SPECIFIC FEATURES OF THE OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM MODEL

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Abstract: The protection of workers from occupational accidents and diseases is primarily a management responsibility, on a par with other managerial tasks such as setting production targets, ensuring the quality of products or providing customer services. The basic principles of health and safety management systems are applicable at any scale or level. A health and safety management system is a tool with which to manage health and safety. It is not a substitute for compliance with regulations and having the necessary infrastructure, facilities, working procedures and competent personnel.

1. Introduction

In the modern society, promoting the health and safety conditions in the workplace and ensuring a comfortable work environment, observing the normative requirements and maintaining a good business reputation are key aspects which should be considered by every successful organization.

The implementation and certification of a occupational health and safety management system is an effective tool for organizing and focusing the efforts of an organization towards a better control and management of the work-hazards (accidents, incidents and occupational diseases) and a significant improvement of the professional performances.

OHSAS 18001 represents a work model for the organizations willing to ensure a better control of the professional risks. It has been developed in scope of completing the quality and environmental management systems and it is based on explicit requirements for better managing the professional risks and inducing a culture for prevention among employees.

2. Management of occupational health and safety

2.1 Benefits of the implementation of an occupational health and safety management system

A management system sets the goals and objectives, outlines the strategies and tactics, and develops the plans, schedules and necessary controls to run an organization. Numerous rewards can be obtained by the companies from adopting a occupational health and safety management system [2]:

- Reduced sick leave
- Improved performance/productivity
- Reduced litigation costs
- Reduced health care costs
- Reduced worker compensation
- Increased productivity
- Reduced property damage
- Lower insurance premiums - life and health insurance
- Lower rates of accident and injury
- Reduced training and development costs
- Improved well being and morale
- Increased employee loyalty
- Positive company image
- Increased business
- Improved quality
- Reduced damage

2.2 Management commitment and resources

While top management has the ultimate responsibility for the health and safety programme in an organization, authority should be delegated to all management levels for ensuring safe operation. Supervisors are obviously the key persons in such a programme because they are in constant contact with the employees. As safety officers, they act in a staff capacity to help administer safety policy, to provide technical information, to help with training and to supply programme material.

Total commitment on the part of management to making health and safety a priority is essential to a successful occupational health and safety programme in the workplace. It is only when management plays a positive role that workers view such programmes as a worthwhile and sustainable exercise. The boardroom has the influence, power and resources to take initiatives and to set the pattern for a safe and healthy working environment [1].

Management commitment to occupational health and safety may be demonstrated in various ways, such as:

- allocating sufficient resources (financial and human) for the proper functioning of the occupational health and safety programme;
- establishing organizational structures to support managers and employees in their occupational health and safety duties; and
- designating a senior management representative to be responsible for overseeing the proper functioning of occupational health and safety management.

The process of organizing and running an occupational health and safety system requires substantial capital investment. To manage health and safety efficiently, the financial resources must be allocated within business units as part of overall running costs. The local management team must understand the value that corporate leaders place on providing a safe place of work for employees. There should be incentives for managers to ensure that resources are deployed for all aspects of health and safety. The challenge is to institutionalize health and safety within the planning process. Once the programme is under way, concerted efforts must be made to guarantee its sustainability [4].

2.3 Workers participation

Cooperation between management and workers or their representatives within an enterprise is an essential element of the organizational measures that need to be taken in order to prevent occupational accidents and diseases at the workplace. Participation is a fundamental workers. right, and it is also a duty. Employers have various obligations with regard to providing a safe and healthy workplace and workers should, in the course of performing their work, cooperate in order to enable their employer to fulfil those obligations. Their representatives in the undertaking must also cooperate with the employer in the field of occupational health and safety [1].

Employee participation has been identified as the determinant of successful occupational health and safety management and a major contributing factor in the reduction of occupational diseases and injuries. The full participation of workers in any occupational health and safety programmes designed for their benefit will not only ensure the efficacy of such measures, but also make it possible to sustain an acceptable level of health and safety at a reasonable cost. At the shop-floor level, workers and their representatives should be enabled to participate in the definition of issues, goals and resulting actions related to occupational health and safety.

