

CONVEYANCE TRACKING SYSTEM AND EMERGENCY RESPONSE

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INTRODUCTION

Within the year 2000, TRANSNUCLEAIRE performed almost 3000 transports of nuclear and radioactive materials.

This impressive international activity provided by road, railway, sea and airway, shows the need for TRANSNUCLEAIRE Paris to prevent any transport risk and to react efficiently by facing up to any accident and limiting its consequences.

Moreover according to IAEA recommendations and to comply with the French regulations, our company has implemented a specific organization since 1997 which lies on an Emergency Response Plan.

The organization is composed of technical, logistic and communication personnel and specific equipment.

The current presentation is to be articulated according to the following items:

- The legal and political framework
- The composition of the Emergency Response Plan
- TRANSNUCLEAIRE means and equipment

THE LEGAL FRAMEWORK

The main target of the legal framework is to share out responsibilities according to international and national regulations:

IAEA recommendations (safety series n°87)

- Reaction facing an accident during a transport of radioactive materials
- Necessity of emergency planification
- Preparation of response
- Implementation of response plans and specific procedures by the transport companies.

French laws and regulations

- Safety measures against major risks
- Obligation of Prefecture's (Government's local representation) emergency plans and inventory of response means available by Government's Services and Private Companies.

TRANSNUCLEAIRE EMERGENCY RESPONSE ORGANIZATION

Organization

First Transnucléaire had to provide a general plan in order to describe the organization, the human resources and the equipment necessary for three steps of reaction:

- To give the alarm
- To analyze the situation
- To operate the emergency means

This Emergency Plan is composed of an already prepared general planning which is then subdivided in already prepared specific plans.

Finally, operation processes have to be decided with a selection of emergency manpower and equipment.

This organization is tested each year by a training. In 2000, a training organized by the French Authority was another test opportunity as well as an official acknowledgement.

Then Transnucléaire must implement specific human resources and equipment:

- Before alarm

A TRANSNUCLEAIRE duty officer is chosen among the company managers to be on an assignment of 24 hours a day and 7 days a week.

As soon as he is alerted after an accident he has to :

- Report to the top management
- Operate the start of the emergency committee
- Contact the Competent Authorities
- Contact the customer, the consignor and the consignee

- After alarm

- The Emergency Committee is articulated in three sections and located in a specially built "Emergency room":
 - A Command section
 - A Communication section
 - A Technical section
- The Emergency Committee is composed of TNP managers and experts with the possible support of additional experts from COGEMA and is informed by a mobile command and communication team. This team must rapidly reach the place of the accident.

The sharing out of tasks in the Emergency Committee

- Tasks of the Command and decision section

- Estimation of the risks
- Logistic and technical assistance to Authorities
- Coordination of the operating processes according to the Emergency Plan
- Information about the conditions of the accident and the operating processes to minimize its consequences or to solve the situation

The Emergency Committee is located in a specially built operation center fully equipped with communication means (Vehicles tracking system, telephones, telefax, teleconference system, ...) and all the necessary documentation (regulations, transport licenses, technical documents on transport equipment, maps, safety files, Emergency Plan and specific plans, ...)

- Tasks of the Communication Section

Preparation and elaboration of a crisis communication particularly for the medias

- Providing of a specific communication plan
- Information for the Press
- Information from the Press

- Tasks of the Technical analysis section
 - Proposition of technical solutions and assistance
 - Provision of technical expertises
 - Estimation of the technical state of the flasks and of hazardous consequences
 - Technical assistance to the Competent Authorities and their experts

- Tasks of the Mobile Command and communication team

This team is "the eyes and the ears" of the Command and Decision section

 - Implementation of command, information and expertise near the accident
 - Equipped with a first intervention case (satellites communication system, radio or chemical protection equipment, camera, computers...)
 - Technical assistance to the local Competent Authorities.

