Implementation of safety management systems and health at work (case study in a telecommunications company)

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Abstract Colombian legislation requires all companies to develop a health and safety at work program in order to preserve, maintain and improve the individual and collective health of workers and avoid work accidents and occupational diseases. The design of a management system focused on safety and health at work that provides safety, care and education to employees must involve audit-based evaluation activities. This leads to programs that reduce work accidents and prevent occupational diseases, and that also optimize the productivity of the company. The process must involve the development of criteria for analyzing the tasks or functions of each person. It is vital to anticipate dangerous or harmful events or incidents, to identify potentially dangerous tasks, and prioritize and apply corrective action. The goal of this paper is to demonstrate a methodology based on ohsas 18001 for the implementation of a management system at a telecommunications company. In the methodological scope, sufficient and necessary information will be gathered to detect the shortcomings of the administrative and management areas that support the proposal on the alternative design. It describes the situation observed and analyse the documents that will support the proposal to carry it out in accordance with the established norms.

1. Introduction
Occupational health and safety management systems grew out of the industrial revolution, which resulted in a huge influx of workers from the countryside to the factories, where they often worked in sub-human conditions, which gave rise to broad social criticism and the development of studies and investigations that investigated the relationship between different occupations and diseases. [1] Existing Colombian regulations seek to promote health and safety in the workplace, taking into account that initially an exploratory-type investigation is essential to compile information, and identify conditions, processes and risks that threaten the well-being of the workers [2].

Afterwards, we will go to descriptive areas where we will show the current state of the organization and the solutions found that seek to reduce the risks of work activity and increase the quality of life at work.

Surveys and interviews have been done as exploratory techniques to the people responsible for the health and safety at work process. The processing of the results of them will allow the design of the alternative system together with ohsas 18001:2007, which will improve safety and health in the organization.
2. Materials and methods

2.1. Comprehensive diagnosis of working conditions and health in the company

In order to know the current situation of the company and its progress in relation to the Health and Safety System, the process and its activities must be analyzed from a preventive point of view to avoid incidents, accidents and diseases of occupational origin that affect to workers, such as falls, cuts, musculoskeletal injuries, professional asthma, etc. [3]. In conjunction with the Human resources area, the following elements must be put in place to establish an effective health and safety management system: manual quality folder, description of the organization, its Quality System, the responsibilities of management and human resources, and an allocation of responsibilities for the measurement, analysis and improvement of health and safety. Occupational health and industrial safety program: Description of the organization, its Quality System, the responsibilities of management and human resources, and an allocation of responsibilities for the measurement, analysis and improvement of health and safety. Health and safety committee record-keeping: Certification of incorporation, minutes of meetings, records of votes and elections.

The health and safety management system model that has emerged in Colombia in recent years requires a systematic approach that involves all workers. Continuous improvement is also important [4]. For this reason, quality system matters are also relevant.

3. Discussions and results

3.1. Health and safety management system design

The ohsas 18001 standard was used as a reference for the design of the Occupational Health and Safety management system (SST), which establishes minimum requirements for best practices in order to allow an organization to control its risks and improve its performance of the SST [5] (Figure 1).

Although the standard establishes the minimum requirements, the success of the design and subsequent implementation is based on the way it is received by employees. Therefore, the first step is to design measures that motivate workers to participate in identifying risks and preventing accidents and illnesses. As is stated in the article: The Attitude of Construction Workers to the Implementation of Occupational Health and Safety (OHS): "Attitudes and behaviors in the workplace are traditional habits that are considered prevalent, even occupational accidents are considered a risk and a destination that must be accepted", [6] Similarly, the article 'Industrial Student Apprenticeship: Understanding Health and Safety' states that "Accidents occur due to lack of understanding, so that the level of awareness about health and safety decreases", which is why we must seek to reduce the risk of an accident at work, increasing awareness of health and safety [7].

The next step is the definition of the policy and the objectives of the system, this policy should be: Appropriately to the nature and magnitude of OSH risks of the organization; Include the commitment to continuous improvement; Include the commitment to comply with the applicable legislation on OSH and other requirements subscribed by the organization; Documented, implemented and maintained; Communicated to all workers so that they know each one of their individual obligations and responsibilities regarding the SST; Available to interested parties; and Reviewed periodically to ensure that it remains relevant and appropriate for the organization [8].

