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## MANAGEMENT OF RISK SAFETY OF LABOR ON DIFFERENT LEVELS

The modern solution of occupational safety issues is needed at different levels: state, sectoral, regional, industrial. It is determined by various reasons:

- technical equipment, technological processes, and labor conditions that do not comply with regulatory requirements are potential sources of threat to the life and health of workers. In addition, the negative effects of the workers actions are contrary to the rules of safety. This is due to injuries associated with production. It generates administrative, organizational, technical, and social problems.

- incomplete, outdated and hidden information about harmful and dangerous working conditions in the workplace;

- insufficient account of the domestic normative legal acts of international standards and recommendations. This requires the development of updated methodologies and regulatory acts, which in particular determine the analysis and risk assessment and management.

Therefore, the creation of a modern safety system should provide its comprehensive suitability for state and production levels, as the main ones, regarding the mechanism for identifying risks for safe working conditions, criteria for their ranking, the choice of adequate preventive measures for reducing levels or eliminating risks.

However, in the state and industrial management of labor protection, there are features associated with the specific functioning of these systems:

- the official supervision of state control is hampering the impact on the improvement of working conditions; divergencies in state statistics do not give objective analysis of treativism and the ability to formulate policies and implement preventive measures adequately; lack of a sound mechanism of economic impact on the state of labor safety;

- insufficient implementation of risk prevention in workplace, underdeveloped culture of safety, lack of a system of economic incentives for employers and workers to improve the state of occupational safety.

For systemic coordination of risk management of labor safety between state and production levels, it is necessary to determine the interconnection of modern methodological approaches to risk management.

**Keywords:** labour protection, job safety, risk, risk control.

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## УПРАВЛІННЯ РИЗИКАМИ БЕЗПЕКИ ПРАЦІ НА РІЗНИХ РІВНЯХ

Виявлення виробничих небезпек та оцінювання відповідних їм ризиків розглядається як основний механізм розв'язання питань забезпечення безпеки праці на різних рівнях: державному, виробничому як базисних, а також галузевому та регіональному. Це є складовою сучасних систем управління охороною праці (СУОП). Причинами виробничих

небезпек і відповідних ризиків є застосування на виробництві небезпечного технічного устаткування та технологічних процесів, погіршення умов праці, негативний прояв людського фактора, хибність статистичних даних, недостатня адаптованість вітчизняних нормативних актів до міжнародних і європейських. Вказані причини впливають на управління створеними ризиками, але різною мірою залежно від їх значимості для державного та виробничого рівнів.

У державному і виробничому управлінні охороною праці є певні відмінності, спричинені функціональними особливостями цих рівнів управління. Для досягнення загального підвищення ефективності управління охороною праці потрібно взаємно логічно ув'язати системні підходи до різних рівнів управління в єдину (узагальнену) СУОП. Основним зв'язуючим елементом може бути застосування ризик-орієнтованого підходу до оцінки стану безпеки праці за єдиною схемою. Відмінними залишаються тільки ризикоформуючі фактори. Доцільним буде також оцінювання ризику невиконання запланованих працезохоронних заходів, що дозволить їх вчасне коригування.

**Ключові слова:** охорона праці, безпека праці, ризики, управління ризиками.

For unambiguous application of the terms and concepts given in this article, their definition in DSTU 2293: 2014 «Occupational Safety. Terms and definitions of key concepts»:

- labor safety – the protection of the human activity from excessive acceptable risk;
- production risk – probability of damaging the health of the employee in the process of labor activity, causing damage to property, the environment, which is caused by the harmfulness and / or the danger of industrial and technological processes;
- occupational risk – the risk of damage to the health of the employee in the process of his professional activity;
- acceptable risk – a risk reduced to the level that its industry, business combinations, enterprise, institution, organization may allow, taking into account its legal responsibilities and its own policy in the field of occupational safety;
- labor process – the aggregate of targeted actions of the employee (s) during the performance of work, the creation of products, the provision of services;
- labor activity – realization of the objective function, connected with production and formed by the needs of the society, carried out in a certain organizational and legal form of management.

**Relevance of the question.** Analysis, evaluation and risk management are considered as the main mechanism for the current solution of occupational safety issues (hereinafter – labor safety) at various levels. This is due to several reasons:

1. It is known that technical systems, installations, units, equipment of high danger, technological processes, working conditions that do not meet the regulatory and sanitary requirements, are potential and real sources of danger to people. If to add dangerous actions, carried out by a person deliberately, contrary to safety standards, then the magnitude of the risk, which results in traumatic events, including fatal ones, increases significantly. Therefore, the presence of hazards in daily work is a serious administrative, organizational, technical, social and psychophysiological problem.

2. The need for an objective assessment of the conditions of work by factors of danger or risk is also stipulated in Ukraine as a legislative norm obliging the employer to inform employees about working conditions in the workplace, about allhazardous and harmful production factors.

