contract should be in place for all vehicle security equipment and systems, Tracking systems are widely available for goods vehicles and trailers; fitting such equipment represents best practice when carrying HCRM. It may also be appropriate to consider tracking the freight or container itself if the goods are particularly sensitive or attractive to thieves.
80. Total operations processing system (TOPS) and global positioning system (GPS) applications are in use on some trains.

ADR 1.10.4 – The requirements of 1.10.1, 1.10.2, 1.10.3 and 8.1.2.1 (d) do not apply when the quantities carried in tanks or in bulk on a transport unit do not exceed those referred to in 1.1.3.6.3. In addition the provisions of this Chapter do not apply to the carriage of UN No. 2912 RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I) and UN No. 2913 RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I).

Advice

81. This ADR provision relates to specified quantities of radioactive materials referenced in ADR, below which the requirements of these security provisions do not apply.

ADR 1.10.5 - For radioactive material, the provisions of this chapter are deemed to be complied with when the provisions of the Convention on Physical Protection of Nuclear Material (INFCIRC/274/Rev.1, IAEA, Vienna (1980)) and the IAEA circular on “The Physical Protection of Nuclear Material and Nuclear Facilities” (INFCIRC/225/Rev. 5, IAEA, Vienna (2011)) are applied.

Advice

82. This ADR provision confirms the security provisions of ADR are deemed to be complied with when the provisions of the convention on physical protection of nuclear material and the IAEA circular on “The Physical Protection of Nuclear Material and Nuclear Facilities” are applied. The ONR Security Assessment Principles (SyAPs) address the UK’s approach to compliance with this convention, with SyDP 6.7 specifically addressing transport offsite. Dutyholders meet the provisions of the convention by complying with the requirements of NISR, SyDP6.7 and the associated ONR Guidance [5].

5.4. Undeliverable consignments

ADR 7.5.11 special provision for loading, unloading and handling CV33 (6) - Where a consignment is undeliverable, the consignment shall be placed in a safe location and the competent authority shall be informed as soon as possible and a request made for instructions on further action. [4]

Advice

83. You should have, within your written arrangements, a process for dealing with undeliverable consignments. For carriers this should include the ability to contact the consignor and/or consignee in the first instance.
84. Carriers should have processes in place for securing consignments, and redelivering to the same location, where practicable.
85. Where a consignment needs to be redirected to a different location the consignor should have in place a method by which they can issue a new/amended transport document with the correct consignee address.
86. Where a consignment is subject to ADR 1.10.3 security plan requirements the security plan should include specific consideration of the consignment being undeliverable and the actions to be taken to ensure the package is secured.
87. If the consignor and/or consignee cannot be contacted and the package cannot be secured by the carrier or where the carrier requires further advice you should initially consult your DGSA. If no alternative options are available then you may contact ONR via the contact details provided on the ONR website.

6. References

- [1] [About the ADR | UNECE](#)
- [2] [RID 2023 – OTIF – Intergovernmental Organisation for International Carriage by Rail](#)
- [3] [The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 \(legislation.gov.uk\)](#)
- [4] [The Nuclear Industries Security Regulations 2003 \(legislation.gov.uk\)](#)
- [5] [cnss-sec-gd-001-nuclear-transport-security-guidance-for-class-b-approved-carriers-1.docx \(live.com\)](#)
- [6] [Scope of and exemptions from the radioactive substances legislation in England, Wales and Northern Ireland](#)
- [7] [Security Guidance on the secure carriage of dangerous goods by road and rail \(publishing.service.gov.uk\)](#)
- [8] ONR, “ONR-OL-PROC-002 - Process for Incident Notifications to ONR”.

Appendix A – Table of acronyms

Term/Acronym	Description
ADN	International Carriage of Dangerous Goods by Inland Waterways
ADR	Agreement concerning the International Carriage of Dangerous Goods by Road
BTP	British Transport Police
CDG09	Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (Statutory Instrument 2009 No. 1348)
CPNI	Centre for the Protection of National Infrastructure
CA	Competent Authority
CSSC	Cross-sector Safety and Security Communications
CTSAs	Counter Terrorism Security Advisors
DfT	Department for Transport
DGSA	Dangerous Goods Safety Advisor
DRS	Direct Rail Services
DSRL	Dounreay Site Restoration Limited
DVSA	Driver and Vehicle Standards Agency
EMM	Enforcement Management Model
GB	Great Britain
GPS	Global positioning system
HAAS	High Activity Sealed Sources
HCDGs	High Consequence Dangerous Goods
HCRM	High Consequence Radioactive Material
HMG	His Majesty's Government
HSE	Health and Safety Executive
IAEA	International Atomic Energy Agency

