

Fire in a warehouse

August 1st, 2000

Marly-la-Ville [Val d'Oise]

France

Fire

Warehouse

Cotton wool
cellulose

Arsenic trioxide

Phytosanitary
products

Works

Collapse

Firefighting water

Water table

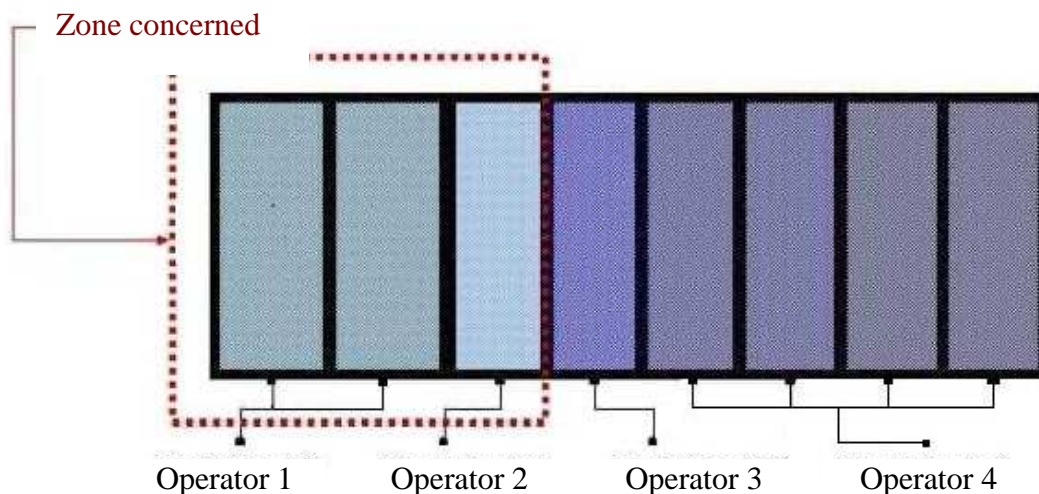
THE INSTALLATIONS IN QUESTION

The site:

The building which makes up the warehouse occupies a surface area of 9,600 m² and is 10 m tall. It is arranged into eight 1,200-m² cells.

Its owner rents the building to various renters who occupy one or more cells. The day of the accident, 4 renters occupied the 8 cells.

This warehouse is subject to authorisation owing to the storage of combustible materials in quantities greater than 500 tonnes in a building volume of more than 50,000 m³. It is governed by the SEVESO directive owing to the quantity of arsenic trioxide present at the site (105 kg > 100 kg, Seveso classification threshold).



THE ACCIDENT, ITS BEHAVIOUR AND CONSEQUENCES

The accident

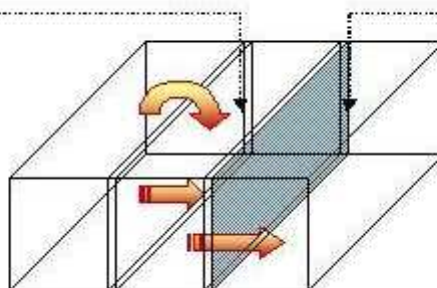
At 11.30 am on August 1st, 2000, a fire started in the bales of cotton-wool-like cellulose stored in a cells that one of the renters used as a shop for manufacturing napkins, tablecloths and paper for sanitary use.

Employees attempted to put out the blaze using the internal hose station network. Within 20 minutes, the fire spread to the operator's 2 cells via the roof and existing openings in the walls. The partial collapse of a separating concrete block wall allowed the fire to spread to the agro-pharmaceutical products and animal feed stored by the adjacent logistics company.

Thirty-seven firemen were overwhelmed by the smoke (7 were hospitalised and placed under observation). The fire protection water (1,500 m³) loaded with pesticides, detergents and soaps, collected in a non-hermetic holding reservoir was threatening to pollute the drinking water. Requisition measures were taken to ensure that it was pumped and stored prior to treatment.

2 cells:
2400 m²
24,000 m³

1 cell:
1,200 m²
12,000 m³



The fire was brought under control 2 hours after it had started. Part of the building was spared owing to measures undertaken by the fire brigade and emergency services.

The consequences:

Property damage at the site was estimated at 15 MF (2.29 M€).

Approximately 1,500 m³ of the fire protection water collected in a non-hermetic storm water holding reservoir upstream from the site threatening the water table and the Marly-La-Ville drinking water collection facilities. The reservoir's soil can be considered as polluted and the rainwater network tainted. Products initially stored and damaged by the fire remain in the cells.

The difficulties encountered in the elimination of the polluted water were the most significant consequences of this fire. Besides the high costs of the operations and the judicial and administrative procedures initiated, water treatment operations extended over an 11-month period.

European scale of industrial accidents

By applying the rating rules of the 18 parameters of the scale made official in February 1994 by the Committee of Competent Authorities of the Member States which oversees the application of the 'SEVESO' directive, the Marly-la-Ville accident can be characterised by the following 4 indices, based on the information available.

Dangerous materials released								
Human and social consequences								
Environmental consequences								
Economic consequences								

The parameters that comprise these indices and the corresponding rating method are available at the following address:
<http://www.aria.ecologie.gouv.fr>

The level 5 rating relative to the quantities of dangerous substances released (parameter Q1) corresponds to the spillage of 105 kg of arsenic trioxide, which is a product classified according to 'SEVESO 2' Directive 96/82/EC.