2.4 Training

The continuous integration of improvements into the work process is vital, but it is possible only if everyone involved is properly trained. Training is an essential element in maintaining a healthy and safe workplace and has been an integral component of occupational health and safety management for many years. Managers, supervisory staff and workers all need to be trained. Workers and their representatives in the undertaking should be given appropriate training in occupational health and safety. It is up to management to give the necessary instructions and training, taking account of the functions and capacities of different categories of workers. The primary role of training in occupational health and safety is to promote action. It must therefore stimulate awareness, impart knowledge and help recipients to adapt to their own roles [5].

Training in occupational health and safety should not be treated in isolation; it should feature as an integral part of job training be incorporated into daily work procedures on the shop floor. Management must ensure that all those who play a part in the production process are trained in the technical skills that they need to do their work. Training for the acquisition of technical skills should therefore always include a component of occupational health and safety.

2.5 Organizational aspects

The control of occupational hazards and diseases requires adequate organizational measures. As there is no perfect model for an organizational structure, a choice has to be made by weighing up the anticipated merits and disadvantages of various systems. Moderation should be the guiding principle, and a step-by-step approach is likely to be more successful than an overambitious scheme that does not allow for subsequent adjustment [3].

Setting priorities

The first step is to establish priorities among objectives by assessing the main factors contributing to the hazards with the most severe consequences. High priority may also be allocated to actions that will produce rapid results, as early successes will enhance the credibility of efforts. Priorities may change from time to time, depending on the existing situation. It should be reiterated that cooperation between management and workers or their representatives within the enterprise is essential in ensuring the successful implementation of an organizational structure for occupational health and safety.

Planning and development activities

These need to be undertaken both in initially setting up the occupational health and safety management system and in its ongoing revision and modification. Systems and procedures should be thought through logically, first identifying where injury or ill health can occur, and then instituting measures that will make the occurrences less likely. Management should put in place organizational arrangements that are adapted to the size of the undertaking and the nature of its activities. Such arrangements should include the preparation of work procedures on the basis of job safety analysis. In this case, the person responsible should determine the safest, most effective way of performing a given task..

The place of occupational health and safety management

Occupational health and safety management should not be treated as a separate process, but be integrated into other workplace activities. Its various functions and procedures should be embedded in other management system and business processes in the enterprise, as well as within comparable structures in the community. For example, occupational health services in a small enterprise could be integrated with the primary

health care provided within the community. This would be of benefit to workers and their families.

2.6 Performance measures

The ability to measure occupational health and safety performance over time is essential in order to verify that there is a continuous improvement in eliminating occupational injuries and illness. Employers should regularly verify the implementation of applicable standards on occupational health and safety, for instance by environmental monitoring, and should undertake systematic safety audits from time to time. Furthermore, they should keep records relating to occupational health and safety and the working environment, as specified by the competent authority. Such information might include records of all notifiable occupational accidents and injuries to health which arise in the course of or in connection with work, lists of authorizations and exemptions under laws or regulations relating to the supervision of the health of workers in the enterprise, and data concerning exposure to specified substances and agents [3].

A comprehensive evaluation system would include baseline evaluations, auditing, self-inspection and self-correction, incident investigation, medical surveillance, and management review activities.

3. Elements of an ideal occupational health and safety management system

The basic principles of health and safety management systems are applicable at any scale or level. A health and safety management systems is a tool with which to manage health and safety. It is not a substitute for compliance with regulations and having the necessary infrastructure, facilities, working procedures and competent personnel. The concept of occupational health and safety management systems is rather complex and several definitions are available [1].

