



THE HEALTH AND SAFETY MANAGEMENT SYSTEM OF BAYER CROPSCIENCE VILLEFRANCHE

1. Organisations involved

Bayer CropScience Villefranche (BCSF)

2. Description of the case

2.1. Introduction

With more than 150 products, Bayer CropScience Villefranche (BCSF) has a leading position in various business sectors: number one in insecticides, number two in fungicides, and number three for herbicides.

The Villefranche plant produces 30,000 tonnes of products a year and supplies 50% of all Bayer CropScience products distributed in France. Ensuring the availability and speedy delivery of its products is central to its success. The plant observes a quality policy and has ISO 9000 certification.

However, this market position and distribution role are not synonymous with stable, routine operations. The plant, built in the 1970s, must adapt not only to changes in its premises and equipment, but also to new environments: new product development, replacement of a major product range requiring conversion of the production units and increased flexibility, etc. The plant organisation must adjust to these changes.

Production is not the only challenge facing the company. For the chemicals sector generally, safety is also of prime importance. The group has carried out numerous campaigns, especially communication campaigns on the themes of the environment, sustainable development and health and safety.

Bayer CropScience intends to fulfil its commitments regarding sustainable development and Quality, Health, Safety and Environment (QHSE) in all its operations. The group's safety policy is being applied gradually in all its new plants. This policy is outlined in a programme of about 30 pages, describing the main features of the QHSE management system that all the plants are supposed to comply with. While quality and environment certification is required, no external 'label' is demanded for health and safety. However, the group proposes its own standards on the subject.

The circulated document describes key requirements and directives in detail. It covers the measures to be taken on 13 general aspects: management principles, personnel training and qualification, audits and evaluation, reporting and communication, emergency management, etc.

The document deals in detail with several relevant aspects of the management system, detailing management of the four areas of risk prevention: quality, health, safety and the environment.

For health and hygiene, for example, it covers the medical data monitoring and recording programme (retention for 30 years after retirement), involvement of personnel in risk assessment, prohibition of alcohol and drug consumption by company employees, wearing of personal protective equipment (PPE), etc. The section on safety covers nine aspects: safety of employees, drivers, subcontractors' personnel, safety of processes and units, fire fighting, operating and maintenance safety, safety in the laboratory, and transport, store and equipment safety. A detailed description is given of the requirements for the design of processes and facilities, personnel information, the necessary work permits and the available equipment (ventilation, emergency aid, etc.).

The overall aim is to coordinate practices and create a QHSE culture in the whole group.

2.2. Aims

The QHSE department is considering OHSAS 18001 certification of the plant in the near future. This objective reflects a twofold goal: to achieve excellence in the area of health and safety management and to simplify and coordinate the management systems with an integrated risk management system and the related audits (SE, etc.).

2.3. What was done, and how?

The plant's current health and safety management structure consists chiefly of a set of risk management facilities and tools, inherited from different periods in the plant's operations and associated with different levels of follow-up.

The main measures taken for health and safety management are:

Establishment of an annual action programme

Each year, a health and safety action plan is established for the plant, and is followed up and validated during the twice-yearly management review. It lists the main actions performed or planned on various levels (establishing conformity of plant and equipment, risk prevention measures, etc.). For example, in 2005 the health and hygiene programme was separated from the safety programme; it refers in particular to four measures:

- definition of hygiene requirements and good practice;
- development of chemical risk assessment in risk assessment;
- reduction of traffic risks on site (residual risk); and
- establishment of preventive sanitation.

Activity management documentation structure

In accordance with the ISO 14000 specifications and the Safety Management System (SMS), an environment and safety management manual exists. It conforms with the standards and regulations in force, and is structured according to the standard stages of the continual improvement approach: policy, planning, implementation and operation, checking and corrective measures, management review.

This manual refers to about 50 so-called organisational procedures relating to general management requirements: in production (taking charge of new production, delivery, inspection and storage of raw materials, manual management, etc.), in QHSE monitoring (requests for servicing/work permits which represent mini risk prevention plans, reception of outside contractors, internal audits, etc.), in human resources (recruitment, training, accreditation), etc.

These procedures form the basis of the company's routine management. Beyond this general management framework, there are operating procedures such as workshop manuals specific to each activity.

The workshop manuals represent a third, more detailed, level of organisation. Used for operating purposes by the supervisory staff, they describe the installations and the general conditions of use of these installations: processes, jobs, instructions (start-up, stoppage, checks on work in progress, waste management, etc.).

These documents are extremely comprehensive; structured around diagrams, summary tables and descriptions, they group together the basic technical data for a sector and serve as a basis for training users of the equipment concerned.

Finally, these manuals are supplemented with operator manuals and operating procedures or 'detailed procedures' which describe in even greater detail individual operations and tasks. They list, among other details, the type of products loaded, the risks incurred, the equipment used, etc. These documents are generally concerned with a specific work phase and are destroyed at the end of the phase.

CASE STUDIES

Each new employee is also given an induction booklet that describes the company and provides practical information: working hours, badges, etc. Six pages are devoted to health and safety: health and safety objectives, protective equipment, general instructions and specific instructions. The sector line management go over this information with the employee at shift takeover. The booklet must be signed on each page to signify that this has been done.

