STATE AND CHEMICAL INDUSTRIES: STRENGTHENING REGULATIONS?

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Abstract - On 21 September 2001, the explosion that occurred in a stockpile of 300 tonnes of ammonium nitrate occurred in hangar 221 of the AZF Grande-Paroisse plant in Toulouse (France). The explosion officially killed 31 people (22 of whom were on the chemical site), injured thousands, damaged or destroyed 27,000 buildings. This industrial disaster is one of the most serious in France, affecting buildings several kilometres from the site of the explosion. This text aims to show how the French State relies on environmental groups to impose risk management guidelines on companies in the chemical sector.

Keywords - Industrial Hazards, Industrial Accident, Environment, Protests

I. INTRODUCTION

On 21 September 2001, the explosion that occurred in a stockpile of 300 tons of ammonium nitrate occurred in hangar 221 of the AZF Grande-Paroisse plant in Toulouse (France). The explosion officially killed 31 people (22 of whom were on the chemical site), injured thousands, damaged or destroyed 27,000 buildings. This industrial disaster is one of the most serious in France, affecting buildings several kilometers from the site of the explosion. The noise of the explosion was heard up to 40 kilometers from Toulouse; the seismic shock was assessed at 3.4 on the Richter scale. In June 2002, nine months later, many houses still do not have real windows, and the physical traces of the disaster are visible several years later: buildings awaiting either destruction or rehabilitation. This text aims to show how the French State relies on environmental groups to impose risk management guidelines on companies in the chemical sector.

II. OVERTURNING ADMINISTRATIVE PRACTICES

Before Total FinaElf's decision to abandon the activities of the "Grande-Paroisse" (AZF) plant in January 2002 (the official announcement was officially made on 11 April 2002), the decision of dismantling of this plant was immediate. Indeed, the absence of any takeover process reveals, on the low side, TotalFinaElf's policy as regards to its "Grande-Paroisse" subsidiary, whose chemical activities were less profitable than the petroleum ones. Texts are circulating on the web about European overcapacity in nitrogen fertilizer production and the parent company's desire to get rid of the chemical branch's activities. On the other hand, the managers of other companies based on the same site than AZF (SNPE, Tolochimie, Raisio and Isochem.) are adopting the opposite attitude by stepping up efforts to get their plants restarted. By decree of 21 September 2001, the “Prefect” of Haute-Garonne suspended the site's activities. This order required all companies to carry out studies to assess the relevance of restarting their workshops. This suspension was essentially aimed at ensuring safety and includes a request for the evacuation or neutralization of dangerous and toxic materials as well as an expert assessment of the installations. More specifically, this prefectural decree imposed on companies a set of steps such as: (a) analysis of the consequences of the disaster, (b) assessment of the damaged installations from the point of view of their safety and (c) assessment of the measures to be taken to continue operation "under good safety conditions".

A number of consulting firms were called in, resulting in a set of reports describing the state of the installations and providing recommendations to be followed before any resumption of activity.

Initially, two appraisal firms were commissioned by the SNPE group to carry out an examination of damage to buildings and equipment. While the results of these verifications were made available to the “Inspection of classified installations” (environmental police), the Prime Minister nevertheless requested, as early as October 2001, that additional expertise be engaged independently of the companies. The Dutch institute TNO was commissioned by the ministry to carry out this expertise on the basis of the recommendations stipulated in the prefectural suspension order. TNO's expertise should have todetermine which installations can be reused and which need to be repaired or replaced. The re-commissioning of establishments could only be authorized after a report and advice from the inspection of classified installations in the light of all these studies. Formally, Article 3 specified that "... the restarting of the installations may only take place after: (a) checks and repairs recommended by the competent external bodies, (b) tests of the installations' functionality and (c) control room monitoring in accordance with the recommendations of the TNO body".

The main risks presented by the raw materials and products used or stored on the site, covered by the prefectoral decree were: toxic risk, explosion risk and fire risk. The toxic risk was essentially due to the presence of phosgene (extremely toxic), chlorine (very highly toxic) and ammonia (highly toxic). The risk of explosion was linked to the presence of hydrogen, oxidants (ammonium perchlorate) and other explosive products. The risk of fire came from the flammable nature of solvents (alcohols, toluene, etc.). The environmental impacts of the chemical site's installations, recorded by the State services, concerned: liquid effluents, atmospheric effluents, maintenance, packaging and manufacturing waste, noise and problems related to the transport of hazardous materials.