In order to facilitate understanding of the subject, an overall framework for occupational health and safety management is presented below. This describes a management system that contains a number of processes and content variables. This ideal management system includes a number of processes and content variables.
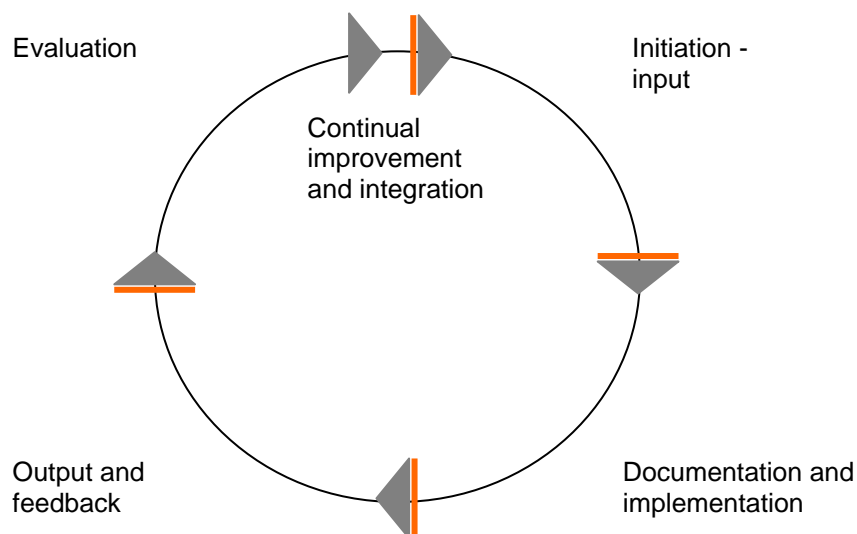

Fig. 1 Five elements of the occupational health and safety management systems

3.1 Occupational health and safety initiation - input

The input factor includes the following four content variables:

1 . Management commitment and resources :

- management representative responsible for overseeing the proper functioning of an occupational health and safety management system;
- allocation of sufficient resources for the proper functioning of an occupational health and safety management system;
- establishment of organisational structures that support managers and employees in their occupational health and safety duties.

2 . Regulatory compliance and system conformance

Compliance with legal provisions and their conformance with the occupational health and safety management system is of high priority.

3 . Accountability, responsibility and authority

The accountability, the responsibility and the authority are important elements which must be clarified in each organization.

4 . Employee participation

This should take place either:

- directly through the individual cooperation on issues of occupational health and safety, participation in circles, working groups, etc.; or
- indirectly through their representatives, e.g. safety representatives elected by the employees. This also includes bodies such as occupational safety and health committees in which employees are represented.

3.2 Documentation and implementation

Documentation

The basic category process is rather comprehensive, and within it a number of variables can be identified. It includes the formulation of a policy for the organization including instructions for dealing with the suppliers and cooperation partners. The variables include:

1 . Occupational health and safety policy/goals and objectives

A well-formulated policy forms the basis for the objectives in the field of occupational safety and health, the measures to be taken and the relationship these measures have to other company objectives. The policy should be short and precise, be published by the top management and made known to all employees.

2 . Performance measures

The ability to measure performance, and as a precondition for this the development of measurable indicators that can be derived from the goals and objectives, is regularly discussed. The necessity to make such measurements is highlighted.

3 . System planning and development

This covers the explanations relating to the development of, and in particular the modifications to the occupational health and safety management system.

4 . Baseline evaluation and hazard assessment

To conduct a baseline evaluation and a hazard/risk assessment is a prerequisite to the introduction of an occupational health and safety management system. It is necessary to identify the existing practices as well as the hazards and risks in order to be able to develop an occupational health and safety management system for the organisation that adequately meets its specific requirements.

5 . Occupational health and safety management system manual and procedures

Usually little importance is given to a manual. However, more specific documents will frequently need to be drafted in order to set out individual procedures.

Implementation

These basic elements are [4]:

- *Training system* (in particular technical expertise and personnel qualifications).
- *Hazard control system* (process design, emergency planning and response system, and hazardous agent management system).

The hazard control system is broadly defined and includes the various methods used to reduce or eliminate occupational hazards as well as methods through which the control system should be modified in the case workplace conditions change. This includes the installation of new processes or operations, emergency planning and the management of hazardous agents.

Emergency planning and the handling of hazardous agents are central issues. The explanations concerning these issues are very detailed and the impression could arise that the occupational health and safety management system has the task of ensuring the functioning of emergency measures and the handling of hazardous agents.

- *Preventive and corrective action system*

This system element refers to actions taken in response to, or in anticipation of, system breakdowns or high hazard/risk events. Central to an effective system is the decision as to which actions should be as regarded as likely. Safe working procedures and practices are key elements of this system.

- *Procurement and contracting*

The purchase of products is an issue considered frequently in occupational health and safety management system. These aspects should be considered as early on as at the time of purchase. This should be guaranteed by taking the relevant organisational precautions, e.g. information about the effects of certain products on health, or the involvement of safety experts in the purchase. Contractors are to be understood as external organisations or individual persons having a contractual relationship with the enterprise or the organisation, e.g. in working groups, as external companies, etc.

