Conventions on multi-operator sites : an efficient risk management tool

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ABSTRACT

Until the end of the 20th century, single user sites were the norm in Europe, but in the last 10 years, the situation has changed. Today, especially in the chemical industry, sites are operated by several companies with facilities close to one another.

Beyond business interests, multi-operator sites can offer great advantages to deal with environment, safety, security and emergency management. But, this change generates new risks, because of the interdependence between different companies, and calls for a new organization of risk management at site scale.

For managing overall risk, it is necessary to define a minimum of common rules. In particular, companies should be encouraged to conclude clear and efficient contracts between themselves. These contracts under private law are very flexible and can be easily updated to accompany the development of sites.

The aim of this paper is to highlight the main issues brought by this new kind of organization and to present INERIS' conclusions on appropriate contracts between operators (conventions) and efficient risk management on each site.

1. INTRODUCTION

Over the last decade, many industrial sites in Europe, which had been owned and operated by a single company, became multi-operator sites : several companies operate on a same site with a certain degree of interactions between their activities. This trend, which first concerned huge chemical parks, can now be seen in all industries. In the context of globalization, such changes, which are driven by economic strategies, can be explained by successive sales and purchases, focus on core businesses, outsourcing of utilities or services, integration on site of contractors' activities, and so on.

In many cases, multi-operator sites were the result of the voluntary implantation of some companies close to other ones to benefit from the links they could establish between their activities. This could lead, when framework conditions were favorable, to

the formation of clusters of industrial sites more or less closely integrated. In a few cases, the development of a multi-operator site can be decided, planned and coordinated. It is for instance the case of shared warehouses or industrial harbors or sometimes chemical parks.

The economic interests of multi-operator sites are obvious : shared infrastructure and facilities, easiness for an operator to set up, change or transfer its activities... But these sites raise different questions about environment, occupational health and safety (EHS) issues. Installations operated by different companies close to one another and/or interconnected by pipe networks generate new risks on interfaces.

Moreover, multi-operator sites constitute a new phenomenon for the implementation of European and French EHS regulation, in particular the Seveso II Directive. These regulations do not answer all the questions raised by these new forms of industrial organization. On the contrary, their implementation to the letter on such sites could purely and simply lead to the closure of some of them.

In 2005, the French Environment Ministry asked INERIS to look into the issue. A first set of observations was made and INERIS identified key in-depth studies to be carried out. The main ones are presented in the first part of this paper. Among them, the ministry asked INERIS to study more specifically private agreements between operators in the field of EHS risk control.

2. KEY ISSUES AT STAKE ON MULTI-OPERATOR SITES

To identify the questions raised by this new situation, INERIS decided on the one hand to examine how French and European law takes into account multi-operator sites, and, on the other hand, to interview a large panel of those involved in several French regions and different industrial sectors. The graph below represents the various stakeholders involved.

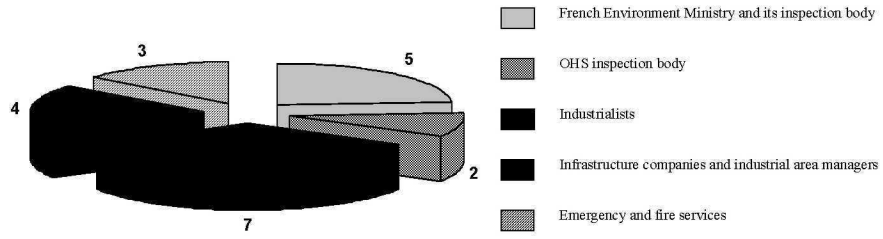


Figure 1: Distribution of interviewees

2.1 French and European Legislation

First of all, both legislation only talk about **individual** operator, not multi-operator. Also, in the French legislation, there is no definition of what a "site" is. The environmental legislation only talks about "installation", and "establishment" for operators concerned by the Seveso II Directive.

There is no clear legal definition of a multi-operator site. It seems that, in view of the great variety of such sites, it would be difficult to find an unambiguous definition. In some cases (huge chemical sites for instance), operators share infrastructure, fence and access control. Their activities are also closely linked as far as their use of materials and energy is concerned. The complex overlapping of their activities makes it difficult to identify the boundaries of each company.

Consequently, the difficulty lies in identifying individual responsibilities at interface level, from the new risks generated by the interdependence between companies to overall risk at site scale.

