Safety culture: lever of safety improvement

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Abstract— These this study is part of improving safety, to reposition our study in context, we first Insights on development of safety and the approaches developed around it, then we interested in new trends that have combined the approaches of technical, human and organizational, and we in particular focus on the concept of "safety culture".S

o, we present the theoretical framework of the "safety culture", therefore we make a synthesis of approaches and practices to establish and implement a process of "safety culture".

Finally, we focus on the areas of improvement and the principal processes that can lead to a better project to establish and strengthen the "safety culture" in companies

Index Terms— OHSAS 18001, Health and safety, safety culture.

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1 Introduction

Today, safety management is part of the overall management system of the company. This management presents itself as a set of methods and practices that help a company better understand its risk to lead the safety management to a high level of performance. formalization of such a standardized system for the company resulting from consistency, completeness and efficiency in its handling of safety, real demonstration of management commitment to safety, it provides the means position of safety strategically in the enterprise.

However, the success of these systems is not standardized systematic. It may indeed sometimes seem redundant to the existing arrangements or be incomplete. Its approach, sometimes too prescribed, too formal or too rigid is also likely to personnel subject to multiple controls, to reduce its autonomy, to go against him when he is supposed to be, paradoxically, the first beneficiary.

It seems particularly interesting to note that regardless of the chosen referential management, SMS in place, whether informal or standardized type do not reach a level of performance all the same. This observation will now lead to focus on methodologies available to help industries to improve the performance of the device they have created.

Safety culture is as an approach to maintain the commitment to progress and continuous improvement. In this context, we propose a model of OHSMS, but first we present the evolution of safety and consequences, we review the approaches developed, second, we focus on safety culture and its factors

sucked, finally, we present the approach of the proposed safety culture.

2 Presentation of Safety andSafety Culture

Generally, in industry, the term security is used to designate (Froman and al., 2002):
- Safety for the product: this aspect of safety is actually a component of quality. It relates to the safe use for the customer of the product produced, which is why conform to specifications or standards (CE, NF, etc.).
- The safety of installations or industrial security: facing the major accidents, chronic risks and protection of residents. This security is dominated by the history of dependability and enriched by many theories and developments in the last twenty years (human reliability, organizational approaches, resilience, safety culture).
- Occupational safety: this form of security for the prevention of occupational accidents and diseases of the company's employees (and those made "him by an outside company, including temporary workers). It includes fields as varied as the prevention of occupational hazards, hygiene, health workers, improving working conditions, workstation ergonomics, space planning, etc..

Meanwhile, safety management, the emergence of safety in business, knows from various definitions, they sometimes show quite specific, especially in the normative literature, technical or commercial, which characterizes variously as:
- A set of interrelated or interdependent elements intended to establish policy and objectives of safety and health at work and to achieve these objectives (ILO, 2002);
- Part of an overall management system that facilitates the management of risks associated with the activities of the organization relating to health and safety at work. It includes organizing, planning activities, responsibilities, practices, procedures, processes and resources to develop, implement, implement, review and maintain the organization's policy on OSH (OHSAS, 1999).

Note that this evolution of the term is due to changes in its concept, which, from an approach is part of another, has become a global, independent, interacting with other disciplines, and it uses the approaches developed in the field of management and management, particularly the systemic approach as part of a management system of health and safety at work.

IJSER

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Historically, we identify four eras that characterize the evolution of safety management in its global sense.

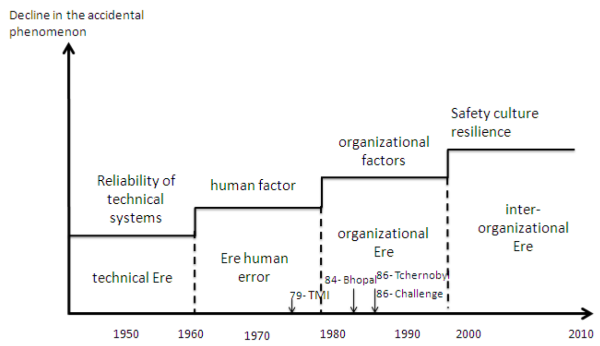

Fig. 1. Evolution of approaches to safety (adapted from Groeneweg,2002 and Fahlbruch and Wilpert, 1998)

In reality, the factors shown in the figure (Fig.1) are the basis for improving safety, therefore, whatever the approach of OH & S management, technical factors, human and organizational must be taken into account when developing the system of OH & S management.

