

Multimedia Instructions for Carriers of Radioactive Material

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Abstract

For some operators the transport regulations for transporting radioactive material are considered to be complicated and not user friendly and as a result for some operators it is difficult to identify all the transport regulatory requirements they must comply with for each type of package or radioactive material. These difficulties can result in self-checking being ineffective and as a consequence the first and important step in the safety chain is lost. This paper describes a transport compliance guide for operators that is currently under development for the South American market. This paper describes the scope and structure of the guide and examples of the information provided is given, which will be available in English, Portuguese and Spanish. It is intended that when the guide is launched before the end of 2013 it will be accessed using a bespoke software program that can run on PC platform to provide a checklist for the operator before the shipment begins. By identifying the regulatory requirements the guide is also intended to provide operators with an understanding of the structure of the transport regulations and an appreciation of the logic behind the regulatory requirements for each UN numbered package and material type listed in the transport regulations for radioactive material. It is foreseen that the interactive program can be used both operationally on a day-to-day basis and as a training tool, including refresher training, as the guide will be updated when the transport regulations are periodically changed.

1. Overview

The transport regulations for radioactive material (class 7 dangerous goods) have a different structure than those for the other 8 classes of dangerous goods and it is therefore important that operators receive effective training in the various aspects of transporting radioactive material. Of key importance is that operators have consistent methods for marking and labelling packages, placarding vehicles, producing transport documentation and preparing effective emergency plans which meet the regulatory requirements. The awareness training programme and the transport compliance guide described in this paper is intended to illustrate a system that provides a consistent

MULTIMEDIA TRAINING; GUIDANCE FOR THE CARRIAGE OF RADIOACTIVE MATERIAL

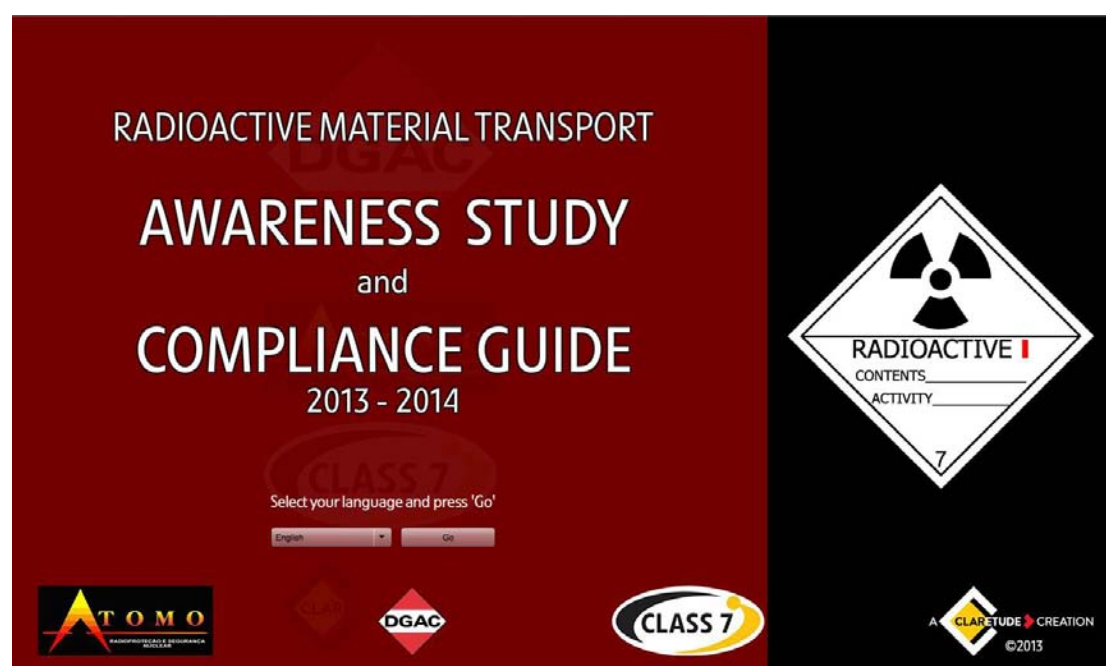
approach which also provides the user with references to the regulatory text for the four modes of transport namely road, rail, sea and air.

The user of this multimedia programme will be able to choose English, Portuguese and Spanish languages and make reference to the transport regulations of:

- Europe, USA and Brazil for road,
- Europe and USA for rail,
- IMDG for sea, and,
- IATA regulations for air transport.

The addition of other languages and other national transport regulations can be incorporated as required to meet user requirements.

This Awareness Study and Compliance Guide is intended to supplement other specific training programmes for consignors and carriers that exist in many countries. This programme provides an effective overall awareness for operators whilst giving specific guidance in areas of transport documentation, package labelling and emergency arrangements.





2. Structure

The structure has been developed to be **clear** in its presentation, enabling the user to easily navigate through the multi-media program. **Simple** and clear text is used to make the information understandable to the user that is presented in a **concise** way by providing additional information such as regulatory text, and further explanatory text.

3. The Awareness Training Programme

The three elements of the programme are:

i. Select the Chapter

There are 14 Chapters that can be studied in sequence or accessed randomly to find information for specific topics. The freedom to navigate the Chapters is important for checking specific information during transport preparations.

ii. Select a Section

Within each Chapter there are a number of sections that provide information of the basic story / concept. This presents the information in a logical order that is easier to understand. This current version of the program is at an 'Awareness' level and is intended to provide the user with an understanding from which more detailed information regarding regulatory requirements can be sought.