SPECIFIC EQUIPMENT FOR EMERGENCY RESPONSE

The operation room used by the Emergency Committee is equipped with a conveyance tracking system.

This tracking system is operated permanently during TRANSNUCLEAIRE transports by road, sea and railway.

The system is based on information transmitted by satellites:

- location of vehicles (trucks, wagons, ships...) through the GPS cover
- transmission of location and other information through the INMARSAT cover.

60 TRUCKS AND 31 RAILWAY WAGONS ARE NOW EQUIPPED BY TRANSNUCLEAIRE

Information transmitted by TRANSNUCLEAIRE tracking system:

Systematically

- location of the vehicle (maritime coordinates)
- speed of the vehicle
- stop of the vehicle

Examples of other possible information:

- temperature of the cask, of the cargo room
- dosis rate
- accident (by shock detectors)
- vehicle or cargo's unauthorized entering.

A specific equipment for the recovery of a heavy cask

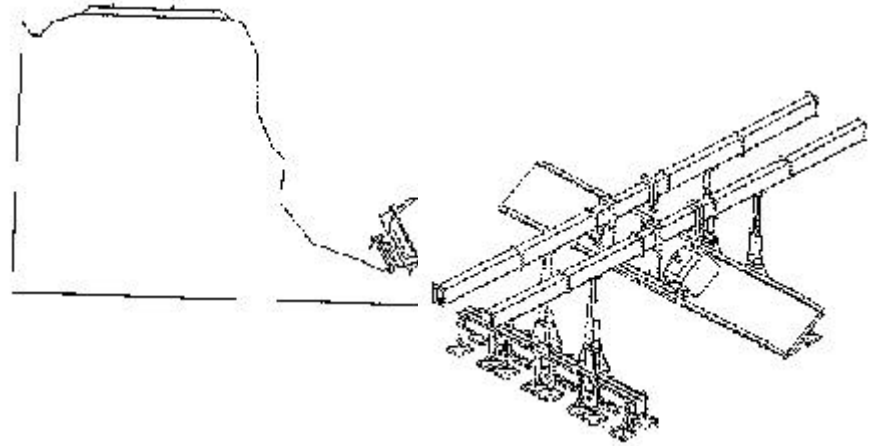
This equipment was developed by Transnucleaire in 1996 and 1997 in order to recover an heavy cask (for spent fuel, Mox or vitrified residues) in case of an accident in impassable places.

The composition of the system is the following :

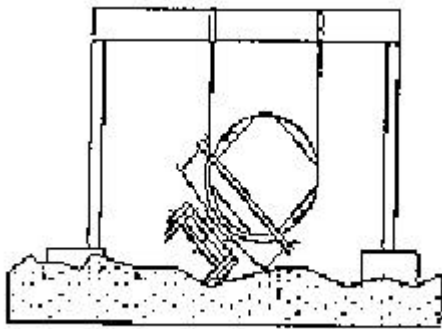
- a mobile lifting device which can be assembled above the cask
- specific sledge and winch to haul the cask until a passable place
- about 32 ISO-20 'containers to transport all the equipment and shelters for the operations and the Mobile Command Team

- The assembly and use of this equipment was actually tested in 1998. The operations did obtain the expected results in term of reliability.