Although the application of these standards and compliance are essential first steps in establishing an environment of work, however security does not seem not yet guaranteed. Indeed, it is increasingly necessary to establish what is called a safety culture.

A culture of safety in the workplace includes all values, attitudes, rules, participatory approaches and management practices and all the work behaviors that lead to creating an environment safe and healthy working

The implementation of measures of work organization, training and informing workers and inspection activities are important tools to promote a culture of safety and health. How to run a business and the commitment of the company play a key role in this area, as evidenced by the fact that firms with management systems safety and health at work have better results in terms security than those who do not.

Reason has described factors sucked a culture of safety:

- An information system security that collects, analyzes and disseminates information about incidents and near misses but also about proactive regular audits of the system;

- A culture of reporting in which individuals are prepared to report their errors, mistakes and violations;

- A culture of trust in which individuals are encouraged and even rewarded for providing important information about safety, but also where a clear line between acceptable and unacceptable behavior is traced;

- A flexible organizational structure that is to say capable of reconfiguring itself based on changes in the environment;

- The willingness and skills to properly assess the state of system security and willingness to implement corrective actions as appropriate.

Pidgeon and O'Leary (Pidgeon, O'Leary 1994) have in turn defined the qualities What organizations with a "good" safety culture:

- Management commitment and senior management vis-à-vis safety;

- Shared Care and attention vis-à-vis the dangers and concern vis-à-vis their potential impacts;

- Standards and regulations realistic and flexible about the dangers;

- Reflection and continuous organizational learning vis-à-vis the practice through monitoring systems, analysis and feedback.

It is important to note that the success factors of a process safety culture must be based on the principles presented above.

3. DEVELOPING A MANAGEMENT SYSTEM OF HEALTH AND SAFETY AT WORK:

3.1 Health and safety management in the references:

Like a comparative study by Kowal (Kowal et al., 2006) repositories safety management, the commonalities that are adopted by these standards:

1. OHS Policy
2. Objectives and program security.
3. Role, responsibility and organizational structure
4. Watch and compliance
5. Hazard identification and risk control
6. Staff training, specific skills and empowerment
7. Communication, consultation and information for staff
8. Documentation, document management, records management
9. Operational control
10. Preparing for emergencies
11. Measuring performance security and medical monitoring
12. Audits, checks, inspections, audits
13. Analysis and correction of anomalies
14. Management review and continuous improvement

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3.2 Ooccupational health and safety assessment system suggested model

From the comparative study of OSH management repositories, we have developed a system of OH & S management. It follows the structure of the Deming, and and therefore it follows the approach of continuous improvement.

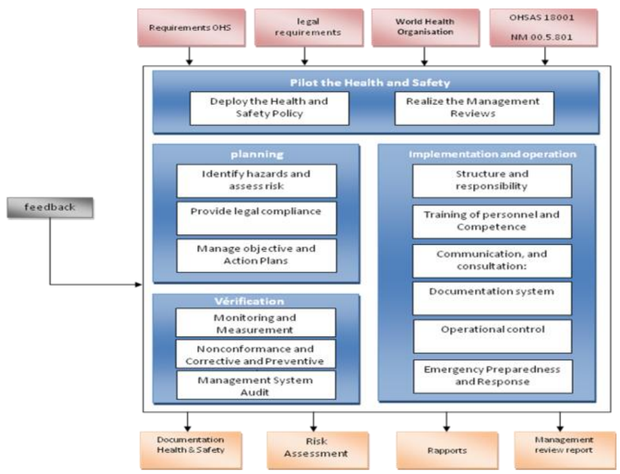

Fig. 2. OSH management system.

