OCCUPATIONAL SAFETY MANAGEMENT AS PART OF THE ORGANIZATION SYSTEM MANAGEMENT

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Abstract

Occupational safety is achieved by implementing protection at workplace, which is an essence part of the organization of work and the execution of work process. Occupational safety management is a part of the organization's management system that is directly related to the development of occupational safety policy in every business system. In accordance with management theory as well as the categorization of basic functions and processes of business system management, it is also possible to identify five basic processes in the system of security and safety at workplace in the business system: the process of planning safety and protection; the process of organizing protection; the process of human resource management of protection; the process of occupational safety and the process of control of safety and protection at workplace. In this context, occupational safety experts have a special role, ie the development of managerial knowledge, skills and abilities in this area.

Keywords: occupational safety, management, occupational safety experts

INTRODUCTION

The modern concept of management in occupational safety is based on different theoretical views and knowledge of different scientific disciplines. When it comes to injuries and accidents at work, theoretical approaches to safety at workplace have changed and developed in order from individual, partial and finally to systemic. After the First World War, there are views of the authors [8] that some people are more prone to accidents than others, which means that any risk assessment should be focused on individuals. However, such recommendations have remained without broader results [23].

Later decades bring new conceptual ideas and theoretical approaches to occupational safety. In the contemporary literature, the views of those authors who recommend a systematic approach to risk analysis that includes both humans and their technical environment are particularly widespread [24].
In the 1970s, regulatory reforms in most industrialized countries [22] emphasized the role of management and organization in controlling workplace risks. The development of management in occupational safety is becoming increasingly evident in the regulatory mechanisms of many countries (Netherlands, Norway). At the same time, progress has been made in considering occupational safety management and environmental management within quality management [12].

In the European Union (EU), more than 5,500 people lose their lives every year due to accidents at workplace. Estimates of the International Labor Organization indicate that 159,000 people in the EU die from occupational diseases every year. Companies in the EU lose about 143 million working days every year due to accidents at workplace. All these injuries, deaths and occupational diseases cost the EU economy at least 490 billion euros a year [33]. Competent institutions, for example in the Republic of Serbia, that are obliged to keep records of occupational injuries, occupational and

occupational diseases are: the Directorate for Safety and Health at Work, the Labor Inspectorate, the Health Insurance Fund and the Pension and Disability Fund Insurance. The data of these institutions differ due to the non-existence of a single register for keeping records of workplace injuries and professional diseases. According to the data of the Directorate for Safety and Health at Work for a period of 4 years (2009-2012), 35,073 injuries at work, 23 occupational diseases and 12 diseases related to work were recorded in Serbia [14], while only in 2016, 9,064 reports on injuries at work and one report on occupational diseases were submitted to the Management Board by employers. Of this total number of submitted reports on injuries at workplace, observed according to the severity of the injury, there were: 8 fatal injuries, 763 serious injuries, 473 serious injuries that occurred either on arrival or departure from workplace and 7,820 minor injuries [34].

Occupational safety management is a complex problem. Each phase of occupational safety must be managed, any feedback that speaks to problems in any of the phases must help the system to learn lessons related to improving the performance of safety and health at workplace. In this context, occupational safety experts have a special responsibility.

We find plenty of sources in the literature on occupational safety professionals [2,6]. In addition to productivity and quality, the company and its managers must go through a process of control, guidance and problem solving in order to achieve a certain level of occupational safety and improve employee productivity. The industry has recognized the connection between safety, health and environmental management by recruiting a large number of advisors i.e. safety managers from different types of managements. From beginners and seniors managers at the end of their careers to those who have great potential and desire to become part of the top of OSH management [10]. The roles of occupational safety experts are to: know what the duties of a manager are, present information, spread knowledge and safety culture in the organization, analyze and define the problem and offer appropriate solutions to actually develop a proactive approach to occupational safety [7,9,25].

Neal and Griffin (2004) define commitment to occupational safety management as "the level at which management understands and prioritizes security and communication and thus effectively acts on these issues." The meta-analysis report on the commitment of occupational safety management is not only the most commonly measured, but it is one of the most important organizational factors of workplace safety and health performance [3,5].

OCCUPATIONAL SAFETY MANAGEMENT

Analyzing the working process, identifying, anticipating and predicting risks, as well as taking measures and activities to either avoid them as much as possible or to mitigate them, are crucial to reducing the number of injured and fallen workers. Safety and protection of workers in the workplace, reduced number of injuries and accidents, as well as improving business efficiency are only possible with an appropriate approach to occupational safety.

