

**ТЕХНИКАЛЫҚ МАМАНДЫҚТАРЫ  
ҚОРШАҒАН ОРТАНЫ ҚОРҒАУ  
ЖӘНЕ ӨМІР ТІРШІЛІГІНІҢ ҚАУІПСІЗДІГІ**

UDC 502.175: 504.5 (574.1)

**Shirvanov R.B.**, Ph.D, Associate Professor

NCJSC «Zhangir UDC 502.175: 504.5 (574.1)

**Shirvanov R.B.**, Ph.D, Associate Professor

NCJSC «Zhangir khan West Kazakhstan Agrarian-Technical University», Uralsk, Republic of Kazakhstan

**LEGAL AND REGULATORY PROVISION OF SAFETY AND LABOR PROTECTION  
FOR PRODUCTION PERSONNEL**

**Abstract**

Based on statistical data, this article analyzes the indicators of personnel who get injured at work and fatalities, generally in the Republic of Kazakhstan as a whole and in the West Kazakhstan region over the past 5 years, identifying their root causes and economic consequences. By the results of production activities the legislative framework of the Republic of Kazakhstan on ensuring safe and healthy working conditions for workers prioritized of the life and health of the employee is analyzed. It is determined that labor safety and labor protection in modern conditions are ensured by: government management of occupational safety and labor protection; government regulatory requirements of occupational safety; by the Constitution and regulatory legal acts of the Republic of Kazakhstan; fundamental conventions of the International Labor Organization within general labor protection ratified by the Mazhilis of the Republic of Kazakhstan; Occupational safety standards system containing technical requirements for the safety of industrial buildings, equipment, processes; sanitary regulations and standards; as well as standards, industrial relations, instructions and other conditions. It is established that in order to ensure the safety of production and technological processes, as well as comfortable and safe working conditions for workers a three-stage control over the state of labor protection of structural units should be established at the company.

**Keywords:** *assessment, workplace, industrial injuries, occupational diseases, harmful and dangerous production factors, certifications, standards, labor safety and protection.*

Ensuring the life safety of workers, their safe working conditions is an urgent problem and a fundamental goal that the government and society strive for. However, the current state of working conditions as the most important socio-economic indicator characterizing the level of scientific and technological achievements and the attitude of the state towards preserving the life and health of its citizens continues to remain at a rather low level. Despite the declining of absolute indicators, relative indicators that are allocated to a certain number of employees remain very sad. According to the competent authority for statistics, out of 1.6 million workers examined in 2018 by ventures on working conditions, 373 thousand or every fourth Kazakhstani worker (22.3%) was employed in harmful and dangerous working conditions. Based on the results of certification of workplaces in 2018, 676 thousand workers in the republic received various compensations for work in harmful working conditions, and by this reason were allocated 116,3 billion tenge by employers, which is 8% more than in 2017.

Although across the Republic and in the West Kazakhstan region in recent years there have been positive shifts in the statistics of occupational injuries towards a decrease, the level of injuries remains quite high. The number of injured persons in occupational accidents in 2018 (table 1) compared to the same period in 2014 decreased by almost 16.2% and amounted to 2160 people (in 2014 the number of injuries was 2578 people). In 2018, 215 people were died as a result of occupational accidents compared to 2014 - 263 people, thus, the death rate decreased by 18.2%. In 2018, in the West Kazakhstan region, 61 people get injured with varying severity and 8 people died in comparison with 2014, when 83 people were injured and accidents ended with fatality in 11 people,

i.e. the decrease was 26.5% and 27.2%, accordingly. Another negative side of industrial injuries is its substantive consequences or losses for the country's economy, which in 2018 amounted to 1 billion 532 million 656.2 thousand tenge by the republic, and 11 million 341.1 thousand tenge by the West Kazakhstan region.

Table 1 - Data on industrial injuries in the Republic of Kazakhstan and the West Kazakhstan region in the period from 2014 to 2018.