3.3 Pilot the Health and Safety

a) the Health and Safety Policy

Policy hygiene health and safety are based on six guiding principles:
-Improving the working conditions of employees.
-Reduction of accidents and incidents.
-Compliance with laws and regulations.
-Involvement of management: Training and awareness.
-Prevention of major risks.

b) Realize the Management Reviews

The General Management organizes and performs at least once a year, a Health and Safety review with the following bjectives:

-From an update on the situation of the company;

-To present and analyze the results of the System Management Health & Safety at work;

-To decide on the effectiveness of the system

-Detect and plan corrective and preventive actions needed to improve the effectiveness of SMS & T,

Possibly revision of the policy and set new goals a Health and Safety action plan accordingly.

3.2.2. Planning

a) Identify hazards and assess risk:

The procedure for hazard identification and risk assessment involves six steps:

-Hazard identification and hazards: In this step, it is to identify all the dangers and hazards that may affect employees in a work unit in question.
-Risk analysis: This step is to define the actual existence of a risk down the causal chain from a danger or hazard. :
-Risk Assessment: It is this step which allows to prioritize the identified risks and to help shape the priorities for action. This ranking is based on a scoring matrix. A matrix is a table crossing several criteria divided on the rating scales to be assigned to risk category and thus to note the risks against each other.
-Developing an action plan: Following the prioritization of risks, it is to determine the measures of prevention, protection, or limitation of the most appropriate way to reduce or eliminate, if possible, the risk concerned.
-Monitoring and updates: This step is both a continuation of the previous step and ensuring an ongoing dynamic evaluation by the renewal of the process regularly.
Particular attention should be paid to the actual effectiveness of preventive measures implemented in terms of reducing the risk at stake.
Regular updates of the approach to occupational risk assessment must be ensured.

b) Provide legal compliance:

The objective of this procedure is to comply with legal requirements, it is based on six steps:

-Identify legal texts;

-Identify the applicable requirements;

-Communicate relevant information on legal requirements;

-Assess the applicability and compliance;

-Establish action plan and monitoring action plans;

-Regularly evaluate regulatory compliance.

c) Manage objective and Action Plans:

Targets are set on a very specific period, they take into consideration:

-The legal and other requirements

-The results of Hazards identification and risk assessment

-The conclusions of management reviews

Once targets are set, a plan or plans of action must be established for the implementation of these objectives, action plans must:

-Indicate the responsibilities

-Establish indicators of progress of actions

Fix the means necessary to achieve the objectives and targets

-Specify the date by which the goals or targets must be

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achieved.

3.2.3. Implementation and operation

a) Structure and responsibility:

It is to define the roles and responsibilities regarding health and safety at work, designate the authorities and accountabilities.

b) Training of personnel and Competence

This is to make training related to health and safety and search skills to manage health and safety at work.

c) Communication, participation and consultation:

Establishing a communication plan used to develop the participatory approach and involve more the parties concerned in the health and safety at work.

This is to establish the procedures required to inform and consult with stakeholders in the company policy and objectives for health and safety.

d) Documentation system:

This procedure allows you to manage documents related to the management of health and safety travail.il is to define the modalities of creation, revision, Communication / dissemination, and Conservation / archiving on the one hand and secondly, to establish:

- Procedure for document management

- Mailing list of documents

- List of current documents

- List of recordings

Generally, the structure of documents in OSH can be presented as the following pyramid:

e) Operational control

It is to deploy the actions taken in all activities and all sites of the body, generally, we ensure that these disciplines are mastered in health and safety;

Fig. 3. The process of operational control

f) Emergency Preparedness and Response

This procedure allows to identify and assess emergency situations that may arise. It defines the organization to implement and behaviors in case of emergency.

