

SPECIFIC FEATURES REGARDING THE PREVENTION OF WORK ACCIDENTS AND OCCUPATIONAL DISEASES IN LAND RECLAMATIONS ACTIVITY

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Abstract

The insurance subsystem against work accidents and occupational diseases is one of the pillars of the social security system identifiable at any developed country level, regardless the conferred title or the institution in which subordinations is. The Prevention of occupational risks submits one of the variants of rebalancing the allocated budgets for this subsystem. The developed researches was based on Framework Directive 89/391/CEE for health and safety at work and the correspondent Romanian harmonised legislation. The aim was to avoid or reduce the occupational risks by achieving an integrated prevention and protection to ensure the continuous improvement of the safety level and health protection of workers within the land improvement activity. The developed model for ANIF is also applicable for other components of the social security systems, the acting success condition being the developing of a system based on integrated approaches linked with assets to the passive dimension.

Key words: *framework directive on OSH, NALR (National Administration of Land Reclamation), prevention, occupational risks, risks avoiding.*

INTRODUCTION TO APPLICABLE LEGISLATION

Framework Directive on the occupational safety and health (OSH), "Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work", defines prevention as "all the steps or measures taken or planned at all stages of work in the undertaking to prevent or reduce occupational risks". The implementation of prevention measures of occupational risks to the end to ensure the safety and health protection of workers, will be conducted by the employer in compliance with the general principles of prevention that the Framework Directive provides in Article 6, which are the follows: avoiding risks; evaluating the risks which cannot be avoided; combating the risks at source; adapting work to the individual, especially as regards the design of workplaces, the choice of work equipment

and the choice of working and production methods, with a view, in particular, to alleviating monotonous work and work at a predetermined work-rate and to reducing their effect on health., adapting to technical progress; replacing the dangerous by the non-dangerous or less dangerous that is, developing a coherent overall prevention policy which include technology, work organization, working conditions, social relationships and the influence of the working environment; adoption as a priority to collective protective measures for personal protection measures, giving appropriate instructions to workers.

These principles were transposed into national legislation by the Law no. 319/2006, in Article 7, and they are considered some of the most important issues in the occupational safety and health field, together with the provisions which establish the most important obligations for the employer, namely: "to assess risks for the workers health and safety, to take prevention

measures and apply working and production methods to ensure security and to improve workers occupational health and safety which must be integrated into activities of the undertaking and/or establishment and also which must be present at all hierarchical levels, to take into consideration the worker's capabilities as regards health and safety at work when employer do establish the tasks assigned for worker; to ensure that the planning and introduction of new technologies are the subject of consultation with the workers and/or their representatives, as regards the consequences of the choice of equipment, the working conditions and the working environment for the safety and health of workers, take appropriate steps to ensure that only workers who have received adequate instructions may have access to areas where there is a serious and specific danger.

THEORETICAL CONSIDERATIONS

Taking into consideration the definition of prevention from the legal point of view mentioned above, the preventive measures are the technical, organizational, hygienic and sanitary ways, which provide or improve the safety and health at work and by them, actually, the risks are eliminated, avoided or decreased. Stepping out this legal area and passing to the research ones, these risks represent the possible action of the existing risk factors (effect of present hazards) on the human body and eliminate the risk of a workplace is very difficult in practice. In our opinion, it would be appropriate to use the concept of "prevention" only in such case. In the other two cases of avoidance or mitigation processes, the concept of "prevention" use would be justified only partially, because it must to apply "the protective measures". Since, both in theory and in practice, the risk factors are classified most commonly in relation with the work system elements (performer - work tasks - means of production - working environment), the protection and prevention measures can be classified, also by reference thereto. For example, the measures related to worker (e.g. medical examination, psychological examination, training and counselling) aimed to eliminate intrinsic causes are: omissions and

wrong actions or their causal substrate, lack of attention, lack of physical and mental attitudes, lack of occupational safety knowledge, inadequate attitude towards risk. To establish a correspondence between a cause and a protection and its prevention measure is not always possible. Frequently, a cause can be removed by several measures, and vice versa - a single measure can eliminate many causes or risk factors.