Indicators	By year				
	2014	2015	2016	2017	2018
In general, in the Republic of Kazakhstan					
The number of injured persons in occupational accidents related to labor activity, people	2578	2307	2034	2045	2160
The number of fatalities in occupational accidents related to labor activity, people	263	229	225	211	215
Substantive consequences of the occupational accidents, thousand tenge	1960325,3	1457943,8	1278543,8	1503460,7	1532656,2
In the West Kazakhstan region					
The number of injured persons in occupational accidents related to labor activity, people	83	59	80	77	61
The number of fatalities in occupational accidents related to labor activity, people	11	5	6	4	8
Substantive consequences of the occupational accidents, thousand tenge	21495,8	10696,7	24507,9	33601,2	11341,1

Although the presented statistics showing a positive picture, however, if we consider the last three-year period (from 2016 to 2018), there is an increase in the number of injured in production in the republic from 2034 to 2160 people or by 6.2%, while the number of fatalities from occupational accidents related to labor activity also remain sufficiently substantial. In the Republic of Kazakhstan, the total annual substantive consequences from industrial accidents, including the cost of their elimination, exceeds 20-30 billion tenge [1,2].

In this regard, the problem of ensuring industrial safety of production facilities has now become a priority.

Life safety and labor protection are an integral part in any field of work. Accordingly, this requires precise rules, instructions and other regulatory documents and it is affected to the health of personnel, as well as production productivity if it is not complying.

General documents on labor protection are divided into the following types:

- Codes, Laws of the Republic of Kazakhstan and Government Decrees of the Republic of Kazakhstan in this area;
- Conventions of the International Labor Organization ratified in Kazakhstan;
- Inter-state and state standards of the Republic of Kazakhstan;
- State Occupational safety standards system (OSSS);
- Industry standards of the occupational safety standards system IS OSSS;
- Sanitary regulations and standards (СанПиН), sanitary regulations (СП), building codes (СНИП), safety regulations (ПБ), rules for design and safe operation (ПУБЭ), safety instructions (ИБ), inter-industry job safety rules (ПОТ и М), industry job safety rules (ПОТ и О), standard industry job safety instructions (ТОИ).

A systematic list of state regulations in the area of labor protection is given in table 2.

Table 2 - A list of types of General documents on labor protection containing state regulatory requirements for labor protection in the Republic of Kazakhstan

The name of the type of legislation and regulations		The name of the Public authority approving the legislation and regulations
Full name	abridged	
Codes, Laws of the Republic of Kazakhstan	-	President of the Republic of Kazakhstan
Government Decrees of the Republic of Kazakhstan	-	Government of the Republic of Kazakhstan
Ratified Conventions of the International Labor Organization	ILO Conventions	Mazhilis of the Republic of Kazakhstan
Interstate Standard of the Republic of Kazakhstan for OSSS	GOST standard 12.0.230-2007	Eurasian Council for Standardization, Metrology and Certification
State standards of the Republic of Kazakhstan on labor safety	Occupational safety standards system (OSSS)	Committee for Technical Regulation and Metrology of the Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan
Industry Standards for Occupational Safety Standards System	OST OSSS	Relevant Ministries and Departments
Sanitary regulations and standards, sanitary regulations	SanPin, sanitary regulations	Ministry of Public Health of the Republic of Kazakhstan
Building codes	SNiP	Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan
Guidance documents to providing working conditions. Rules and instructions for certification of workplaces by working conditions	-	Ministry of Labor and Social Protection of the Republic
Safety regulations, rules for design and safe operation, safety instructions, inter-industry job safety rules, industry job safety rules, standard industry job safety instructions	PB, PUBE, IB, POTiM, POTiO, TOI	Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan
Documentation, internal GOST standards, instructions, labor safety rules	-	Companies, organizations

The basis of legislative and regulations is the Constitution of the Republic of Kazakhstan, which p. 2 of article 24 guarantees everyone the right to working conditions that meet the requirements of safety and hygiene, and p. 1 of article 29 the right to protection of health, and p. 1 of article 31 the state aims to protect the environment which is conducive to human life and health.

