

THE ROLE OF THE DANGEROUS GOODS SAFETY ADVISER AND IMPROVING COMPLIANCE WITH THE RADIOACTIVE MATERIAL ROAD TRANSPORT REGULATIONS AMONGST USERS IN THE GB INDUSTRIAL SECTOR

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ABSTRACT

Over the last few years the Department for Transport (DfT) has been vigorously enforcing the radioactive material road transport regulations in Great Britain (GB) through its industrial and medical users inspection programme. These inspections have served to highlight significant compliance issues amongst organisations working in the industrial sector and it appears one requirement, more than any other, is unlikely to be met: the requirement to appoint a Dangerous Goods Safety Adviser (DGSA). In light of this and the other findings of the DfT's inspections, the aims of this paper are twofold:

- To clarify where the requirement for a DGSA comes from, what the role of the DGSA is and which organisations should appoint one.
- To discuss possible reasons for the low number of DGSA appointments and other non-compliances commonly seen amongst organisations working in industry, before moving on to discuss how compliance, and in particular compliance with the requirement to appoint a DGSA, could perhaps be improved in the industrial sector.

This paper concludes that a significant contribution towards improving compliance amongst organisations working in the industrial sector will be made through increasing the number of DGSA appointments. How this could be achieved and how the perceived value of the role of the DGSA could be improved are discussed.

INTRODUCTION

The requirement for organisations involved in transporting dangerous goods to appoint an expert adviser was first proposed by the European Commission in the mid-1990s. At that time it was considered that that the increasing quantities of dangerous goods being transported both nationally and internationally was increasing the risk of accidents, and that this was in part due to the insufficient knowledge of the risks involved. In an effort to minimise these risks, Council Directive 96/35/EC¹ was passed in 1996, which prescribed the appointment of safety advisers, specialists who have received appropriate vocational training in the regulations and administrative provisions applicable to the transport of dangerous goods. This directive was enacted in Great Britain (GB) through The Transport of Dangerous Goods (Safety Advisers) Regulations 1999², the title of which led safety advisers in GB to be known as Dangerous Goods Safety Advisers (DGSAs). These regulations augmented the existing Radioactive Material (Road Transport) Regulations 1996³, which principally enacted the International Atomic Energy Agency's (IAEA) Regulations for the Safe Transport of Radioactive Material (TS-R-1)⁴.

By 2007, The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations⁵ had become the sole text for the transport of all classes of dangerous goods by road and rail in GB, including class 7 – radioactive material. These regulations, and the 2009

regulations⁶ that supersede them, invoke the requirements of the European Agreement Concerning the International Carriage of Dangerous Goods by Road⁷. Usually abbreviated to ADR, this document, produced by the Committee on Inland Transport at the United Nations Economic Commission for Europe (UNECE), assimilates the requirements of both TS-R-1 and the 1996 Directive, as well as additional provisions laid down by the UNECE working party on dangerous goods. The GB regulations are enforced by the Department for Transport (DfT).

WHAT IS THE ROLE OF THE DGSA?

The role of the DGSA is to assist organisations minimise the risks associated with the transport of dangerous goods. The DGSA can be either an internal or external appointment, but the appointee must hold a Vocational Training Certificate (VTC) from the Scottish Qualifications Authority (SQA). This qualification is obtained by passing three written examinations: 'core', 'mode' and 'class'. The core examination is taken by all candidates. There are two choices for the mode examination - road or rail – but as dangerous goods are most often shipped by road, almost all candidates take the road examination. In the final 'class' examination candidates can choose to either specialise in a particular class or classes of dangerous goods. If a candidate chooses to specialise then they can only advise on those classes of dangerous good covered in the 'class' examination they took. Most candidates take what is termed the 'all classes' examination, which covers all nine classes of dangerous goods. All three examinations must be passed for the candidate to obtain a VTC, which remains valid for five years.

WHAT ARE THE DUTIES OF THE DGSA?

According to ADR Chapter 1.8.3.3 the DGSA has the following key duties to perform on behalf of the organisation to which they are appointed:

- To monitor compliance with the requirements governing the carriage of dangerous goods.
- To advise on the carriage of dangerous goods.
- To prepare an annual report on the organisation's activities.

