

LJUBLJANA SCHOOL OF BUSINESS

**MODERN APPROACHES TO KNOWLEDGE
MANAGEMENT DEVELOPMENT**

Collective monograph



Ljubljana 2020



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Ljubljana, Slovenia
2020

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This collective monograph offers the description of sustainable development in the condition of European integration. The authors of individual chapters have chosen such point of view for the topic which they considered as the most important and specific for their field of study using the methods of logical and semantic analysis of concepts, the method of reflection, textual reconstruction and comparative analysis. The theoretical and applied problems of sustainable development in the condition of European integration are investigated in the context of economics, education, cultural, politics and law.

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**OCCUPATIONAL SAFETY AND HEALTH AND PREVENTIVE MEASURES IN COAL
INDUSTRY**

Abstract. *The article deals with the problem of safety of workers, including employees of coal industry; the need to improve the existing legislation in the mentioned field and to give more attention to preventive measures within occupational safety and health is determined. The difference between labour and civil relations (working hours, overtime, off - hours, working place and so on), which influence the fact of recognition a person as a victim of industrial accident, is highlighted. The mechanism of compensation for employers, who declined the number of working places with harmful conditions, is recommended; the provision stating, if during 5 years new working places with harmful conditions will appear, then pegged compensation has to be returned in proportion to the quantity of created working places with harmful working conditions in order to prevent abuse also is foreseen; the factors, influencing the condition of occupational safety and health, are detected. The changes to current legislation concerning the involvement of the territorial authority of the State Labour Service of Ukraine to special commission for investigating and accounting the industrial accidents, occupational diseases and industrial crashes are offered. It is determined, that they will improve the legal quality of law of regulation and contribute to legal certainty in regulation of relations, concerning the procedure for investigating and accounting the industrial accidents, namely concerning the victim, who is a worker and a person, providing services under a civil contract simultaneously.*

Introduction.

Safety is the main need of every person and a major factor in the life of society. The proper safety in the state production sphere should be maintained by observance of relevant normative legal acts, responsibility of officials in organization and management of production, compliance of specific executors of labour process to the work performed. Unfortunately, the number of emergencies in Ukraine is not diminishing, and the budgetary costs, aimed to overcome the results of accidents, are constantly increasing. And while the death toll and casualty rate remain almost unchanged, these values substantially exceed the according rates in developed countries. This proves, that Ukraine technogenic and industrial status requires the transition to security regulation, based on the modern paradigm of risk-oriented approach, generally accepted by the most countries of the world [1].

It is well known that poor occupational safety and health results in slowdown of both economic growth and social progress. Industrial security is one among fundamental factors for sustainability and stability of economy, capacity for self-development and progress in every country [2].

According to the information posted on the State Labour Service of Ukraine website as of January 1, 2018, there were 69 mines in Ukraine in different condition. This information is reproduced in Fig. 1 [3].

