Technical Guide

Compliance Inspections by the European Competent Authorities on the Transport of Radioactive Material

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European Association of Competent Authorities

Together for a safe and sustainable transport of radioactive material

FOREWORD

This Technical Guide has been developed by the competent authorities and their support organisations responsible for the transport of radioactive material. The correspondence working group included representatives from Belgium, United Kingdom, Ireland, Spain, Finland, France, Germany, Sweden and Switzerland.

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It is intended that this Technical Guide will be used within European States and that it will assist all European competent authorities responsible for the transport of radioactive material. It is intended that the Guide will assist them in formulating the scope of their various compliance inspections and enable the competent authority to meet its obligations for regulatory oversight.

COMMENTS ON THIS DOCUMENT

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1. INTRODUCTION AND GENERALITIES

1.1 Introduction

The competent authorities are responsible for assuring compliance with the applicable national regulations and international dangerous goods regulations and Agreements relating to the safe transport of radioactive material.

The term 'compliance assurance' has a broad meaning which includes all of the measures applied by a competent authority that are intended to ensure that the provisions of the Transport Regulations are complied with in practice.
A compliance assurance programme can only be implemented if its scope and objectives are conveyed to all parties involved in the transport of radioactive material (i.e. designers, manufacturers, consignors and carriers).

There is likely to be differences between States in how the authority, responsibilities and operating functions of a competent authority are structured. It is therefore important that each competent authority uses this document template and in this section describes how the various duties and responsibilities are operated to ensure there are no overlaps or gaps.
There are two distinct sectors that need to be considered and documented, namely:

- Nuclear sector,
- Non-nuclear sector (research, industrial and medical),

The importance of competent authorities carrying out similar programmes of compliance inspections on duty holders should not be underestimated. The resources available in many competent authorities results in a graded approach risk based model being used. For international transports it is therefore very important to know to what extent regulatory oversight and interventions are taking place, particularly when the shipment 'transits' en route to elsewhere. To have an appropriate understanding of the compliance and safety performance of the duty holders involved it is essential that competent authorities en-route develop a harmonised approach to verify compliance.

1.2 Objectives and Scope

The principal objectives of a systematic programme of compliance assurance are:

- To provide independent verification of regulatory compliance by the duty holders of the Transport Regulations;
- To provide feedback to the regulatory process as a basis for improvements to the Transport Regulations and the compliance assurance programme.

An effective compliance assurance programme should, as a minimum, include measures related to:

- Review and assessment, including the issuance of approval certificates;
- Inspection and enforcement.

The competent authority should perform audits and inspections as part of its compliance assurance programme in order to confirm that the users are meeting all applicable requirements of the Transport Regulations and are applying their management system. Inspections are also necessary to identify instances of non-compliance which may necessitate either corrective action by the user or enforcement action by the competent authority.

It is recognised that different States have different regulatory structure regarding compliance assurance of the transport of nuclear and non-nuclear radioactive material. Other State specific regulations that are more stringent than European Union Regulations may apply to the inspections of the transport of radioactive material. It is also recognized that the competent authority in some States may also be the competent authority on the Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation and their implementation into the national regulations. Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom, enters

into force on 6 February 2014 and Member States should bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 6 February 2018. Consequently, inspections of transport may be a part of a more general inspection of a radiation practice. The scope of this guide is therefore limited to the requirements set in the common Transport Regulations, namely:

- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR);
- Regulations concerning the international carriage of dangerous goods by rail (RID), appearing as Appendix C to the Convention concerning International Carriage by Rail (COTIF);
- International Maritime Dangerous Goods (IMDG) Code;
- European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN);
- Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO);
- INF Code.

There are other Regulations, European Directives, Agreements that apply to transport but are not relevant to the scope of this guide. Details can be found on the EACA website.

This document is intended:

- To assist the competent authorities for the establishment and execution of their compliance assurance programmes;
- To provide a harmonised approach for competent authorities to perform their compliance assurance programmes.

This document does not replace the regulations or limit their application.
If there are any discrepancies between this document and the regulations, the requirements in the national and international regulations apply.

1.3 Definitions

The definitions stated in the Transport Regulations apply throughout this document.

1.4 Important need to share and collate information

To enable a judgement to be made as to whether an organisation is compliant with the appropriate regulatory requirements and is competent to carry out their duties and responsibilities the following information needs to be collated and considered:

- Involvement in previous incidents or accidents on file;
- Knowledge specific to industry sector;
- Findings from previous compliance audits/inspections;
- Information from other Government Departments from their audits/inspections.

The scope of the compliance inspections given in this document is not extensive in nature, apart from the incident investigation, which should be extensive in nature to establish the cause and risk of reoccurrence. The scope of the inspections will identify key salient and important points for inspection but not all aspects will be covered. The quality of the information obtained will be dependent upon the experience and skill of the competent authority inspector.
In many States the responsibilities for inspection is shared amongst more than one Government department and it is therefore important that a system of sharing information and intelligence is established with all parties involved having a common understanding of who does what and when.

1.5 Duty holders in transport modal regulations

Each of the modal regulations on transport of dangerous goods identifies duty holders and provides details of their duties and responsibilities. As an example the duty-holders identified in ADR are:

- Consignor,
- Filler,
- Loader,
- Packer,
- Carrier,
- Consignee,
- Unloader.

For Class 7 goods there are other important functions that require special attention since the safety of the radioactive material during transport is primarily provided by the packaging. Consequently the package designer, packaging manufacturer, packaging test facilities and packaging maintenance/repair facilities all have crucial roles that can affect the condition of the package and its compliance with the transport regulations. Consequently this document identifies inspection schedules for each of these functions.

2. RESPONSIBILITIES OF THE COMPETENT AUTHORITIES

2.1 National

The competent authority is responsible for assuring compliance with the transport regulations. To implement these responsibilities in an inspection programme or a management system it is necessary to consider some general aspects which are explained in the following chapters.

Usually more than one national authority is responsible for the control of the transport of radioactive material (e.g. the competent authority for the radiation protection, the competent authority for the transport and the competent authority for emergency response). In this case there should be legal or formal agreements between these authorities covering the responsibilities of each competent authority. This is a very important aspect especially, if there are any areas of overlap or, more importantly, gaps concerning the responsibilities. The concerned authorities should cooperate closely. There should be for example periodic meetings to exchange information (e.g. results of inspections, occurrences and non-compliances, consistent application of inspection and enforcement measures) and to discuss issues regarding the transport of radioactive material (e.g. planning and carrying out coordinated controls). A list of all national competent authorities that are responsible for the control of the transport of radioactive material should be published and regularly checked to verify that it is correct.

2.2 International transport routes

This is an important area where the sharing of information and intelligence between States is necessary to provide the necessary assurances that compliance with transport regulations, and hence levels of safety, are being achieved by duty holders.

Border controls will detect issues surrounding transport documentation, driver training (transport by road), placarding and package marking and labelling. However issues relating to packaging manufacture, the appropriateness of permitted self-certification of package designs (e.g. Type A), packaging maintenance, package configuration management, repairs and correct filling will not be detected, although incorrect filling may be detected by dose rate measurement for some package contents.

The purpose of this document is to provide a common basis for each competent authority to carry out compliance inspections on each of the activities and duty holders involved in the transport process.

The European Association of Competent Authorities (EACA) provides a forum and network to exchange information obtained from the compliance inspections described in this document. If this guidance is adopted by EACA members, it will enable each State to understand what compliance checks are being carried out by States en-route thereby enabling a duplication of work to be avoided or for additional inspections to be carried out to cover any gaps in knowledge about the duty holder or the package being transported.

This approach to shipments by several competent authorities having a common interest based upon transport routes will be discussed further following the issue of the document to the EACA members.

2.3 Qualifications of the employees

Only appropriate qualified persons should be engaged in the control of transport of radioactive material. Therefore recommendations for a national education and training programme should be developed. Relating to this programme each concerned authority should establish and maintain a programme for the education and training of its own personnel. The jobs and the associated duties and responsibilities of the personnel should be specified so that the necessary education and training can be determined and provided. The education and training programme for an individual may also vary slightly or considerably, depending on its relevant experience. Each concerned authority should maintain adequate records of its education and training plans, the performance of individuals and the

authorisation issued. Common inspections of the involved authorities could be a part of the education and training programme. International workshops and conferences are also important aspects of the education and training of the personnel.

2.4 Documentation and analyses of the inspection results

Each inspection should be recorded. The record should include a summary of the results and findings as well as the initiated measures, and should be brought to the attention of the inspected organisation. The result of all relevant inspections as well as their findings should be annually analysed by the competent authority. The analysis should be published in a report (additionally to the report in accordance with Council Directives 2004/112/EC and 2008/54/EC). Such analysis will help the competent authority in detecting unsatisfactory performances or trends and inform the inspection programmes for the following year. The analysis will also provide knowledge of what guidance material is required to inform the industry sectors and change their behaviours and improve compliance.
In case the inspector carries out measurements of radiation and/or contamination levels the radiation monitors used are identified in the inspection report, including their calibration data.
In case the inspector uses checklist from this technical guide, all the points made in these checklist need not to be adressed. Selection of the appropriate check point will depend on the specific circumstances of audit and/or inspection.

2.5 Measures and Penalties

The findings and violations of the transport regulations should be categorized according to the Council Directives 2004/112/EC and 2008/54/EC. Depending on the safety significance of the violation or non-compliance a range of enforcement actions should be applied. Graded measures can be for example written notices, suspensions, prosecutions (monetary fine and/or criminal penalty) or revocation of approvals or certifications. In each case the controlled organisation should get a record of the results of the control. In the case of findings or violations with safety significance the transport must comply with the transport regulations before departure or continuation of the transport as well as the transport is allowed to enter the Community.

It is recommended that States and competent authorities share information on relevant enforcement actions relating to international transports.

3. PREPARATION FOR AUDIT / INSPECTION

3.1 Annual inspection plan

Inspections should be planned by the competent authority on an annual basis and the duty holders involved notified accordingly (announced inspections). This plan may include unannounced inspections that will remain confidential to the competent authority (see section 3.2). The intention of the announced inspections should not be to try and catch duty holders out, it is more important to find out what is happening and to develop a strategy that informs and promotes a compliant and safe industry. It is therefore preferable to have a programme of inspections for industry sectors with the selection of organisations being based upon a risk based model and not one which reacts to incidents or accidents. Helpful to set up such an inspection program may be means as Safety Performance Indicators (SPI): SPIs provide a means of measuring performance (by compliance rates) and detecting early if these rates are reducing thereby giving time for contingency plans to be put in place (e.g. targeted guidance or information). SPIs are useful for enabling inspector resources to be used more effectively. An annual inspection plan may preferably consist of announced inspections but can also contain unannounced ones.

An advantage of announced inspections is that the appropriate personnel will be available for the inspection and this will increase the effectiveness of the inspection as information and documentation is more likely to be made available to the inspector.

3.2 Unannounced inspections

Unannounced or shorter notified inspections [notified closer to the planned inspection date] should be used when acting upon information/knowledge/experience or if the organisation has a history of non-compliance or incidents.

Details of these unannounced inspections should remain confidential enabling the competent authority to perform them as intended and increase their effectiveness.

Unannounced inspections could also be used to monitor the corrective actions taken with respect to findings already identified in a previous inspection.

Unannounced inspections could also be advantageous, as they would help prevent the impression within the general public that the organisation could remedy or hide deficiencies before the known date of inspection.

3.3 Time taken for inspection

Time is an important factor, especially for smaller organisations that have limited resources. The inspection should therefore be planned in a way considering the needs of those organisations, nonetheless sufficient time should be allowed for the review of transport documents, training records, marking and labelling, emergency arrangements, etc. An outline of the inspected areas should be provided in case of an announced inspection including an estimation of the time required.

3.4 Inspection agenda

To ensure an announced inspection is carried out effectively an inspection agenda should be sent to the organisation in advance. The agenda will include the agreed dates and times for the inspection and its scope thereby enabling staff and documentation to be assembled for the inspection.

3.5 Preparation for inspection

For the preparation of the inspection the inspector should consider all available background and records of the organisation to be inspected, as previous inspections reports, certificates, approvals, incidents, non-compliances and enforcement actions. The inspector should take into account the applicable regulations and the transported material data. Based on the available information the inspector will prepare all the documents and checklists necessary to carry out the inspection. The inspector should assign priorities to the inspection points of the checklists for the case that there is not enough time to complete them.

3.6 Inspection process

The inspection may start with an opening dialogue including the involved parties to clarify the scope of the inspection and the needs of the inspectors and the parties. At the end of the inspection, there should be again a final dialogue to communicate first results or findings and give the concerned parties the opportunity for explanation or clarification. After the inspection, the inspectors should provide a written document containing observations and findings to the inspected parties, including a deadline for response as appropriate. The report might be sent to the inspected parties and if required to other authorities for sharing information.

4. COMPLIANCE INSPECTIONS AND AUDITS

4.1 Graded approach to define an inspection programme

In determining the extent of a compliance inspection programme, the competent authority should at least take into account:

- the quantities and types of packages being transported,
- the nature and extent of the transport operations (e.g. percentage and frequency of transports involving radioactive material),
- the incidents and accidents in the past,
- the documented results and findings of previous inspections,
- the size, complexity and activities of the industry for which it has responsibility, as well as
- its own resources (the competent authority should be provided with adequate resources and employees to ensure that all the regulatory requirements are correctly fulfilled in practice).

In all circumstances, compliance inspection programmes should include, as a minimum, the following four fundamental activities relating to

- review and assessment,
- inspection and enforcement,
- emergency response,
- dose records of workers.

Compliance assurance programmes may be relatively simple and straightforward or may be complex and wide ranging, depending on the aspects named above.

4.2 Preliminary remarks on the use of the checklist from this technical guide

The different checklists can be used to determine whether the duty holder has established and is maintaining an effective management program to ensure radiological and nuclear safety for the transport of radioactive material (RAM), and to determine whether the transport activities are in compliance with the Regulations on transport of radioactive material.

Transport activities comprises all the 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 final destination of loads of radioactive material and packages.

In case the duty holder carries out more activities, the inspector should use the applicable checklists included in the annexes of this technical guide.

In case the inspector uses checklist from this technical guide, all the points made in these checklist need not to be adressed. Selection of the appropriate check point will depend on the specific circumstances of audit and/or inspection.

4.3 Compliance audit of package or special form radioactive material design activities

The compliance audit of a package or special form radioactive material designer, including testing and representativeness of the package or special form radioactive material model, should include as a minimum the following items, if applicable:

- Company details and organisation
- List of packages (model, type, reference of PDSR, if applicable certificate of approval)
- Management System (see §4.12)
- Common information
- Management of resources
- Package or special form radioactive material design activities

- Package or special form radioactive material design demonstration of compliance with Regulations (see Technical Guide "Package Design Safety Reports for the Transport of Radioactive Material" [14]) including:
    - Package or special form radioactive material design assessment methods including physical testing and calculation methods
    - Package or special form radioactive material certification process:
        - for package or special form radioactive material designs that require competent authority approval, application until approval certificate
        - for package designs not requiring competent authority approval, documented declaration of conformity of package design
- Measurement, analysis and improvement.

Detailed checklist for compliance audit of package or special form radioactive material design activities can be found in annexe 1.

4.4 Compliance audit of manufacturing activities of CA approved packages or special form radioactive material

The compliance audit of manufacturing activities of CA approved packages or special form radioactive material should include the following items, if applicable:

- Company details and organisation
- List of CA approved packages and special form radioactive material
- Management System (see § 4.12)
- Common information
- Management of resources
- Production and manufacturing of packaging's or special form radioactive material
- Inspection before commissioning
- Operation and maintenance of packaging's (if applicable)
- Measurement, analysis and improvement.