The second main issue is the problem of industrial neighbors. In the eye of the law, there is no difference between neighbors, whether they are industrial or not, or whether they are inside or outside a fence. This means that an operator must respect environmental regulation on the protection of its industrial neighbors ; in terms of emission limits for hazardous chemicals and noise, in terms of exposure to accidental risks of fire, explosion and toxic dispersion, etc … These requirements are much more restricting than those of OHS regulation which the operator must abide regarding its employees. But, on sites where activities are closely linked, employees of different operators may be exposed to the same emissions or risks. Some should be protected by OHS regulation, others by environmental one (more restricting). As said in the introduction, a strict implementation of the law could lead to the closure of some sites because of the prohibitive costs to ensure that employees on a site get the same level of protection as the one required for neighbors.

2.2 Conclusions for further in-depth analysis

The interviews confirmed the observations above : there are as many definitions of what a multi-operator site is as they are interviewees, ranging from closed site by common fence and access (called "closed site" in the paper) to side by side companies without linked activities. Another interesting observation is that the interviewees were not often aware of all the issues raised by multi-operator sites.

On the basis of these interviews, INERIS formulated the following recommendations :

- To provide a definition of multi-operator sites and typical multi-operator site models ;
- To find the origins of multi-operator sites and trends ;
- To define a methodology to guarantee a systematic identification and control of boundaries of each company on site ;

- To address administrative issues : for instance, several operators without addition rules of chemical quantities to compare with "Seveso II thresholds" ;
- To identify solutions to the problem of industrial neighbors from both a regulation and a risk prevention point of view : see § 2.1 ;
- To look into the consequences of a change of operator in terms of EHS risk management ;
- To consider waste water and waste gas emission issues: interest of shared facilities, risk assessment of cumulative emissions, identification of responsibilities… ;
- To identify specific needs for public information ;
- To study voluntary and compulsory management systems : interest of coherence, links or common part between management systems of each operator, especially Seveso II establishments concerned by a compulsory safety management system ;
- To provide a methodology to identify, prevent and control interference EHS risks[1] ;
- To investigate land use planning issues deriving from the French regulation on Seveso II establishments which introduces "technological risk prevention plans" ;
- To consider emergency management at site scale : common organization, shared services and resources ;
- To examine conventions/contracts between operators.

In October 2007, INERIS met the chairman of the European Process Safety Center who worked on the issue focusing on German chemical parks (which are much more developed than in France). It appeared that our respective conclusions were very similar.

Among the recommendations detailed previously, the Ministry asked INERIS to study two issues in priority : emergency management and conventions between operators.

Only the second one is detailed in the next part of this paper.

3. CONVENTIONS

3.1 Scope of the study

For the next stage of this study, the French Environment Ministry asked INERIS to focus on :

- multi-operator sites where at least one Seveso II establishment operates ;
- major accident hazard control first, without forgetting other hazards and impacts ;

The question asked by the ministry were :

- Why do operators establish such conventions ?
- What is the scope of such conventions ?
- How could they contribute to a better management of interference and overall risks on multi-operator sites ?
- How the environment inspection body could take into account these conventions when it assesses how operator's activities comply with legal requirements ?

[1] When two or more companies operate close or related installations, new risks can appear due to simultaneous activities (co-activity). These new risks are called interference risks.

A working group was created by INERIS with industrialists, environment inspectors and fire brigades, selected on account of their knowledge and experience of conventions. About twenty multi-operator sites and associated conventions were considered. Several meetings took place to discuss with each member of the working group the reasons behind conventions, their content, their implementation and the way they work.

3.2 Definition and scope of conventions

"Convention" means every contractual document dealing directly or not with EHS risk issues and established between two or more companies operating on the same site. Contracts between a company and its subcontractors are not considered here. In France, these relationships are well covered by OHS regulation in terms of risk prevention.

Conventions may have the following objectives :

- To clarify responsibilities of each operator who owns a permit and each owner of a given installation, especially at interfaces ;
- To specifying financial and operational rules on shared infrastructures, facilities and services ;
- To define common EHS rules applicable at site scale ;
- To defining organizational governance to deal with rules on site and disagreements between operators.

Moreover, conventions can be seen as a guarantee for an operator of :

- continuity of shared infrastructures, facilities and services (called "shared resources" in the paper). ;
- risk prevention and control of other operators' activities which could have an impact on its employees and installations.

3.3 Definition of responsibilities

The first goal of a convention is to clarify the role, responsibilities and commitments of each operator and owner regarding shared (or linked) infrastructures, installations, activities and associated resources. This could concern also land owners and the ones who are responsible for past pollution as far as they are involved in site issues.