3.3 Output and feedback

The element "output" plays an important role. In particular, the description of the measuring and assessment of the output and the development of operational criteria to measure performance have to be sufficiently concrete that they can be applied in practice by those responsible at organization level. However, the output variables, their operational implementation and the way of measuring can differ considerably [5].

1 . Goals and objectives

There is often a strong focus on the achievement of the formulated occupational health and safety management system objectives.

2 . Illness and injury rates

Illness and injury rates are features that are pointed out. There is no marked difference in relation to the significance of these indicators. One could also consider a form of "benchmarking" with other organizations related to these rates.

3 . Workforce health

General health and the well-being of the employed, unless expressed as "illness rate", is used on a considerably lesser scale.

4 . Changes in efficiency

The improvement of the organization's efficiency is subject of an occupational health and safety management system. Direct increases of efficiency, expressed by higher

productivity or indicators indirectly referring to improvements, e.g. increased motivation of the workforce, are however regarded as an exception.
5 . Overall performance of the organization
The overall performance of the organization is only exceptionally or indirectly addressed.

3.4 Evaluation

1 . The communication system including the document and record management system
Regardless of the communication channels (verbal, written or electronic) communication is of central importance. Communication tasks include the drafting, dissemination, updating and checking of documents.
2. The evaluation system with its elements of auditing and self-inspection, the incident investigation and the root-cause analysis' as well as the health/medical programme and surveillance
In general, the evaluation and the two aspects of "auditing and self-inspection" and "incident investigation and root-cause analysis" are considered to be important. The aspect of "health/medical programme and surveillance" is sometimes considered in relation to preventive check-ups of industrial medicine [2].

3.5 Continual improvement and integration

1. Continuous improvement
The continual improvement of occupational health and safety is a standard topic. In connection with the evaluation outcome measures are usually demanded in order to encourage further development/improvement of the organization, if necessary introducing new processes by which to achieve this. Motives for the introduction of a process of improvement are the results of the regularly-occurring system evaluations, current incidents (such as accidents at work), modifications of the work organization, and changes in the production process, etc. [5]
2. Management review
Management reviews evaluate the overall performance of the occupational health and safety management system. In this context the occupational health and safety management system is analysed in relation to the overall organization and to the environment or third parties. This also involves assessing the occupational health and safety management system ability to correspond to the needs and requirements of the employers, the employees and the inspection. The system audit assesses the performance of the system, its structure and the results achieved. The compliance audit reviews the compliance of public and legal obligations in the field of occupational health and safety [3].
2 . Integration
Integration refers to those actions and measures taken by the organization in order to link occupational health and safety management system to other management systems or even to integrate them. Successful integration could mean, for example, that the occupational health and safety management system becomes part of the organizational culture. In this way, the occupational health and safety objectives become business objectives and the management has thereby included aspects of occupational health and safety in daily work routines.
In most approaches the integration with other parts of management systems is a central theme and many documents contain concrete indications and tools, such as checklists, in

order to show the links to other systems and to facilitate integration. In general it can be pointed out that the ISO standards covered within the series 9000 and 14000 are mentioned most frequently.

In practice there is often a certain degree of integration. The possibilities for integration may well be in particular in the field of quality assurance and environmental protection at the company level.

4. Conclusions

The protection of workers from occupational accidents and diseases is primarily a management responsibility, on a par with other managerial tasks such as setting production targets, ensuring the quality of products or providing customer services. Management sets the direction for the company. The strategic vision and mission statement establish a context for growth, profitability and production, as well as placing a value on workers' health and safety throughout the enterprise. The system for managing health and safety should be integrated within the company's business culture and processes.

If management demonstrates in words and action, through policies, procedures and financial incentives, that it is committed to workers health and safety, then supervisors and workers will respond by ensuring that work is performed safely throughout the enterprise.

Occupational health and safety should not be treated as a separate process, but one that is integral to the way in which activities take place in the company. In order to achieve the objective of safe and healthy working conditions and environment, employers should institute organizational arrangements adapted to the size of the enterprise and the nature of its activities.

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