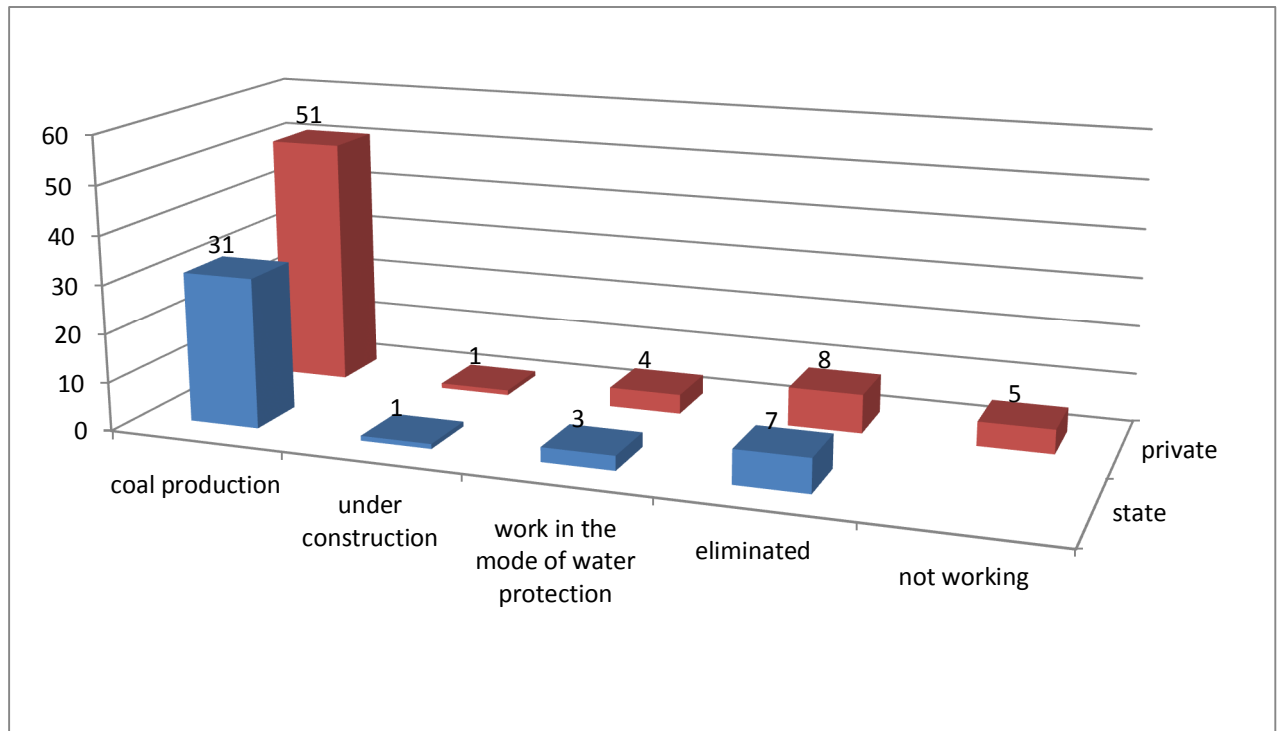


Fig. 1. Information on the State Labour Service of Ukraine

According to experts of the International Labour Organization (ILO), there are 2.2 million work-related accidents each year in the world's 2.8 billion working-age population. On average, 5,000 people die from occupational injuries every day. The total number of workplace accidents is around 270 million. The number of diseases caused by unfavourable working conditions reaches 160 million cases. Occupational accident losses account for 4% of world gross domestic product (GDP). The majority of occupational accidents and diseases in developing countries occurs in industries such as agriculture, fisheries, logging and forestry, mining and construction [2].

Unfortunately, there are a lot of examples of research relevance in the field of occupational safety, as evidenced by the numerous death accidents. This confirms the existence of the safety problem in the coal industry.

The General Report of the Coal Industry Supervision Division on the State of Occupational Safety at Coal Enterprises for 2017, which is available on the State Labour Service of Ukraine website, identifies major traumatic factors that have led to the fatal accident in underground conditions.

This information is reproduced in Fig. 2 [3].