Responsibilities to be defined concern the operation, maintenance and financing of shared and linked resources (for instance : pipe racks, effluent networks, fire protection devices, exchange of materials or energy, waste water treatment plant, retention pond, utilities, etc.). In particular, conventions must be clear about the financial contribution of each operator, depending on their respective needs, and the possibility of reviewing their commitments subject to potential compensation.

To ensure the continuity and efficiency of shared resources vital to EHS prevention, the convention can oblige operators to use these ones rather than to operate their own resources.

This clarification aims at preventing operators from a weakening of their responsibilities and at allowing them to act efficiently on interfaces between their activities and those of other operators.

3.4 Common EHS rules

In order to guarantee risk control at interfaces, operators should define and implement common EHS rules that apply to everyone. For instance, on a closed site, common rules will first concern access and circulation requirements (people, goods, vehicles).

Specific rules should also be added, only for certain operators, as regards interference risks. For instance, Seveso II establishments on site could define rules concerning shared internal emergency plan and services to deal with major accidents and domino effects.

Since conventions are private agreements, it has to be noticed that all operators who sign them will have to fulfill common requirements, even those who have few EHS obligations. The result is that most of operators benefit from shared resources and additional competencies to prevent risks they wouldn't have otherwise.

A long term benefit could be the development of shared practices, vocabulary and culture of risk.

INERIS identifies several good practices that could make conventions more efficient. First, the convention which defines the EHS rules should be distinct from the one which deals with shared resources. The reason is that all operators are not necessary concerned by shared resources, depending on their needs, whereas they are all involved in the compliance with EHS rules.

Conventions should also state the obligation for an operator who wants to sale its company to inform the purchaser of the obligation to sign the convention and comply with common EHS rules. Thus, rules are linked to installations and not to operators. It is a guarantee of continuity for operators on the site.

3.5 Interest of conventions from authorities' point of view

Many benefits can be derived from the definition of conventions. As said previously, the authorities can only address individual operators. The clarification of responsibilities at interfaces, which allows to know well boundaries of each company, fits in with authorities' goals.

The French law gives few opportunities to the environment inspection body to control changes of operators and their potential consequences in term of risks. As a result, conventions also appear as an interesting tool to manage changes of operator both for industrialists and the inspection body.

When it deliver the permit required to operate installations, the environment inspection body may impose the establishment of a convention in certain conditions. In that case, it is preferable to impose only the objectives of the convention. The objectives should primarily concern, risk control on interfaces and the definition of responsibilities.

On the contrary, imposing content could restrict the flexibility of conventions which is necessary in a fast moving industrial environment and could weaken the responsibilities of operators.

Moreover, if the permit specifies that operators must inform the inspection body before any change in the convention, the inspection body will be assured to have its word on private contracts when conventions are drawn up and updated.

Finally, from an operator point of view, a convention can be a way of showing to the inspection body that some legal requirements are met with the assistance of a third party (e.g., shared fire-fighting capacities).

3.6 INERIS' observations

During this study, INERIS highlighted that most conventions are limited to commercial issues (contracts on services between operators). Risk prevention and control on interfaces are often forgotten.

This situation led INERIS to make another observation. When a company gives birth to a multi-operator site by selling some business units, there are only few changes on the site : people, culture of risk, habits, relationships remain the same. The need to define contractual rules to manage EHS risks on interfaces doesn't appear as a necessity : "we come from the same family !". But, within a few years, companies follow different paths, people move and relationships are more and more business oriented. It is then much more difficult to elaborate EHS rules than to change rules defined at the creation of the multi-operator site.

The last observation is that, among multi-operator sites, chemical parks are the most advanced in the implementation of conventions taking into account EHS risk management.

4. DEFINING EFFECTIVE CONVENTIONS

4.1 Infrastructure company

Among operators, an infrastructure company can operate and maintain shared resources : pipe networks, roads, sewers, power supplies... It can also provide services to other operators such as authorizations and general training of subcontractors before they enter the site (chemical hazards on the site, traffic rules, emergency procedures...).

Most of the activities of an infrastructure company are concerned by interfaces with operators' activities. This implies that the infrastructure company is especially involved in interference risk control. Consequently, the more an infrastructure company has activities, the easier it is for it to act as a site manager and to organize cooperation between operators in the field of EHS management.

The experience of chemical parks shows us that an infrastructure company is in a stronger position to manage overall risk as long as :

- it shares the same industrial risk culture, because operators often originate from a single historical company ;
- its status specify that it is a non-profit company (less sensitive to free market forces) ;
- it imposes some compulsory services and shared resources to all operators, preventing them from setting up some less effective installations than a centralized one for instance ;
- it has the power to check how operators comply with common EHS rules.