This procedure must:

- Ensure consistency between the list of emergency and risk analysis SST

- In planning for emergencies, consider the needs of other relevant stakeholders, including emergency services and related organisms

- Monitor and evaluate the effectiveness of improvement actions arising from the implementation of emergency simulations

3.2.4. Checking

a) Monitoring and Measurement:

The objective of this procedure is to ensure continuous improvement of management system health and safety, from dashboards established non-conformities identified must be a plan or plans of action, it is put in place corrective and preventive actions and a monitoring system to ensure the realization of these actions

b) Nonconformance and Corrective and Preventive Action:

Following each incident, an investigation is undertaken to identify the causes of the incident in order to propose solutions through corrective and preventive actions.

Anyone can detect and report a non-compliance on safety. This non-compliance is subject to registration, and corrective actions and / or preventive measures have incurred.

c) Management System Audit:

To ensure the implementation of the OHS system management, safety audits are scheduled and conducted by qualified auditors and independent. The programming of audits reflects the risks associated with various industries. Each audit is subject to a report specifying the differences detected. Corrective actions are then initiated.

4. PROCESS SAFETY CULTURE

A safety culture is presented as an approach to maintain the commitment to progress and continuous improvement.

Our approach to safety culture is an integral part of OHSMS, a best practice tool allows capitalization of knowledge, it contributes to improving security in that it provides a snapshot of the OHSMS;

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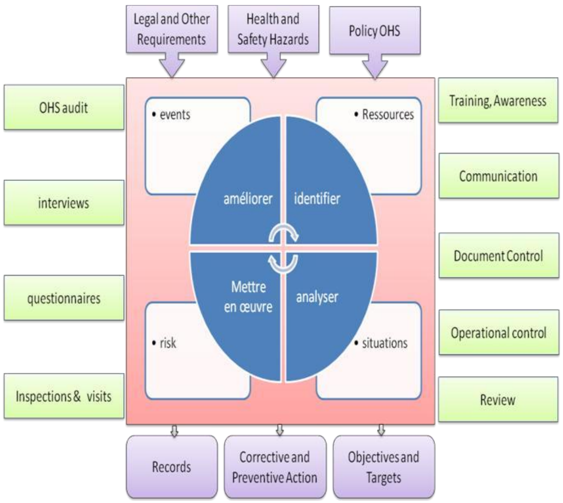

Fig. 4 Process safety culture

4.1. Identify areas of risk:

This step detects gaps and deficiencies that may lead to an undesirable event (incident near accident or accident), it is to develop a diagnostic device that takes into account human factors, technical, and organizational.

4.2. Analyze events

It is an essential step in the learning process of human error, technical and organizational. Its purpose is to describe the aspects identified risks, namely: gaps, failures, and risk behaviors, it is based on different models that are characterized by the causal structure of the accident

- The definition of learning: this step provides the operational phase of the analysis of risk areas. It is supposed to bring a new reading of the situation to determine the conditions of its repetition. Lessons learned from the accident analysis relate to technical and / or humans, and / or systemic, may result in actions, differentiated or additional, focused on the individual, the collective work or system .
- The drafting of the minutes of event: this is a transcript of the analysis and lessons). The organization and establishes a standardized language that provides a representation of events that can be shared beyond the unit directly concerned

4.3. Implement corrective actions

Corrective actions are all preventive measures implemented retrospectively to ensure the health and safety at work. They aim to restore an appropriate level of risk. They result in replacement of equipment, training or changes in business planning. At this level, the key issue refers to the availability of resources (time, skills, finances) to achieve the corrective actions.

4.4. Improve the process safety culture:

This concludes the process, it is in the process of continuous improvement, it aims to reveal weaknesses in the system by analyzing trends incidental.

5. CONCLUSION

The purpose of this study was to propose a management system for health and safety, based on known reference on the subject, at first, and second, to propose a management model feedback.

After presenting the safety and trends developed to improve it, we have an update on key procedures required to develop, implement, and maintain a management system for health and safety;

As part of continuous improvement of the management system, and therefore improve its performance, safety culture is presented as a way to make ever more powerful devices to prevent accidents, by attending to a secure environment.

Thus, we develop an approach to safety culture is an integral part of management system of health and safety;

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