Detailed checklist for compliance audit of manufacturing activities of CA approved packages or special form radioactive material can be found in annexe 2.

4.5 Compliance audit of manufacturing activities of non-CA approved packages

The compliance audit of manufacturing activities of non-CA approved packages should include the following items, if applicable:

- Company details and organisation
- List of non-CA approved packages (model, type, reference of documentation of compliance, serial numbers (if applicable)
- Management System (see § 4.12)
- Common information
- Management of resources
- Production and manufacturing of packaging's
- Inspection before commissioning
- Operation and maintenance of packaging's (if applicable)
- Measurement, analysis and improvement.

Detailed checklist for compliance audit of manufacturing activities of non-CA approved packages can be found in annexe 3.

4.6 Compliance audit of maintenance, repair and service activities of packaging's

The compliance audit of maintenance, repair and service activities of packaging's should include the following items, if applicable:

- Company details and organisation
- List of packaging's / packages (model, manufacturer, type, serial numbers)

- Instructions for use, maintenance and service operations
- Management System (see § 4.12)
- Transport Regulations
- Resource (personnel, material and equipment, supplier, subcontractor)
- Training
- Documentation, control of documents and of records
- Maintenance and service operations: controls, tests and inspections
- Radiation Protection Programme.

Detailed checklist for compliance audit of maintenance, repair and service activities of packaging's can be found in annexe 4.

4.7 Compliance audit of a consignor

The compliance audit of a consignor should include the following items, if applicable:

- Company details and organisation
- List of package (model, manufacturer, type/certificate of approval, serial numbers)
- Management system (see § 4.12)
- Company details and organisation including activities related to transport developed by the consignor
- Awareness of Transport Regulations
- Types of transport
- Evidence of conformity of the packages:
    - Radioactive Material Classification
    - Packages
    - Package maintenance / repair
    - Operating/handling processes
- Conformity of the vehicle or vessel or aircraft (see also § 4.8 and 4.9)
- Package Marking and Labelling
- Consignment documentation
- Radiation Protection Programme
- Emergency arrangements
- DGSA (Safety Adviser for the transport of Dangerous Goods by road, rail or inland waterway)
- Security arrangements
- Training.

Detailed checklist for compliance audit of a consignor can be found in annexe 5.

4.8 Compliance audit of a carrier

The compliance audit of a carrier should include the following items, if applicable:

- Company details and organisation
- Awareness of Transport Regulations
- Management System (see §4.12)
- Radiation Protection Requirements
- DGSA (Safety Adviser for the transport of Dangerous Goods by road, rail or inland waterway)
- Emergency Arrangements
- Driver / Operators Requirements
- Training
- Consignment documentation
- Package and Material Integrity
- Shipment approval certificates
- Vehicles - Placarding, Fire Extinguishers, Miscellaneous Equipment and Stowage
- Security Provisions – General
- Security Provisions – High Consequence Dangerous Goods.

Detailed checklist for compliance audit of a carrier can be found in annexe 6.

4.9 Routine inspection during transport

The routine inspection during transport should include the following items, if applicable:

- Security
- Transport Documents to be carried
- Transport index, criticality safety index, category of the package/overpack
- Carriage and handling
- Marking and labelling
- Members of the vehicle crew
- Packages - stowage
- Transport units
- Radiation limits
- Equipment
- Other.

Detailed checklists for routine inspections of transport can be found in annexes:

Annexe 7.1: Checklist for routine inspections of transport by road
Annexe 7.2: Checklist for routine inspections of transport by rail
Annexe 7.3: Checklist for routine inspections of transport by sea
Annexe 7.4: Checklist for routine inspections of transport by inland waterway
Annexe 7.5: Checklist for routine inspections of transport by air.

4.10 Compliance audit of a consignee

The compliance audit of a consignee should include the following items, if applicable:

- Company details and organisation
- Modes of transport
- Management System (see § 4.12)
- Transport Regulations
- Checks of the transport operations (unloading and receipt)
- Training
- Radiation Protection Programme
- Emergency arrangements.

Detailed checklist for compliance audit of a consignee can be found in annexe 8.

4.11 Investigation after an incident/accident

The emergency response after an accident can be divided into three phases:

1. The initial phase, where immediate emergency actions are taken,
2. The accident control phase, when a monitoring team is present on the scene and
3. The post-accident phase, the cleanup stage and also the phase when an investigation of the causes of an accident safely can start.

Details of the emergency response can be found in IAEA TS-G-1.2 "Planning and Preparing for Emergency Response to Transport Accidents Involving Radioactive Material" [9].
The investigation after an incident or accident is expected to be more detailed as it may result in legal action and therefore subject to potential legal challenge if the findings are used as evidence.

The investigation after an incident/accident should include the following items, if applicable:

- Company details and organisation
- Observations:
    - Accident/incident
    - Environment
    - Injuries and damages
    - External conditions

- Investigations
    - Witness information
    - Management systems
    - Rules and regulations
    - Condition and function of technical systems
    - Documentation of the operations
    - Human factors
    - Previous accidents
    - The scene of the accident
- Costs
    - Injuries
    - Damages
- Analysis and conclusions
    - Mapping the sequence of events
    - Analysis and discussion
    - Conclusions
    - Other observations
- Actions taken
- Proposal for action
- Notification and accident report

Detailed checklist for investigation after an incident/accident can be found in annexe 9.

4.12 Compliance audit of a management system

The compliance audit of a management system should include the following items, if applicable:

- Company details and organisation
- Company activities
- Modes of transport
- Management system
- Documentation and control of documents and records
- Management responsibility
- Satisfaction of interested parties
- Resource management
- Training
- Process Implementation
- Measurement, assessment and improvement
- Check of the supplier services
- Internal audits
- Non-compliance, corrective and preventive actions, events.

Detailed checklist for compliance audit of a management system can be found in annexe 10.

5. REFERENCES

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[14] European Association of Competent Authorities for the Safe Transport of Radioactive Material, Technical Guide - Package Design Safety Reports for the Transport of Radioactive Material, Issue 2, September 2012

6. ANNEXES

Annexe 1: Checklist for compliance audit of package or special form radioactive material design activities

Annexe 2: Checklist for compliance audit of a manufacturer of CA approved packages or special form radioactive material

Annexe 3: Checklist for compliance audit of a manufacturer of non-CA approved packages

Annexe 4: Checklist for compliance audit of maintenance, repair and service activities of packaging's

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Annexe 7.1: Checklist for routine inspections of transport by road

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Annexe 10: Checklist for compliance audit of a management system

ANNEXE 1: CHECKLIST FOR COMPLIANCE AUDIT OF A PACKAGE OR SPECIAL FORM RADIOACTIVE MATERIAL DESIGN ACTIVITIES

Audit details:

Auditor name(s):
File reference:
Date/time:
Location:

Company details and organisation:

Company name:
Address:
Telephone:
Fax:
E-mail:
Web:

Name of the different people met:

Name	Title	Telephone	E-mail

List of packages or special form radioactive material:

Model	Type	Reference of PDSR	Certificate of approval (if applicable)

Subject/Inspection aspect	Provision	Compliance			Comments
		OK	NOK	NA	
Management System(see Annex 10)					
Common information					
Does the company have experience in design of packages or special form radioactive material for transport of radioactive material?		☐	☐	☐	
Is this the first compliance audit?		☐	☐	☐	
When was the last compliance audit performed?		☐	☐	☐	
How is the company organised? Are there changes since the last audit?		☐	☐	☐	
Were there deviations or requirements at the last audit?		☐	☐	☐	
Are the requirements from last audit fulfilled?		☐	☐	☐	
If applicable, does the designer have a valid certificate from the competent authority? Valid until?		☐	☐	☐	
Does the designer have branches or other facilities?		☐	☐	☐	
What parts of the package or special form radioactive material design, development and calculation are subcontracted?		☐	☐	☐	
Management of Resources					
Are human resources in package or special form radioactive material design and quality assurance periodically evaluated for the work to be done by the company?		☐	☐	☐	
Is the staff sufficiently trained (qualification and competence preservation, knowledge of rules and standards, guidelines and state of the art)? (Ask for documentation of staff qualification)		☐	☐	☐	
Does the company provide an adequate training programme for the personnel?		☐	☐	☐	
Does the company maintain records of the training and qualifications of the personnel?		☐	☐	☐	
Were staff members training valid during the package or special form radioactive material design?		☐	☐	☐	
Does the facility organisation allow a quality assured development and design of packages or special form radioactive material?		☐	☐	☐	
Are software, calculation and simulation code qualified?		☐	☐	☐	
Are subcontractors audited? Is the documentation available?		☐	☐	☐	
Are the personnel of the quality department directly lead by the executive board? (See also check list of Management System)		☐	☐	☐	
Package or Special Form Radioactive Material Design Activities					
Are the responsibilities for different design steps clearly stated? (How are the responsibilities during design organized?)		☐	☐	☐	

Are design requirements in accordance with applicable performance codes, standards and specifications and up to date?		☐	☐	☐	
Are design requirements in compliance with regulations?		☐	☐	☐	
Is there a valid and internally approved design steps plan?		☐	☐	☐	
Are the realised design steps documented?		☐	☐	☐	
Are maintenance, repair, in-service inspection, testing, storage and cleaning considered in the design documents?		☐	☐	☐	
Can the package be produced according to the manufacture specifications (final design specifications, documents and drawings)?		☐	☐	☐	
Package or Special Form Radioactive Material Design Demonstration of Compliance with Regulations					
Can the Package or Special Form Radioactive Material Design Safety Report (PDSR) demonstrate the compliance of the design with the regulatory requirements?		☐	☐	☐	
Is the PDSR a controlled document?		☐	☐	☐	
Are package or special form radioactive material design assessment methods including physical testing and calculation methods documented?		☐	☐	☐	
Is there a package certification process: - For package or special form radioactive material design that requires competent authority approval, application until approval certificate - For package design not requiring competent authority approval, a documented declaration of conformity of package design		☐ ☐	☐ ☐	☐ ☐	
Measurement, Analysis and Improvement					
Are changes in regulations and standards tracked? Are existing documents (design and others) updated accordingly?		☐	☐	☐	
Are changes in the design tracked? Are existing documents updated accordingly?		☐	☐	☐	
Are deviation reports systematically evaluated and appropriate corrective and preventive measures implemented?		☐	☐	☐	

Annexe 2: Checklist for compliance audit of manufacturing activities of CA approved packages

Audit details:

Auditor name(s):
File reference:
Date/time:
Location:

Company details and organisation:

Company name:
Address:
Telephone:
Fax:
E-mail:
Web:

Name of the different people met:

Name	Title	Telephone	E-mail

List of packages:

Model	Type	Certificate of approval	Serial numbers

Subject/Inspection aspect	Provision	Compliance			Comments
		OK	NOK	NA	
Management System(see Annex 10)					
Common information					
Does the manufacturer have experience in manufacturing of packages for transport of radioactive material?		☐	☐	☐	
Is this the first compliance audit?		☐	☐	☐	
When was the last compliance audit performed?		☐	☐	☐	
How is the company organised? Are there changes since the last audit?		☐	☐	☐	
Were there deviations or requirements at the last audit?		☐	☐	☐	
Are the requirements from last audit fulfilled?		☐	☐	☐	
If applicable, does the manufacturer have a valid certificate from the competent authority? Valid until?		☐	☐	☐	
Does the manufacturer have branches or other production facilities?		☐	☐	☐	
What parts of the production and control process are subcontracted?					
Do staff members of the manufacturer visit subcontractors during their production process?		☐	☐	☐	
Management of Resources					
Are human resources in development, manufacturing and quality assurance periodically evaluated for the work to be done by the company?		☐	☐	☐	
Is the staff sufficiently trained (qualification and competence preservation, knowledge of rules and standards, guidelines and state of the art)? (Ask for documentation of staff qualification)		☐	☐	☐	
Does the company provide an adequate training programme for the personnel?		☐	☐	☐	
Does the company maintain records of the training and qualifications of the personnel?		☐	☐	☐	
Were staff members training valid during the packaging production?		☐	☐	☐	
Does the facility organisation allow a quality assured production of CA approved packages?		☐	☐	☐	
Are tools and machines properly controlled, maintained and calibrated?		☐	☐	☐	
Are subcontractors audited? Is the documentation available?		☐	☐	☐	
Are the personnel of the quality department directly lead by the executive board? (See also check list of Management System)		☐	☐	☐	

Production and Manufacturing of Packaging's					
Are the responsibilities for different production steps clearly stated? (How are the responsibilities during production organized?)		☐	☐	☐	
Are specifications (drawings, material etc.) up to date?		☐	☐	☐	
Is there a valid and internally approved fabrication and test sequence plan?		☐	☐	☐	
Are the realised test steps documented in the fabrication and test sequence plan?		☐	☐	☐	
Are the components of the packaging classified accordingly?		☐	☐	☐	
Is the production of classified components documented accordingly? (How is the production of classified components witnessed and documented?)		☐	☐	☐	
Is the qualification of subcontractors monitored during procurement? Are there supporting documents?		☐	☐	☐	
Are the fabrication and test plan organised with hold points, quality checks, and are they sufficiently documented?		☐	☐	☐	
Are there compliance checks regarding specifications of the materials needed for production? (Ask for a list of material suppliers)		☐	☐	☐	
Are there certificates for materials according to classified packaging components?		☐	☐	☐	
Are the used materials traceable?		☐	☐	☐	
Is the monitoring of measuring and monitoring devices controlled?		☐	☐	☐	
Is the measuring and test equipment calibrated?		☐	☐	☐	
Are measures established in order to handle deviations and/or changes?		☐	☐	☐	
Are these measures considered?		☐	☐	☐	
How is the competent authority informed and involved with deviations and changes having impact on safety?		☐	☐	☐	
Inspection before Commissioning					
Do all manufactured packaging's undergo the required acceptance inspections?		☐	☐	☐	
Is the package labelled permanently?		☐	☐	☐	
Is the date of the next periodic inspection clearly visible?		☐	☐	☐	
Are the results of inspections documented?		☐	☐	☐	
Is there a control of completeness of documentation?		☐	☐	☐	
Operation and Maintenance of Packagings (if applicable)					
How are the documents for operation of packages (instructions for use and maintenance) forwarded to the operator?		☐	☐	☐	
Is ensured that the operator obtains instructions for use and maintenance of the packaging?		☐	☐	☐	

Measurement, Analysis and Improvement					
Are there procedures for ensuring feedback on operational experience of delivered packaging's?		☐	☐	☐	
Are changes in regulations and standards tracked? Are existing documents updated accordingly?		☐	☐	☐	
Are changes in the design tracked? Are existing documents updated accordingly?		☐	☐	☐	
Are deviation reports systematically evaluated and appropriate corrective and preventive measures implemented?		☐	☐	☐	

Annexe 3: Checklist for compliance audit of manufacturing activities of non-CA approved packages

Audit details:

Auditor name(s):
File reference:
Date/time:
Location:

Company details and organisation:

Company name:
Address:
Telephone:
Fax:
E-mail:
Web:

Name of the different people met:

Name	Title	Telephone	E-mail

List of packages:

Model	Type	Reference of documentation of compliance	Serial numbers (if applicable)