The 37 firemen who were injured explains the level 3 rating of the 'human and social consequences' index (parameter H5).

The contamination of the underground storm water basin is characterised by the level 1 rating for the 'environmental consequences' index (parameter Env13).

And finally, the 15 MF (2.29 M€) in property damage account for the level 3 rating of the 'economic consequences' index (parameter E15).

ORIGIN, CAUSES AND CIRCUMSTANCES OF THE ACCIDENT

The fire broke out while workmen were using a torch to repair damage left by major storms in early winter 1999.

The visit conducted by the Classified Installations Inspectorate at the site following the fire showed that numerous sensitive chemical products were stored in the cells that had burned. This could be considered an aggravating factor. The categories of the products stored are cited below:

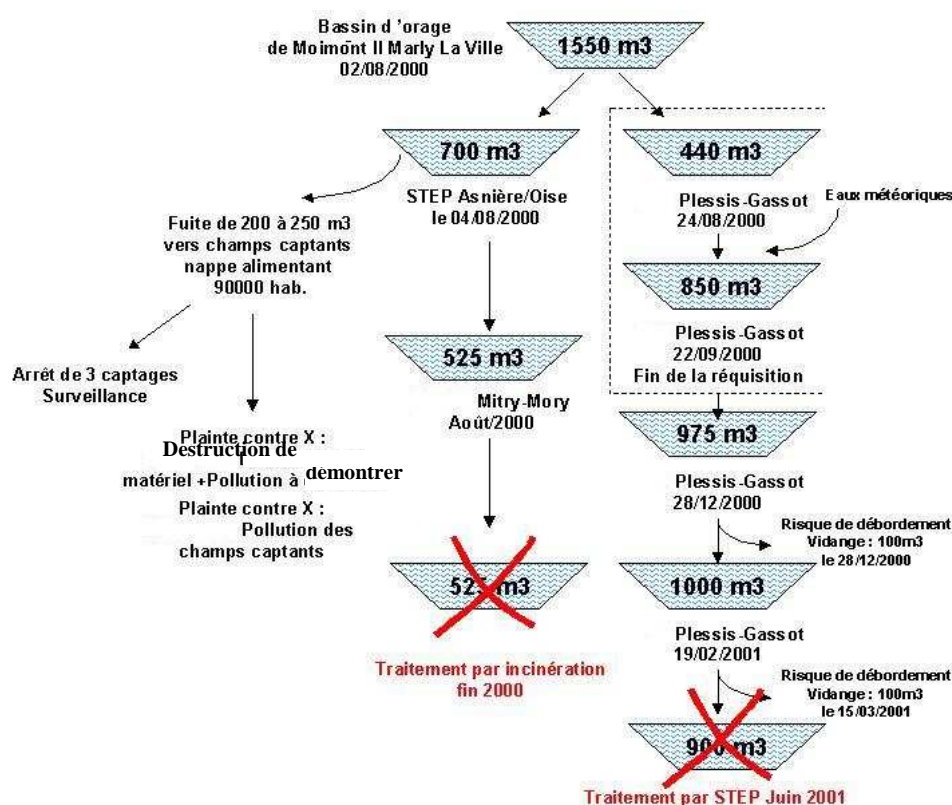
- ✓ Strong bases, soaps, inks... in one of the company's cells where the fire started,
- ✓ Pesticide products, herbicides, fungicides, arsenic trioxide... in the cell of the adjacent transport company.

ACTION TAKEN

The prime objectives of emergency action were to save the quality of the water table.

On August 4th, 2000, the Prefect of the Val d'Oise gave official notice to the operators responsible for the products at issue to pump the fire protection water collected in the Marly-La-Ville holding reservoir within 24 hours under the terms of Article 18 of the Water Act. Faced with the refusal of the 2 operators, as of August 5th, 2000, the Prefect undertook requisition measures under the terms of the Acts of July 22nd, 1987 and July 11th, 1983 relative to the following points:

- ✓ the pumping and transport means of a specialised company,
- ✓ the means required to store the fire protection water prior to elimination consisting of the leaching tank of the Asnières-sur-Oise treatment plant (800 m³) and the aeration tank of a class 2 technical burial center (700 m³),
- ✓ the monitoring of the water table by the installation of 2 piezometers upstream from the Bellefontaine drinking water collection station.



LESSONS LEARNED

In this case, certain difficulties appeared, namely:

- based on the operators' refusal to satisfy the requirements of the prefectural orders issued successively after the accident: emergency prefectural order (Environmental Code, article L512-7) and formal notification (article L514-1),
- by the delays accumulated through non-contentious administrative recourse, then legal action.

The requisition of service providing companies allows the necessary work to be performed. The final financial payment for the operations will be covered by those responsible for the accident and its consequences, and their delayed action only increased the overall cost of the necessary operations.

The rapid spread of the fire to a cell occupied by a third party shows that the required construction practices and implemented at the warehouse site must be adapted and checked.

The presence of a quantity of arsenic derivatives equivalent to a SEVESO classification requires vigilance relative to the materials stocked and their risk potential in buildings reserved for the varied product storage of a transport company.

The pollution generated by firefighting water is likely to place the water table at risk and therefore justifies the construction of hermetic catch basins by each operator.

In configurations involving imbricated installations operated by various manufacturers, and likely to result in the division of a platform or the addition of an installation, all of the technical and organisational questions regarding the prevention of pollution and hazards must be controlled through appropriate measures. The person or organisation in charge of executing these measures must be clearly identified.