



Transporting radioactive material - Guidance on emergency arrangements

Who is this guide for?

This guide has been prepared primarily to help non-nuclear sector duty holders transporting radioactive material by road in Great Britain to determine:

- ✓ **the factors to be considered when writing emergency plans; and**
- ✓ **the appropriate testing regime for their emergency plans.**

Who needs an emergency plan and why?

The carriage of dangerous goods, including radioactive materials, is regulated by the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG). Regulation 24 and Schedule 2 of CDG requires that a written emergency plan is prepared to deal with radiological emergencies. These are situations where urgent action is required to protect workers, members of the public or the population from exposure to ionising radiation.

Before the carriage of radioactive material takes place, CDG requires both the consignor and the carrier to have a plan, in writing, detailing emergency arrangements appropriate to protect the vehicle crew, the public, attending emergency services and the environment when transporting radioactive material.

Emergency plans are required in addition to the Instructions in Writing required by ADR* (Section 5.4.3 of ADR refers.)

Factors to consider when writing a plan

An emergency plan should provide clear instructions to the driver, carrier and consignor who all have responsibilities. It is most likely that the driver will initiate emergency plans; however there should be contingency arrangements where, in the case of injury, the driver (or accompanying vehicle crew) is unable to take appropriate action.

The plan should address at least the following:-

- ✓ **immediate notifications to be made:** contact the Police (999), the consignor (24 hour telephone number recommended) and where appropriate, the relevant Fire and Rescue body (999)
- ✓ **actions to protect the driver:** minimise exposure to ionising radiation, establish how the driver will identify any potential damage to the package(s) including loss of shielding or leakage of the radioactive contents and what to do in such situations, when to use any protective equipment provided
- ✓ **how to prevent the situation from getting worse:** where trained, equipped, and it is safe and appropriate to do so, control fire/heat, restrict access, and do not approach or move significantly damaged packages
- ✓ **actions to protect the public:** where equipped and safe to do so, set up temporary barriers to prevent access by the public to the incident scene, remain upwind of the incident scene where significant damage to a package is suspected

- ✓ **actions to protect the emergency services on their arrival at the scene:** pass on details of the incident and information in the transport documentation including the radioactive material being carried, the form it takes (special form, solid, liquid, gas), the amount of radioactive material present (in units of Becquerels, Bq)
- ✓ **actions to ensure the radioactive materials remain secure without compromising the emergency response:** consider what to do if the vehicle is damaged to the extent that it is vulnerable e.g. where there are broken windows or doors are not lockable.
- ✓ **actions to be taken by the consignor:** include arrangements to provide advice to the emergency services and make particular notifications.
- ✓ **where to obtain specialist advice and effective support:** - from the consignor, appointed Dangerous Goods Safety Adviser (DGSA) or Radiation Protection Adviser (RPA), to deal with circumstances where damage to a package/s or source/s is suspected, the clean-up phase, and to inform the need for further notifications to ONR and other relevant regulators in particular accident situations.

It is important to note that the National Arrangements for Incidents involving Radioactivity (NAIR) must not be claimed as being wholly or partly the plan. In addition, some consignors may be members of the RADSAFE scheme. Membership of RADSAFE alone does not constitute an adequate emergency plan.

How to produce effective emergency plans

Training should be delivered to ensure that each person with a role in the emergency plan understands their duties in the event that the plan needs to be used, and has ready access to that plan. It is recommended that a driver should have an accessible copy of the plan in the vehicle cab. All equipment required for implementation of the plan should be carried on the vehicle whenever radioactive material is being transported.

Where a consignor and a carrier have separate plans, arrangements should be in place to ensure that there are no conflicts. In the circumstances where there is just the one plan, both the carrier and consignor should be familiar with the contents as appropriate to their roles in the plan.

Factors to consider in relation to testing emergency arrangements

CDG requires that where a plan is used more than once, it must be tested at suitable intervals. The way plans are tested and how often this is done is not specified however testing should be proportionate to the risks involved in a dutyholder's transport operation. As a guide, ONR would expect a test to be carried out approximately annually. A dutyholder should be able to justify their approach to testing.

All relevant aspects of the plan should be tested i.e. that emergency equipment is present, it works, that plans are accessible, they are up to date with contact names and telephone numbers, and that support staff as well as drivers undertake their roles effectively, and not just the driver. A record should be made to include the date of the test, names of those individuals involved, and any learning points identified. The plan should be reviewed and updated, if required, to reflect experience, with all relevant people being advised of any changes to the plan as these occur.

Ways to test emergency arrangements could include a desktop exercise discussing the actions to be taken in the event of different emergency scenarios with individuals or groups with roles in the emergency plan. Alternatively testing could be a full or partial simulation

involving some or all of the following: - a vehicle, simulated package, driver, emergency equipment, emergency services, consignor, competent advice and specialist support providers (DGSA or RPA). **It is important to note that testing should not take place out on public roads and should not involve packages containing radioactive material. Emergency services should only be involved with their express prior agreement.**

* ADR refers to the European Agreement Concerning the International Carriage of Dangerous Goods by Road. CDG refers to ADR requirements for road transport of dangerous goods in Great Britain.