Subject/Inspection aspect	Provision	Compliance			Comments
		OK	NOK	NA	
Management System (see Annex 10)					
Common information					
Does the manufacturer have experience in manufacturing of packages for transport of radioactive material?		☐	☐	☐	
Is this the first compliance audit?		☐	☐	☐	
When was the last compliance audit performed?		☐	☐	☐	
How is the company organised? Are there changes since the last audit?		☐	☐	☐	
Were there deviations or requirements at the last audit?		☐	☐	☐	
Are the requirements from last audit fulfilled?		☐	☐	☐	
Does the manufacturer have a valid certificate from the competent authority? Valid until?		☐	☐	☐	
Does the manufacturer have branches or other production facilities?		☐	☐	☐	
What parts of the production and control process are subcontracted?					
Do staff members of the manufacturer visit subcontractors during their production process?		☐	☐	☐	
Which packaging or special form radioactive material designs are already certified?		☐	☐	☐	
Management of Resources					
Are human resources in development, manufacturing, maintenance, handling and quality assurance sufficient?		☐	☐	☐	
Is the staff sufficiently trained (qualification and competence preservation, knowledge of rules and standards, guidelines and state of the art)? (Ask for documentation of staff qualification)		☐	☐	☐	
Does the company provide an adequate training programme for the personnel?		☐	☐	☐	
Does the company maintain records of the training and qualifications of the personnel?		☐	☐	☐	
Were staff members training valid during the packaging production?		☐	☐	☐	
Are tools and machines properly controlled, maintained and calibrated?		☐	☐	☐	
Are subcontractors audited? Is the documentation available?		☐	☐	☐	
Are the personnel of the quality department directly lead by the executive board? (See also check list of Management System)		☐	☐	☐	
Production and Manufacturing of Packaging's					
Are the responsibilities for different production steps clearly stated? (How are the responsibilities during production organized?)		☐	☐	☐	

Are specifications (drawings, material etc.) valid?		☐	☐	☐	
Is there a valid and internally approved fabrication and test sequence plan?		☐	☐	☐	
Are the realized test steps documented in the fabrication and test sequence plan?		☐	☐	☐	
Are the components of the packaging classified accordingly?		☐	☐	☐	
Is the production of classified components documented accordingly? (How is the production of classified components witnessed and documented?)		☐	☐	☐	
Is the qualification of subcontractors monitored during procurement? Are there supporting documents?		☐	☐	☐	
Is the organisation of accompanying checks during manufacturing sufficient?		☐	☐	☐	
Are there compliance checks regarding specifications of the materials needed for production? (Ask for a list of material suppliers)		☐	☐	☐	
Are there certificates for materials according to classified packaging components?		☐	☐	☐	
Are the used materials traceable?		☐	☐	☐	
Is the monitoring of measuring and monitoring devices controlled?		☐	☐	☐	
Are measures established in order to handle deviations and/or changes?		☐	☐	☐	
Are these measures considered?		☐	☐	☐	
Inspection before Commissioning					
Do all manufactured packaging's undergo the required acceptance inspections?		☐	☐	☐	
Is the package labelled permanently?		☐	☐	☐	
Is the date of the next periodic inspection clearly visible?		☐	☐	☐	
Are the results of inspections documented?		☐	☐	☐	
Is there a control of completeness of documentation?		☐	☐	☐	
Operation and Maintenance of Packaging's (if applicable)					
How are the documents for operation of packages (instructions for use and maintenance) forwarded to the operator?		☐	☐	☐	
Is it ensured that the operator obtains instructions for use and maintenance of the packaging?		☐	☐	☐	
Measurement, Analysis and Improvement					
Are there procedures for ensuring feedback on operational experience of delivered packaging's?		☐	☐	☐	
Are changes in regulations and standards tracked? Are existing documents updated accordingly?		☐	☐	☐	
Are deviation reports systematically evaluated and appropriate corrective and preventive measures implemented?		☐	☐	☐	

Annexe 4: Checklist for compliance audit of maintenance, repair and service activities of packaging's

Audit details:

Auditor name(s):
File reference:
Date/time:
Location:

Company details and organisation:

Company name:
Address:
Telephone:
Fax:
E-mail:
Web:

Name of the different people met:

Name	Title	Telephone	E-mail

List of packages:

Model	Manufacturer	Type	Serial numbers

Subject/Inspection aspect	Provision	Compliance			Comments
		OK	NOK	NA	
Instructions for use, maintenance and service operations					
Are there instructions, procedures, plans or drawings for use, maintenance and service operations for each type of package?		☐	☐	☐	
Is the specified maintenance expiry date exceeded?					
Are records kept of maintenance and service operations?		☐	☐	☐	
Are these records or logbooks correctly completed, verified or certified by authorized personnel?		☐	☐	☐	
Management System (see annex 10)					
Regulations					
Are the organisation and personnel involved in the transport of RAM aware of the regulatory requirements?		☐	☐	☐	
Resource					
Are the defined roles and responsibilities adequately resourced?		☐	☐	☐	
Do the tools and equipment (in good conditions and calibrated) comply with the regulations?		☐	☐	☐	
Training					
Does the company provide an adequate training programme for the personnel?		☐	☐	☐	
Does the company maintain records of the training and qualifications of the personnel?		☐	☐	☐	
Documentation, control of documents and records					
Is all requisite documentation completed and recorded by designated personnel?		☐	☐	☐	
Are the necessary documents kept as records?		☐	☐	☐	
Maintenance and service operations: controls, tests and inspections					
Does the company/facility have necessary permits/licenses for use, maintenance or service operations of packages/packaging's?		☐	☐	☐	
Have the use, maintenance and service operations been carried out in accordance with the packages/packaging's specifications?		☐	☐	☐	
Is evidence available to show that specified controls, tests and inspections have been performed?		☐	☐	☐	
Radiation Protection Programme					
Is there an adequate Radiation Protection Programme (doses evaluation, optimization, radiological surveillance, radiation protection procedures)?		☐	☐	☐	
Is the Radiation Protection Programme periodically reviewed?		☐	☐	☐	

Annexe 5: Checklist for compliance audit of a consignor

Note:

The provisions have been taken from the ADR, edition 2013. For another mode of transport, the inspector should use the applicable modal and/or national regulation.

Audit details:

Auditor name(s):
File reference:
Date/time:
Location:

Company details :

Company name:
Address:
Telephone:
Fax:
E-mail:
Web:

Name of the different people met:

Name	Title	Telephone	E-mail

List of packages:

Model	Manufacturer	Type/Certificate of approval	Serial numbers

Subject/Inspection aspect	Provision ADR 2013	Compliance			Comments
		OK	NOK	NA	
Management System (see Annex 10)					
Company details and organisation →related to Annexe 10 Management system					
	1.7.3				
Are the roles and responsibilities relating to transport clearly defined? (identify the different parts of the organisation in charge of transport activities)	1.7.3	☐	☐	☐	
Are the defined roles and responsibilities adequately resourced?	1.7.3	☐	☐	☐	
Identify which activities related with transport are developed by the consignor:					
Reception of radioactive material		☐		☐	→If yes, See also Annex 8
Package or SFRM design		☐		☐	→If yes, See also Annex 1
Package manufacturing		☐		☐	→If yes, See also Annex 2
Radioactive Material classification		☐		☐	
Packaging selection		☐		☐	
Handling/Loading/Unloading		☐		☐	
Transport		☐		☐	→See also Annexes 6 and 7
Maintenance/repairing of packaging		☐		☐	
Does the consignor subcontract activities associated with the transport of RAM? (Identify what activities are subcontracted)	1.4.2.1.2	☐	☐	☐	
Does the consignor well define the interfaces with subcontractors and the respective responsibilities? (identify how)	1.4.2.1.2	☐	☐	☐	
Does the consignor perform a previous evaluation of subcontractors as service suppliers? (Identify the applicable Procedure)	1.7.3	☐	☐	☐	
Has the consignor got a procedure to cover the relationship with suppliers? (the relationship could be written in specific accordance document, not necessary procedures)	1.7.3	☐	☐	☐	
Has the consignor got a list of approved suppliers? (Ask for and check some suppliers' documentation. Verify the evaluation is in accordance with the procedure)	1.7.3	☐	☐	☐	
Does the consignor undertake periodical inspections of the subcontractor's activities? (Check procedures and records on these inspections)	1.7.3	☐	☐	☐	
Do the suppliers comply with other requirements like specific licensees? (i.e. carrier's registration or authorisation, laboratory's authorisations,etc …)		☐	☐	☐	
Are there written instructions or procedures to cover transport activities? (identify them)	1.7.3	☐	☐	☐	
Is the content of those procedures in compliance with the Regulations as well as with the certificate of approval and the Safety Analysis Report of the package? (Whenever possible, check the fulfilment of the procedures requirements)	1.7.3	☐	☐	☐	→depends on the transport mode, see also Annexes 7.1 to 7.5

Awareness of Transport Regulations					
Is the company aware of the latest ADR and of the other modal, international and national regulations?		☐	☐	☐	
Does the company hold a copy / copies? (*List those held*)		☐	☐	☐	
How are copies controlled and updated? (*Document system?*)	1.7.3	☐	☐	☐	
Types of Transport					
Modes of transport generally used by the consignor: (Identify the more usual consignments, consignees and transport routes)					
• By road		☐		☐	
• By rail		☐		☐	
• By air		☐		☐	
• By sea		☐		☐	
• By inland waterways		☐		☐	
Types of packages used by the consignor					
• Excepted packages		☐		☐	
• Industrial packages		☐		☐	
• Type A		☐		☐	
• Type B		☐		☐	
• Type C		☐		☐	
• Unpackaged radioactive material	4.1.9.2.3	☐		☐	
Other dangerous properties of contents					
• Toxicity (UF6)		☐		☐	
• Fissile		☐		☐	
• others		☐		☐	
Is the RAM transported under exclusive use?	4.1.9.2.3 4.1.9.2.4. and table 4.1.9.1.9 and 7.5.11.CV33 (3.4) 4.1.9.1.10 Table D paragraph 7.5.11.CV33 (3.3)a Table E paragraph 7.5.11.CV33 (3.3) d. 6.4.8.3	☐		☐	
Evidence of conformity of the packages					
Radioactive Material Classification					
Does the consignor do the classification?	1.7.1.3	☐	☐	☐	
If yes, has the consignor got procedures for this activity? (note reference(s))	1.7.3	☐	☐	☐	
If not, does the consignor conduct any control over the classification process? (Identify the procedure and the way the consignor does this control: Verification, inspection, calculus validation…)	1.7.3	☐	☐	☐	
In case of special form radioactive material, or low dispersible radioactive material, are the approval certificates available?	5.1.5.2.1 5.1.5.2.2	☐	☐	☐	
Is the radioactive material transported as "fissile excepted"? (identify the criteria used and the procedures applied by the consignor to confirm the criteria fulfillment)	1.7.1.5.1 2.2.7.2.3.1.2 2.2.7.2.3.5 6.4.11.2	☐	☐	☐	

Packages					
Has the consignor got procedures for selecting the packaging depending on the RAM to be transported? (Identify the package designs, the number of packaging's of each design used and their suppliers)	1.7.3	☐	☐	☐	
For packages subject to approval, has the consignor available the certificates in force?	5.1.5.2.1 5.1.5.2.2	☐	☐	☐	
Has the consigner implemented a procedure to be informed about changes of approvals certificates?	1.7.3	☐	☐	☐	
For packages not subject to approval, has the consignor available documentary evidence of the compliance of the package design? (Identify the documentation presented)	5.1.5.2.3	☐	☐	☐	
Is the general state of the packaging's adequate?	4.1.9.1.7 7.5.11 CV33 (5.1)	☐	☐	☐	
Are the different components of the packaging's in good state?	4.1.9.1.7	☐	☐	☐	
Are the packaging's and their components in accordance with the package design?	4.1.9.1.7	☐	☐	☐	
Is the marking of packages adequate?	5.2.1	☐	☐	☐	
Is the labelling of packages adequate?	5.2.2	☐	☐	☐	
Are the radiological measures conducted on the packages according to regulations?	4.1.9.1.4 4.1.9.1.7 5.1.5.3	☐	☐	☐	
Package maintenance/repair (See also Annex 4)					
Has the consigner available the procedures related to periodical maintenance referenced in the certificate of approval or in the compliance documentation? (Verify how the requirements included in those documents are transferred to consignor's instructions or procedures)	1.7.1.2	☐	☐	☐	
Is the implemented packaging maintenance program according to that established in the approval certificate or in the compliance documentation?	1.7.3	☐	☐	☐	
Has the consignor got specific procedures or instructions to evaluate the findings found during maintenance?	1.7.3	☐	☐	☐	
For the case of repairing, has the consignor got specific procedures or instructions to evaluate if the repairing may affect the requirements defined for the package design in the approval certificate and/or the SAR? (Identify the role of the packaging designer)	1.7.3 1.7.1.2	☐	☐	☐	
Does the consigner have records of the maintenance operations?	1.7.3	☐	☐	☐	
Operating/handling processes					
Has the consigner available the operation procedure referenced in the certificate of approval or in the compliance documentation? (Verify how the requirements included in those documents are transferred to consignor's instructions or procedures)	1.7.3 7.5.7 7.5.2 7.5.11 CV33 (1.1, 1.2 and 3)	☐	☐	☐	

Does the consigner carry out the inspection requirements before the first use of the package?	5.1.5.2.1	☐	☐	☐	
Does the consigner carry out the inspection requirements before each shipment?	5.1.5.2.2	☐	☐	☐	
Conformity of the vehicle or vessel or aircraft →See also Annexes 6, 7.1 to 7.5					
For own vehicles, has the consignor got specific procedures to cover all vehicle activities? Check:	1.7.3 8.1.4 8.1.5 8.4 8.5 (S21)	☐	☐	☐	
• Authorisations (if necessary)	8.1.2.2	☐	☐	☐	
• Periodical inspections	--	☐	☐	☐	
• Vehicle equipment	8.1.5	☐	☐	☐	
Conventional	--	☐	☐	☐	
Radiological protection	--	☐	☐	☐	
• Stowage	7.5.11 CV33 (3 and 4)	☐	☐	☐	
• Labeling and placarding	8.1.3	☐	☐	☐	
• Supplementary requirements? (identify)	8.1.4 8.1.5	☐	☐	☐	
For rented vehicles, has the consignor got specific procedures or documents to control subcontracted vehicles and/or drivers? (identify)	1.7.3	☐	☐	☐	→See also point "company details and organisation"
Package Marking and Labeling → See also Annexes 7.1 to 7.5 for specific requirements					
Do the procedures include the requirements about marking and labeling activities? (check)	1.7.3	☐	☐	☐	
Is the marking on the packages according to the regulations?	5.2.1 5.2.1.7 5.1.2.1 5.2.1.7.8	☐	☐	☐	
Is the methodology for the determination of transport index clearly defined and according to the regulations?	5.1.5.3.1 5.1.5.3.4	☐	☐	☐	
Whenever is possible, it is useful to do visual inspections					(see also annexes 7.1 to 7.5)
Consignment documentation					
Do the procedures include the documentation required and are they in compliance with the Regulations? (check shipment-records and verify they are accord the procedures)	1.7.3 5.4.1	☐	☐	☐	→depends on the transport mode, see also Annexes 7.1 to 7.5
Does the documentation include:					
UN number?	5.4.1.1.1 a)	☐	☐		
Good description?	5.4.1.1.1 b) 5.4.1.2.5.1	☐	☐		
Class number?	5.4.1.1.1 c) 5.4.1.2.5.1	☐	☐		
Tunnel restriction code?	5.4.1.1.1 k) 8.6.3	☐	☐		
Radionuclide/s?	5.4.1 5.4.1.2.5.1	☐	☐		
Physical and chemical form?	5.4.1 5.4.1.2.5.1	☐	☐		