It can be assumed that when all these conditions are met, the infrastructure company can really manage the global interest of the site. The global interest of the site may go against individual interest. For instance, it may be relevant, when an accident occurs, to protect sensitive installations of a particular operator rather than those more threatened of another operator with a view to limiting consequences outside.

4.1 Governance

An efficient convention needs an efficient governance at site scale.

The convention must refer to specific decision-making bodies (committees) dealing with :

- shared resources : short-/long-term financing, implementation, operation and maintenance ;
- common EHS rules : definition, implementation, control and update.

These committees can eventually merge into a single one. But it should be taken into account that issues at stake are not the same for each operator.

On the one hand, for instance, only the main users of shared resources (often shareholders of the infrastructure company when it exists) have voting rights, which are proportional to their needs. In some cases, the convention dealing with shared resources can be included into the status of the infrastructure company.

On the other hand, the weight of each operator in decision-making regarding common EHS rules should not only be based on financial aspects and payroll. Seveso II establishments, as regard to the potential hazards of their activities, should see their position strengthened in decision-making, according to the consequences on risk control.

It must be kept in mind that a weakening of responsibilities must be prevented. The balance between all these constraints should be found after several amendments to of the convention, on condition that the convention and the governance bodies are defined at the creation of the multi-operator site.

Finally, the rules concerning committees which are defined in the convention should provide for the resolution of disagreements or conflicts. In particular, role of corporate level and how operators waive any claims between themselves in specific cases should be included.

It has been observed that strong infrastructure companies (when they exist) have often a driving role in committees because of their knowledge of activities and interfaces on sites.

The figure 2 shows how the governance could be define at site scale and beyond.

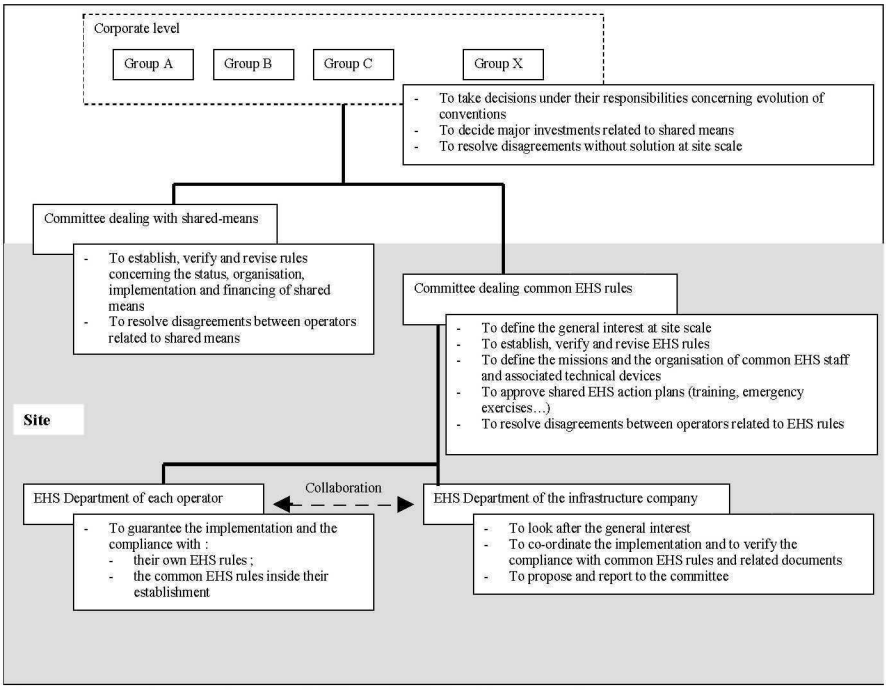


Figure 2 : Committees and responsibilities to be defined in conventions

INERIS believes conventions should concentrate on the definition and rules of the exercise of individual and collective responsibilities (committees described above). It should refer to operational documents defining common EHS rules rather than trying to include them in the convention. Otherwise, operational rules cannot be updated as fast as changes on site require.

Indeed, it is obvious that conventions must define rules on the way they should be updated. It is also clear that regarding what is at stake for operators, the update process of a convention takes a long time. This is why the update frequency of conventions is 5 years on average.

4.3 Checking process

The checking process aims at assessing how operators met their commitments as defined in convention(s). Each step of the checking process, including how to deal with nonconformities, must be described in the convention.