This chapter goes on to give details as to how the DGSA should fulfil the three key duties outlined above. The DGSA should, amongst other things:

- Monitor procedures for identification, packaging and handling of dangerous goods.
- Check that vehicles are suitable for the dangerous goods to be carried on it.
- Check that employees are properly trained and that records of training are maintained.
- Assist with the implementation of proper emergency procedures in the event of any accident or incident involving dangerous goods.
- Investigate and where appropriate prepare reports on serious accidents or incidents.
- Implement measures to prevent the reoccurrence of accidents or incidents.
- Introduce measures to increase awareness of the risks inherent in the carriage, loading and unloading of dangerous goods.

THE REGULATORY REQUIREMENT TO APPOINT A DGSA FOR CLASS 7

As a qualified DGSA working in the industrial sector for many years now, the author has often been asked to advise on whether an organisation need appoint a DGSA, both by those in industry and others working in the field of radiation protection. With regard to the

transport of radioactive material, there are three important points to consider when determining whether an organisation is required to appoint a DGSA.

1. DGSAs must be appointed by organisations involved in any aspect of the transport operation, not just by carriers. As Chapter 1.8.3.1 of ADR indicates, this requirement applies equally to those involved in the packaging and loading of radioactive material. The same chapter also indicates that organisations involved in the unloading of radioactive material must appoint a DGSA too. However, in GB, the DfT differentiates between ‘final unloaders’, i.e. consignees, and ‘intermediate unloaders’, such as forwarding agents, with only the latter having to appoint a DGSA.
2. Organisations involved in the transport of radioactive material in excepted packages alone need not appoint a DGSA. This is because such packages are considered to be of low hazard.
3. Organisations involved in transporting radioactive material in packages, other than excepted, no more than once or twice per month need not appoint a DGSA. This is the GB interpretation⁸ of Chapter 1.8.3.2 (b) of ADR, which states that the requirement to appoint a DGSA shall not apply to organisations where:

‘The main or secondary activities of which are not the carriage or the related loading or unloading of dangerous goods but which occasionally engage in the national carriage or the related loading or unloading of dangerous goods posing little danger or risk of pollution’.

As discussed later, this chapter of ADR can be interpreted differently by organisations working in the industrial sector.

Considering these three points together, the appointment of a DGSA would be expected of the following industrial users of radioactive material undertaking the work described below:

- Non-Destructive Testing (NDT) companies - Typically transport sealed selenium-75, iridium-192 or ytterbium-169 sources in Type A or B packages for site radiography.
- Road construction and civil engineering companies - Typically transport nuclear density gauges containing sealed caesium-137 and americium-241/beryllium sources, in Type A packages (see Figure 1 below).
- Borehole logging companies - Typically transport sealed caesium-137 and americium-241/beryllium sources in Type A packages for borehole and pipe exploration.
- Utility companies - Typically transport sealed caesium-137 and americium-241/beryllium sources in Type A packages for moisture or density measurements.
- Freight forwarders and handling agents - May handle any number and type of radioactive package.

However, the evidence from the DfT is that many users carrying out these activities have not appointed a DGSA.

WHY HAVE SO FEW DGSAs BEEN APPOINTED BY INDUSTRIAL USERS?

Over the last few years the DfT has been vigorously enforcing the radioactive material road transport regulations through its industrial and medical users inspection programme. These inspections have served to highlight significant compliance issues amongst users and it

appears one requirement, more than any other, is unlikely to be met: the requirement to appoint a DGSA. In successive DfT newsletters on the transport of radioactive material up to April 2010⁹, it has been stated that ‘most organisations don’t have one’. Possible reasons why this might be the case are discussed below.

Lack of regulatory enforcement and stakeholder engagement by the competent authority

Prior to the introduction of its industrial and medical users inspection programme, the DfT and its forebear, the Department of Transport (DoT), carried out very few inspections or stakeholder engagement exercises. This meant that compliance issues amongst users were not being identified or addressed and may have even lead some users to take a more relaxed approach to compliance, and perhaps concentrate more on addressing the requirements of other regulations, such as the Ionising Radiations Regulations 1999 (IRR99)¹⁰, under which they were more likely to be inspected. What is clear is that users could have not complied with the transport regulations for many years without any action being taken against them.