Another main legal document on labor protection is the Labor Code of the Republic of Kazakhstan, according to Article 181 of Chapter 18 each employee has the right to: a workplace equipped in accordance with the requirements for safety and labor protection; provision of sanitary complied facilities, personal and collectively protective equipment; appeal to the local labor inspectorate to conduct a survey of conditions and labor protection at his workplace; refusal to perform work if the employer does not provide the employee with individual and (or) collectively protection equipment and if happens a situation that poses a threat to his health or life; education and training necessary for the safe performance of labor duties, at the expense of the employer; obtaining reliable information from the employer about the characteristics of the workplace and the organization's territory, the condition of labor safety and labor protection, the existing risk of health damage, as well as measures to protect it from the effects of harmful and (or) dangerous production factors; occupational accident insurance in the performance of labor (official) duties.

An equally important government document is the Law of the Republic of Kazakhstan «On Civil Protection», indicating that industrial safety is ensured by:

- establishment and implementation of industrial safety requirements, which are mandatory, with the exceptions established by the legislation of the Republic of Kazakhstan;
- admission to use technologies, technical devices, materials that meet industrial safety requirements at hazardous production facilities;
- admission to the use hazardous technical devices that comply with industrial safety requirements on the territory of the Republic of Kazakhstan;
- industrial safety declaration of hazardous production facility;
- government supervision, as well as industrial control as regards of industrial safety;
- industrial safety evaluations;
- certification of legal entities for the right to work as regards of industrial safety;
- monitoring of industrial safety;
- maintenance of hazardous production facilities by professional emergency services or groups.

In 2018, ISO published the International Occupational Health and Safety Standard (OHSAS) ISO 45001: 2018, which replaced the OHSAS 18001: 2007 standard with the goal of transforming and improving occupational health and safety recommendations. Organizations / enterprises that have already passed OHSAS 18001 certification are given a period of three years to comply with the new ISO 45001 standard.

OHSAS 18001 was designed to be compatible with ISO 9001: 2000 (for quality management systems) and ISO 14001: 2004 (for environmental management systems) to facilitate the integration of quality management, environmental management, and occupational safety management systems for organizations if they prefer.

ISO 45001: 2018 contains information on reliable and efficient process sets aimed to improving labor safety in global supply chains. It is expected that the new international standard will help increase the effectiveness of organizations of all levels and industries, reduce the number of injuries and diseases in the workplace around the world.

The principal differences between OHSAS 18001 and ISO 45001 are:

- if the main goal of the OHSAS 18001 standard was to prevent possible threats to the workers' health and other internal issues, then ISO 45001 is aimed at the interaction between organizations and the business environment;
- if the old standard was based on procedures, the new one – on processes;
- the old standard considered only risks, the new one - not only risks, but also opportunities;
- if the old standard did not take into account the opinions of interested parties, the new one takes into account such an opinion.

All of the above aspects contribute to significant changes in the perception of OSH management, which is now being considered in the context of a stable and sustainable organization.

After the new standard was published, a three-year transitional period was set, inclusively until March 11, 2021, for organizations to rebuild their OSMS system from OHSAS 18001: 2007 to meet the requirements of the new ISO 45001: 2018 standard. Despite the fact that the two standards are different from each other, the OSHMS developed in accordance with OHSAS 18001 and will become a reliable basis for the transition to ISO 45001.

Instead of RoK Standard OHSAS 18001-2008 (OHSAS 18001: 2007) «Occupational safety and health management system, Requirements» at the republican level put into force the national standard of the Republic of Kazakhstan ST RoK ISO 45001-2018 “Occupational safety and health management systems. Requirements and application guidelines”, and from September 1, 2019, enterprises and organizations in the republic must be certified according to this standard.

Thus, the management system of enterprises, built and certified in accordance with the requirements of (OHSAS) ISO 45001: 2018, will allow enterprises (organizations) to create an effective system of occupational health and safety, which contributing to: monitoring AFP; management of risks arising in the process of production activities and the possibilities of their prevention; preventing the occurrence of incidents, accidents, emergency situations; reduce losses from inappropriate activities; integration with existing management systems.