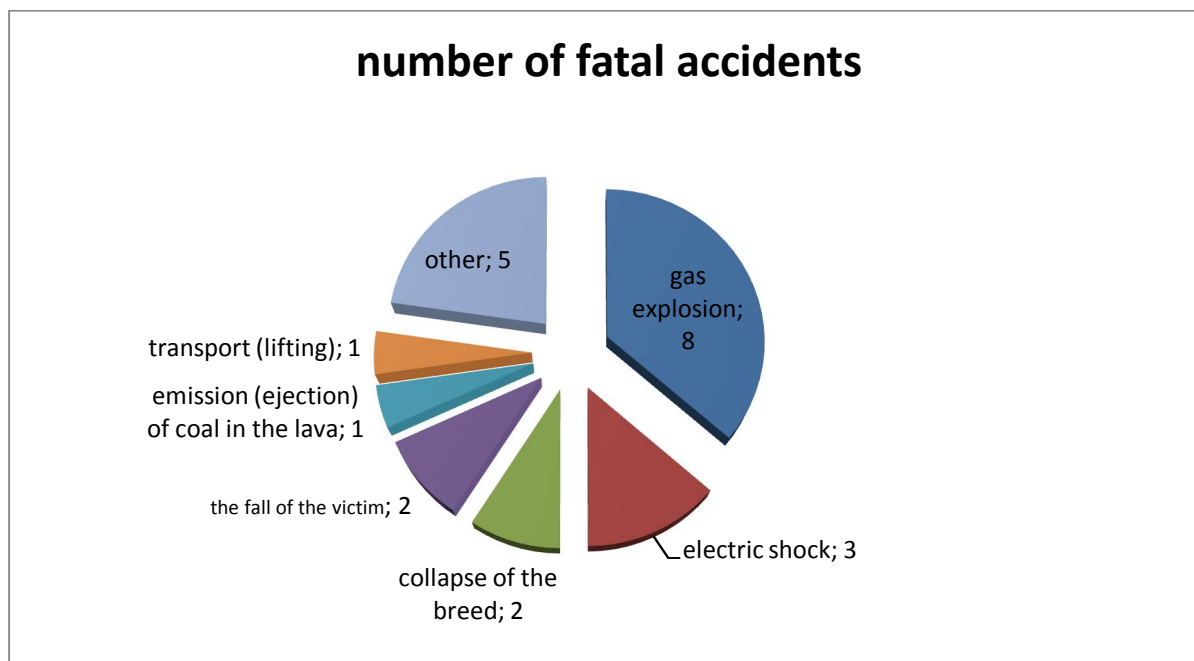


Fig. 2. Number of fatal accidents

Working in the coal industry has additional risks which are important to consider about while ensuring safety at work. Proper legislative regulation of investigation of industrial accidents and occupational diseases is also equally important.

1. Gaps in legislative regulation of the investigation of accidents and occupational diseases.

Ukrainian mining law has deep historical roots, linked both to the age-old traditions of Ukrainian mining and to the collisions of modern government in Ukraine. It entered a new phase of its development in the early 90's of the twentieth century. The process of developing and adopting of the new laws and other regulations connected with modern mining relations is intensively underway. It is being implemented while controversial period of transition from the administrative system of management of the mining industry to the market economy of the rule of law. All these processes are reflected in the current legislative acts, which, on the one hand, are characterized by the progressiveness of new legal norms and institutions (mining concession, product distribution, etc.) and, on the other, by the recurrence of the principles of so-called democratic centralism. This is a testament to the complexity of socio-economic, political and legal conditions in which Ukraine's modern mining law is developing [4].

The current Occupational Accident Investigation Procedure doesn't contain properly resolved procedural issues while investigating accidents, involving persons working under civil contracts. Despite the unfortunate statistics of accidents in the coal industry, we believe that attention to additional resources that need to be stepped up to improve occupational safety at work (support for domestic innovative technologies, analysis of economic feasibility in creating safe working conditions or closing unsafe areas in production, encouraging employers to improve working conditions) is not properly paid.

The article analyses changes of the legislation regarding a new category of persons who are subject to compulsory state social insurance against accidents and occupational diseases. These are persons who perform work and provide services under civil contracts (The Law of Ukraine "On Compulsory State Social Insurance" as well as the new Procedure for Investigation of Accidents

(Resolution of the Cabinet of Ministers of Ukraine “On Approval of the Procedure for Investigation and Accounting of Accidents, Occupational Diseases and Occupational Accidents.) Also, while issues of preventive measures are being considered, the positions of scientists concerning work in harmful and difficult working conditions (T.O. Didkovskaya "The Essence And Importance of Work with Harmful and Difficult Working Conditions", "Classification of Work with Harmful and Difficult Conditions Work), the ILO's position on factors of the production environment (B.I. Stashkiv " Social Security Law") have been analysed, as well as the monograph by O.L. Kuchma "The Problems of the Theory and Regulatory Regulation of Social Insurance in Ukraine", which highlights the incentives and penalties that encourage employers to reduce hazards in the workplace. The works of other scientists, regulatory acts, statistical information, mentioned in the paper, have been also analysed within the framework of the investigated issues.

Since 01.01.2018 the legislator has expanded the range of subjects who are insured against industrial accidents and occupational diseases (hereinafter - accident insurance) by including insured persons and persons who provide services or perform work under civil contracts [5].

The amendments to legislation have expanded the social maintenance of insured persons, since employers do not always formulate employment relationships by conducting an employment contract. And although sanctions are provided for every unformed employee, employers either form none relationship with an employee or enter into civil contracts for work or service.