3. Intention to take into account in the field of labor protection, international standards and recommendations for the management of occupational safety and health of workers, of course, require the development of a methodology and appropriate regulations, which, in particular, determine the mechanism for the practical implementation of the risk-oriented approach, since the analysis and risk assessment, management are the conditions for rational compliance of the national system of management of labor protection with international standards.

In connection with this, there is a need to create a system or methodology that determines the mechanism for identifying risks for safe work, criteria for their distribution (categories), the choice of preventive and preventive measures, in order to reduce or eliminate risks.

For these reasons, the management of identified and identified risks, due to its complexity, is currently very relevant. In general, the management of risks (risk) will be correlated with labor protection activities (occupational safety) and other objects whose operation may adversely affect people and the environment, that is, management based on analysis and risk assessment. Here it is a combination of industrial and professional risks. In order to simplify the presentation of the material in the future on the safety of work, we will use the more widespread and already general term «professional risk». This is also justified by the fact that, with regard to employee employment at a particular workplace, these concepts reflect the same subject from different perspectives.

**The problem that needs to be addressed.** The identification of threats to the safety of work, the elimination of the negative risks of their implementation, prevention of occupational injuries and occupational disease is achieved, in particular, due to the systematic management of labor protection - the functioning of the system of management of labor protection (SMLP).

The modern SMLP is based on the predominance of a posteriori response to accidents, illnesses and accidents at work. At the same time, due to the lack of an effective analysis of their causes, predominantly already responding to the consequences without taking into account the risk factors. This is a characteristic of both a nationwide organization of labor protection management and the functioning of the SMLP at work. Accordingly, the employer has ineffective planning of preventive measures, financially and materially expendable expenditures, etc.

There are specific features and needs of the management of labor protection at the state and production levels. Restrictions on the control and supervision of the State Labor Inspectorate impede control of the observance of labor and labor legislation, limit its ability to influence the improvement of working conditions. The lack of a single state statistical reporting does not allow us to reliably compare statistics on injuries, working conditions and objectively formulate policies and take adequate precautionary measures.

On the other hand, the productive side, it is necessary to strengthen the participation of employees, their representatives, employers in social dialogue, in cooperation and coordination of actions. This applies primarily to small and medium-sized enterprises.

It is necessary to take into account the peculiarities of the weaknesses in risk management for safety at the state and production levels. The first is characterized by a cumbersome regulatory framework, excessive regulatory and bureaucratic influence and economic agents, inadequate efficiency and effectiveness of the national labor safety system, and lack of a sound mechanism for economic impact on the state of work safety – stimulation and encouragement.

The disadvantages of managing work risks are insufficient risk prevention, lack of economic incentives for employers and workers to comply with legislation, undeveloped culture of safety and so on.

In this way, the delineation of labor protection tasks and measures, the diversity of risk management between the state and production levels, the absence of a cross-cutting SMLP, and the problem of inconsistency in the multi-level management of labor safety and their low efficiency despite the declarative nature of the complex SMLP.

**Problem solving problem.** For the systemic coordination of risk management of labor safety between state and production levels, it is necessary to determine the relationship of modern methodological approaches to risk management.

**Research and development to solve the problem.** Study of national and inter-departmental risk issues. Conceptual principles for reforming the system of labor safety (in the broad application of labor protection and industrial safety) are reflected in numerous studies, for example: criticisms of modern technical regulation reform [1], implementation of the concept of acceptable risk [2], functioning of risk-oriented SOUP [3–5], including taking into account international experience [6] and targeted standards [7–9]. Other issues related to risks in the management of labor safety have been explored and specified: for a complex of organizational measures in the conditions of production [10], including for small enterprises [11], for certain spheres of employment [12, 13] and types of employment [14].

Among the systematic results of research there are:

- in many industrialized developed countries, on the one hand, strict measures are taken on the one hand to deal with serious threats, on the other hand, the number of mandatory standards is limited, and the development of normative documents is encouraged without compulsory legality, greater flexibility of law enforcement and long-term prospects;

- work on the principle of absolute security with the employer's responsibility to comply with the maximum regulatory requirements does not enable him to switch to risk management. At the same time, in the western countries, the employer has the ability to manage risks within the framework of existing regulatory legal acts with the application of other normative acts to achieve optimal results;

- in the whole national standard meets the basic standard BS 18001: 2007 by almost 90 %. The remaining 10 % relates to risk management, which remain unregulated in domestic requirements;

- analysis of existing approaches to risk assessment of the worker's health problem revealed a lack of a unified methodological approach to assessing this risk in economic activities for each type of economic activity and in the state as a whole.