Number and a description of the packages? (approval certificate references,… if necessary)	5.4.1.1.1 e)	☐	☐	☐	
Activity?	5.4.1 5.4.1.2.5.1	☐	☐		
Packaging Category?	5.4.1 5.4.1.2.5.1	☐	☐		
Transport Index (TI)? (if necessary)	5.4.1 5.4.1.2.5.1	☐	☐	☐	
Criticality Safety Index (CSI)? (for fissile material)	5.4.1 5.4.1.2.5.1	☐	☐	☐	
Name and address of the consignor?	5.4.1.1.1 f)	☐	☐		
Name and address of the consignee?	5.4.1.1.1 h)	☐	☐		
Transport under exclusive use? (if necessary)	5.4.1 5.4.1.2.5.1	☐	☐	☐	
Does the consignor provide supplementary transport requirements? (handling, stowage, temperature measurements, if necessary)	5.4.1.1.1 i) 5.4.1.1.14	☐	☐	☐	
Does the consignor provide restriction on the mode of carriage or vehicle and any necessary routing instructions? (if necessary)	1.9.1 to 1.9.4	☐	☐	☐	
Does the consignor provide instructions on the mixed loading prohibition?	7.5.2.1	☐	☐	☐	
Does the consignor provide emergency arrangements appropriate to the consignment?	5.4.3	☐	☐	☐	
Is the documentation language used according to the regulations?	5.4.1.4	☐	☐	☐	
Radiation Protection Program					
Had the consignor got a Radiation Protection Program (RPP)? (identify and take reference)	1.7.2 1.7.2.3	☐	☐	☐	
Is the RPP periodically maintained? (How often is the Radiation Protection Programme reviewed?) (*Review frequency is not specified in CDG*)	1.7.3	☐	☐	☐	
Is there adequate documentary evidence of the Radiation Protection Programme?	1.7.2.3	☐	☐	☐	
Is there a brief description of the operations?	1.7.2.1	☐	☐	☐	
Are the responsibilities on radiation protection of the Organisation well defined?	1.7.3	☐	☐	☐	
Is there a person assigned by the company having overall responsibility for the RPP? (identify who, which department, and his/her responsibility)	1.7.3	☐	☐	☐	
Is he/she responsible for ensuring the following? (if not, identify the responsible)					
Training	1.7.2.5	☐	☐	☐	
Implementation of work procedures	1.7.2.2	☐	☐	☐	
Assessment of workers' exposures	1.7.2.2	☐	☐	☐	
Are there working instructions and procedures in place adequate to minimize doses? (Identify the procedures implemented)	1.7.3	☐	☐	☐	
Is there a structured and systematic approach to dose monitoring?	1.7.2.2	☐	☐	☐	
Have dose assessments been carried out? (Identify the procedure applied for the assessments)	1.7.2.2	☐	☐	☐	

Are there expose workers' categories? (identify the different categories used and the personnel included in)	1.7.2.3	☐	☐	☐	
Has radiological surveillance been carried out? (if yes, describe)	1.7.2.4	☐	☐	☐	
Are the results of radiological surveillance recorded? (check records)	1.7.2.4	☐	☐	☐	
Are contamination checks performed? (describe method)	1.7.2.1 7.5.11 CV33 (5.3 and 5.4)	☐	☐	☐	
Does the Company know the applicable limits for radiation levels or contamination?	1.7.6	☐	☐	☐	
Are contamination check records kept?	1.7.3	☐	☐	☐	
Is there a protocol in case of non-compliance with the above limits for radiation levels or contamination?	1.7.6	☐	☐	☐	
Does the program consider appropriate segregation distances between packages and areas regularly occupied by members of the public and/or workers?	7.5.11 CV33 (1.1 and 1.2)	☐	☐	☐	
Are shielded areas used in the storage?	7.5.7 7.5.11 CV33 (3)	☐	☐	☐	
Is shielding used on the transports?	1.7.2.2	☐	☐	☐	
Is segregation used on the conveyances?	7.5.7 7.5.11 CV33 (3)	☐	☐	☐	
Are the packages transported from storage to the loading area applying the necessary radiation protection measures and ALARA principle?	1.7.2.2	☐	☐	☐	
Do the emergency situations contemplate in this program?	1.7.2.4	☐	☐	☐	
Does the RPP include training? (Identify training programs, contents, initial and periodic training frequencies, who performs the training)	1.7.3 1.7.2	☐	☐	☐	
Is the training documented? (identify how and check records)	1.7.2.5 1.7.3	☐	☐	☐	
Is the radiation monitoring appropriate for the measurements to be taken?	8.1.5	☐	☐	☐	
Are radiation monitoring devices periodically verified and calibrated?	1.7.3	☐	☐	☐	
Emergency arrangements → see also Annex 9					
Who is the person assigned by the company having overall responsibility for the emergency? (identify who and in which department, and his/her responsibility)	1.7.3 1.7.1	☐	☐	☐	
Which resources are provided in case of emergency? (at site or during transport, relations with service suppliers as carriers, …)	1.7.3 1.7.1	☐	☐	☐	
Has the consignor emergency response provisions available? (identify, possibly in RPP)	1.7.3 1.7.1 6.4.23.12 q)	☐	☐	☐	
Do these provisions consider potential events that may happened during transport activities? (identify, possibly in RPP)	1.7.3 1.7.2	☐	☐	☐	

Are these provisions regularly reviewed? (check how the emergency provisions are implemented and maintained, if operative experience is considered, …)	1.7.3	☐	☐	☐	
Were there any recent emergency? (Whenever possible, check the fulfilment of the emergency provisions during the emergency)		☐	☐	☐	
DGSA (Safety Adviser for the transport of Dangerous Goods by road, rail or inland waterway)					
Has a DGSA been appointed? Evidence? (identify who and if he/she works for the company)	1.8.3.1	☐	☐	☐	
Does the DGSA carry out the missions defined by the transport regulations?	1.8.3.3	☐	☐	☐	
Is the DGSA adequately considered in the procedures of the consigner applying to transport? (Confirm how the DGSA participates in the different activities with safety implications: packages selection, labeling and marking of packages, transport documentation, radiation protection, emergencies, mixed loading prohibition , personnel training, develop of procedures and instructions, regulations follow up…)	1.7.3 1.8.3.3	☐	☐	☐	
Security arrangements					
Is the RAM offered to carriers that have been appropriately identified?	1.10.1.2	☐	☐	☐	
Are areas used for storage of RAM properly secured?	1.10.1.3	☐	☐	☐	
Does the training program consider security topics?	1.10.2	☐	☐	☐	
In case of transport of "High consequence dangerous goods", has the consigner available an appropriate security plan?	1.10.3.2.1	☐	☐	☐	
Is that security plan adequately implemented?		☐	☐	☐	
In case of transport of "High consequence dangerous goods", has the consigner devices, equipment or arrangements to prevent the theft of the RAM?	1.10.3.3	☐	☐	☐	
Has the consigner taken measures to ensure that devices, equipment or arrangements are operational and effective at all times?	1.10.3.3	☐	☐	☐	
Do the protective measures applied jeopardize the emergency response?	1.10.3.3	☐	☐	☐	
Training					
Does the consignor provide an appropriate training programme for all personnel involved in the transport of RAM?	1.3	☐	☐	☐	
Does the operator maintain records of the training and competence?	1.3.3	☐	☐	☐	

Annexe 6: Checklist for compliance audit of a carrier

Audit details:

Auditor name(s):
File reference:
Date/time:
Location:

Company details and organisation:

Company name:
Address:
Telephone:
Fax:
E-mail:
Web:

Name of the different people met:

Name	Title	Telephone	E-mail

List of packages:

Model	Manufacturer	Type	Serial numbers

Subject/Inspection aspect	Provision ADR 2013	Compliance			Comments
		OK	NOK	NA	
Company details and organisation →related with Annexe 10 Management system					
Total number of employees					
Number of personnel involved with RAM transport, and their status (e.g. RPS, trainee)					
Percentage of business involving RAM transport					
Frequency of RAM transport (per month)					
Is RAM transport in-house? *(If carriers used, give names, addresses and telephone numbers)*					
Have there been any changes since previous contact with the competent authority?					
Awareness of Transport Regulations					
Is the company aware of the latest ADR and of the other modal, international and national regulations?		☐	☐	☐	
Does the company hold a copy / copies? (*List those held*)		☐	☐	☐	
How are copies controlled and updated? (*Document system?*)	1.7.3	☐	☐	☐	
Management System (see Annex 10)					
Is the QA system / QMS certified?		☐	☐	☐	
Name of the assessing body and Registration Number (*Check that the body is accredited*)		☐	☐	☐	
Does the scope of registration cover RAM Transport Operations?	1.7.3	☐	☐	☐	
What systems, procedures and documents are in place to cover RAM transport?	1.7.3	☐	☐	☐	
Is the Organisation and its Responsibility defined?	1.7.3	☐	☐	☐	
Does the Company have a QA Programme / QMS?	1.7.3	☐	☐	☐	
Radiation Protection Requirements					
Has the carrier got a Radiation Protection Programme (RPP)? (identify and take reference)	1.7.2	☐	☐	☐	
Is the RPP periodically maintained? (How often is the RPP reviewed?) (*Review frequency is not specified in CDG*)		☐	☐	☐	
Is there adequate documentary evidence of the RPP?	1.7.2.3	☐	☐	☐	
Is there a brief description of the operations?	1.7.2.1	☐	☐	☐	
Are the responsibilities on radiation protection of the organisation well defined?	1.7.3	☐	☐	☐	
Is there a person assigned by the company having overall responsibility for the RPP? (identify who, which department, and his/her responsibility)	1.7.3	☐	☐	☐	
Is he/she responsible for ensuring the following? (if not, identify the responsible)					
Training	1.7.2.5	☐	☐	☐	
Implementation of work procedures	1.7.2.2	☐	☐	☐	
Assessment of workers' exposures	1.7.2.2	☐	☐	☐	
Are there working instructions and procedures in place adequate to minimize doses? (Identify the procedures implemented)	1.7.3	☐	☐	☐	

Is there a structured and systematic approach to dose monitoring?	1.7.2.2	☐	☐	☐	
Have dose assessments been carried out? (Identify the procedure applied for the assessments)	1.7.2.2	☐	☐	☐	
Are there expose workers' categories? (identify the different categories used and the personnel included in)	1.7.2.3	☐	☐	☐	
Has radiological surveillance been carried out? (if yes, describe)	1.7.2.4	☐	☐	☐	
Are the results of radiological surveillance recorded? (check records)	1.7.2.4	☐	☐	☐	
Are contamination checks performed? (describe method)	1.7.2.1 7.5.11 CV33 (5.3 and 5.4)	☐	☐	☐	
Are contamination check records kept?	ADR 1.7.3	☐	☐	☐	
Does the Company know the applicable limits for radiation levels or contamination?	1.7.6	☐	☐	☐	
Is there a protocol in case of non-compliance with the above limits for radiation levels or contamination?	1.7.6	☐	☐	☐	
Does the RPP consider appropriate segregation distances between packages and areas regularly occupied by members of the public and/or workers?	7.5.11 CV33 (1.1 and 1.2)	☐	☐	☐	
Are shielded areas used in the storage?	7.5.7 7.5.11 CV33 (3)	☐	☐	☐	
Is shielding used on the transports?	1.7.2.2	☐	☐	☐	
Is segregation used on the conveyances?	7.5.7 7.5.11 CV33 (3)	☐	☐	☐	
Are the necessary radiation protection measures and ALARA principle applied in loading and unloading operations?	1.7.2.2	☐	☐	☐	
Do the emergency situations contemplate in this RPP?	1.7.2.4	☐	☐	☐	
Does the RPP include training? (Identify training programs, contents, initial and periodic training frequencies, who performs the training)	1.7.3 1.7.2	☐	☐	☐	
Is the training documented? (identify how and check records)	1.7.2.5 1.7.3	☐	☐	☐	
Are the radiation monitoring appropriated for the measurements to be taken?	8.1.5	☐	☐	☐	
Are radiation monitoring periodically verified and calibrated?	1.7.3	☐	☐	☐	
DGSA (Safety Adviser for the transport of Dangerous Goods by road, rail or inland waterway)					
Has a DGSA been appointed? Evidence? (*identify who and if he/she works for the company*)	1.8.3	☐	☐	☐	
Does the DGSA carry out the missions defined by the transport regulations?	1.8.3.3	☐	☐	☐	
Is the DGSA adequately considered in the procedures of the carrier applying to transport? (Confirm how the DGSA participates in the different activities with safety implications: packages selection, labeling and marking of packages, transport documentation, radiation protection, emergencies, mixed loading prohibition, personnel training, develop of procedures and instructions, regulations follow up…)	1.7.3 1.8.3.3	☐	☐	☐	

Emergency Arrangements					
Are there procedures for radiological emergencies?		☐	☐	☐	
How are the emergency response procedures tested?		☐	☐	☐	
Driver/ Operators Requirements					
Is the vehicle crew supplied with written instructions regarding emergency response procedures?	8.1.2, 5.4.3	☐	☐	☐	
Does the crew have instructions and / or procedures to cover any trans-shipment, segregation or en-route storage requirements?	7.5.11 CV33	☐	☐	☐	
Does the vehicle crew carry photo I/D?	8.1.2.1.(d) 1.10.1.4	☐	☐	☐	
Carrier: are accumulations of packages monitored for TI and radiation levels?	7.5.11 CV33 (3.3)	☐	☐	☐	
Carrier: is the mixed loading prohibition verified?	7.5.2.1	☐	☐	☐	
Training					
Does the operator provide an appropriate training programme for all personnel involved in the transport of RAM? (*Awareness, safety, refresher*)	1.3, 1.7.2.5, 8.2, 3.2.1 Table A Special Provisions	☐	☐	☐	
Does the operator maintain records of the training and competence?	1.3.3	☐	☐	☐	
Does the driver have any necessary documents to confirm his proficiency in handling radioactive material? (*training certificate / driving licence*)	1.3, 8.2, ADR 3.2.1 Table A Special Provisions	☐	☐	☐	
Consignment documentation					
Is the driver supplied with all required transport documentation?	5.4 5.4.1.2.5.2	☐	☐	☐	
Are "Special Arrangement" provisions and conditions being complied with?	1.7.4	☐	☐	☐	
Are the transport documents retained for a minimum of 3 months?		☐	☐	☐	
Package and Material Integrity					
Package and Material Type: - The company will have / use / carry one or more of the following *(Enter the number for each type, carriers should identify the number of each carried each month)*					
Excepted	IP 1, 2 or 3	Type A	Type B *(State which sub-type)*	Special Form Material	Special Arrangement	Fissile
For Type B and Type C packages, and Special Form, Low Dispersible and Fissile materials						
Does the company require the consignor to make available copies of package and / or material certificates?	4.1.9, 5.1.5.2.2, 6.4	☐	☐	☐	
Shipment Approval Certificates					
Check shipment approval certificates where required	5.1.5.1, 5.1.5.2	☐	☐	☐	
Vehicles - Placarding, Fire Extinguishers, Miscellaneous Equipment and Stowage					
Are the vehicles correctly placarded?	5.3	☐	☐	☐	
Are fire extinguishers carried?	8.1.4	☐	☐	☐	
Is other miscellaneous equipment carried?	8.1.5	☐	☐	☐	
Are the stowage facilities in or on the vehicle satisfactory?	7.5.7, 7.5.11 CV33	☐	☐	☐	
Are vehicles periodically checked for radioactive contamination?	7.5.11 CV33 (5.3)	☐	☐	☐	