The effects of the disaster on the installations of AZF's neighboring companies resulted in damage to many buildings, putting most of the site's production out of service. However, despite fears, no over-accidents occurred. Gaseous emissions were limited. Toxic gases remained confined in the storage facilities and pipelines, although the second envelope of the phosgene storage area was damaged. The measures taken very quickly by the companies and the DRIRE quickly eliminated the risk of over-accident.

At the end of December 2001, considering that the requirements set out in the prefectural decree had been met and having carried out the repairs, the SNPE group considered that the restarting of at least part of the activities is possible. By letter dated 28 December 2001, the SNPE director therefore asked the prefect to lift the suspension of activity for part of the installations: the 'first tranche'. This concerns phosgene-free production, i.e. two main families of products: non-space fine chemistry plus research and development on the one hand, and space fine chemistry on the other. The first stage was estimated at approximately 30% of SNPE's total activity.
With a view to restarting in the very short term, considerable work had been undertaken by companies during the first three months. Thus, the dossier submitted to the DRIRE and the prefecture included : (a) a provisional requalification file including the results of inspections carried out by outside bodies on the facilities and the corrective and preventive actions carried out by the SNPE, (b) an overall hazard study, corresponding to the first stage, (c) fourteen hazard studies specific to each of the workshops, (d) a flood risk prevention and protection study, (e) the safety management system, (f) the establishment's internal operation plan and (h) the extract from the CHSCT report of 11 December 2001 giving a favorable opinion on the hazard studies, the safety system and the Internal Operation Plan (POI). The companies specified that the completion or updating of all these documents is part of "the strengthening of the regulatory system for the prevention of risks associated with industrial activities involving hazardous chemical substances", prescribed by the Order of 10 May 2000, transcribing Directive 96/82/EC, known as Seveso II, into French law. Even though no process modifications have been undertaken, this list revealed modifications and innovations concerning the major accident prevention policy (PPAM) and a new safety management system (SGS).

At the time when SNPE submitted the dossier for restarting the first unit (i.e. 28 December 2001), the TNO's expert report had not been submitted either to the Prefect of Haute-Garonne or to the environmental police. The report was not submitted to the authorities until 23 January 2002. However, the TNO report concerned the first industrial phase, which also included phosgene and hydrogen activities and three departments: personal safety, explosives and industrial processes. It was based on a probabilistic approach to risks with regard to 31 different scenarios including, for example, an aircraft crash or the rupture of a chlorine wagon. TNO's report gave overall accreditation to all the steps taken by SNPE in terms of repairs, hazard assessment and prevention systems. It therefore concluded that it is possible to restart operations under certain conditions, including: a reduction in authorized stocks (10 tons of chlorine compared to 60 tons previously), the addition of retention tanks, a reduction in pipe lengths, the installation of automatic fire suppression equipment, the separation of certain areas to avoid domino effects, a strengthening of removal procedures and special attention to functional tests. Despite this favorable report, the State services did not grant authorization for restarting, considering that many problems remain unresolved.

III. WHEN THE ADMINISTRATIVE SPHERE WAS OPPOSED TO RESTARTING

If the repair of damaged facilities was considered satisfactory, as well as the updating of hazard studies, the lack of transformation of manufacturing processes and storage modalities represented a stumbling block. The companies on the site had restored the installations to working order, but essentially in the same condition. There had been no significant reduction in hazards at source. However, while risk management did involve the implementation of barriers to contain the effects of a disaster, it could also result in a reduction of hazards at source, limiting the potential scale of these effects.

In concrete terms, in the case of the SNPE group, the improvements made by the companies had resulted, for example, in the construction of retention basins, the addition of water curtains to prevent the spread of fires, the installation of an effluent collection system,

etc. Consequently, the companies had only taken measures to contain potential effects by leaving the manufacturing processes unchanged and not reducing storage volumes in a manner deemed satisfactory. The companies was sticking to an approach based on placing additional barriers to reduce the risk but not the hazard at the source.

In Toulouse, the environmental police defended an approach to "risk control" based on actions aimed both at containing the effects of accidents and minimizing the danger itself. Thus, in concrete terms, industrialists were asked, for example, to: reduce the quantities of products used, reduce the length or diameters of pipes, reduce or bury stocks, couple human devices with automatic devices... The Prefect indirectly supported this risk approach by specifying, publicly, that "... on the basis of the information available to me, noting that the danger zones include the bypass and the Chemin des Etroits, I have asked to examine the possibility of reducing the danger perimeters to prevent them from exceeding the limits of the company".