However, civil contracts are not always concluded in the presence of employment relations; there are also situations where, depending on the conditions of cooperation, the parties choose the civil legal framework for cooperation. Sometimes, it is more important for a person to perform work or provide services at his own risk than to have increased social protection but to observe labour discipline.

It is advantageous for employers to arrange relationship with an employee in the form of a civil contract (despite the employer's risk of verifying the fact of employment relations and applying sanctions by controlling authority), since it is possible to terminate the contractual relations in a manner specified in contract (without using the grounds stipulated by labour law) and to avoid annual paid leaves, pay guarantees for employees, etc.

Also, employers have no obligation to provide safety training to persons working under civil contracts, that's why classifying them as persons, who are insured against industrial accidents, especially those who are forced to work in harmful and dangerous working condition, should become the next important step towards their social protection.

In order to implement these changes and taking into account the need for better regulation of legal relations in the field of labour protection in Ukraine, the Resolution №337 “On Adoption of Procedure for Investigating and Accounting of Industrial Accidents, Occupational Diseases and Industrial Crashes” has been adopted [6] (hereinafter - the Procedure).

However, the fundamental differences between labour and civil relations haven't been taken into account (contractors and service providers do not concern about the work schedule of the enterprise, there are no beginning and ending of work, overtime, days off, holidays, leaves and other factors, affecting qualification production-related accidents), but this category has been only mentioned in the Procedure as another category of persons, also covered by the Procedure. The importance of improving the legislative framework has been also emphasized in the Conception of Reforming of the Coal Industry in Ukraine [7].

Taking into account the possible legal constructions, there are 8 combinations of legal bases of relations between an insured person and an insurer, depending on the legal relations of parties (Fig. 3).

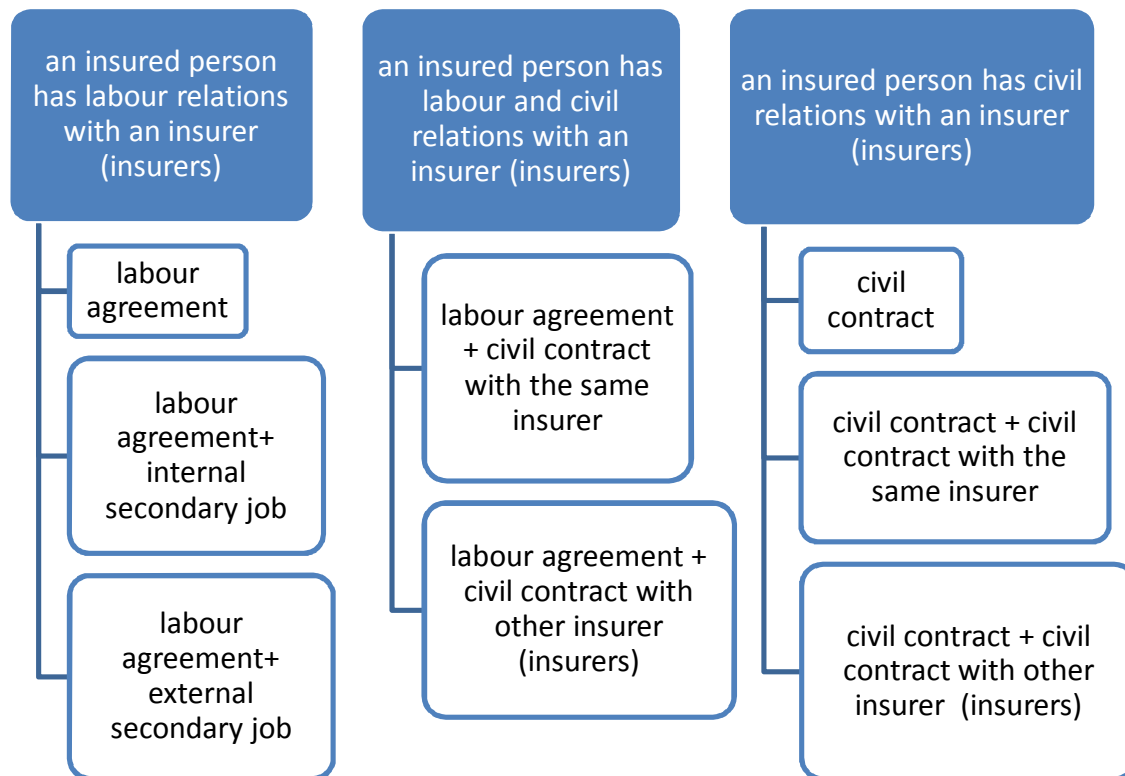


Fig. 3. Legal grounds for relations between an insured person and an insurer.

