

**UKOPA/SA/10/0051**

# ***UKOPA SAFETY ALERT***

## **Leak on an underground pipeline due to drilling operation**

**Site: Rome / Date : 13th of May, 2008**

### **1. SUMMARY**

At around 4:00 pm on the 13<sup>th</sup> of May 2008 there was a hydrocarbon leak from the 8" low pressure pipeline delivering kerosene to the aviation depot at Fiumicino airport. A vertical drilling rig used in the motorway roadwork construction nearby the pipeline area has drilled into the pipeline which was buried at 3,5 m deep.

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The alert was communicated with the refinery at about 5:00 pm by a subcontractor employee in charge of the surveillance of the refinery pipelines. A crisis cell was mobilized and the first intervention team of the refinery arrived on site thirty minutes later. The Prefecture was notified and the fire brigade arrived on site to assist the refinery teams until the pipeline and the area were secured.

## **2. CONSEQUENCES (potential Gravity Level : 4)**

The point of impact was at 5 km from the refinery. As the pipeline was shut down when the loss of confinement occurred, only a few cubic meters of kerosene spilled. Hydrocarbons were partially recovered and the remaining stayed on the ground. Contaminated soil was removed after the pipeline had been repaired.

Repair work to the pipeline was carried out quickly and the pipeline was brought back into service three days after the accident.

There was no break in kerosene supplies to Fiumicino airport, nor any media impact.



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Potential consequences : major loss of kerosene if pipe had been under higher pressure with important environmental, economic and media impacts

## **3. CAUSES**

### **3.1 IMMEDIATE CAUSES**

The machine concerned is equipment used in drilling work for a new motorway structure. This work was at a distance of more than 50 m from the pipeline's right of way.

The jobsite and more particularly the drilling work, was known and notified to the refinery's monitoring departments for a long time. The refinery's pipelines routing area was known by the contractor. The accident occurred at the end of the working day, following the drilling equipment driver decision to sink the drilling bit into the ground, outside the usual jobsite area.

### **3.2 ROOT CAUSES**

Lack of information of the drilling equipment driver about the pipeline position. The current prescriptions do not plan to check that information supplied to the contractor of external works was well transmitted on to subcontractor.

The layout of the pipeline is not identified well enough on the ground. Pipeline markers provided when work on site began in 2005 had disappeared over time and had not been replaced.

## **4. ACTIONS TAKEN BY THE SITE**

1. Before the beginning of the work

- ⌚ Reinforce the marking of the zone of pipelines in the presence of the company in charge of the work, by indicating in writing exactly the limitations in terms of passage and works
- ⌚ Check that the other companies working on jobsite have received detailed information about the pipe-line area requiring protection.
- ⌚ Ensure report is signed by the two parties, describing the area of pipelines to be protected and the obligation of the company to maintain the marking.

2- While work is in progress, and in particular in the case of long-term work:

- ⌚ Check during the surveillance rounds that the contractor has kept the specific marking in good order.
- ⌚ Check that the work is still being complied with the instructions stated at the beginning.
- ⌚ Remind the information about the pipeline's area to the project manager and the contractors according to a predefined frequency.

3. When work is complete, check that :

- ⌚ The work complies with the prescriptions required
- ⌚ The work carried out by the contractor are in line with the work he declared

## **5. MAIN LEARNINGS**

Following this event, we are issuing the following recommendations:

In a preventive way,

- ⌚ Make sure that the presence of pipelines and that the rights of way are permanently known by the local residents, the authority associated,... (update of the lists of owners, local residents, ...).
- ⌚ Watch the evolution of the environment of pipelines (urbanization, works, change of affectation of a building ..), to anticipate possible interferences with the rights of way linked to pipelines
- ⌚ Respect the regulations in force

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For the works realized nearby pipelines,

- ⌚ Write a procedure to follow-up this kind of works in line with the appropriate standards,
- ⌚ Before the beginning of the works, reinforce the marking of the zone of the pipelines which is near these works,
- ⌚ Respect the regulations in force

During all the duration of the works,

- ⌚ Maintain the reinforced marking,
- ⌚ Make sure regularly that the contracting authority and the subcontracting companies are fully aware of the presence of pipelines and associated rights of way,
- ⌚ Control that our recommendations or technical prescriptions relative to the conditions of the work execution are fulfilled