Believing that the companies on the site did not meet this type of requirement, the environmentalpolice referred a number of requests to the companies for justification of their choices and processes in relation to the best possible techniques. This last aspect is essential from the point of view of the new orientations that the environmental policewas seeking to put forward in terms of "risk control".

The major difficulty lied in the fact that this specific approach to risk and the requests made by the administration were not supported by specific regulations. The environmental police readily acknowledged that this approach was deliberately part of "anticipating regulatory changes". Indeed, the administrative decision to authorize the establishment of a new operation referred to well-defined legislation and procedural frameworks. On the other hand, in the case of an existing operation that had previously obtained an operating permit, administrative prerogatives were greatly reduced. In other words, previously granted operating permits could not be challenged if the company's operating conditions remained unchanged.

The legal framework did not provide for such a situation, nor dit it provide for the procedure likely to validate the decision to maintain or lift the order suspending industrial activities. The problem was all the more complex in that the undertakings whose activities were suspended were not themselves the cause of the disaster. While these companies did not question the legitimacy of the suspension order imposed by the prefect immediately after the disaster - the facilities had to be checked - on the other hand, they refuted the maintenance of the prefectural order once the checks on the workshops had been carried out and the repair work completed. Before the disaster, these companies had an operating permit; how can one justify a refusal to take over as soon as an identical (or even improved) repair is carried out?

The companies believed that they were entitled to do so and were demanding, as early as December 2001, to obtain a permit to operate again without further conditions. Since the official steps had yielded few results, these companies then asserted their status as victims and pointed out the risks of losing their customers, arguing that their survival was at stake, as well as part of the Toulouse economic basin.

State services were thus confronted with a significant procedural difficulty. The requirement to reduce the dangers at source by means of large-scale transformations of manufacturing processes or storage could not be supported by any text of the current legislation. The pre-existence of the installations and the activity authorization from which they benefit could not be called into question except in the case of proven faults. Therefore, for the State, whose objective was to delay the restart, it was a matter of defining the reasons that could legitimately be put forward to maintain the cessation of activities and, correlatively, of defining the procedures and criteria that would govern the restart.

State services, with the approval of the government, opted for a particular strategy. They extended the restart procedure to a formal passage through public debate: "...the industrial solutions that will be considered for the Toulouse chemical cluster will have to be presented, debated and implemented in complete transparency". The expected effect of the debate on the industrial project was to delay the decision and "save time", particularly in relation to the 2002 presidential elections deadline. But, more fundamentally, this debate should also allow the administration to rely on the mobilization and the civic parties to force companies, which could not be forced by legal means, to start transforming their production methods.

Thus, in particular for phosgene, faced with the position of the State which "as the main shareholder, asks the company to examine the possibility of transforming the manufacturing processes and to present the results of its work", the SNPE could only accept, at least formally, the possibility of designing a new generation of plant, consuming phosgene as it is produced (a chemistry on tap) and avoiding excessive stocks. As for activities relating to fine chemicals, space and national defense, the State states that it "will be up to SNPE to indicate whether it could, subject to undoubtedly very significant modifications to existing industrial installations, met an absolute safety requirement".

This case shows how civil society (NGOs) were mobilized by French State to overcome companies resistance. It also reveals a new kind of social relations between state and companies, previously on close cooperation. In this perspective, it appears that NGOs represent, in some situations, a lever to force companies to increase their prevention efforts. Nevertheless, it does not mean that state and NGOs engaged in a honeymoon trip. Even if we can observe the same types of cases from time to time, we also can see fluctuations in relations between state and companies. For instance, in the nuclear domain, NGOs have no word to say. In other terms, some industrial domains a flexible, but some others are not when they concerned "state industries" as nuclear ones, specifically in France.

REFERENCES

[1] Andurand, R., 1996. Saga des Secrétariats Permanents de Prévention des Problèmes Industriels. Paris, Editions Préventique

[2] Chaskiel, P., 2004. « Syndicalisme et frontières de l'entreprise : La CGT face à la catastrophe de l'usine AZF de Toulouse (21 sept. 2001- juillet 2002) », communication au colloque Histoire et Gestion, Toulouse, 25-26 novembre.

[3] Daumas, J.-C. et Mioche, P., 2004. " Histoire des entreprises et environnement : une frontière pour la recherche ", Entreprise et Histoire, 69-88

[4] Gilbert, C., 2003. La fabrique des risques. Cahiers Internationaux de Sociologie, janvier-juin, vol CXIV, 55-72

[5] Suraud, M.-G., 2003. Le net ou la clôture de l'espace public. Débats sur l'accident industriel de Toulouse (septembre 2001), Réseaux, n° 118, 211-226

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