The fundamental and most informative type of regulatory and technical documentation for ensuring of labor safety is the occupational safety standards system (OSSS).

Occupational safety standards. The interstate standard GOST 12.0.230-2007 «Occupational safety standards system. OSH management systems» was put into force in the Republic of Kazakhstan, which is a multi-level system of interconnected standards aimed at ensuring occupational safety.

OSSS is a set of interrelated standards aimed at ensuring life safety, labor protection, preserving human health and working efficiency in the process of work. The occupational safety standards system has an important social function in preventing technological accidents and occupational accidents in order to ensure the protection of human health at work and at home. Within this system mutual coordination and systematization of all existing normative and normative-technical documentation on labor safety is linking, including numerous safety rules and regulations, industrial hygiene of republican and sectoral significance. OSSS is the regulatory framework for mandatory certification. The requirements of the OSSS are maximally related to similar international documents of ISO and IEC. The preparation of safety standards is aimed at identifying the parameters of standardization objects that have a negative impact on humans and the environment. Security methods are also established for each of these parameters.

Classification of the OSSS. Standards of the OSSS are divided into groups depending on the direction of their action:

- organizational and methodological standards - establish the purpose, objectives, structure of the OSSS, scope, features of alignment of OSSS, terminology, give a classification of hazardous and harmful production factors (HMF), principles of work safety;

- standards of requirements and regulations for types of hazardous and harmful production factors (HMFs) - establish requirements for types of HMFs and their maximum permissible levels (MPL), methods and safeguards of protection against their impact, methods for controlling their level;

- standards of safety requirements for equipment - establish general safety requirements for certain types of production equipment, methods for monitoring the implementation of these requirements;

- standards of safety requirements for production processes - establish general safety requirements for individual production and technological processes, methods for monitoring the implementation of these requirements;

- standards of security requirements for protection systems - establish security requirements for protection systems against AFPF;

- standards of safety requirements for buildings and structures - establish safety requirements for buildings and structures.

Based on OSSS, new safe equipment and technologies are created, initiatives are planned and implemented to improve sanitary and hygienic working conditions at workplaces, the working conditions and labor protection are monitored. The requirements of OSSS should be included in industrial standards and internal enterprise standards, in all types of design, technological and project documentation accordingly.

Industrial standards (IS OSSS) should establish requirements, rules and regulations in accordance with state standards, taking into account the safety features in the industry. Standards of enterprises (ES OSSS) on labor safety establish:

- safe work organization procedure to ensure occupational safety at the enterprise (including planning, control, training, etc.);

- the procedure for organizing of the implementation and monitoring of the implementation and compliance with OSSS standards, rules and regulations of government control and supervision bodies and other technical standards documentation on labor safety;

- fire and explosion safety establishment organization process;

- provision, operation, maintenance and storage of protective equipment organization requirements.

Practical measures are implemented as safety instructions for various professions working in enterprises. Security issues are necessarily included in the technical specifications (TS). There

regulated the requirements for the safety of the structure, providing of sanitary and hygienic conditions, the requirements for electrical, fire and explosion safety, ergonomic requirements and the requirements for methods of controlling dangerous and harmful factors.

Occupational safety regulations. Occupational safety regulations - regulatory legal acts, intersectoral and industry-specific, which contain government occupational safety requirements that are mandatory for the design, organization and implementation of production processes, certain types of work, operation of production equipment, installations, units, machines, vessels, as well as during transportation, storage, use of raw materials, finished products, substances, industrial wastes, etc. The main objective of occupational safety regulations is to help employer to organize and maintain safe working conditions in the company.

Intersectoral occupational safety regulations are developed by the institutes for the occupational safety, relevant ministries and departments, industry regulations - by the relevant authority in agreement with the specified ministry. Intersectoral and industrial regulations include the following sections:

- General requirements;
- occupational safety requirements for organization and implementation of work;
- requirements for production facilities;
- requirements for production equipment, providing workplaces;
- requirements for the storage and transportation of raw materials, blanks, finished products, production wastes.