The Procedure establishes that accidents with persons working under the terms of a civil contract are subject to special investigation. A representative of the local state administration or local self-government body is included to that special commission. Also, item 15 of the Procedure stipulates that, if necessary, officials of the State Labour Service and / or its territorial body by branch can be included to commission. Taking into account the additional risks of labour in the coal industry, which are peculiar to both workers and persons working under a civil contract, it is necessary to complement the Procedure with mandatory rule for involving a territorial body of the State Labour Service by sectoral direction to a special commission and commission for investigation of accidents.

2. Preventive measures in the field of labour protection.

The market economy, including the coal industry, cannot work effectively without human resources. The safety of production processes is beneficial to both employees and employers. However, not all employers understand this and save on preventative measures.

According to the statistical information, the most disadvantaged sectors are coal industry, socio-cultural sphere and trade, agro-industrial complex, mechanical engineering, construction, metallurgy.

It is a well-known fact, that accident is a negative socio-economic phenomenon. The largest financial costs are borne by the company due to accidents and industrial crashes. Back in 1920, the “Iceberg Theory” was developed, which stated that the financial costs of the company are divided into direct and indirect. Direct financial costs for an accident include: payment of wages and

surcharges for the period of absence of the victim at work; cost of medical care, medicines; cost of training and retraining of workers instead of lost, due to loss of life or disability, etc. Indirect means the loss of working hours of other persons (except the victim); damage to property and products of the organization; lost prestige of the company; remuneration of lawyers; fines and other damages [8].

However, in addition to financial costs, the social consequences of accidents and catastrophes are much more significant - the loss of health, the lives of citizens and the labour potential of the country, the increase in the number of single-parent families and orphans. Attention should be also paid to the socio-psychological tensions of the population caused by accidents and their consequences, as well as to the deterioration of the international image of the state in general. The employee prefers to work with lower risks to life and health. The total amount of annual economic loss in national economy due to staff turnover and dissatisfaction with working conditions exceeds 0.6 billion UAH. [9].

Managing the economic activity of the coal industry requires modern information support. Labour costs are its important part and one of the most important element of the labour process. Such information can be interesting first of all to real and potential users of information resources. The formation of labour costs and its safety, are preceded by complex accounting work, which depends on the reliability and objectivity of the information needed for managerial decision-making by executives [10].

In the context of the critical situation concerning occupational safety in coal industry and increasing requirements for labour security, it is important to receive detailed information about labour safety, its costs and effectiveness along with the assessment of production processes. Depending on these tasks, labour protection accounting can be divided into accounting, aimed to obtaining data for the preparation of financial statements - financial accounting and accounting, aimed to obtaining managerial decisions regarding the formation of the mine's social strategy, evaluation of cost effectiveness in terms of labour protection measures; setting the price of coal, taking into account the real costs of its production; cost control - management accounting. Management accounting of labour protection activities is intended to solve the following tasks:

- determination of planned costs for implementation of labour protection measures and sources of their financing;
- formation of cost estimates for labour security activities and control over its implementation;
- compilation of internal reports by segment of labour protection activities for management needs.

Unlike financial accounting, which is intended to form information in terms of its usefulness and decision-making, management accounting involves the cost-oriented position for formation of costs in the context of processes of coal mining technology and management services. An important task of management accounting is predicting the results of future operations [10].

It is better to pay for preventative measures than to pay for the costs of injury and to offset the costs of burial.

