

RADIOACTIVE WASTES TRANSPORTATION IN FRANCE

M. Thieblemont

ANDRA - Centre de l'Aube - BP 7, 10200 Soulaines-Dhuys, France

SUMMARY

In France, all the short lived low and medium activity wastes are stored at the Centre de l'Aube managed by ANDRA (National agency for the management of radioactive wastes).

ANDRA has to guarantee an optimal safety level during the upstream transportation activities.

On the one hand all the packages delivered to the Centre de l'Aube have to be first agreed by ANDRA according to pre-established specifications and procedures. Computer connections between ANDRA and wastes producers, and controls allow to ensure their respect.

On the other hand, the producers must use qualify carriers. In order to get this qualification, they must respect ADR prescriptions and specific additional requirements settled by ANDRA.

On the Centre de l'Aube, check-up are carried out to verify that the procedures are respected during the transportation operations.

In the last fifteen years, 3 significant accidents involving low and medium activity wastes have occurred, but we never observe radiological impact in the environment.

INTRODUCTION

In FRANCE, all the short lived low or medium activity wastes produced by about fifty producers are stored at Centre de l'Aube. Its management is the responsibility of ANDRA.

The producers are responsible for producing packages according to ANDRA's specifications. Also they are responsible for transport but some of them have delegated this mission to ANDRA.

ANDRA has set procedures which ensure an optimal level of security and safety during the transportation operations. Those documents concern the transport itself and some upstream and downstream activities.

PROCEDURE FOR PACKAGE ACCEPTANCE

This procedure is applied upstream the transportation operations. Producers are connected to ANDRA's computer and send all the characteristics concerning the package by this network.

We mark three steps :

> The package fabrication

When a package is made, a specific identification number is given to it. This number allows to know all its characteristics about :

- . *its designation* : origin
 volume
 weight
- . *its composition* : waste nature
 physicochemical state
 embedding
- . *its radiological characteristics* :
 spectrum
 activity per radionuclide
 total activity
 dose rate

A computerised treatment allows to verify the compatibility between the package characteristics and the data of the approval certificate and then delivers the package acceptance.

> Validation of the shipment

When a producer wants to organise a shipment, he sends to ANDRA a list of the concerned packages. The computer verifies that all the packages have been previously accepted and validates the shipment.

> Confirmation of the shipment

When the packages have been loaded on the vehicle, the producer confirms his shipment by notifying the information related to the transport (haulier, vehicle's number, driver's name,...).

SECURITY OF THE TRANSPORT

Carriers qualification

Since the beginning of 1997, in France, the radioactive wastes transport has been submitted to European Regulations : ADR (Road transport) and RID (Rail transport).

In order to get the highest level of safety and security in road transport, ANDRA has established specific requirements. Only the carriers qualified by ANDRA are allowed to carry the wastes to the disposal centre.

To get this qualification which has to be renewed every year, carriers respect a procedure which condenses the main points of ADR concerning exclusively the transport of low level radioactive wastes and specific requirements imposed by ANDRA. This document mainly concerns drivers and vehicles. ANDRA carries out inspection and gives the qualification if all the points noticed in the procedure are respected. Also carriers have to follow a quality assurance program.

Driver's Training

The main subjects covered are :

- . radioactivity knowledge
- . transport regulations
- . carriers and shippers obligations.
- . intervention in case of an accident

At the end of this training, an examination is carried out. If successful, a 4 years licence is delivered to the driver. When this licence expires, he must take follow up training course.

Medical survey

The drivers have to respect requirements for the workers of nuclear Industry.

Vehicles equipment

According to the qualification procedure, vehicles have to respect the following requirements :

- . platform being decontaminable easily
- . wedging and stowing schemes approved by ANDRA
- . in the semi-trailer, an installation have to be provided for receiving a biological protection between the cabin and the loading.
- . they must have supports to get reglementary panels and labels.
- . two special fire-extinguisher (powder). one for the engine and one for the loading.
- . have intervention and repair materials to face transport incident or accident.

Transport documents

During the transport operation the drivers must have the following documents :

- . information about the consignor and the consignee
- . the itinerary
- . instructions in case of an accident

The carriers checking

Every month, controls are made on the shipments which get to the Centre de l'Aube. In 1996 we realised 24 controls. Some of them pointed out minor problems.

The transportation office is responsible for advising the carriers or producers when they are responsible for their transport operations if any anomalies are noted. In case of frequent anomalies or if these anomalies are major, the certification may be suspended or cancelled.

Tracking during the transport

Just before the beginning of the shipment, all the data are transmitted by network to the Centre de l'Aube. The delivery note, the list of the packages and their characteristics (spectrum activity, waste nature, embedding ...) are established and given with the other documents of transport to the driver. A copy of this document is sent by fax to ANDRA.

ANDRA has settled permanent staff on duty night and day in order to facing up to accidents or incidents which could occur during the transport out of the business hours.

The transportation office has settled a document which gives for every transport of the week $w+1$, the origin, the departure date, the number and the type of wagon or semi-trailer, the type of package and the arrival date into the railway terminal or in the Centre de l'Aube.

In case of accident or incident, this permanent staff have to connect with a specific computer located in the Centre de l'Aube and with the document established by the transportation office and the documents of transport he will be able to know the activity and the characteristics of the packages contained in the concerned shipping. Also, he will be able to give useful indications necessary to the intervention staff.

CONCLUSION

In the last five years, 3000 vehicles delivered radioactive wastes to the Centre de l'Aube. Only three significant incidents or accidents have occurred.

No radiological impact have been detected. The first one was due to a driving mistake, the second one was due to a mechanical problem and the last one was the consequence of a strike decided by the drivers. At this occasion, a truck was blocked and involved in an accident. All these problems are quickly solved, in general, in the course of the day.

Concerning rail transports, no accident has been deployed.