Subordinate regulatory legal acts are issued by authorized bodies in the form of decrees, orders, decrees, rules, instructions and regulations. If the legislation on occupational safety, intersectoral rules and model instructions for occupational safety, the introduction of new equipment and technologies, as well as the results of an analysis of occupational injuries, occupational diseases, accidents and disasters in the Republic of Kazakhstan change, the government regulatory requirements for occupational safety are subject to revision regardless of the deadline of action. When adopting regulatory, legal acts containing government regulatory requirements for labor protection of intersectoral significance, industry regulations containing labor protection requirements for similar technological processes and types of work are subject to adjustment, revision or cancellation.

Standard occupational safety instructions. Standard occupational safety instructions, as well as labor protection rules, are divided into inter-industry and industry. They are developed for professions or for certain types of work by the relevant ministries, services, institutes and other organizations on the basis of current legislation on labor protection, taking into account occupational safety rules. Standard occupational safety instructions include the following sections:

- general occupational safety requirements;
- occupational safety requirements before starting work;
- occupational safety requirements during work;
- occupational safety requirements in emergency situations;
- occupational safety requirements at the end of work.

Occupational safety instructions for employees of the company are developed in all organizations, for all workers, specialists, officials, employees, without exception. They are divided into instructions for: positions of workers, professions; certain types of work performed by different workers in case of production needs. Company instructions are developed on the basis of intersectoral and industrial occupational safety instructions, and in their absence, on the basis of occupational safety rules, safety requirements set forth in process documentation, equipment manuals, etc. The validity of instructions is 5 years. Prior to expiration, the employer is obliged to organize a check, and if necessary, a review of the instructions.

Sanitary regulations and standards (SanPiN). Sanitary regulations and standards - a set of epidemiological standards and rules in force in a wide area. Sanitary regulations and standards are regulations and standards, which is impossible to design any objects without it, their construction, reconstruction and operation, the functioning of the company and organizations. Sanitary regulations and standards are binding and should be applied in the development of technical and regulatory documentation.

Sanitary standards apply not only to the microclimate of the premises where a person can be attended; they also determine the safety criteria for all manufactured products and goods. The purpose of sanitary regulations and standards is to prevent harmful or adverse effects on the health, general condition and performance of a person, indoor microclimate and chemical composition of food products, household items, clothing and other goods.

Local regulatory acts on occupational safety include labor contracts and agreements, individual labor agreements, occupational safety instructions, company standards, regulations, orders, etc. A labor contract is a legal act regulating social and labor relations in a company or an individual entrepreneur, concluded by employees and the employer in the person of their representatives.

In the company, as usual, three-stage control of occupational safety is introduced, namely:

Stage 1. Control at the workplace (the workshop is controlled by the foreman; the laboratory is supervised by the team leader). Daily control.

Stage 2. The level of the workshop, laboratory (weekly frequency).

Stage 3. The level of the company (one of the workshops is randomly checked by a commission), which includes: the chief engineer, the head of the occupational safety department and the representative of the medical unit, the chief specialist (process engineer or power engineer).

#### **REFERENCES**

1. Republic of Kazakhstan. RoK Law. Labor Code of RoK №414-V RoK Law from 23.11.2015 (introduced in 01.01.2016) - Astana, 2015- RoK Parliament Journal. - 2015 - №22. - IV. – article 151.

2. In accordance with including changes into Prikaz of Health and social development ministry of the Republic of Kazakhstan from 28 of December 2015 #1057 «On approval of the rules of mandatory and periodical certification of production facility by labor conditions» // system of information-legal «Adilet», 26.01.2016 [Electronic resource]. - Access mode: <http://www.enbek.gov.kz/ru/node/343222>.