The coal industry is a very specific industry that has a number of features. One of which is the inability to change the conditions of production, labour, as well as the natural mountain-geological conditions. Mining and geological conditions of the coal industry of Ukraine are one of the most difficult in the world coal mining. In Europe, mines with conditions same to Ukrainian

now were closed long time ago. That is why the coal industry of Ukraine is characterized by difficult and very dangerous working conditions, which is unfortunately confirmed by a large number of serious and fatal accidents [10].

The work conditions of miners are significantly different from the production conditions of other industries. These are aggressiveness of the environment, high temperature and humidity, potential risk of explosion of methane and coal dust. Therefore, mine safety issues are of great importance. It is especially dangerous in places where deep horizons are being developed, the air temperature rises and conditions for the sudden release of methane and coal dust appear [11]. Along with complex mining and geological conditions, the crisis situation of the coal industry in Ukraine in terms of technical, economic, financial and social indicators has a significant impact on the level of accident, traumatism and occupational diseases [10].

The requirements for organization and safety of workplaces are enshrined in the General Requirements for employers to provide employees with occupational safety and health. This document establishes requirements for creation of safe and harmless working conditions through the proper arrangement of workplaces, industrial, sanitary and other premises at the enterprise, institution, organization, provision of training of workers and involvement of them in solution of labour safety issues, regulation of labour safety between enterprises in case of involvement in performance of work employees from other enterprises [12].

The organization of occupational safety at coal enterprises covers a wide range of issues. However, not all of them are qualitatively solved. More than a half of mines operate without reconstruction, they have sophisticated ventilation nets and tiered transport. In the current fleet of slaughtering equipment, the proportion of treatment machinery complexes and combines of new technical level is only reaches 2%. On the whole, industrial-production funds of coal-mining enterprises are worn out on average by 65% [10].

B.I. Stashkiv highlights that the ILO points to the following factors of working environment that affect person and cause him fatigue: 1) physical effort (moving or maintaining loads, efforts to press for labour, etc.); 2) nervous tension; 3) the pace of work; 4) working position (the position of the human body in relation to means of production); 5) monotony of work; 6) temperature, humidity, thermal radiation in the work area; 7) air pollution; 8) production noise; 9) vibration, rotation, shocks in the workplace; 10) lighting in the work area. Social legislation gives legal importance to working conditions that adversely affects human health and well-being [13].

Labour law obliges an employer to create safe working conditions for workers, however, as T. Didkovskaya rightly observes, the conditions can be favourable and unfavourable, may depend and not depend on person. Yes, geographic, biological, geological and other similar factors do not depend on humans. That is, they are conditioned by an appropriate activity and cannot be excluded by human effort, but can only be modified and adapted to individual in some way to reduce their negative impact on the employee [14].

According to the State Sanitary Rules and Regulations, harmful working conditions are such working conditions in which the level of influence of one or more factors of the production environment and / or the work process exceeds the allowable one.

The legislator defines the right for retirement pension on preferential terms, operating the category of "hazardous working conditions".

In scientific works, hazardous working conditions are defined as conditions when at least one indicator of the difficulty of the labour process exceeds the established norms [14].

According to T.O. Didkovskaya, dealing with harmful and hazardous working conditions is the pursuit of work activity in conditions where one of the factors of the production environment or one of the factors, characterizing the difficulty of the work process, exceeds the norms established in the appropriate order and procedure, and in this connection there is a negative impact on the health of the employee [14].

Taking into account the occupations and positions in both 3th and 4th classes of working conditions, the legislator provided an increased level of social protection for such workers, establishing the right for retirement age on preferential terms among other things.

Since employers treat differently the obligation to ensure safe and harmless working conditions, it is premature to exclude works, containing increased risk of harmful factors in the workplace from the list of harmful professions and positions. It is advisable to provide the mechanism of compensation for employers who have reduced the number of jobs in production with harmful factors (also to set provision, providing, for example, if within 5 years there are new jobs in this production with harmful working conditions, then the indexed compensation will be returned in proportion to the number of new jobs created with harmful working conditions).

The state needs to save money not only by reducing the list of professions with the right to retire from an earlier age (there is a need to revise these lists of professions, taking into account the development of science and technology), but also by stimulating employers to improve working conditions by investing in modernization of equipment and elimination (in cases of failure elimination - maximum reduction) of harmful factors in the workplace.