The assessment can be made at different level :

- Direct checks : this concerns one-off verifications of compliance with some common EHS rules (speed limit, loading/unloading procedures…) ;
- Internal audits : their scope is the organization at operator and site levels to implement and comply with the convention.

These two types of checking are complementary. Direct checks make it possible to verify the day-to-day observance of common rules by people on site. Internal audits are essential to highlight progress of convention' requirements necessary to improve EHS performance and the convention itself.

On a multi-operator site, direct checks can be carried out by the infrastructure company. Internal audits can be conducted by the infrastructure company, accompanied or not by some operators, an external expert or by operators from other multi-operator sites to encourage exchanges of views. In any case, the authority of the infrastructure company to conduct such checks must be stated in the convention. This is necessary to ensure that results of the checks will be followed by corrective actions.

On the basis of the conventions it studied, INERIS observed that the checking process is the most critical step regarding the methodology known as Plan-Do-Check-Act (PDCA) applied to the management of the convention. The interviews showed that, if some direct checks are made when an infrastructure company operates on a site, there is no audit decided and planned in common by operators to check the application of conventions. Moreover, audits conducted by operators are rarely carried out at interfaces.

In addition to internal checking process, it can be noted that, in France, the inspection body can verify some or all the requirements of the convention when it is quoted in the permit of an operator.

5. Conclusion

Changes in the European economic environment have accelerated over the last 10 years the development of multi-operator sites. If many environmental and economic benefits are already clearly identified, this new situation raises questions about EHS and overall risks at site scale that are not handled by European and especially French regulations.

Following an identification of interfaces between the different companies and an in-depth analysis of interference risks, the establishment of convention(s) between operators can provide the conditions of the continuity of the site. Conventions must clarify the

individual responsibilities of each operator and intend to create the necessary governance to discuss and improve risk management at site scale and to guarantee the protection of industrial neighbors equal to non industrial ones.

On an economic point of view, conventions under private law are flexible enough to react to fast changes in company's strategies. On an EHS risk control point of view, they can contribute to increase the effectiveness of shared resources and rules and to develop or maintain a common culture of risk, aiming at reaching a high level of performance.

INERIS has shown through its observations on field that an important key to success is the checking step which is essential to allow a real continuous improvement of the convention. The following figure proposes the application of the PDCA methodology to convention :

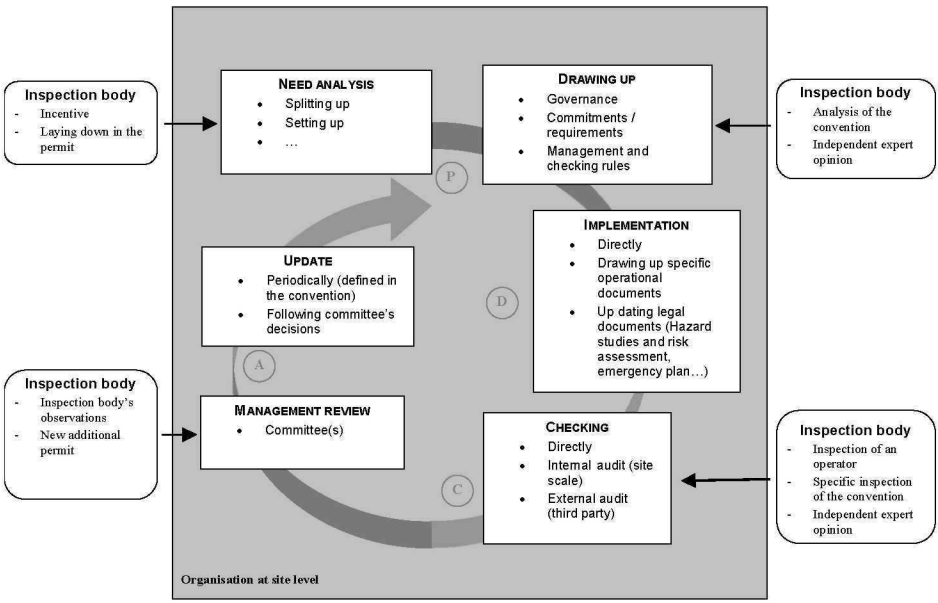


Figure 3 : Plan-Do-Check-Act (PDCA) methodology applied to the management of the convention

On multi-operator sites, conventions can be seen as a useful tool in the service of operators but also authorities. Their development should be promoted, insisting on the quality of their content and on their real implementation and check on field.

An important issue remains : if conventions allow to handle responsibilities between companies, they do not solve the acceptance by individuals of interference risks and the consequences in term of employer's responsibility.

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