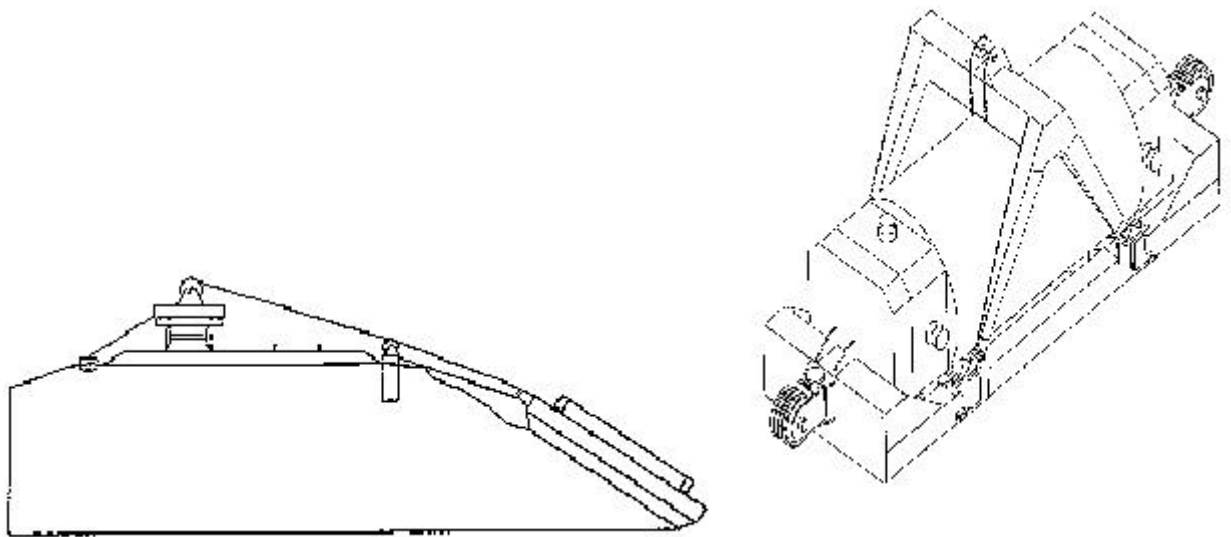
Cask with the wagon falling into a gully



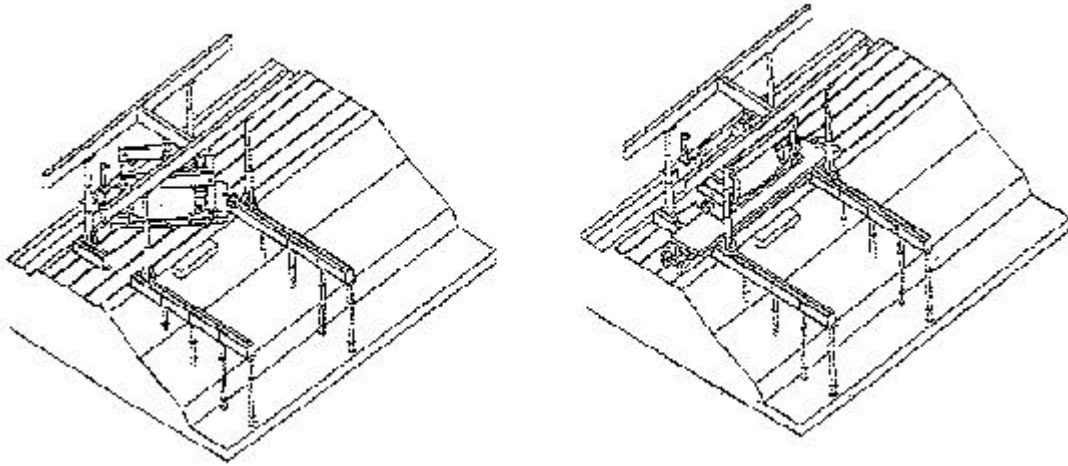
Use of a mobile gantry crane to separate the cask from the wagon, the cask is put into the sledge



The sledge is hauled to the level of the tracks



The gantry crane is reassembled above the tracks to place the cask on a new wagon



CONCLUSION

Transnucléaire is not only a qualified supplier for movements of nuclear materials but also an experienced partner for Emergency Response.

Given a real priority to safety and security according to international and national regulations, Transnucléaire may implement a well proven emergency response organization with skilled personal and specific means.

Our every day used Conveyance Tracking Device and the specific means developed by Transnucléaire to help any intervention in case of an accident during a movement of nuclear materials are important parts of our commercial will.

This will is plainly to support our customer with the provision of the best conditions of Transport.