The protective and preventive measures can be classified into two broad categories:

- Organizational measures, aimed in particular on contractor and work task;
- Technical measures relating in particular to the means of production and work environment.

The main organizational protective and preventive measures against work accidents and occupational diseases are health surveillance measures: medical examinations and, where appropriate, psychological examination; staff training; counselling; communication and consultation with staff in the health and safety at work issues; organization of the work and workplace. Technical measures to prevent work accidents and occupational diseases are classified into the following categories of protection: individual, collective, intrinsic and integrated.

1. Organizational measures

1.1. Medical examinations

Medical examination is an important preventative measure, helping to eliminate the causes of accidents and occupational diseases which have no substrate, failure or shortcomings of physical and mental qualities of the performer, that means his health that abnormal condition. In terms of industrial activity, the medical examination has an important preventive role. First of all, it contributes to reducing the incidence of occupational diseases and accidents, by targeting subjects who have abnormal susceptibility to the action of professional hazardous chemical, physical or biological agents. On the other hand, detection of occupational diseases in an early stage can

prevent worsening illness or disability installation.

1.2. Psychological examination

In the system of actions and measures designed to achieve optimum efficiency and a maximum security at work, the psychological examination occupies an important place. Along with the medical one, it has two key objectives: it ensures consistency between tasks/objective requirements of the profession/employment, in particular, and real capabilities of the individual; Detecting and preventing the causes of psychological disorders and accidents in the system "man - tasks - means of production - working environment." In achieving these objectives the psychological examination is involved in the professional adults training guidance, the professional selection, the distribution for the jobs in the same profession or trades, to maintain or not the workers in their jobs, in promoting the employees for the higher level of skill jobs, also for the expertise of and the recovery of the work capacity.

In all cases listed above the examination is complex, involving multiple correlation methods and procedures: observation, biographical method (the detection and evaluation of the most significant episodes and events in the history of the person), the method of analysis work products, and call the questionnaire method, experimental methods (lab and natural), test method. Each method involves a logical operational scheme different criteria and measurement techniques for specific evaluation. Whatever, the purpose for which it seeks psychological examination is based on a series of general principles whose observance is likely to prevent possible mystification, distortions, exaggerations, giving meaning diagnostic - prognostic's expected results.

1.3. Staff training

Training in safety and health is part of general training and it is done either at work or in educational institutions (secondary, post and / or higher). Personnel training in the safety and health at work domain is a set of organized activities which aim to acquire knowledge and

skills of occupational safety, including practical exercises on how to achieve action in predictable cases. Considered one of the most important preventive measures, training is aimed at eliminating or reducing the number of human errors or failures resulting from lack of safety knowledge. It is through training processes - processes of information exchange in health and safety at work. The content of the training process consists of all information related to the sphere of labour, through assimilation and repetition lead to the formation of normal behaviour, optimal work, developing the correct orientation to risk and boost capacity to mobilize against them.

1.4. Consultation of workers and communication on the health and safety at work

In addition, "the workers with specific responsibility for safety and health of workers shall have the right to ask the employer to take appropriate measures and to submit proposals to him to that end to mitigate hazards for workers and/or to remove sources of danger." Therefore, the representatives of workers acquire more than an advisory function, they can get involved in policy development and health security of the company. This work is paid, the workers' representatives can not be discriminated against their positions taken and they can appeal to the authorities responsible for the protection and safety during inspections and can freely express their observations. Consulting staff on issues related to safety and health is a concept introduced by the Framework Directive (Article 11), which establishes the principles of consultation by employers of workers on these issues. In Romania, this concept is achieved, especially in the health and safety committees established in enterprises and work units established by Law no. 319/2006. Employees have the right to be consulted, to make proposals, namely balanced participation, in accordance with law and / or practice in order to discuss problems concerning health and safety at work.