Term/Acronym	Description
LSA	Low Specific Activity
NCSC	National Cyber Security Centre
NPSA	National Protective Security Authority
ONR	Office for Nuclear Regulation
ORR	Office for Rail Regulation
RGP	Relevant Good Practice
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SCO	Surface Contaminated Object
SyAPs	Security Assessment Principles
TOPS	Total operations processing system
TCA	(ONR) Transport Competent Authority
UK	United Kingdom

Appendix B – Glossary of terms

Glossary	Description
A ₁	The activity value of special form radioactive material which is listed in the table in ADR 2.2.7.2.2.1 or derived in ADR 2.2.7.2.2.2 and is used to determine the activity limits for the requirements of ADR.
A ₂	The activity value of radioactive material, other than special form of radioactive material, which is listed in the Table in ADR 2.2.7.2.2.1 or derived in ADR 2.2.7.2.2.2 and is used to determine the activity limits for the requirements of ADR.
carriage	<p>The change of place of dangerous good, including stop made necessary by transport conditions and including any period spent by the dangerous goods in vehicle, tanks and containers made necessary by traffic conditions before, during and after the change of place.</p> <p>This definition also covers the intermediate temporary storage of dangerous goods in order to change the mode or means of transport (trans-shipment). This shall apply provided that transport documents showing the place of dispatch and the place of reception are presented on request and provided that packages and tanks are not opened during intermediate storage, except to be checked by the competent authorities.</p>
carrier	The enterprise which carries out the transport operation with or without a transport contract.
Class 7 dangerous goods	Radioactive material
Class 7 high consequence dangerous goods	Radioactive material with the potential for misuse in a terrorist incident and which may, as a result, produce serious consequences such as mass casualties or mass destruction (whether to infrastructure, the environment or the economy) or, particularly in for radioactive material, mass socio-economic disruption.
competent authority	Any person or organisation with the legal authority or power to perform a specific function.
contamination	In the context of ADR, contamination means the presence of a radioactive substance on a surface in quantities in excess of 0.4 Bq/cm ² for beta and gamma

Glossary	Description
	<p>emitters and low toxicity alpha emitters, or 0.04 Bq/cm² for all other alpha emitters.</p> <p>Non-fixed contamination means contamination that can be removed from a surface during routine condition of carriage.</p> <p>Fixed contamination means contamination other than non-fixed contamination.</p>
nuclear material	<p>Material listed in the table on the categorisation of nuclear material, including the material listed in its footnotes, in Section 4 of IAEA Nuclear Security Series No 13, Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC/225/Revision 5).</p>
radioactive material	<p>Any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values specified in ADR 2.2.7.2.2.1 to 2.2.7.2.2.6.</p>
high consequence dangerous goods	<p>Goods which have the potential for misuse in a terrorist event and which may, as a result, produce serious consequences such as loss of life, mass destruction or, particularly for Class 7, mass socio-economic disruption.</p>
high consequence radioactive material	<p>High consequence radioactive material is that with an activity equal to or greater than a transport security threshold of 3000 A₂ per single package (see also ADR 2.2.7.2.2.1) except for the radionuclides specified in ADR Table 1.10.3.1.3 with associated transport security thresholds.</p>
secular equilibrium	<p>A situation in which the quantity of a radioactive isotope remains constant because its production rate (e.g. due to decay of a parent isotope) is equal to its decay rate.</p>
security	<p>For the purposes of ADR Chapter 1.10, security means the measures or precautions to be taken to minimise theft or misuse of dangerous goods that may endanger persons, property or the environment.</p>
special form radioactive material	<p>In the context of ADR, either:</p> <ul style="list-style-type: none"> a) An indispersible solid radioactive material; or b) A sealed capsule containing radioactive material

Glossary	Description
transport category	As defined in ADR 1.1.3.6.3
temporary storage	<p>Temporary storage includes stops made necessary by the circumstances in a journey, as well as changes to the mode of transport. Areas used for the temporary storage of dangerous goods must be secured; this means they should be controlled by a combination of physical barriers, security equipment, procedures and staff vigilance.</p> <p>Note: For the purposes of ADR and RID, parking or necessary short stops during a journey is not considered temporary storage.</p>
transport	<p>For the purposes of the IAEA transport regulations upon which the provisions of ADR and RID are based, 'transport' comprises 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.</p>
transport security threshold	<p>Value in TBq as defined in 1.10.3.1.3 which when exceeded, for a single package, contents becomes High Consequence Radioactive Material.</p>