Fault-finding facilities and supervision tools

Numerous risk analysis methods are used, including *a priori* methods such as hazard studies, or *a posteriori* methods such as the fault-tree. These methods are used systematically upstream or downstream of operations or malfunctions to help in drawing up technical and work organisation planning.

By breaking down work stages by units, the risks were identified and then scored (severity and frequency level). By a comparison with the risk prevention resources (level of control), residual risk levels are calculated, leading to the classification of risks in three categories (yellow, green and red colour codes).

This classification highlights priorities for action: priority handling of red critical points; risk prevention action plan or additional corrective measure to be planned for other situations. The corrective measures are funded from the supervisory staff's budget; senior management has made special allocations for this purpose. The number of 'red points' allocated throughout the plant has declined from 45 to 9 in two years.

Other risk control and monitoring methods are used, such as atmospheric measurements, surface biopsy and blood sampling for exposure values, or traditional healthcare follow-up. All employees take part in management of the system and in monitoring health and safety objectives over time.

Human resources and organisation

The annual budget of the overall safety programme is more than EUR 2 million. This covers plant and machinery but also work equipment (including PPE) and personnel. The plant, which is old, has been completely renovated in recent years. Training courses on health and safety are held regularly, and an Awareness of Raising Day was introduced in 2003.

The measures that best illustrate the initiatives taken for health and safety management, from the point of view the staff, are as follows:

- the plant visit (for newcomers): water networks, shower points, eye rinses, meeting points, etc.;
- the strict regulations regarding PPE;
- work instructions;
- the need for accreditation and work requests;
- hygiene, cleaning and sanitation plans;
- information concerning chemical risks (safety day dedicated to hygiene and toxicology for the last two years);
- medical screening since 2004;
- assessment of risks to workers' health and safety (especially for executives).

2.4. What was achieved?

The QHSE action plan carried out in the Bayer plant testifies to high occupational risk prevention objectives, with updated technical measures and significant results in terms of improved health and safety.

The IMS has made it possible to structure and reinforce health and safety management in general in a chemical sector traditionally exposed to risks. It provides risk prevention facilities of which the company can be proud.

CASE STUDIES

There nevertheless remain a few areas for progress which can be acted on to fully complete the risk management programme: there are still shortcomings in dealing with industrial hygiene, problems in the application of measures and tension regarding the settlement of actions

The results observed are as follows:

An improvement in safety and working conditions

In the current context of stricter safety requirements and sensitivity to risks faced by chemicals firms, the safety investments made by the BCSF plant are giving good results.

Apart from this observed progress, safety management conditions appear to have changed, with more systematic coverage of risks and a more disciplined and methodical approach in comparison with earlier periods. Even the industrial hygiene and chemical risk fields, which had been overlooked, have progressed well. Sensitivity to chemical risk has increased among the workers.

Disparities in adoption of the new rules

The new work rules which are put in place through QHSE initiatives are not necessarily adopted immediately. One reason for this is that there are differences in how the proposed measures are regarded: between technical measures (method, tool, installation) and management measures (organisation, procedures, training, etc.), the former will more easily lead to a consensus (they are in response to regulations and the only question is the budget), and they will be more easily granted, implemented and complied with.

Then there is the question of the type of risk. The measures relating to industrial hygiene, a subject that remains in the background, are the hardest to apply: the use of air locks and showers, traffic flows, cleaning of clothing, and the wearing of PPE, are often not observed.

Different perceptions of risks and safety

There are major differences in the perception of risks, particularly when it comes to chemical risks. The toxic, irritant and noxious nature of products is often not well identified. Despite the awareness-raising, the perception of risks varies greatly from one person to another; different names are used for risks and their assessment is highly subjective (different concepts of severity, frequency, etc.).

Strengths of the project were:

- A strong safety policy
- Major material and human resources in QHSE
- Extensive organisation and subdivision of health and safety policy
- A solid organisation
- Risk analysis tools and methods well under control (fault-tree, etc.)
- An organised and active committee for health, safety and working conditions
- Personnel attentive to safety
- A participative, monitored risk assessment approach
- A real link between risk assessment and SMS.

Problems faced

While risk management may be reinforced from a formal viewpoint, on the operational level deviations from the rules persist, and there are still shortcomings in the operational control of risks. Problems include:

- deviations in the application of certain preventive measures;

CASE STUDIES

- health still assigned less importance in the management system (in comparison with the 'technical' and regulatory safety aspects);
- new expectations to be managed, related to increased sensitivity to chemical risk;
- management tools to be defined in detail and adapted to operations,
- relative participation of employees in risk management;
- few indicators of exposure to chemical risk;
- antagonistic safety cultures (safety vs hygiene);
- safety coordination based on QHSE;
- complexity of documentation and problems of information circulation;
- large staff turnover;
- numerous projects and changes underway.

2.5. Further information

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2.6. Transferability

This initiative is transferable to other companies and other activities. It requires management involvement and involvement of employees to be fully successful.

3. References, resources:

- http://osha.europa.eu/en/publications/reports/mainstreaming_osh_business