Along with training, professional selection and consultation, communication measures implemented or planned, as well as important data for the activity, are important

organizational measures to prevent accidents and occupational diseases. It consists of a set of actions, methods and means of influencing human behaviour in relation to health and safety requirements of work. The communication aims to eliminate risk factors arising from the dangers of impropriety, is the main way to disseminate ideas and information to strengthen the opinions, attitudes and behaviours appropriate in terms of knowledge, respect and Law Enforcement its safety and health at work.

The main objectives of business communication and health security can be formulated as follows:

- modification of the individual and collective behaviour in relation to occupational safety requirements;
- influencing and correction of personal and collective characteristics that can lead to accidents in the workplace;
- increasing of the security for individual and collective work process;
- promoting appropriate attitudes about risk;
- create and maintain a tendency of individual and collective responsiveness to concrete activities to prevent industrial accidents and occupational diseases.

In terms of occupational safety organization work station, regulating the activity of the performer can be a source of errors by insufficient training of the workers or lack of equipment, work tools, time, work tasks and rules disproportionate against the workers full potential etc. The constraints due to wrong methods of work, assignment of excessive work tasks can lead to excessive anxiety and disruption, favouring the occurrence of dangerous situations. The same effect it has poor service job, its poor planning, the personal issues. All matters listed are part of the work subject, understood as an integrated set of techniques and methods used for analytical research, systematic and critical work processes, potential or existing, in order to achieve greater economic efficiency.. Making a correlation between technical progress, with its constructive solutions, and the human body's ability to react promptly to receive information in different ways, within its physiological, psychological, professional and cultural, it is an

important requirement of modern society. Labour productivity should assist the contractors to reduce their effort in the process of work. In the current economic conditions, saturation occurs mainly workers under psychological report, with serious consequences for increasing errors, and survey work is essential to optimize work processes, especially in the ergonomic sense of their organization.

The analysis lead to an ergonomic work for the purpose of mutual adaptation of the work system components, so that the implementation process has to allow the daily restoration of work capacity. Generally, work organization can be defined as determining the work tasks and their distribution between the performers. A good organization of work appeals to the study of the work and to ergonomics, has solved a number of steps. Among them, some are more important in terms of health and safety at work, being, in essence, and measures to prevent accidents and occupational diseases.

The streamline of the movement of men and machinery by identifying solutions that provide (in addition to reducing the length of routes) the elimination of the overlaps and cross flows, the reduction of the number and duration of transport, the reduction of the number of vehicles, the avoidance of overcrowding of jobs and periods of waiting for processing, the avoidance of the collision between objects (products or means of transport) or between objects and different performers etc..

By analysing the contractor movements, it appears that the manner of execution of movements and energy directly determines the degree of strain at work. The purpose of the analysis is to eliminate the unnecessary movements, reducing the distances that are performed and to rationalize the direction and execution effort of the movements. Finally must be obtained simultaneously the removing of the causes that lead to premature appearance of fatigue, and reducing the work time to perform a task.

As it knows, between the technical measures to prevent occupational accidents and diseases are the following main areas of action: individual protection, collective protection, intrinsic protection and integrated protection. Integrated

and collective protection are priority actions to prevent accidents and occupational diseases. The current level of scientific and technical progress does not make possible the complete personal protection, because it cannot entirely eliminate the risks..

2.1. Personal protection

The personal protection equipment consists in all personal protective means that are used by the worker during his work. It behaving like a screen; this type of protection helps to prevent or eliminate the risks.

2.2. Collective protection

Collective protection includes all technical means and methods which prevent or reduce risk factors on the action of two or more performers. In practice, collective protection consists mainly in providing facilities, machinery, devices and appliances designed for the sole purpose of protecting workers during the work process and it is achieved by providing technological facilities and equipment, security devices, additional work,, independent tasks designed with unique technological process. In this manner, it is possible to correct protection deficiencies of machinery, equipment or the parameters of the working environment for the purpose of bringing them in the security limits.