Format of the regulations

It is a common perception amongst users (and many radiation protection professionals) that the transport regulations are simply too complicated, inaccessible and lacking in useful guidance. As a result they cannot determine what they need to do to comply or simply feel don’t have the time to go through the regulations to find the various requirements. In addition to this, many users consider that the adoption of ADR in 2007 as the basis of the radioactive material road transport legislation just made matters worse.

Perceived regulatory burden

In the author’s experience, another common perception amongst users is that the amount of work required to achieve compliance is too great, and perhaps even disproportionate to the relative risk of their transport activity. One aspect of the regulations often cited as a demonstration of this are the security provisions in Chapter 1.10 of ADR, introduced in 2005. At this time, users had already been required to assess the security of their holdings of radioactive material under High Activity Sealed Radioactive Sources and Orphan Sources Regulations 2005¹¹ (HASS Regulations). Chapter 1.10 and the DfT’s guidance document¹² were therefore seen to be repeating many of the requirements of the HASS Regulations and consequently adding, unnecessarily, to the regulatory burden.

Reliance on Radiation Protection Advisers (RPAs)

In Great Britain, organisations working with ionising radiation must appoint an RPA under IRR99. Whilst, strictly speaking, RPAs are appointed to provide advice on compliance with IRR99, many RPAs will also provide advice on other related regulations, including the transport regulations. Consequently, the RPA is considered by many users to be a ‘one-stop-shop’ for advice and consequently they either do not realise, or see the need, for a DGSA. It has also been suggested that the DfT still look for assistance from RPAs, rather than DGSAs, to help improve compliance. The trouble is, few RPAs claim a comprehensive knowledge of the transport regulations and so many may not be in a position to assist with improving compliance.

Lack of class 7 expertise amongst DGSAs

Perhaps the reason why people look more towards RPAs than DGSAs to help improve compliance is because their radiation protection expertise enables them to understand the concepts relating to radioactive material transport more readily than a DGSA. Whilst most DGSAs are qualified to advise on all classes of dangerous goods, this qualification can be

obtained with little or no knowledge of the transport of radioactive material. This is because very few questions in the examinations are on class 7. Indeed, the author has now taken the ‘core’, ‘mode’ and ‘all classes’ examinations twice and been asked one question relating to the transport of radioactive material. In the author’s experience this means that candidates tend to concentrate on learning about those classes which are prominent in the examinations and learn little about class 7. As a result, whilst most DGSAs are qualified to advise on the transport of radioactive material, it is possible that many lack the knowledge to actually do so. Therefore many may be unwilling or unable to advise on the transport of radioactive material and so some users may be unable to obtain the services of a suitable DGSA.

Interpretation of DGSA exemption provisions

As already explained in the previous section, Chapter 1.8.3.2 (b) of ADR states that organisations only ‘occasionally’ involved in the transport of dangerous goods need not appoint a DGSA. The DfT interprets ‘occasionally’ as being no more than 1 or 2 journeys per month. However, the DfT has not formally disseminated this information. Consequently some users may have interpreted occasional transport as a frequency of more than 1 or 2 journeys per month and as a result not appointed a DGSA.

WHAT OTHER NON-COMPLIANCES ARE COMMON?

Many of the reasons given above are also considered relevant to the other non-compliances commonly observed. These non-compliances, as identified by the DfT’s inspectors and reported in their Transport of Radioactive Material Newsletter from April 2010, include:

- Package documentation – No evidence to support package designation.
- Marking and labelling – Damaged or incomplete.
- Transport document – Vital information missing.
- Radiation Protection Programme – Whilst some form of programme usually exists, it is not properly managed.
- Emergency arrangements – Insufficient and/or untested.
- ADR matters – Security in transport, driver training, standard format instructions in writing, vehicle and personnel safety equipment requirements not met/in use.

HOW CAN COMPLIANCE BE IMPROVED?