There is a huge need for occupational safety management based on the principles of modern management. This is supported by the basic definition of safety and health at workplace as "providing such working conditions which, as far as possible, reduce injuries at workplace, occupational and work-related diseases and which mostly create the precondition for full physical, mental and social welfare of employees" [32]. In the area of safety and protection at workplace in business systems, the main responsibility lies with the employer, i.e. the management of the business system. Occupational safety and health requirements should therefore be an integral part of the functions of modern business systems management, so that we can talk about the need for management in occupational safety.

Occupational safety management implies a planned, thoughtful management of activities, measures and procedures aimed at eliminating or minimizing all hazards and harms, i.e. reducing the level of risk to a minimum and overcoming the resulting crisis or emergency

situations. It is necessary to emphasize that the main goal of this management is to reduce the level of risk of occupational hazards, such as: risk of injuries, occupational diseases, technological accidents, fires, physical, chemical and biological agents in the working environment, etc. [11,18,19].

Sources of research and occupational safety and management in occupational health can be found in the scientific literature in the field of safety and health at workplace, then in many interdisciplinary areas as well as in the practice of safety and protection at workplace. Thus, for example, through the written articles of many well-known management theorists (Frederick W. Taylor, Henry L. Gant, Frank and Lilian Gibreth, Henry Fayol, Hugo Münsterberg, G.E. Mayo and others), great interest (care) for the worker is visible. They were opinions that the interests of workers, managers and owners can and should be harmonized. In particular, they emphasized the need for worker training as well as the need to understand and support the different characteristics and needs of workers. It was also pointed out the importance of management education as well as finding people whose mental quality best suits the job they can do. They investigated the influence of physical agents in the working environment (noise, lighting, etc.) which, according to the theory of scientific management, should lead to variations in production. It was concluded that relations within the working group are far more important in determining the behavior of workers than the physical working conditions and work practices imposed by management [27]. The advantages of implementing management in occupational safety, i.e. the advantages of the correct approach to occupational safety are:

- reduced costs;
- long-term reduced frequency of risk;
- lower turnover rate and absence of employees;
- fewer injuries and accidents at work;
- a more organized way of implementing measures and activities that are reflected in the distribution of responsibilities at all levels in the field of safety and health at workplace;
- better business continuity and increased productivity, ie. avoiding incidents, accidents, severe breakdowns and stopping the work process [35].

SYSTEMIC APPROACH TO MANAGEMENT IN OCCUPATIONAL SAFETY

The need for a systematic approach to management in occupational safety [20] is indicated by a large number of authors. The systemic approach implies that all phenomena are understood and observed as wholes (systems) that exist and operate in the near and (or) further environment. This approach was fully affirmed in the thirties of the XX century and today it represents the foundation of research methodology in fundamental and in applied sciences as well. The term system means any ordered set consisting of at least two elements, which by interaction realize some simple or complex function of the whole. The number of elements that make up the system is not limited but it must be a finite number [21].

Occupational safety should be managed as well as all other aspects of the organization. In order to successfully manage the entire business system, it is necessary to manage the occupational safety system. Therefore, an occupational safety system should be established as a subsystem of the business system [13].

A systematic approach to an occupational safety includes a systematic understanding of risk, ie. it is necessary to define the risk in relation to the quality of the system. Hence, the first subsystem of occupational safety system management should be occupational risk management system [26]. The basis of risk management is taking measures aimed at eliminating the causes and/or minimizing the effects of risky events, as well as measures to ensure minimal losses and eliminate the consequences if there is a realization of risky events [15]. In fact, the continuous existence of the system should be ensured by risk management [16].

The need for a systematic approach to occupational safety is conditioned by a defined

system of the working environment. The working environment as a system includes "elements of the technological system whose mutual connections and relations in the process of work can form such conditions in which influences and actions with the consequences of endangering health or material and natural goods can be manifested" [1]. The systematic approach in the study of the working environment aims to connect the complexity of the present relations and influences in the field of human labor and creativity as a whole with the possibility of applying a unique methodology for working environment analysis, management and coordination of activities in the area.

The system of occupational safety is also determined by the legal regulations on occupational safety. By analyzing the legal regulations on occupational safety, it is possible to determine the levels of the occupational safety system. The highest international level of the occupational safety system is defined by international conventions and directives of international organizations such as the ILO, the EU and others. At the national level of individual countries, the following levels or subsystems of the occupational safety system can be determined: state (subsystem of legislative, judicial and executive authorities), business (subsystem of business system management-employer, subsystem workers, subsystem of workers' organizations in the business system) and public (subsystem of health care, public information, education, etc.) subsystem of the system of occupational safety [28].