2.3. Intrinsic protection

Intrinsic protection is the best way to eliminate risk factors for occupational accidents and its goal is the integration of security, productivity and reliability issues in the phase of technical design. Each element must be designed to ensure simultaneous satisfaction of the production function and security criteria throughout the expected life of the product, in any operating conditions. Intrinsic safety makes unnecessary the development of special occupational safety regulations, along with technological requirements, but needs instructions for the use of machines and facilities.

Although the most efficient, in terms of economic and social achievement, the intrinsic

safety is a goal whose achievement is strictly conditioned by the technical progress and science in general. It implies the existence of design methods to enable simulation of all the possible alternatives of operation and of behaviour of each element of a technical system in order to be able to choose constructive solution corresponding to the intrinsic risk equal with zero. Also, it should be possible the materialisation of such solutions with costs that meet the criteria of profitability. The robots, automated processes and especially businesses that are fully automated are the solution to protect the man from the possible action of some specific risk factors in the work place, starting from the fact that only the presence of man, as a performer, working in a system, makes possible an occupational accident or disease. There are objective limitations in improving security office machines, equipment, technologies and that human behaviour. This is the reason why the increasingly accepted solution by some authors, to achieve complete intrinsic safety, is to replace human performers with mechanical systems, automated or robotic. The transfer function of the actual execution of the processing, transport, supply of machinery, etc., to the mechanical systems, and even then the function of command and decision, allows to obtain not only higher yields, but also the physical impossibility of interaction between man and danger.

2.4. Integrated protection

The integrated protection is the ideal way to protect the human at work and eliminate the danger of accidents and occupational disease before the formation and the entry into service of the work system. In this respect, the integrated protection concept was created as a way to eliminate the risk, by providing all necessary measures and means of protection from the design phase and implementation of labour resources. In this way you can be working systems which operate to provide minimum acceptable risk for executing against the technical and scientific progress.

The principles of the integrated protection are:

- the design and implementation of equipment, machinery etc. In this stage, it must be

identified all risk factors of occupational accidents and professional diseases, must to assess risks and to choose the most appropriate solutions, based on scientific and technical progress in aim to eliminate or minimize the risks;

- when we choose the best solutions, the following criteria must be applied, in the above mentioned order: eliminate or reduce risks, establish and implement the necessary protective measures against risks that can not be removed, inform the users about the residual risks due to incomplete efficacy of the adopted measures;
- the protective functions must be made at the same level with the other functions of the product;
- it will consider both situations: the normal circumstances of the operation and the unusual, abnormal, but predictable ones.

The result of the principles application of the integrated protection is that the integrated security can be expressed quantitatively or qualitatively. Currently, the concept of integrated protection began to be extended to systems work together at which the gravity potential risk is extremely high, especially in their accidents representing a massive loss of lives and considerable material damage.

Achieving integrated protection involves the design, development and selection only of those items that meet all safety criteria in the phase of work, prior to its entry into service of all measures to maintain the security function in optimal parameters.

RESULTS AND DISCUSSIONS

This concept was applied in the specific conditions of the National Administration of Land Reclamation, to prevent work accidents and occupational diseases, by occupational risks avoiding.

CONCLUSIONS

Implementation of occupational risk prevention measures to ensure safety and health protection that can be achieved by compliance with

general principles of prevention, which are provided by Framework Directive, as follows:

- avoiding risks;
 - risk assessment can not be avoided,
 - combating risks at source;
 - adapting the work to humans, especially in regard to design workstations, choosing work equipment, work methods and production, to reduce the monotony of work, work with predetermined rate and reducing their effect on health;
 - adapting to technical progress;
 - replacing the dangerous by the non-dangerous or what is less dangerous;
 - developing a coherent overall prevention policy which include technology, work organization, working conditions, social relationships and the influence of the working environment
 - adopted as prior the collective protective measures instead individual protection measures;
 - providing appropriate instructions to workers.
- Following the assessment that the employer have the obligation to make, if necessary, the preventive measures and working methods implemented by him must to ensure security, to improve occupational health and to be integrated in the overall business and / or establishment, at all hierarchical levels.

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