The situation is now starting to improve largely due to the programme of compliance inspections introduced by the DfT. In recent years the DfT have also been conducting stakeholder meetings and producing guidance documents to address concerns amongst users and make them aware of their regulatory responsibilities. In support of this, the DfT is currently developing three new guidance documents to try to address particular issues: one will detail the requirements of a transport document; one will detail the package marking and labelling requirements; and one will summarise the requirements of ADR. With regard to the latter, the author believes a simple set of instructions, like the one suggested below, would help users considerably:

“CDG09 requires ADR to be followed in full. Exceptions to this rule are stipulated in Regulations 11(3) and 24(2) of CDG09. Regulation 11(3) invokes the DfT’s Approved Derogations and Transitional Provisions document¹³, which lays down exemptions to ADR that apply in Great Britain only. Regulation 24(2), through Schedule 2, lays down the arrangements that must be put in place to cover radiological emergencies. ADR, whilst highly prescriptive, is structured in a manner that enables the reader to find the necessary

information. A summary of how radioactive material fits into the various chapters of ADR is given below:

- 1) Exemptions relating to radioactive material are given in Chapter 1.7.1.4.
- 2) Radiation protection and quality assurance programmes must be drafted according to Chapter 1.7.2 and 1.7.3 respectively.
- 3) To transport radioactive material it must be assigned to a package type, proper shipping name and UN number according to Chapter 2.2.7.
- 4) Once the package type is known, refer to Table A. If transporting excepted packages also refer to Chapter 1.1.3.6.
- 5) Table A lists all dangerous goods in UN number order. Find the UN number associated with the package type being used.
- 6) Read across the row to find out which other parts of ADR are relevant to the transport of that package type.
- 7) Unless transporting excepted packages, or other package types less than once or twice per month, a DGSA must be appointed according to Chapter 1.8.3.
- 8) Unless transporting excepted packages, the security requirements of Chapter 1.10 must be followed.”

Even with appropriate guidance however, there are clear benefits in having an expert available to advise and assist organisations with regulatory compliance. Therefore, it is suggested that a significant contribution to improving compliance will come through increasing the number of DGSA appointments in the industrial sector. To achieve this it would be of great benefit to have focused stakeholder engagement by the DfT with those in the radiation protection community (including users, RPAs and relevant professional societies, such as the Society for Radiological Protection (SRP)) to promote the role of the DGSA and make it clear when a DGSA should be appointed. As mentioned above, although a number of stakeholder meetings have now been provided by the DfT, none have specifically addressed the issue of DGSA appointments.

There must also be movement away from relying on RPAs to assist with compliance. There needs to be an acceptance that an RPA is appointed to ensure compliance with IRR99, and that a DGSA must be appointed to ensure compliance with the transport regulations. As recognised in this paper though, this may not be easy due to the potential lack of class 7 expertise amongst DGSAs. If a DGSA is to carry out the duties listed in this paper, such as monitoring procedures relating to the transport of dangerous goods, they must have a good understanding of the basic concepts of radiation and radioactive material and the principles of radiation protection.

One possible solution to this could be for the DfT to review the qualification process for class 7 and make it mandatory for DGSAs to take a specific ‘class 7’ examination if they want to advise on the transport of radioactive material. Such a move should not present much difficulty since a ‘class 7’ examination can already be taken as an alternative to the ‘all classes’ examination and a suitable transitional period would smooth the introduction of this requirement. Taking such a step would add greater value to the role of the DGSA with regard to class 7.

Another possible solution could be for the DfT to compile a list of DGSAs and the classes of dangerous goods they are prepared to advise on. This could then be made available online to

enable users to easily identify a DGSA suitable for their needs. A similar arrangement is already in place to enable users to identify a suitable RPA.

CONCLUSION

Despite that fact that many industrial users, routinely shipping radioactive material by road, are required to appoint a qualified DGSA, the DfT's recent inspection programme has shown that few have done so and that there are often additional non-compliances. A number of reasons for these non-compliances have been put forward in this paper and the DfT is now moving to address some of these. However, a significant contribution towards improving compliance amongst users will be made through increasing the number of DGSA appointments. To achieve this:

- The DfT, and those in the radiation protection community, need to promote the role of the DGSA and extol its relevance and value to users through focused stakeholder engagement.
- There must be movement away from relying on RPAs to assist with compliance with transport legislation. To facilitate this, it is suggested that the DfT consider a review of the DGSA qualification process and make it mandatory for DGSAs to take a 'class 7' examination before they can advise on this class. This would strengthen the role of the DGSA and increase the value of a DGSA appointment to users. The DfT could also consider maintaining a list of DGSAs able to advise on class 7 on their website, to enable users to easily identify a DGSA suitable for their needs.

REFERENCES

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