OCCUPATIONAL SAFETY MANAGEMENT MODEL

If we look at the model of occupational safety system management (Figure 1), it is concluded that it consists of three subsystems of management functions, namely: the subsystem of risk management at workplace; occupational safety management subsystem and occupational injury management subsystem (occupational and work-related diseases) [30].

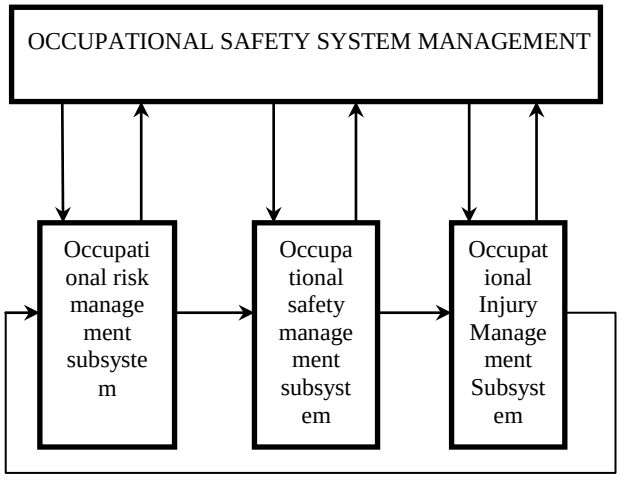

Figure 1. *Occupational safety system management model*

As can be seen in Figure 1, all three control subsystems are interconnected by direct connections of the determined flow. When the first level, that is, the system of occupational safety, is observed, individual mutual connections with all subsystems are noticed. However, in order to achieve a permanent improvement of the system of prevention of working injuries and professional diseases (the goal of the system of occupational safety), the feedback between the subsystem of injury working management and the subsystem of risk working management is crucial. This feedback closes the system in a continuous cycle and obtains the necessary information for the revision of the occupational risk assessment, after which new occupational safety measures are determined [Ibid.]. From the presented model of occupational safety system management, a mathematical model of occupational safety system management can be presented with the following expression [29]:

$$C = \{P, Z, O\}. \quad (1)$$

Where C, P, Z and O denotes management system of occupational safety (C), occupational risk management subsystem (P), occupational safety management subsystem (Z) and occupational injury management subsystem, respectively (O).

Thus, the goal of management in occupational safety is to reduce the level of risk from hazards that arise in the working environment. Without quality management in occupational safety, there is no safe working environment. The basic functions of modern business systems management are: planning, organizing, human resource management, leadership and control. On the other hand, the basic functions of management are performed at the highest, middle and lower levels (that is at all levels of management). The specifics of performing functions at individual levels of management depend on: goals, content, time dimension, context, environment, orientation, type of decisions, conditions, methods of decision-making, etc. Through all basic management functions, common management roles are realized: informational, interpersonal and decision-making roles. The essence of management is coordination [4].

In accordance with the theory of management as well as the categorization of basic functions and processes of business systems management, it is possible to determine five basic processes in the system of safety and protection at workplace [31]: the process of planning safety and protection; the process of organizing safety; the process of managing human resources for safety; the process of conducting safety and the process of controlling safety and protection.

CONCLUSION

Occupational safety is achieved by implementing safety at workplace, which is a structural part of the organization of work and performance of the work process. Occupational safety is achieved by performing occupational safety activities and the application of prescribed occupational safety measures whose purpose is to prevent injuries at workplace, occupational diseases and other work-related diseases.

In fact, protection management is necessary to be based on the principles of modern management. Therefore, management in occupational safety is a permanent process of a series of structured and related activities that allows the normal flow of processes in the working environment. It is a management that tends to eliminate negative tendencies and influences in relation to the working environment and the health of employees. It is necessary to emphasize that the main goal of this management is to reduce the level of risk of occupational hazards, such as: risk of injuries, occupational diseases, technological accidents, fires, physical, chemical and biological agents in the working environment.

As leaders in the organization, occupational safety experts make a crucial contribution to organizational safety. Numerous researches of safety culture and climate in the organization confirm this statement, and in that sense it is necessary to develop managerial knowledge, abilities and skills of occupational safety experts.

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