Reducing the number of jobs with harmful working conditions is not only the removal of preferential calculations of length of service in a certain position, but also the creation of conditions safe for life and health of an employee. This is advantageous for the Social Insurance Fund of Ukraine (reduced risk of industrial accident and occupational disease, respectively, and the possibility of avoiding additional costs in the future) and for the employee (insurance payments in case of an accident - an industrial accident or occupational disease, an earlier retirement pension is a financial compensation that will help to cover health care costs [15]).

The Law of Ukraine "On Compulsory State Social Insurance" defines carrying out measures for the prevention of insured events and also establishes the use of the Fund's budget to finance measures for the prevention of insured events on of the tasks of the Social Insurance Fund.

The list of issues considered by insurance experts during inspections of business entities includes: the implementation of preventive measures on labour safety and other labour safety measures on the basis of plans of work, orders, collective agreement, contract [16]. The problem is that preventative labour protection measures at enterprises sometimes take place formally, for audit, and this reduces the effectiveness of planned interventions. It would be appropriate to take advantage from the foreign experience concerning preventive measures in the field of labour safety.

As it is emphasized by V.R. Serdyuk and L.V. Mymryc, the review of accordance and adaptation of labour and industrial safety legislation to EU legislation is one way to reduce occupational injury and morbidity. Addressing the problems of improving occupational safety requires a comprehensive approach that involves development and implementation of a range of measures at the state, employer and employee levels. The most effective factor in this case is government.

It should facilitate the development and implementation of social standards; define the economic management mechanism in the field of labour safety; increase the level of scientific and technical support; implement scientific achievements in practice; develop new methods, systems, diagnostic tools and assessment of its condition. Taking into account the reasons of accidents, it is necessary, first of all, to improve enterprise safety at the level management system and to develop a number of measures to improve its training. The complex implementation of mentioned above measures is entirely about defining the concept of "occupational safety" as a system of legal, socio-economic, organizational, technical, sanitary and preventive measures and means aimed to preserving life, health and efficiency of the person in the labour process activities [2].

For more effective labour safety it is necessary to strengthen the control over the quality of the used equipment (its guarantee, repair works, the possibility of modernization), pay attention to alternative ways of performing the labour function, compare economic interest and investing in improving or closing the work area, profitability of mines. It is also necessary to calculate costs aimed to employment of persons who will lose their jobs (in the case of absence of work - costs of unemployment benefits, retraining) during closing any work section.

Conclusions

Occupational safety in general and labour security in coal industry in particular are not in the best condition, and this is influenced by a number of factors: psychological (business executives do not consider preserving life and health of employees to be the most important tasks in their business), financial (not sufficient financing for preventive measures), legal (the regulatory framework needs to be refined, both in terms of improving the quality of existing regulatory acts and in developing the new ones). In doing so, the financial factor is closely linked to the psychological one. Regarding the legal factor, its connection with the psychological one manifests itself in the fact that employers can regulate the issues of labour safety locally, if desired, without waiting for development at the government level.

This article proposes to create conditions for development of innovative production technologies by scientists in Ukraine, which will make the working conditions safer. This is interesting and profitable for business - no need to pay for foreign products, and for the state - since job creation reduces the number of people receiving unemployment benefits and increases the number of taxpayers. This also benefits workers with ability to earn money at home without leaving families in search for jobs in other countries.

Advisability of reviewing the economic aspect is also emphasised: comparing gains and losses from work (termination of work) in harmful working conditions (both employers and the state). It is also proposed to provide a mechanism for compensation for employers who have reduced the number of jobs in production with harmful factors (to set a norm providing for example, if within 5 years there are new jobs in this production with harmful working conditions, then the indexed compensation has to be returned in proportion to the number of jobs created harmful working conditions). It is also necessary to complement the Procedure by imperative norm for involving a territorial body of the State Labour Service in a sectoral direction into a special commission and commission for investigation of industrial accidents.

These are not single proposals required by legislation, for instance, the Procedure and other legal acts are needed to be revised in part, concerning the mechanism of implementation of proposed changes and norms, which adapt the current legislation to the new subject composition of insured persons. This may be the subject for research in the following scientific papers.

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