Security Provisions – General					
Who has overall responsibility for security?	1.10.1.1	☐	☐	☐	
Have all staff been assessed against security criteria?	1.10.1.1	☐	☐	☐	
Have all carriers been appropriately identified and assessed?	1.10.1.2	☐	☐	☐	
Are temporary storage areas secure, well lit and not open to the public?	1.10.1.3	☐	☐	☐	
Has appropriate security awareness training and refresher training taken place?	1.10.2.	☐	☐	☐	
Security Provisions – High Consequence Radioactive Material					
Check that appropriate security plans are in place, including:					
Allocation of responsibilities	1.10.3.2.2(a)	☐	☐	☐	
Records of radioactive material held	1.10.3.2.2(b)	☐	☐	☐	
Review of transport operations	1.10.3.2.2(c)	☐	☐	☐	
Statement of measures taken to reduce risks	1.10.3.2.2(d)	☐	☐	☐	
Reporting and dealing with threats, breaches and incidents	1.10.3.2.2(e)	☐	☐	☐	
Evaluation, testing, review and update of plans	1.10.3.2.2(f)	☐	☐	☐	
Physical security of transport information	1.10.3.2.2(g)	☐	☐	☐	
Restrictions on access to transport security information	1.10.3.2.2(h)	☐	☐	☐	
Evidence of information sharing with other parties	1.10.3.2.2 (See NOTE at the end of 1.10.3.2.2)	☐	☐	☐	
Devices, equipment or arrangements to prevent theft of the vehicles and / or contents	1.10.3.3	☐	☐	☐	

Annexe 7.1: Checklist for routine inspections of transport by road

Inspection details:

Inspector name(s):
File reference:
Date/time:
Location:

Company details and organisation:

Consignor Name:
Address:
Telephone:
Fax:
E-mail:

Carrier Name:
Address:
Telephone:
Fax:
E-mail:

Consignee Name:
Address:
Telephone:
Fax:
E-mail:

Name of the different people met:

Name	Title	Telephone	E-mail

List of carried packages:

Model	Manufacturer	Type/Certificate of approval	Serial numbers

Vehicle(s) details:

Vehicle(s) Number:
Nationality:
Type of vehicle(s):
Owner:
Leased by:

Subject/Inspection aspect	Provision ADR2013	Compliance			Comments
		OK	NOK	NA	
Security					
Areas for temporary storage: Are the areas for the temporary storage - properly secured, - well illuminated and - not accessible to the general public (where possible and appropriate)?	1.10.1.3	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Means of identification: Does each member of the vehicle crew carry means of identification?	1.10.1.4	☐	☐	☐	
Are all the provisions included in the Security Plan fulfilled (for high consequences radioactive material)?	1.10.3.2	☐	☐	☐	
Documents to be carried					
Documents: Are the following documents carried on the transport unit? - transport document; - container/vehicle packing certificate; - instructions in writing; - means of identification; - driver´s training certificate.	8.1.2	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	
Transport document – information: Does the transport document contain the following information? a) UN number preceded by the letters "UN"; b) proper shipping name; c) primary hazard class (number "7"); k) tunnel restriction code (in capitals within parenthesis), not applicable where the carriage is known beforehand not to pass through a tunnel with restrictions; g) name and address of the consignor; h) name and address of the consignee(s); The following information shall be inserted in the order given and immediately after the information a) to c) and k) from above: a) name or symbol of each radionuclide or a list of the most restrictive radionuclide(s); b) description of the physical and chemical form or a notation that the material is a special form radioactive material or low dispersible radioactive material; c) maximum activity [Bq] with an appropriate SI prefix symbol (for fissile material, the mass [g] of fissile material may be used in place of activity); d) category of the package (I-WHITE, II-YELLOW, III-YELLOW); e) transport index (categories II-YELLOW and III-YELLOW only); f) criticality safety index for consignments including fissile material; g) identification mark for each competent authority approval certificate; h) detailed statement of the contents of each package within the overpack,	5.4.1	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	

container or vehicle; i) "EXCLUSIVE USE SHIPMENT" where a consignment is required to be shipped under exclusive use; j) total activity of the consignment as a multiple of A2 for LSA-II and LSA-III substances, SCO-I and SCO-II; "Carriage in accordance with 1.1.4.2.1" for the carriage in a transport chain including maritime or air carriage;		☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
Transport document – statement regarding actions: Did the consignor provide in the transport documents a statement regarding actions that are required to be taken by the carrier or a statement that no such requirements are necessary?	5.4.1.2.5.2	☐	☐	☐	
Container/vehicle packing certificate: Is a container/vehicle packing certificate provided with the transport document (if the carriage in a large container precedes a voyage by sea)?	5.4.2	☐	☐	☐	
Instructions in writing: Are the instructions in writing carried in the vehicle crew´s cab readily available and do they correspond in form and contents to the given model?	5.4.3	☐	☐	☐	
Transport index, criticality safety index, category of the package/ overpack					
Transport index (TI): Is the transport index (TI) correct?	5.1.5.3	☐	☐	☐	
Criticality safety index (CSI): Is the criticality safety index (CSI) correct: - for each overpack or container; - in a consignment or aboard a vehicle?	5.1.5.3.3	☐	☐	☐	
Category of the package and overpack: Are the packages and overpacks assigned to the correct category? I-WHITE TI ≤ 0, RI ≤ 0,005 mSv/h II-YELLOW TI ≤ 1, RI ≤ 0,5 mSv/h III-YELLOW TI ≤ 10, RI ≤ 2 mSv/h III-YELLOW(1) TI > 10, RI ≤ 10 mSv/h (1) under exclusive use Note: RI = Radiation level	5.1.5.3.4	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
Carriage and handling					
Securing of loads: Are packages containing dangerous goods, unpackaged dangerous articles and other goods secured by suitable means?	7.5.7	☐	☐	☐	
Marking and labelling					
Marking of packages: Is each package legibly and durably marked on the outside with - an identification of either the consignor or consignee, or both? - the UN-number preceded by the letters "UN" and the proper shipping name (in the case of excepted packages only the UN-number, preceded by the letters "UN" is required)? - the permissible gross mass (for each package of gross mass exceeding 50 kg)? - TYPE IP-1, TYPE IP-2, TYPE IP-3, TYPE	5.2.1.7.1	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	

A, TYPE B(U), TYPE B(M) or rather TYPE C? - the international vehicle registration code (VRI Code) for Type IP-2, IP-3 and A packages? - the identification mark and a serial number for packages which conforms to a design? - the trefoil symbol by embossing, stamping or other means resistant to the effects of fire and water for Type B(U), B(M) and C packages? - where applicable the orientation arrows (not necessary for material in Type IP-2, IP-3, A, B(U), B(M) or C packages)?		☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	
Marking-requirements: Are all package markings - readily visible, - legible and - able to withstand open water exposure without a substantial reduction in effectiveness?	5.2.1.2	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Labelling-provisions: Is each label - affixed near the mark indicating the proper shipping name, - not covered or obscured and - displayed next to each other, when more than one label is required?	5.2.2.1.6	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Labelling-provisions (number): Are the labels (7A to 7C and 7E (in addition for fissile material)) affixed to - two opposite sides (package, overpack) or - all four sides (container)?	5.2.2.1.11.1	☐ ☐	☐ ☐	☐ ☐	
Labelling-information: Is each label completed with - contents: name(s) of the radionuclide(s) using the symbol or the most restrictive radionuclide(s) for mixtures of radionuclides, followed by the LSA-/SCO-group (the name of the radionuclide(s) is not necessary for LSA-I-material); - activity: the maximum activity [Bq] with the appropriate SI prefix symbol (for fissile material the mass [g] may be used in place of activity); - transport index(TI) (not applicable for category I-WHITE) - criticality safety index (CSI) (each label conforming to the model No. 7E)	5.2.2.1.11.2	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
Labelling-requirements: Do all labels - withstand open water exposure without a substantial reduction in effectiveness and - satisfy the provisions to the models (colour, symbols and format)?	5.2.2.2.1.7 5.2.2.2.2	☐ ☐	☐ ☐	☐ ☐	

Placards: Are placards affixed - to both sides and at each end of the container, MEGC, tank-container or portable tank? - to both sides and at the rear o carrying vehicle, if the placards affixed to the container, MEGC, tank container or portable tank are not visible from outside the carrying vehicle? o vehicle for carriage in bulk, tank-vehicle, battery-vehicle and vehicle with demountable tanks? o vehicle carrying radioactive material in packaging's or IBCs?	5.3.1 5.3.1.2 5.3.1.3 5.3.1.4 5.3.1.5	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Orange-coloured plate: Are orange-coloured plates affixed - in a vertical plane, at the front and at the rear of the transport unit both perpendicular to the longitudinal axis of the transport unit? - in addition on the sides of each tank, tank compartment or element of battery vehicles parallel to the longitudinal axis of the vehicle when a hazard identification number is indicated in Column (20) of table A of Chapter 3.2? - in addition on the sides of each transport unit and container carrying unpackaged solids or articles or packaged radioactive material with a single UN number under exclusive use parallel to the longitudinal axis of the vehicle when a hazard identification number is indicated in Column (20) of table A of Chapter 3.2? - In case that the orange-coloured plates prescribed in 5.3.2.1.2 and 5.3.2.1.4 are not used because transport units are carrying only one dangerous substance, do the plates displayed at the front and rear bear the hazard identification number and the UN number for that substance?	5.3.2.1 5.3.2.1.1 5.3.2.1.2 5.3.2.1.4 5.3.2.1.5	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
Orange-coloured plate – requirements: - Are the orange-coloured plates reflectorized? - Is the material used be weather resistant and ensure durable marking? - Do the plates detach from its amount in the event of 15 minutes´ engulfment in fire?	5.3.2.2.1	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Members of the vehicle crew					
Are there persons other than the members of the vehicle crew on board (not allowed in vehicles carrying packages, overpacks or containers bearing category II-YELLOW or III-YELLOW labels)?	7.5.1 CV33 (1.3)	☐	☐	☐	

Packages - Stowage					
Are the packages correctly secured by suitable means capable of restraining the goods (such as fastening straps, sliding, slatboards, adjustable brackets) in the vehicle or container in a manner that will prevent any movement during carriage?	7.5.7.1	☐	☐	☐	
Where restraints such as bandings or straps are used, these shall not be over-tightened to cause damage or deformation of the package	7.5.7.1	☐	☐	☐	
Transport units					
Transport unit: Does the transport unit include more than one trailer (or semi-trailer)?	8.1.1	☐	☐	☐	
Opening packages: Does the driver or driver´s assistant observe the prohibition on opening packages?	8.3.3	☐	☐	☐	
Radiation limits					
Radiation level: Does the radiation level not exceed the following limits?					
- excepted packages					
o external surface ≤ 5 µSv/h	2.2.7.2.4.1.2	☐	☐	☐	
o 10 cm from the external surface of any unpackaged instrument or article ≤ 0,1 mSv/h	2.2.7.2.4.1.3	☐	☐	☐	
- low dispersible radioactive material					
o 3 m from the unshielded radioactive material ≤ 10 mSv/h	2.2.7.2.3.4.1a)	☐	☐	☐	
- packages and overpacks					
o external surface ≤ 2 mSv/h	4.1.9.1.10	☐	☐	☐	
o external surface ≤ 10 mSv/h (under exclusive use)	7.5.11 CV33 (3.5)	☐	☐	☐	
- vehicle		☐	☐	☐	
o external surface ≤ 2 mSv/h and		☐	☐	☐	
o 2 m from the external surface ≤ 0,1 mSv/h	7.5.11 CV33 (3.3)	☐	☐	☐	
Contamination: Does the non-fixed contamination not exceed the following limits on the external surface of any package as well as on the external and internal surface of overpacks, containers, tanks, IBCs and vehicles ?					
≤ 4 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters	4.1.9.1.2	☐	☐	☐	
≤ 0,4 Bq/cm^2 for all other alpha emitters	4.1.9.1.4	☐	☐	☐	
Equipment					
Fire-fighting equipment – number: Is the transport unit equipped with sufficient fire extinguisher?	8.1.4.1				
excepted packages 2 kg		☐	☐	☐	
mpm ≤ 3,5 t 2 kg + 2 kg		☐	☐	☐	
3,5 t < mpm ≤ 7,5 t 2 kg + 6 kg		☐	☐	☐	
mpm > 7,5 t 2 kg + 4 kg + 6 kg		☐	☐	☐	

Fire-fighting equipment – requirements: Are the portable fire extinguishers - fitted with a seal verifying that they have not been used and - bearing a mark of compliance and an inscription at least indicating the date of the next recurrent inspection or of the maximum permissible period of use?	8.1.4.4	☐ ☐	☐ ☐	☐ ☐	
Fire-fighting equipment – provisions: Are the portable fire extinguishers installed on the transport units that they are - easily accessible to the vehicle crew and - protected against effects of the weather so that their operational safety is not affected?	8.1.4.5	☐ ☐	☐ ☐	☐ ☐	
Fire-fighting equipment – use: Do the members of the vehicle crew know how to use the fire-fighting appliances?	8.3.2	☐	☐	☐	
Miscellaneous equipment and equipment for personal protection: Is the transport unit provided with - 1 wheel chock for each vehicle, - 2 self-standing warning signs, - eye rinsing liquid, and for each member of the vehicle crew - 1 warning vest, - portable lighting apparatus, - 1 pair of protection gloves and - eye protection?	8.1.5	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	
Other					
If applicable, do involved parties have the necessary permits/licenses/certificates for handling and transport?		☐	☐	☐	
If applicable, are the conditions stated in the permits/licenses/certificates met?		☐	☐	☐	

Annexe 7.2: Checklist for routine inspections of transport by rail

Inspection details:

Inspector Name(s):
File reference:
Date/time:
Location:

Company details and organisation:

Consignor Name:
Address:
Telephone:
Fax:
E-mail:

Carrier Name:
Address:
Telephone:
Fax:
E-mail:

Consignee Name:
Address:
Telephone:
Fax:
E-mail:

Name of the different people met:

Name	Title/function/company	Telephone	E-mail

List of carried packages:

Model	Manufacturer	Type/Certificate of approval	Serial numbers

Wagon details:

Wagon Number:
Nationality:
Type of wagon:
Owner:
Leased by:
Container/Tank container/Trailer Id. no:

Subject/Inspection aspect	Provision RID 2013	Compliance			Comments
		OK	NOK	NA	
Wagon					
Is the wagon revised within the prescribed period?	1.4.1 - 1.4.2	☐	☐	☐	
Is the wagon technically fit for use? (Wheels, axles, axle boxes, springs, brakes, frame, buffers and hitch)		☐	☐	☐	
Is the cargo within the allowed maximum load?		☐	☐	☐	
Is the brake handle (if manual) in the correct position (loaded or empty)?		☐	☐	☐	
Is the cargo allowed on this wagon?		☐	☐	☐	
Is the cargo correctly secured against movement or displacement?	7.5.1	☐	☐	☐	
Is there visible damage, leakage, etc., of cargo or wagon?	7.5.1	☐	☐	☐	
Security					
Are the areas for temporary storage (usually terminals and shunting yards) - properly secured, - well lit - not accessible to the general public (where appropriate)?	1.10.1.3	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Does each member of the crew carry required identification?	1.10.1.4	☐	☐	☐	
Are all the provisions included in the Security Plan fulfilled (for high consequences radioactive material)?	1.10.1.3	☐	☐	☐	
Documentation					
Is the transport document (in any form) accessible during the transport?	5.4.0	☐	☐	☐	
Is the train driver provided with instructions in writing?	5.4.3	☐	☐	☐	
Is the train driver provided with a list of wagons in correct order indicating the wagons with dangerous goods?	5.4.3.3	☐	☐	☐	
Does the transport document contain the following information? - Is the RID-box ticked (when International transport using CIM-document) a) UN number, preceded by the letters "UN"; b) proper shipping name; c) primary hazard class (number "7"); d) name and symbol of each radionuclide or a list of the most restrictive radionuclide(s); e) description of the physical and chemical form or a notation that the material is a special form radioactive material or low dispersible radioactive material; f) Maximum activity (Bq) with an appropriate SI-prefix symbol or, for fissile material, the mass (g) of the fissile material may be used; g) category of the package (I-WHITE, II-YELLOW or III-YELLOW); h) transport index (categories II-YELLOW and III-YELLOW only); i) criticality safety index (for consignments including fissile	5.4.1 5.4.1.1.1 5.4.1.2.5.1	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	

material); j) Identification mark for each competent authority approval certificate; k) detailed statement of the contents of each package within an overpack, container or vehicle; l) "EXCUSIVE USE SHIPMENT" where a consignment is required to be shipped under exclusive use; m) total activity of the consignment as a multiple of A2 for LSA-II and LSA-III substances, SCO-I and SCO-II; g) name and address of the consignor; h) name and address of the consignee(s); - "Carriage in accordance with 1.1.4.2.1" for the carriage in a transport chain including maritime or air carriage. - "Carriage in accordance with 1.1.4.4" for carriage in a combined road/rail transport.	5.4.1.1.1	☐	☐	☐	
Did the consignor provide instructions regarding actions required by the carrier?	5.4.1.2.5.2	☐	☐	☐	
Is a container or vehicle packing certificate provided (if in a transport chain involving a sea transport)?	5.4.2	☐	☐	☐	
TI, CSI and category					
Is the transport index (TI) correct?	5.1.5.3	☐	☐	☐	
Is the criticality safety index (CSI) calculated correct - for each overpack or container, - for consignment or vehicle?	5.1.5.3.3	☐	☐	☐	
Are the packages and overpacks assigned to the correct category? I-WHITE TI ≤ 0, RI ≤ 0,005 mSv/h II-YELLOW TI ≤ 1, RI ≤ 0,5 mSv/h III-YELLOW TI ≤ 10, RI ≤ 2 mSv/h III-YELLOW(1) TI > 10, RI ≤ 10 mSv/h (1) under exclusive use Note: RI : Radiation level	5.1.5.3.4	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
Marking and labelling					
Is each package legibly and durably marked on the outside with - an identification of either the consignor or consignee (or both)? - the UN-number, preceded by the letters "UN" and the proper shipping name (excepted packages; only UN-number, preceded by the letters "UN")? - the gross mass (if more than 50 kg)? - Type of package (TYPE IP-1, TYPE IP-2, TYPE IP-3, TYPE A, TYPE B(U), TYPE B(M) or TYPE C? - VRI-code (nationality) for type IP-2, IP-3 and A packages? - the identification mark and serial number for packages which conforms to a design? - the trefoil symbol by embossing, stamping or other means resistant to	5.2.1.7.1 5.2.1.7.2 5.2.1.7.3 5.2.1.7.4 5.2.1.7.4 5.2.1.7.5	☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐	

the effects of fire and water for type B(U), B(M) and C packages? - orientation arrows (where applicable)?	5.2.1.7.6 5.2.1.9	☐ ☐	☐ ☐	☐ ☐	
Are all package markings - readily visible? - legible? - able to withstand water exposure?	5.2.1.2	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Is each label - affixed near the mark indicating the proper shipping name, - not covered or obscured and - displayed next to each other, when more than one label is required?	5.2.2.1.6	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Are the labels (7A to 7C and 7E [in addition for fissile material]) affixed to - two opposite sides (package or overpack) or - all four sides (container)?	5.2.2.1.11.1	☐ ☐	☐ ☐	☐ ☐	
Is each label completed with - contents: Name(s) of the radionuclide(s) using the symbol, or the most restrictive radionuclide(s) for mixtures of radionuclides, followed by the LSA-/SCO-group (the name of the radionuclide(s) is not necessary for LSA-I material); - activity: The maximum activity (Bq) with the appropriate SI-prefix symbol (for fissile material, the mass (g) may be used in place of activity); - transport index (TI) (not applicable for category I-WHITE); - criticality safety index (CSI);	5.2.2.1.11.2 5.2.2.1.11.3	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
Is there any text insert in the space below the symbol?	5.2.2.2.1.5	☐	☐	☐	
Do all labels withstand weather exposure without substantial reduction in effectiveness?	5.2.2.2.1.7	☐	☐	☐	
Do all labels satisfy the provisions to the models (colour, symbols and format)?	5.2.2.2.2	☐	☐	☐	
Are placards affixed to both sides and each end of the container, MEGC, tank container or portable tank?	5.3.1.2	☐	☐	☐	
Are placards affixed to both sides of the wagon, - if the placards affixed to the container, MEGC, tank container or portable tank are not visible from outside the carrying wagon or - if the wagon is for carriage in bulk, tank, battery-wagon or wagon with demountable tanks or - if the wagon is carrying radioactive packages?	 5.3.1.3 5.3.1.4 5.3.1.5	 ☐ ☐ ☐	 ☐ ☐ ☐	 ☐ ☐ ☐	
Are orange-coloured plates affixed and visible to both sides of the wagon?	5.3.2	☐	☐	☐	
Are the orange-coloured plates - weather resistant and durable? - do the plates detach from its mounts if engulfed in 15 minutes of fire? - do they satisfy the provisions to the model (colour, size, format)?	5.3.2.2	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	

Are the markings on the wagon (on both sides) consistent with the documentation?		☐	☐	☐	
Packages - Stowage					
Are the packages correctly secured by suitable means capable of restraining the goods (such as fastening straps, sliding, slatboards, adjustable brackets) in the wagon or container in a manner that will prevent any movement during carriage?	7.5.7.1	☐	☐	☐	
Where restraints such as bandings or straps are used, these shall not be over-tightened to cause damage or deformation of the package	7.5.7.1	☐	☐	☐	
Radiation limits					
Are the radiation levels kept within the following limits?					
Excepted packages:					
- External surface ≤ 5 µSv/h	2.2.7.2.4.1.2	☐	☐	☐	
- 10 cm from the external surface of any unpackaged instrument or article ≤ 0,1 mSv/h	2.2.7.2.4.1.3	☐	☐	☐	
Low dispersible radioactive material:					
- 3 m from the unshielded radioactive material ≤ 10 mSv/h	2.2.7. 2.3.4.1a)	☐	☐	☐	
Packages or overpacks:					
- External surface ≤ 2 mSv/h	4.1.9.1.10	☐	☐	☐	
- External surface ≤ 10 mSv/h under exclusive use	7.5.11 CW33 (3.5)	☐	☐	☐	
Wagon					
- External surface ≤ 2 mSv/h and	7.5.11 CW33	☐	☐	☐	
- 2 m from external surface ≤ 0,1 mSv/h	(3.3)	☐	☐	☐	
Does the non-fixed contamination not exceed the following limits on the external surface of any package as well as on the external and internal surface of overpacks, containers, tanks, IBCs and wagons?	RID				
≤ 4 Bq/cm^2 for β and γ emitters and low toxicity alpha emitters	4.1.9.1.2	☐	☐	☐	
≤ 0,4 Bq/cm^2 for all other alpha emitters	4.1.9.1.4	☐	☐	☐	
Other					
Is the transport unit equipped with	5.4.3				
- portable lighting apparatus,		☐	☐	☐	
- suitable warning clothing		☐	☐	☐	
If applicable, do involved parties have the necessary permits/licenses/certificates for handling and transport?		☐	☐	☐	
If applicable, are the conditions stated in the permits/licenses/certificates met?		☐	☐	☐	

Annexe 7.3: Checklist for routine inspections of transport by sea

Inspection details:

Inspector name(s):
File reference:
Date/time:
Location:

Company details and organisation:

Company name:
Address:
Telephone:
Fax:
E-mail:
Web:

Name of the different people met:

Name	Title	Telephone	E-mail

List of carried packages:

Model	Manufacturer	Type/Certificate of approval	Serial numbers

Organisation detail	
Does the company carry or handle class 7 packages? If no, is there a document mentioning it?	☐ Yes ☐ No ☐ Yes ☐ No
Activity of the company	☐ Consignment ☐ Shipping ☐ Handling ☐ Loading / unloading ☐ Other:
Total number of employees?	
Number of personnel involved with RAM transport, and their status (e.g. acceptance agent, cargo handler …):	
Number of class 7 packages handled?	
Type of class 7 packages handled	☐ Excepted packages ☐ Industrial packages ☐ Type A ☐ Type B ☐ Fissile ☐ Special Form Material ☐ Special Arrangement
Ship details	Ship Name: IMO number: Flag:

Subject/Inspection aspect	Provision IMDG	Compliance			Comments
		OK	NOK	NA	
Consignment documentation					
Are the approval certificates available to the carrier before loading and unloading?	5.4.1.5.7.4	☐	☐	☐	
Has the consignor supplied all required transport documentation?	5.4.1.1 & 5.4.1.3	☐	☐	☐	
Does the transport document contain all required information, in the correct order?	5.4.1.4.1 & 5.4.1.4.7, and *see also 1.5.1.5 for Excepted Packages*	☐	☐	☐	
Are there special provisions and are they respected?	5.4.1.5.7.2	☐	☐	☐	
Other documentations: ▪ Shipper's Declaration ▪ Container/vehicle packing certificate; ▪ Documentation required aboard the ship: - a special list or manifest showing the location of RAM; - or a detailed stowage plan; - emergency response information; ▪ Multimodal Dangerous Goods Form	IMDG 5.4.1 5.4.2 5.4.3 5.4.5.1	 ☐ ☐ ☐ ☐ ☐ ☐	 ☐ ☐ ☐ ☐ ☐ ☐	 ☐ ☐ ☐ ☐ ☐ ☐	
Sea expedition					
Does the company hold and follow recommended packing procedures?	4.1.9	☐	☐	☐	
Marking: Are the cargo transport units correctly placarded and marked? Are the packages correctly marked and labelled? Are the markings legible and long-lasting? Do they able to withstand a three month's immersion in the sea?	 5.3 5.2 5.2.1.2	 ☐ ☐ ☐	 ☐ ☐ ☐	 ☐ ☐ ☐	
Stowage: Are the radioactive materials correctly stowed? Does the consignment respect the special provisions for class 7: ▪ activity limits for LSA material and SCO; ▪ heat flux limit; ▪ radiation levels; ▪ TI limits; ▪ CSI limits; ▪ consignments under exclusive use; ▪ consignments by means of a special use ship; ▪ periodical contamination control. *See IMDG 2.7.2.4.1.5 for the level of non-fixed contamination of an empty packaging.*	 7.1 7.1.14 *see also 4.1.9.1.2*	 ☐ ☐	 ☐ ☐	 ☐ ☐	
Segregation: Are the radioactive materials sufficiently segregated from other dangerous goods? Are the radioactive materials sufficiently segregated from crew and passengers? Who has made the loading plan? Is the loading plan respected in cargo spaces?	 7.2.1.16 7.2.9	 ☐ ☐ ☐ ☐	 ☐ ☐ ☐ ☐	 ☐ ☐ ☐ ☐	

Checklist for INF certified ships					
(This checklist only gives the references of the main parts of the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code))					
INF ships classification: - INF-1 : activity < 4000 TBq; - INF-2 : activity < 2×10^6 TBq or < 2×10^5 TBq for a plutonium cargo; - INF-3 : no limited activity	INF 1.1.2	☐	☐	☐	
Are the initial and periodical surveys of INF certified ships performed and are the documents available?	INF 1.3.2, 1.3.3 & 1.3.4	☐	☐	☐	
Other					
If applicable, do involved parties have the necessary permits/licenses/certificates for handling and transport?		☐	☐	☐	
If applicable, are the conditions stated in the permits/licenses/certificates met?		☐	☐	☐	

Annexe 7.4: Checklist for routine inspections of transport by inland waterway

Inspection details:

Inspector name(s):
File reference:
Date/time:
Location:

Company details and organisation:

Consignor Name:
Address:
Telephone:
Fax:
E-mail:

Carrier Name:
Address:
Telephone:
Fax:
E-mail:

Consignee Name:
Address:
Telephone:
Fax:
E-mail:

Name of the different people met:

Name	Title	Telephone	E-mail

List of carried packages:

Model	Manufacturer	Type	Serial numbers

Vessel(s) details:
Vessel(s) Identification:
Nationality:
Type of vessel(s):
Owner:
Leased by:

Subject/Inspection aspect	Provision ADN 2013	Compliance			Comments
		OK	NOK	NA	
Security					
Areas for temporary storage: Are the areas for the trans-shipment - properly secured, - well illuminated and - not accessible to the general public (where possible and appropriate)?	1.10.1.3	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Means of identification: Does each member of the vessel crew carry means of identification?	1.10.1.4	☐	☐	☐	
Are all the provisions included in the Security Plan fulfilled (for high consequences radioactive material)?	1.10.3.2	☐	☐	☐	
Documents to be carried					
Documents: Are the following documents carried on the vessel? - vessel's certificate of approval - transport document; - instructions in writing; - inspection certificate of the insulation resistance of the electrical installation - inspection certificate of the fire-extinguishing equipment and fire-hoses - means of identification; - stowage plan - ADN specialized knowledge certificate;	8.1.2	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	
Transport document – information: Does the transport document contain the following information? a) UN number preceded by the letters "UN"; b) proper shipping name; c) primary hazard class (number "7"); d) name and address of the consignor; e) name and address of the consignee(s); The following information shall be inserted in the order given and immediately after the information a) to c) from above: a) name or symbol of each radionuclide or a list of the most restrictive radionuclide(s); b) description of the physical and chemical form or a notation that the material is a special form radioactive material or low dispersible radioactive material; c) maximum activity [Bq] with an appropriate SI prefix symbol (for fissile material, the mass [g] of fissile material may be used in place of activity); d) category of the package (I-WHITE, II-YELLOW, III-YELLOW); e) transport index (categories II-YELLOW and III-YELLOW only); f) criticality safety index for consignments including fissile material; g) identification mark for each competent authority approval certificate; h) detailed statement of the contents of each package within the overpack, container or conveyance;	5.4.1	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	

i) "EXCLUSIVE USE SHIPMENT" where a consignment is required to be shipped under exclusive use; j) total activity of the consignment as a multiple of A2 for LSA-II and LSA-III substances, SCO-I and SCO-II; "Carriage in accordance with 1.1.4.2.1" for the carriage in a transport chain including maritime or air carriage;		☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Transport document – statement regarding actions: Did the consignor provide in the transport documents a statement regarding actions that are required to be taken by the carrier or a statement that no such requirements are necessary?	5.4.1.2.5.2	☐	☐	☐	
Container/vehicle packing certificate: Is a container/vehicle packing certificate provided with the transport document (if the carriage in a large container precedes a voyage by sea)?	5.4.2	☐	☐	☐	
Instructions in writing: Are the instructions in writing carried in the wheelhouse readily available and do they correspond in form and contents to the given model?	5.4.3	☐	☐	☐	
Transport index, criticality safety index, category of the package/ overpack					
Transport index (TI): Is the transport index (TI) correct?	5.1.5.3	☐	☐	☐	
Criticality safety index (CSI): Is the criticality safety index (CSI) correct - for each overpack or container - in a consignment or aboard a vessel or cargo transport unit?	5.1.5.3.3	☐	☐	☐	
Category of the package and overpack: Are the packages and overpacks assigned to the correct category? I-WHITE TI ≤ 0, RI ≤ 0,005 mSv/h II-YELLOW TI ≤ 1, RI ≤ 0,5 mSv/h III-YELLOW TI ≤ 10, RI ≤ 2 mSv/h III-YELLOW(1) TI > 10, RI ≤ 10 mSv/h (1) under exclusive use Note: RI = Radiation level	5.1.5.3.4	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
Marking and labeling					
Marking of packages: Is each package legibly and durably marked on the outside with - an identification of either the consignor or consignee, or both? - the UN-number preceded by the letters "UN" and the proper shipping name (in the case of excepted packages only the UN-number, preceded by the letters "UN" is required)? - the permissible gross mass (for each package of gross mass exceeding 50 kg)? - TYPE IP-1, TYPE IP-2, TYPE IP-3, TYPE A, TYPE B(U), TYPE B(M) or rather TYPE C? - the international vehicle registration code (VRI Code) for Type IP-2, IP-3 and A packages?	5.2.1.7.1	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	