There are two distinct approaches to the definition of the most dangerous types of economic activity:

- the ir attribution to a certain class of occupational risk under the legislation on social insurance; in the use of risk management methods, that is, the more dangerous are those that are classified as a higher risk. The lack of a uniform (unified) methodology reduces the overall effectiveness of public health management;

- the mechanism of risk assessment for failure to carry out planned measures of programs at different levels was not worked out;

- the modern SMLP should be focused on ensuring the implementation of state policy in the field of occupational safety:

- substantiation of professional selection and special training on occupational safety at work for high danger work; the application of optimal permitting and declarative systems to increase the attention of employers to high-risk equipment; maximum use of the legal basis based on the assessment of occupational risks;

- the definition of priorities in planning the financing of occupational safety and health measures.

#### 1. Risk management research in the fields and by types of work.

On the basis of the existing general principles of the application of the risk-oriented approach, numerous studies were carried out on their sectoral and production orientation, for example, in the operation of computer equipment [15], in work in conditions of seismic hazard [16], in the textile industry [18], in corporate systems [19, 20] and the general manufacturing [21] management order, in other branches and types of activities [22].

#### 2. Scientific developments on risk management.

Scientific research on labor safety risk management was conducted by many domestic and foreign researchers, for example: scientific developments of the National Research Institute of Industrial Safety and Occupational Safety [23–26], other developers [27–31]. Special studies have been devoted to methods for determining, including acceptable, risk levels, for example [32–35].

### **Conclusions**

The review and analysis of materials on the generalization of the methodology of risk management at various levels allows us to draw the following conclusions.

1. On the principles of state supervision (control) in applying a risk-oriented approach.

Putting the employer in charge of declaring a policy of labor protection involves the introduction of rules that will not be binding on employers, but will indicate which norms the state deems appropriate and recommends for application. But at the

same time the necessary protection of workers from harmful and dangerous industrial factors should be ensured. The State Inspection has the opportunity to apply: the target determination of priorities for purposeful inspection of business entities; the actions of the supervisory authorities are directed primarily to persons who are to some extent responsible for the risk and are most empowered to control it.

## 2. A new approach to public risk management.

The new management approach in this regard encourages state inspectors to «system audit» – an integrated system and structured assessment of risk assessment, monitoring and control systems at the objects of supervision (control). This involves studying the organization of management (SDO) at the facility, the level of competence of the involved personnel, planning methods, the existing system of risk control and monitoring their effectiveness. In general, in a risk management system at the state level, the objective concentration of transparency is important. With regard to focusing on priorities, it should be convinced that it focuses primarily on the really most dangerous and least-controlled risks. Depending on this, a systematic order of inspections is organized. Transparency is to help those responsible for meeting security requirements in their awareness of their rights and responsibilities. The agreed state-industrial measures also include clarification of the delimitation of legal requirements and recommendation standards and other informational assistance.

## 3. Regarding employer risk control

Based on international practice, the employer's control includes:

- detection of objects that can or constitute a threat, and determination of dangerous hazardous production factor;
- preventive and control measures in the analysis of the labor process for the assessment of danger and risk for taking preventive measures to ensure safety and safety of production.

Application of the general problem-target principle in the formation of plans and programs of different levels will allow analytically to identify the most acute issues of labor protection, both in different economic entities, and in the national economy scale. This will allow the formation of a system of target inspectors for safety and health at any level: a unit, enterprise, industry, region, state. The use of a risk-oriented approach in planning program activities is to identify the risk of their non-compliance in addressing specific problem issues.

4. The design of a consolidated (generalized, cross-cutting, etc.) methodology for managing multi-level occupational safety risks will contribute to the formation of a new national system for preventing and implementing occupational risks. This process should be accompanied by monitoring, evaluation of the results and necessary corrective measures.

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## **УПРАВЛЕНИЕ РИСКАМИ БЕЗОПАСНОСТИ ТРУДА НА РАЗНЫХ УРОВНЯХ**

Выявление производственных опасностей и оценивание соответствующих им рисков рассматривается как основной механизм решения вопросов обеспечения безопасности труда на разных уровнях: государственном и производственном как базисных, а также отраслевом и региональном. Это является составляющей современных систем управления охраной труда (СУОТ). Причинами производственных опасностей и соответствующих рисков является применение на производстве опасного технического оборудования и технологических процессов, ухудшение условий труда, негативное проявление человеческого фактора, ошибочность статистических данных, недостаточная адаптированность отечественных нормативных актов к международным и европейским. Указанные факторы влияют на управление созданными рисками, но в разной степени в зависимости от их значимости для государственного и производственного уровней.

В государственном и производственном управлении охраной труда есть определенные различия, вызванные функциональными особенностями этих уровней управления. Для достижения общего повышения эффективности управления охраной труда нужно взаимно логично увязать системные подходы к разным уровням управления в единую (обобщенную) СУОТ. Основным связующим элементом может быть применение риск-ориентированного подхода к оценке состояния безопасности труда по единой схеме. Разными останутся только рискформирующие факторы. Целесообразным будет также оценка риска невыполнения запланированных трудоохранных мероприятий, что позволит проводить их своевременные корректировки.

**Ключевые слова:** охрана труда, безопасность труда, риски, управление рисками.

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