RAM TRANSPORT AWARENESS STUDY AND COMPLIANCE GUIDE 2013 - 2014

STUDY PROGRAMME

CHAPTERS

- Basic Awareness
- Transport related risks
- Intrinsic material risks and issues
- The rule books
- Organising the material
- Packaging
- Permitted transport
- Identifying material
- Warning of the dangers
- The paperwork
- Carrying the material
- Security
- Emergency protocols
- Performance control

PACKAGING

- Packaging Basics
- Packaging Types
- Package activity and content limits
- Package performance standards
- Package certification
- Package type review

ADR/RD 1.2.1, 2.2.7.2.4, 4.1.9, 6.4
 IRR 172.403-11461.7
 IMDG 1.2.1, 2.2.7.2.4, 4.1.9, 6.4
 IATA App A, 10.3.11, 10.5-10.13, 10.6
 CEN/ISO 15.2.1-7, 7.3.2.3, Table 1.8



Type B

There are six different grades of radioactive material packaging
 Excepted, Industrial, Types A, B, C and Uranium hexafluoride packs
 Fissile material is OK in all package types apart from Excepted

CLASS 7

Simples. Sistema de operação em tres etapas básicas –
 1. Selecione um capítulo, 2. Selecione uma seção, 3. Consulte o relato básico

TRANSPORTE DE MATERIAL RADIOATIVO CONSCIENTIZAÇÃO E GUIA DE CONFORMIDADE 2013 - 2014

PROGRAMA DE ESTUDO


CAPITULOS

- Conscientização Básica
- Riscos relacionados ao transporte
- Riscos e problemas intrínsecos
- Livro de regras
- Organização do material
- Embalagens
- Transporte permitido
- Identificação do material
- Avisos de perigo
- Documentos
- Carregamento do material
- Segurança Física
- Protocolos de emergência
- Controle de desempenho

EMBALAGEM

- Embalagens básicas
- Tipos de embalagem
- Atividade do embalado e limites de
- Padrões de desempenho
- Carregamento e transporte
- Revisão do tipo de embalado

ADR/RD 1.2.1, 2.2.7.2.4, 4.1.9, 6.4
 IRR 172.403-121, 172.681-467
 IMDG 1.2.1, 2.2.7.2.4, 4.1.9, 6.4
 IATA App A, 10.3.11, 10.5-10.13, 10.6
 IAEA 15.2.1-7, 7.3.2.3, Tabela 1.8



Type B

Existem seis diferentes classificações de material radioativo
 Exceptivo, Industrial, Tipos A, B, C e Hexafluoreto de urânio
 Material fissil é permitido em qualquer tipo de embalado

iii. Additional information

By selecting the text in a Section, further explanatory text will be displayed together with the corresponding regulatory references for road, rail, sea and air transport.

Resumido.

Caso sejam requeridos mais detalhes –

1. Consulte os regulamentos de referencia/localização/modo ícones
2. Selecione o texto básico para ver o painel detalhado

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EMBALAGEM
Embalagens básicas
Tipos de embalagem
Atividade do embalado e limites de Padrões de desempenho
Caracterização e ensaios
Revisão do tipo de embalagem

ADR/RD 1.21, 2.2, 2.4, 4.1.8, 6.4
HMR 173, 403–421, 573, 581, 607
IMDG 1.2.1, 2.2.2.4, 4.1.8, 6.4
IATA App A, 10.2.11, 10.5.1, 10.5.13, 10.8
DIBCE 01.2.1.7, 7.3.2.3, Tabela 18

Uranium hexafluoride

Existem seis diferentes classificações de material radioativo
Exceção, Industrial, Tipos A, B, C e Hexafluoreto de urânio
Material fissil é permitido em qualquer tipo de embalagem

Embalagens para material fissil são sempre projetadas para as normas mais exigentes
Embalagem de material fissil deve ser capaz de garantir que a criticidade está efetivamente controlada
Isto requer procedimentos de testes extras a serem implementados e consequentemente requerem uma certificação extra
A Autoridade Competente deve aprovar e certificar o projeto de toda a embalagem com material fissil

3.1 Providing information in context

When it is appropriate, the programme provides information in the context of the transport regulations and thereby provides the user with the opportunity to make direct reference to the associated transport regulations for each of the areas displayed in the Chapters and Sections. This will enable the user to refer directly to the regulatory text for further study and improved understanding.

3.2 Access

The training programme will be accessed on-line and a record of the user and dates of access will be registered to provide training records for the operator.

4. Preparation of the Transport Document

Information and guidance will be available for the preparation of the transport document with the user specifying the UN number of the package to be transported, the data entries of the transport document being identified. This will not only provide training for the operator but also a consistency in the preparation of the transport document that will be compliant with the transport regulations.

5. Labelling of packages and placarding of road vehicles

Information and guidance will also be available for the labelling of packages and the placarding of road vehicles with the user specifying the UN number of the package to be transported and the program showing what package labels are required together with a reference to the transport regulations where the requirement(s) are specified.

6. Emergency arrangements

The elements of a transport emergency plan will be identified to provide the user with a template that will meet the transport regulations for road transport. It is important to stress that the emergency arrangements must be tested periodically both as a training exercise for operators involved and also that the communications remain effective throughout the journey.

7. Updates

The interactive programme will be updated to reflect all changes to the transport regulations as they are implemented. By providing the operator with records of the registered users and the date of their training the operator can provide the necessary evidence of training and refresher training for its staff. The use of the transport documentation guide, package labelling guide and emergency arrangements template will also ensure regulatory compliance in these three areas.

8. Availability

Further details are available from ATOMO Radioproteção e Segurança Nuclear and announcements will be via the ATOMO website and elsewhere.

www.atomo.com.br

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