- the identification mark and a serial number for packages which conforms to a design? - the trefoil symbol by embossing, stamping or other means resistant to the effects of fire and water for Type B(U), B(M) and C packages? - where applicable the orientation arrows (not necessary for material in Type IP-2, IP-3, A, B(U), B(M) or C packages)?		☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Marking-requirements: Are all package markings - readily visible, - legible and - able to withstand open water exposure without a substantial reduction in effectiveness?	5.2.1.2	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Labelling-provisions: Is each label - affixed near the mark indicating the proper shipping name, - not covered or obscured and - displayed next to each other, when more than one label is required?	5.2.2.1.6	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Labeling-provisions (number): Are the labels (7A to 7C and 7E (in addition for fissile material)) affixed to - two opposite sides (package, overpack) or - all four sides (container)?	5.2.2.1.11.1	☐ ☐	☐ ☐	☐ ☐	
Labeling-information: Is each label completed with - contents: name(s) of the radionuclide(s) using the symbol or the most restrictive radionuclide(s) for mixtures of radionuclides, followed by the LSA-/SCO-group (the name of the radionuclide(s) is not necessary for LSA-I-material); - activity: the maximum activity [Bq] with the appropriate SI prefix symbol (for fissile material the mass [g] may be used in place of activity); - transport index(TI) (not applicable for category I-WHITE) - criticality safety index (CSI) (each label conforming to the model No. 7E)	5.2.2.1.11.2	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
Labeling-requirements: Do all labels - withstand open water exposure without a substantial reduction in effectiveness and - satisfy the provisions to the models (colour, symbols and format)?	5.2.2.2.1.7 5.2.2.2.2	☐ ☐	☐ ☐	☐ ☐	
Placards: Are placards affixed - to both sides and at each end of the container, MEGC, tank-container or portable tank? - to both sides and at the rear o carrying vehicle or wagon, if the placards affixed to the container, MEGC, tank container or portable tank are not visible from outside	5.3.1 5.3.1.2	☐	☐	☐	

the carrying vehicle? o vehicle for carriage in bulk, tank-vehicle, battery-vehicle and vehicle with demountable tanks? o vehicle carrying radioactive material in packagings or IBCs?	5.3.1.3 5.3.1.4 5.3.1.5	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Orange-coloured plate: Are orange-coloured plates affixed - in a vertical plane, at the front and at the rear of the transport unit both perpendicular to the longitudinal axis of the transport unit? - in addition on the sides of each tank, tank compartment or element of battery vehicles parallel to the longitudinal axis of the vehicle when a hazard identification number is indicated in Column (20) of table A of Chapter 3.2? - in addition on the sides of each transport unit and container carrying unpackaged solids or articles or packaged radioactive material with a single UN number under exclusive use parallel to the longitudinal axis of the vehicle when a hazard identification number is indicated in Column (20) of table A of Chapter 3.2? - In case that the orange-coloured plates prescribed in 5.3.2.1.2 and 5.3.2.1.4 are not used because transport units are carrying only one dangerous substance, do the plates displayed at the front and rear bear the hazard identification number and the UN number for that substance?	5.3.2.1 5.3.2.1.1 5.3.2.1.2 5.3.2.1.4 5.3.2.1.5	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Orange-coloured plate – requirements: - Are the orange-coloured plates reflectorized? - Is the material used be weather resistant and ensure durable marking? - Do the plates detach from its amount in the event of 15 minutes´ engulfment in fire?	5.3.2.2.1	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Members of the vessel/vehicle crew					
Are there persons other than the members of the vessel crew or the driver of the vehicle embarked on board (not allowed in vessels/vehicles carrying packages, overpacks or containers bearing category II-YELLOW or III-YELLOW labels)?	7.1.4.14.7.1.3	☐	☐	☐	
Packages - Stowage					
Are the consignments securely stowed?	7.1.4.14.7.3.1	☐	☐	☐	
Has the master established a stowage plan of the dangerous goods?	7.1.4.11	☐	☐	☐	
Radiation limits					
Radiation level: Does the radiation level not exceed the following limits? - excepted packages o external surface ≤ 5 µSv/h o 10 cm from the external surface of any unpackaged instrument or	2.2.7.2.4.1.2	☐	☐	☐	

article ≤ 0,1 mSv/h - low dispersible radioactive material o 3 m from the unshielded radioactive material ≤ 10 mSv/h - packages and overpacks o external surface ≤ 2 mSv/h o external surface ≤ 10 mSv/h (under exclusive use) - conveyance o external surface ≤ 2 mSv/h and o 2 m from the external surface ≤ 0,1 mSv/h [	2.2.7.2.4.1.3 2.2.7.2.3.4.1 7.1.4.14.7.3.3 7.1.4.14.7.3.5 7.1.4.14.7.3.3	☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐	
Contamination: Does the non-fixed contamination not exceed the following limits on the external surface of any package as well as on the external and internal surface of overpacks, containers, tanks, IBCs and vehicles, wagons vessels? ≤ 4 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters ≤ 0,4 Bq/cm^2 for all other alpha emitters	7.1.4.15.2 & 7.1.4.14.7.5	☐ ☐	☐ ☐	☐ ☐	
Equipment					
Fire-extinguishing appliances: Is the vessel equipped with at least two hand fire-extinguishers having the same capacity? The fire-extinguishing agent contained in these additional hand fire-extinguishers shall be suitable for fighting fires involving the dangerous goods carried	8.1.4	☐	☐	☐	
Fire- extinguishing appliances – use: Does the master/expert know how to use the fire-extinguishing appliances ?	8.3.2	☐	☐	☐	
Other					
If applicable, do involved parties have the necessary permits/licenses/certificates for handling and transport?		☐	☐	☐	
If applicable, are the conditions stated in the permits/licenses/certificates met?		☐	☐	☐	

Annexe 7.5: Checklist for routine inspections of transport by air

Inspection details:

Inspector name(s):
File reference:
Date/time:
Location:

Company details and organisation:

Consignor Name:
Address:
Telephone:
Fax:
E-mail:

Carrier Name:
Address:
Telephone:
Fax:
E-mail:

Consignee Name:
Address:
Telephone:
Fax:
E-mail:

Name of the different people met:

Name	Title	Telephone	E-mail

List of carried packages:

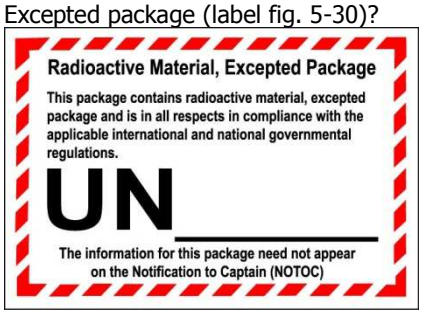
Model	Manufacturer	Type/Certificate of approval	Serial numbers

Aircraft(s) details:
Aircraft(s) Identification:
Nationality:
Type of aircraft(s):
Owner:
Leased by:

Subject/Inspection aspect	Provision ICAO-TI 2013-2014 Ed.	Compliance OK	NOK	NA	Comments
Storage in Transit					
Radiation Protection					
- Correct segregation distances during storage in transit (between groups of packages)	7.2.10.4.1	☐	☐	☐	
- Correct segregation distances during storage in transit (with people)*(NB: Segregation distances with undeveloped photographic film and living animals shall be respected too)*	7.2.10.6.1	☐	☐	☐	
- CSI < 50? Or correct segregation distance?	7.2.10.4.2	☐	☐	☐	
Tie-down					
- Are the packages correctly tied-down?	7-2-4-2	☐	☐	☐	
- Adequate material for the handling of class 7 packages	7.2.4.3	☐	☐	☐	
Dangerous goods storeroom	Recommendation, not mandatory				
- Is there a dedicated storeroom for dangerous goods?		☐	☐	☐	
- Last contamination control?		☐	☐	☐	
- Is there any radiation control (dosimeter)?		☐	☐	☐	
Displayed notice of dangerous goods					
- Are there notices prominently displayed about accepted dangerous goods?	7.4.8	☐	☐	☐	
Airline / Air Cargo carrier					
Is the airline / air cargo carrier allowed to transport radioactive material?		☐	☐	☐	
Documents available for inspection					
Documents: Are the following documents available for inspection?					
- Two copies of DGD or, if provided by EDP or EDI techniques, can be produced as a paper document without delay;	5.4.1.1	☐	☐	☐	
- Multilateral shipment approval and notification	5.1.2.1	☐	☐	☐	
- Certificates issued by the competent authority, design for	5.1.2.2				
- special form;		☐	☐	☐	
- low dispersible radioactive material		☐	☐	☐	
- $UF_6 \geq 0,1$ kg		☐	☐	☐	
- fissile material		☐	☐	☐	
- type B(U) or B(M)		☐	☐	☐	
- type C		☐	☐	☐	
- special arrangements		☐	☐	☐	
Transport document – information					
Does the transport document contain the following information?					
- Name and address of the shipper;	5.4.1.3	☐	☐	☐	
- Name and address of the consignee;		☐	☐	☐	
a) UN number preceded by the letters "UN";	5.4.1.4	☐	☐	☐	
b) proper shipping name;		☐	☐	☐	
c) primary hazard class (number "7");		☐	☐	☐	
d) subsidiary hazard class (if applicable);		☐	☐	☐	

Is the sequence correct (a, b, c, d)? a) name or symbol of each radionuclide or a list of the most restrictive radionuclide(s); b) description of the physical and chemical form or a notation that the material is a special form radioactive material or low dispersible radioactive material; c) maximum activity [Bq] with an appropriate SI prefix symbol (for fissile material, the mass [g] of fissile material may be used in place of activity); d) category of the package (I-WHITE, II-YELLOW, III-YELLOW); e) transport index (categories II-YELLOW and III-YELLOW only); f) criticality safety index for consignments including fissile material; g) identification mark for each competent authority approval certificate; h) detailed statement of the contents of each package within the overpack, container or vehicle; i) "EXCLUSIVE USE SHIPMENT" where a consignment is required to be shipped under exclusive use; j) total activity of the consignment as a multiple of A_2 for LSA-II and LSA-III substances, SCO-I and SCO-II; Are additional requirements stated, such as Cargo Aircraft Only (CAO); Is the transport document certified and signed, name and date; Does the Air Waybill contain a reference to the Dangerous Goods Declaration (DGD)?	5.4.1.4.2 5.4.1.5.7 5.4.1.5.8 5.4.1.6 5.4.2	☐	☐	☐	
Transport document – statement regarding actions: Did the consignor provide in the transport documents a statement regarding actions that are required to be taken by the carrier or a statement that no such requirements are necessary? Restrictions on the type of aircraft and necessary routing instructions? Appropriate emergency arrangements? Content: - Immediate actions and emergency phone numbers - Information to competent authorities - Further actions in order to avoid / limit radiological consequences - Procedure for overpacking or repacking? Are these procedures known by the personnel (are they placarded / distributed)?	5.4.1.5.7.2	☐	☐	☐	

Is the UN number and proper shipping name in accordance with the certificate of the country of origin of design?	5.4.1.5.7.3	☐	☐	☐	
Are the applicable competent authority certificates valid and available for inspection?	5.4.1.5.7.4	☐	☐	☐	
Transport index, criticality safety index, category of the package/ overpack					
Transport index (TI): Is the transport index (TI) correct?	5.1.2.3.1	☐	☐	☐	
Criticality safety index (CSI): Is the criticality safety index (CSI) calculated correctly for each overpack or freight container? Is the criticality safety index (CSI) calculated correctly for each consignment or aboard the aircraft?	5.1.2.3.1.3	☐ ☐	☐ ☐	☐ ☐	
Category of the package and overpack: Are the packages and overpacks assigned to the correct category? I-WHITE TI ≤ 0, Radiation level ≤ 0,005 mSv/h II-YELLOW TI ≤ 1, Radiation level ≤ 0,5 mSv/h III-YELLOW TI ≤ 10, Radiation level ≤ 2 mSv/h III-YELLOW TI > 10, Radiation level ≤ 10 mSv/h and under exclusive use	5.1.2.3.1.4	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
Carriage and handling					
Securing of cargo: - Are packages containing dangerous goods, unpackaged dangerous articles and other goods secured by suitable means? - Are segregation / separation rules respected in storage and transport?	7.2.4.2 7.2.10	☐ ☐	☐ ☐	☐ ☐	
Marking and labelling					
Marking of package: Is each package visibly, legibly and durably marked on the outside with - an identification of either the consignor or consignee, or both? - the UN-number preceded by the letters "UN" and the proper shipping name? - the permissible gross mass (for each package of gross mass exceeding 50 kg)? - TYPE IP-1, TYPE IP-2, TYPE IP-3, TYPE A, TYPE B(U), TYPE B(M) or TYPE C? - the international vehicle registration code (VRI Code) for Type IP-2, IP-3 and A packages? - the identification mark and a serial number for packages which conforms to a design? - the trefoil symbol by embossing, stamping or other means resistant to the effects of fire and water for Type B(U), B(M) and C packages?	5.2.2 5.2.4.2 5.2.4.1 5.2.4.5 5.2.4.5 5.2.4.5 5.2.4.5 5.2.4.5	☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐	

Labelling of package; - Transport on cargo aircraft only and type B(M) package (label fig. 5-25)?  	5.3.1	☐	☐	☐	
- Excepted package (label fig. 5-30)?  	5.3.1	☐	☐	☐	
Labelling - provisions: Is each label - affixed near the mark indicating the proper shipping name; - not covered or obscured and; - displayed next to each other, when more than one label is required; Are the labels affixed to - two opposite sides (package, overpack) or all four sides (container)?	5.3.2.8 5.3.2.8 5.3.2.8 5.3.2.6	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
Labelling - information: Is each label completed with - contents: name(s) of the radionuclide(s) using the symbol or the most restrictive radionuclide(s) for mixtures of radionuclides, followed by the LSA-/SCO-group (the name of the radionuclide(s) is not necessary for LSA-I-material); - activity: the maximum activity [Bq] with the appropriate SI prefix symbol (for fissile material the mass [g] may be used in place of activity); - transport index(TI) (not applicable for category I-WHITE); - criticality safety index (CSI) (each label fig. 5-21); - Is the information consistent with the information given in the transport documents?	5.3.5.1 5.3.5.1 5.3.5.1 5.3.5.1	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	Nuclide(s): Activity: TI: CSI:

Placarding; Are four placards (or enlarged labels) affixed to each side wall and each end wall of large freight containers and tanks (other than excepted packages)?	5.3.6	☐	☐	☐	
Radiation limits					
Radiation level: Does the radiation level not exceed the following limits? - excepted packages o external surface ≤ 5 µSv/h o 10 cm from the external surface of any unpackaged instrument or article ≤ 0,1 mSv/h - low dispersible radioactive material o 3 m from the unshielded radioactive material ≤ 10 mSv/h - packages and overpacks o external surface ≤ 2 mSv/h o external surface ≤ 10 mSv/h (under exclusive use)	 2.7.2.4.1.1.2 2.7.2.4.1.1.3 2.7.2.3.4.1 4.9.1.10 4.9.1.11	 ☐ ☐ ☐ ☐ ☐	 ☐ ☐ ☐ ☐ ☐	 ☐ ☐ ☐ ☐ ☐	
Contamination: Does the non-fixed contamination not exceed the following limits on the external surface of any package ≤ 4 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters; ≤ 0,4 Bq/cm^2 for all other alpha emitters	4.9.1.2	 ☐ ☐	 ☐ ☐	 ☐ ☐	
Technical requirements for air transport: - Classification: o Low dispersible radioactive material o Type C packages) - Additional requirement for packages transported by air: o the temperature of the accessible surfaces shall not exceed 50°C at an ambient temperature of 38°C with no account taken for insolation o packages must be designed so that, if they were exposed to ambient temperatures ranging from –40°C to +55°C, the integrity of containment would not be impaired o packages containing radioactive material must be capable of withstanding, without leakage, an internal pressure that produces a pressure differential of not less than maximum normal operating pressure plus 95 kPa	 2.7.2.3.4 6.7.9 6.7.2.1 6.7.2.2 6.7.2.3	 ☐ ☐ ☐ ☐ ☐	 ☐ ☐ ☐ ☐ ☐	 ☐ ☐ ☐ ☐ ☐	