After establishing the objectives of the system, the risks of each process or area of the organization must be identified. This step must involve a clear identification and description of the risks. A matrix can be used that groups all relevant information. In the case of the telecommunications company, the Colombian Technical Guide GTC-45 was used as a basis.

After identifying the risks, they must be evaluated and controlled. This requires the participation of different parts of the organization, as taking into account different points of view can lead to innovative ideas for the control or elimination of risks without affecting the productive and financial performance of the organization.
According to the analysis carried out, measures must be taken to eliminate and reduce risks. An indispensable factor in the design of the System is that related to Preventive Medicine and Labour, which should cover topics such as: Occupational medical examinations, both incomes, newspapers and out. Conformation of the Joint Safety and Health Committee at work which meets periodically to analyze safety conditions, suggestions of the system, analysis of work accidents and other aspects that allow fluidity in the functioning of the system. Epidemiological Surveillance: Management and control of pests and rodents, prevention program of psychoactive substances. Conformation of the Committee of Labour Coexistence in which cases and activities to prevent workplace harassment are presented.

Psychosocial factors are present conditions in work situations related to the organization of work, the type of position, the completion of the task, and even with the environment, which affect the health of workers and the development of their work. [9] As regards Hygiene and Industrial Safety, the Emergency and contingency plan is developed after the vulnerability analysis, the road safety plan in case of the company having transportation, where control, review and training measures are taken in the road theme. Definition of schedules and topics for training, induction and re-induction.

Considering the above, the action plan is drawn up, defining the strategy to be used, the objectives to be met, measurable goals, budget to be executed, implementation time, indicators that allow analyzing the impact and effectiveness of the actions and responsible for each activity.

To finalize the design, it is essential to establish an audit process and improvement actions in order to verify and evaluate the degree of compliance of the system as well as the constant adaptability to the needs of the company and its members. Fundamental in the whole system is the participation of all the people of the organization in order to carry out the achievement of the proposed objectives and that in the end there are healthy and safe employees in the performance of their daily tasks (Figure 1).

Figure 1. Process of implementation of the occupational health and safety system.

Each company producing goods and services must establish a health and safety management system that suits their needs. [10] Too often, risk factors aren't identified early, which results in unnecessary illness and injury [11].

Currently, organizations are providing the necessary priority to the GSST system; although Asfhal says “Any safety and hygiene manager who believes that the elimination of risks in the workplace is an indisputable goal is a naive one” [12] some companies are going beyond compliance with basic legal issues, since they have glimpsed that an adequate strategy on issues related to occupational health is crucial for the success of the business, since they can obtain advantages in the reduction of costs associated to this topic in addition to improving the productivity of the labour force [13].
4. Conclusions

The implementation of OHSAS 18001 is a necessity in any company because it requires continuous improvement and provides a structure to take steps that prevent illness and injury. This includes guidance on the integration of prevention at all hierarchical and organizational levels, and the use of suitable methodologies, tools and improvement activities. It also helps ensure legal compliance in matters related to the prevention of occupational risks. It generates a good work environment and promotes a preventive culture, which can also increase the quality of the product or service that is being manufactured or marketed by the company.

An occupational health and safety system were planned, designed and implemented for this company, which previously had almost no formal approach to health and safety in place. The bad habits and behaviors created within the company increase the possibility of work accidents occurring. The communication between levels becomes a priority within the company; since it does not fulfil the purpose for which it was created; the “copaso” has lost credibility among the workers of the plant; mainly due to the lack of attention to their requests. It is of special attention the motivation to the employees so that they make use of the elements of personal protection that is a system of control in the individual that the company offers them with the purpose of to avoid accidents and professional illnesses.

The elements of personal protection are not used correctly by operators because of discomfort, carelessness and in many cases because of their irresponsibility. The management commitment and the signing of the policy is the first step to implement the management system. The collaboration of all heads of areas is essential for the implementation of the occupational health and safety management system. The allocation of resources to improve the conditions of the company in terms of structure and infrastructure and the execution of activities to carry them out would possibly reduce the locative risk factor to which employees are exposed. The participation of employees in the updating of risks is essential to control them and have knowledge of their situation and their needs. The approach to employees is necessary within the plant, builds trust and improves the relationships between them and their superiors.

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