3. Official site of the Industrial development and industrial safety Committee of the Republic of Kazakhstan. Industrial safety. // [Electronic resource]. - Access mode: <http://comprom.miid.gov.kz/ru/pages /informaciya-o-deyatelnosti-komiteta-industrialnogo-razvitiya-i-promyshlennoy-bezopasnosti-mir>.

4. OHSAS 18001: 2007. Management systems for occupational health and safety. Requirements. Occupational health and safety management systems - Requirements. [Electronic resource]. - Access mode: [https://online.zakon.kz/Document/?doc\\_id=30464531#pos=0;0](https://online.zakon.kz/Document/?doc_id=30464531#pos=0;0).

5. ISO 45001: 2018. Management systems for health and safety. Systèmes de management de la santé et de la sécurité au travail - Exigences avec directives d'utilisation. [Electronic resource]. - Access mode: <https://pqm-online.com/assets/files/pubs/translations/std/iso-45001-2018-%20rus%29.pdf>.

#### **ТҮЙІН**

Статистикалық мәліметтерге сүйене отырып, бұл мақалада соңғы 5 жыл ішінде Қазақстан Республикасында да, Батыс Қазақстан облысында да жұмыс орындарында қайтыс болған және жарақаттанған жұмысшылардың жарақаттану көрсеткіштері талданады, олардың себептері мен экономикалық салдары анықталған. Жұмысшылардың қауіпсіз және салауатты еңбек жағдайларын қамтамасыз ету, өндірістік қызмет нәтижелерінен қызметкердің өмірі мен денсаулығының басымдығы туралы Қазақстан Республикасының заңнамалық базасы талданады. Қазіргі жағдайда еңбек қауіпсіздігі мен еңбекті қорғауды: еңбек қауіпсіздігі мен еңбекті қорғауды мемлекеттік басқару; еңбекті қорғау саласындағы мемлекеттік реттеу талаптары; Конституцияның ережелері мен Қазақстан Республикасының нормативтік құқықтық актілері арқылы; Халықаралық еңбек ұйымының Қазақстан Республикасының Мәжілісі бекіткен еңбекті қорғау саласындағы негізгі конвенциялары; өндірістік ғимараттардың, жабдықтардың, процестердің қауіпсіздігіне қойылатын техникалық талаптарды қамтитын еңбек қауіпсіздігі стандарттарының жүйесі; санитарлық нормалар мен ережелер; сонымен қатар стандарттар, еңбек қатынастары, нұсқаулықтар және басқа шарттар. Өндірістік және технологиялық процестердің қауіпсіздігін, сонымен қатар жұмысшыларға ыңғайлы және

қауіпсіз еңбек жағдайларын қамтамасыз ету үшін кәсіпорында құрылымдық бөлімшелердің еңбек қорғау жағдайына үш сатылы бақылау орнатылуы керек екендігі анықталды.

#### **РЕЗЮМЕ**

В настоящей статье на основе статистических данных анализируются показатели травматизма работающих по погибшим и пострадавшим на производстве, как в целом по Республике Казахстан, так и по Западно-Казахстанской области в динамике за последние 5 лет, выявляются их причины и экономические последствия. Анализируется законодательная база Республики Казахстан по вопросам обеспечения безопасных и здоровых условий труда работающих, приоритета жизни и здоровья работника над результатами производственной деятельности. Определяется, что безопасность и охрана труда в современных условиях обеспечиваются: государственным управлением безопасностью и охраной труда; государственными нормативными требованиями в области охраны труда; посредством положений Конституции и нормативных правовых актов Республики Казахстан; основополагающих конвенций Международной организации труда в области охраны труда, ратифицированных Мажилисом Республики Казахстан; системой стандартов безопасности труда, содержащих техническими требованиями, предъявляемыми к безопасности производственных зданий, оборудования, технологических процессов; санитарными нормами и правилами; а также стандартами, трудовыми отношениями, инструкциями и другими условиями. Устанавливается, что для обеспечения безопасности производственно-технологических процессов, а также комфортных и безопасных условий труда работающих, на предприятии должен устанавливаться трехступенчатый контроль за состоянием охраны труда структурных подразделений.