Annexe 8: Checklist for compliance audit of a consignee

Auditor details:

Auditor name(s):
File reference:
Date/time:
Location:

Company details and organisation:

Company name:
Address:
Telephone:
Fax:
E-mail:
Web:

Name of the different people met:

Name	Title	Telephone	E-mail

Subject/Inspection aspect	Provision	Compliance			Comments
		OK	NOK	NA	
Modes of transport					
Road		☐	☐	☐	
Rail		☐	☐	☐	
Air		☐	☐	☐	
Sea		☐	☐	☐	
Inland waterway		☐	☐	☐	
Management System (see annex 10)					
Regulations					
Are the organisation and personnel involved in the transport of RAM aware of the regulatory requirements?		☐	☐	☐	
Are the regulatory requirements understood and being observed?		☐	☐	☐	
In the event of a non-compliance with any limit applicable to radiation level or contamination detected at the receipt, has the consignee procedures: - to take immediate actions to mitigate the consequences; ☐ - to investigate the non-compliance and its causes, circumstances and consequences; ☐ - to take appropriate actions to remedy the causes and circumstances, and to prevent a recurrence; ☐ - to inform the consignor; ☐ - to communicate to the competent authority (causes of the non-compliance, corrective and/or preventive actions)? ☐					
Checks of the transport operations (unloading and receipt)					
Does the company/facility have necessary permits/licenses for use of received radioactive material?		☐	☐	☐	
Does the company hold and follow recommended unloading and receipt procedures?		☐	☐	☐	
Does the company perform a check of the shipment and in case of non-compliance inform the consignor?		☐	☐	☐	
Training					
Does the company provide an adequate training programme for the personnel?		☐	☐	☐	
Does the company maintain records of the training and qualifications of the personnel?		☐	☐	☐	
Radiation Protection Programme					
Is there an adequate Radiation Protection Programme (doses evaluation, optimisation, radiological surveillance, radiation protection procedures, and emergency arrangements)?		☐	☐	☐	
Is the Radiation Protection Programme periodically reviewed?		☐	☐	☐	
Emergency Arrangements					
Are adequate emergency response plans or procedures available?		☐	☐	☐	
How and when are the emergency response plans or procedures tested?		☐	☐	☐	

Annexe 9: Checklist for investigation after an incident/accident

Inspection details:

Inspector name(s):
File reference:
Date:
Location:

Company details and organisation:

Consignor Name:
Address:
Telephone:
Fax:
E-mail:
Web:

Carrier Name:
Address:
Telephone:
Fax:
E-mail:
Web:

Consignee Name:
Address:
Telephone:
Fax:
E-mail:
Web:

Interviewed Personnel:

Name	Title/company/function	Telephone	E-mail

1	**Observations**		
1.1	*Accident/incident*		
	Date of the accident		
	Location of the accident		
	Description of the accident	Describe what has happened. Give an overall view of the incident.	
	Scene of accident and performed emergency response	What did it look like? Who responded to the accident? Who came to the scene? How did the emergency response function?	
	Decision of investigation	For whom do I investigate? Who decides? What is my purpose?	
1.2	*Environment*		
	Personnel	What working personnel was involved in the accident?	
	Witnesses	Who witnessed the accident? Were there any recordings, photographs taken or filming being made?	
	Vehicles, machines and other devices	What machinery was involved in the accident and what was its function?	
	Recorded registrations in vehicles, radio controlled equipment, communications and other devices	Secure registrations of actions before moving vehicles and certify that the time stamp in recordings is correct.	
	Surroundings	Describe the surrounding environment.	
	Safety systems	What traffic safety systems were in use (signal system, automated control systems, etc.)? What state were they in?	
	Communications	What ways of communications was available? Was predetermined means of communications used?	
	On-going work on infrastructure	Was there any work or maintenance going on road, railway, runway or other at the time of the accident?	
	Emergency- and rescue services within the organisation	Describe the companies own alarm-, emergency- and rescue organisation, including links to the community rescue services and others.	

	Community rescue services	How did the community rescue services perform? How can it be made better?	
1.3	*Injuries and damages*		
	People	Was anyone from the public killed or injured?	
	Personnel	Was anyone from involved companies killed or injured?	
	Cargo, goods, baggage and other property	Was anything destroyed or damaged?	
	Packagings	Were any packaging's for radioactive materials damaged?	
	Vehicles	Were any vehicles damaged as a result of the accident?	
	Infrastructure	Was there any damage made to the infrastructure?	
	Environment	Was there any damage caused by the accident to the environment? Any emissions resulting from the accident or leakage from packages, tanks, or other damage?	
1.4	*External conditions*		
	Weather and visibility	Was there rain, fog, snow, icy temperatures or any other circumstance that could have had effect on the outcome?	
	Sound	How was the level of noise at the time of the accident?	
	Geographical information	The location of the accident.	
2	**Investigations**		
2.1	*Witness information*		
	Employees	Interview the employees, the safety adviser, the management, consultants and other personnel working in the involved organisation.	
	Other witnesses	Interview other witnesses to the accident. Did anyone take photographs or film the accident? Was there video surveillance of the scene?	

2.2	*Management systems*		
	Organisation and communication of orders	How is the company organized? How is the workforce getting their instructions and orders? Who has the authority to give orders? Who is responsible and is the responsibility clearly stated? How is the safety culture in the company? How are the resources distributed? Are the resources enough to ensure safety?	
	Competence requirements for personnel	What are the minimum requirements for the different functions? Are they clearly stated? Are they complied with?	
	Routines and instructions for internal control, audits and monitoring	How does the organisation detect anomalies and errors in the routines? Is there a functional management system in place? Is there a system to monitor the routines? Are there internal quality audits? Do they also encompass the transport activities?	
	Routines for controlling external entrepreneurs	Are the external entrepreneurs authorized? Are there written rules and instructions for external entrepreneurs? Is there any monitoring of entrepreneurs?	
	Responsibilities regarding the interface with other operators	Are the responsibilities clearly stated? Is there also a question of who is responsible?	
2.3	*Rules and regulations*		
	Laws, ordinances and regulations	Summarise the relevant regulations and check if compliance was met.	
	ADR, RID, ADN, IMDG-code, ICAO-TI, Baltic agreement, Bi- or multilateral agreements, etc.	Were the modal rules for transport understood and observed? Use the relevant checklist for routine inspection of transport operations and check if compliance was made?	

	Operative rules	Describe the operators own set of relevant rules and routines for the activities, were they complied with?	
	Instructions for use	Were instructions for using machinery, operating vehicles, etc. followed? Designers, manufacturers and experts may have knowledge of used equipment which can help the investigation.	
	Standards for infrastructure, planning and construction	Did the design standards have any effect on the accident? Where the standards met?	
	Rules for maintenance of vehicles	Have involved vehicles been checked and maintained according to set rules?	
	Rules for maintenance of infrastructure	Have the infrastructure been maintained properly?	
2.4	*Condition and function of technical systems*		
	Technical safety systems	What was the condition of the railway signal system, road signal system or similar technical systems? Where they in working order as intended?	
	Infrastructure	What was the condition of the road, runway, railway, etc.	
	Communications	What was the condition of the communication systems at the time of the accident? Did the equipment work as intended?	
	Vehicles	What was the condition of the involved vehicles? Had they undergone mandatory controls and recommended maintenance and repairs?	
2.5	*Documentation of the operations*		
	Measures taken by a control centre	Have mandatory documentation been completed by the traffic control at railway, port or airport?	
	Notes made by crew on involved vehicles	What notes have been made? Were they mandatory and correct? Faulty notes received from a control centre may have an effect on the accident.	

	Safety communications	Check log of safety communications between a control centre and a transport. There may also be tapes/records to listen to and footage or video.	
	Given orders	Were given order correct, were they documented in the proper way and did they have any effect on the accident?	
2.6	*Human Factors*		
	Working hours in connection to the accident	Did the personnel work long hours? Late hours? Early hours? Was there enough time given for rest between shifts? Was there a lot of overtime?	
	Medical issues	Check for impaired hearing or eyesight (glasses?), restricted peripheral vision, colour blindness (red/green), diabetes and other physical disabilities that could have had an impact on the accident. Have any medical exemptions been given?	
	Personal circumstances	Are there any personal circumstances that could have affected the outcome, such as trouble at home, divorces or economic troubles influencing a person's presence and watchfulness?	
	Interface between man and machine	Is the machinery's (or corresponding tool's) interface user-friendly to the operator? Was it operated the way intended?	
	Physical and/or psychological impact	Is the work physically heavy? Is the personnel exposed to psychological strain? Is there stress?	
2.7	*Previous accidents*		
	Previous accidents of a similar nature	Have there been other similar accidents or incidents in the past? Are there parallels? Is there a pattern, suggesting a systematic problem?	

2.8	*The Scene of the accident*		
	Photographs and video	Document the scene in photographs as soon as possible, these can be invaluable afterwards (when it has been trampled all over). It is also evidence and can be used to check details afterwards. Video filming the scene can be helpful afterwards to.	
	Overview sketch of the scene	An overview sketch of the scene is helpful to understand the sequence of events leading to the accident.	
3	**Costs**		
3.1	*Injuries*		
	Injuries on people	Describe the injuries and fatalities of people of the public.	
	Injuries on personnel	Describe the injuries and fatalities of working personnel involved in the accident.	
3.2	*Damages*		
	Costs relating to damages on cargo, goods and other property	Estimate the cost of damages to transported goods and other property, related to the accident.	
	Cost relating to damages on vehicles	Estimate the costs of damages made on vehicles.	
	Costs relating to damage on the infrastructure	Estimate the costs of reconstruction of damaged infrastructure.	
	Costs relating to damage on the environment	Estimate the cost of restoration damages to the environment.	
	Downtime costs	Estimate the costs for closed down infrastructure, stopped transports, vehicles, systems or other.	
	Costs for investigations	Estimate the cost of investigating the accident, engaging experts, using consultants and laboratory work.	
	Total Costs	Sum of all costs.	
4	**Analysis and conclusions**		
4.1	*Mapping the sequence of events*		
	Mapping events in chronological order	What did really happen, on a detailed level? Analyze! Follow all detailed events leading to the accident and describe what barriers were breached along the way.	

4.2	*Analysis and discussion*		
	Analysis	Discuss and reason freely the available facts leading to the conclusions. Give reasons for and against theories and do not fear to speculate, but make sure to always arrive at a conclusion or an assessment of probability that is well founded.	
4.3	*Conclusions*		
	Direct causes	Present the causes directly leading to the accident, such as a punctured tyre or a derailment.	
	Underlying factors	Factors leading to direct causes (above), such as poor maintenance, long hours or medical deficiencies.	
	Root causes	Circumstances such as organisational factors, vague or non-existent routines or poor management.	
4.4	*Other observations*		
		Observations made during the course of the investigation, not directly related to the accident but still of some importance.	
5	**Actions taken**		
5.1	*Implemented measures*	Measures already taken and put into action to correct errors or erroneous actions.	
5.2	*Planned and decided actions, not yet implemented*	Measures taken and planned, but not yet set into motion.	
6	**Proposals for action**		
		List the investigator's proposal for corrective measures and address each one to the relevant party.	
7	**Notification and accident report**		
		Accident report of the safety adviser as appropriate and the duty for the notification	

Annexe 10: Checklist for compliance audit of a management system

Audit details:

Auditor name(s):
File reference:
Date/time:
Location:

Company details and organisation:

Company name:
Address:
Telephone:
Fax:
E-mail:
Web:

Name of the different people met:

Name	Title	Telephone	E-mail

Subject/Inspection aspect	Provision	Compliance			Comments
		OK	NOK	NA	
Company activities					
Identify which activities related with transport are developed by the company					
Package or special form radioactive material design (see checklist 1)		☐	☐	☐	
Manufacturing of package or special form radioactive material (see checklists 2 and 3)		☐	☐	☐	
Maintenance, repair and service activities of packaging's (see checklist 4)		☐	☐	☐	
Preparation of a consignment (consignor) (see checklist 5)		☐	☐	☐	
Transport (see checklist 6)		☐	☐	☐	
Reception of consignment (consignee) (see checklist 8)		☐	☐	☐	
Other: …		☐	☐	☐	
Modes of transport					
Road		☐	☐	☐	
Rail		☐	☐	☐	
Air		☐	☐	☐	
Sea		☐	☐	☐	
Inland waterways		☐	☐	☐	
Management system					
Is there an established and appropriately documented management system?		☐	☐	☐	
Is there a defined organisational structure and management responsibilities?		☐	☐	☐	
Are there organizational policies and defined objectives?		☐	☐	☐	
Does the management system cover the activities carried out by the organisation?		☐	☐	☐	
Is the management system designed to ensure that the transport activities conform to all applicable requirements and regulations?		☐	☐	☐	
Is a graded approach used to ensure that the activities are correctly performed?		☐	☐	☐	
What processes are used to encourage and manage a safety culture within the organisation?		☐	☐	☐	
Does a radiation protection programme exist within the organisation?		☐	☐	☐	
Documentation and control of documents and records					
Has the management system documentation been sufficiently defined: - preparation, issue and approval of documents; - distribution and withdrawal of documents and records; - control of documents and records?		☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	
Management responsibility					
Are the responsbilities clearly defined?		☐	☐	☐	
Are active support, strong leadership and commitment of senior management visible?		☐	☐	☐	
Satisfaction of interested parties					
Are the interested parties (stakeholders) clearly identified?		☐	☐	☐	
Are the requirements, needs and expectations of interested parties identified?		☐	☐	☐	

Resource Management					
Is there a commitment to the timely identification and provision of necessary resources, including personnel, to meet the needs of the organisation and regulatory needs?		☐	☐	☐	
Are the following items described in processes and/or procedures? - Human Resources - Infrastructure and working environment - Financial Resources - Involvement of individuals - Managing information and knowledge		☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	
Training					
Does the operator provide an appropriate training programme for all personnel involved in the transport of RAM?		☐	☐	☐	
Process Implementation					
Are the following items described in processes and/or procedures? - Communication and interfaces - Development of processes - Process management and control of product - Design control - Management systems and the different phases of transport - Purchasing - Identification, traceability and preservation of materials - Process control - Control of inspections, measurements and tests - Servicing		☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	
Measurement, assessment and improvement					
Is the management system subject to review and evaluation, and, if so, how frequently?		☐	☐	☐	
Checks of the supplier services					
Have effective and efficient purchasing processes been defined and suitable controls implemented?		☐	☐	☐	
Does the system ensure that the suppliers are selected and evaluated according to the procedure?		☐	☐	☐	
Are supplier audit planned and documented?		☐	☐	☐	
Internal audits					
Is there a programme for internal audits? Documented?		☐	☐	☐	
Are audits conducted by qualified persons and reported?		☐	☐	☐	
Are effective corrective and preventive actions taken when the system is found to be incorrect?		☐	☐	☐	
Non compliances, corrective and preventive actions, events					
Is there an effective system for registration of non-compliance, corrective and preventive actions, and events?		☐	☐	☐	
Are the non-compliance and events analyzed?		☐	☐	☐	
Is the effectiveness of corrective and preventive actions reviewed and monitored?		☐	☐	☐	