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OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT IN EDUCATIONAL INSTITUTIONS

МЕНЕДЖМЕНТ ОХОРОНИ ПРАЦІ У ЗАКЛАДАХ ОСВІТИ

The article is devoted to the organization of a labor protection unit in educational institutions. Thus, according to the legislation of Ukraine, the head of an educational institution must create working and training conditions at the workplace in each structural unit in accordance with regulatory legal acts. Labor protection issues in an educational institution are dealt with by the labor protection service, the composition of which depends on the size of the institution, namely the number of participants in the educational process. Specialists of the labor protection service must undergo training in labor protection upon hiring, as well as periodically, once every 3 years.

The tasks, functions and powers of the labor protection service are analyzed, the algorithm of actions in the event of accidents, occupational diseases, accidents, etc., the list of organizations and structures required for notification, the composition of accident investigation commissions and the procedure for their actions are considered. The DIALux evo program, which is being implemented for calculating artificial lighting in the premises of the Dniprovsky State Technical University, is considered.

Key words: organization, labor protection, legislation, briefing, accident, liability, artificial lighting.

В сучасному світі питанням охорони праці та безпеки життєдіяльності завжди повинна приділятися особлива увага у всіх сферах життя людей, у тому числі і при навчанні. Головна їх мета – це захист життя та здоров'я учасників навчального процесу, а також мінімізація ризиків нещасних випадків та профзахворювань. Навчання дітей, здобувачів освіти в закладах освіти різного рівня є важливим етапом у їх житті, воно повинно проводитися в безпечних та комфортних умовах. Усі етапи навчання у закладах освіти повинні проходити під постійним контролем спеціалістів з охорони праці, пожежної безпеки, цивільного захисту, медичної, психологічної служб тощо. Крім того, необхідно також створювати належні умови праці для викладачів, працівників структурних підрозділів закладу освіти.

Стаття присвячена організації у закладах освіти підрозділу з питань охорони праці. Так, згідно законодавства України, керівник закладу освіти повинен створити на робочому місці в кожному структурному підрозділі умови праці та навчання відповідно до нормативно-правових актів. Питаннями охорони праці в закладі освіти займається служба охорони праці, склад якої залежить від величини закладу, а саме кількості учасників освітнього процесу. Спеціалісти служби охорони праці повинні проходити навчання з питань охорони праці при прийомі на роботу, а також періодично, один раз на 3 роки.

Детально проаналізовані завдання, функції та повноваження служби з питань охорони праці, серед яких можна виділити наступні: організація профілактичних заходів з питань охорони праці, моніторинг виконання вимог законодавчих та нормативних актів з цих питань,

навчання учасників освітнього процесу питанням охорони праці та безпеки життєдіяльності, розробка положень, інструкцій, розділу “Охорона праці” колективного договору, інших актів з охорони праці, що діють у межах закладу, видання керівникам структурних підрозділів закладу обов’язкові для виконання приписи щодо усунення наявних недоліків щодо охорони праці тощо. Розглянута програма *DIALux evo*, яка використовується співробітниками Дніпровського державного технічного університету для розрахунку штучного освітлення в приміщеннях.

Ключові слова: організація, охорона праці, законодавство, інструктаж, нещасний випадок, відповідальність, штучне освітлення.

JEL Classification: J28

Formulation of the problem. In the modern world, issues of occupational health and safety should always be given special attention in all spheres of people's lives, including during education. Their main goal is to protect the life and health of participants in the educational process, as well as minimize the risks of accidents and occupational diseases.

Education of children, students in educational institutions of various levels is an important stage in their lives, it should be carried out in safe and comfortable conditions. In addition, it is also necessary to create proper working conditions for teachers, employees of structural units of the educational institution.

All stages of education in educational institutions should be under the constant supervision of specialists in occupational health, fire safety, civil defense, medical, psychological services, etc. Students and employees of the institution should undergo periodic training, exercises, safety training, which include safe methods of work and education, the procedure for action in various cases of danger (electric shock, fire, natural disasters, air alarm, etc.).

Heads of educational institutions must comply with the legislation of Ukraine on labor protection, life safety, establish and maintain safe working and training conditions for participants in the educational process, organize a monitoring system for compliance with labor protection rules, safety techniques, civil protection, organize training of employees and students in safe methods of life, etc.

Therefore, the creation, organization and functioning of such structures in an educational institution as labor protection, fire safety, and civil protection services are mandatory.

Analysis of recent research and publications. The issues of training in labor protection and civil defense in Ukraine are discussed in works [1–6]. In particular, in [1] it is noted that in the modern world a specialist needs a wide range of skills and competencies, which he must constantly develop throughout his conscious life. Modern methods of training teachers in labor protection are considered in works [2, 3]. Research related to the organization of civil defense of the population, namely, training, training in educational institutions, places of work and residence of people, analysis of risks and threats in critical conditions, aspects of the effectiveness of civil defense, are considered in works [4–6].

Formulation of the goals of the article. The purpose of the work is to analyze modern aspects of the organization of the occupational safety service in an educational institution, that is, the purpose of its creation, tasks and functions, requirements for service specialists, a description of issues related to training in occupational safety and accident investigation, and the application of the latest research and calculation methods in this area.

Presentation of the main research material. The organization of labor protection issues in a higher educational institution is carried out in accordance with Section III of the Law of Ukraine “On Labor Protection” [7]. Article 13 states that the employer is obliged to create working conditions at the workplace in each structural unit in accordance with regulatory legal acts, as well as to ensure compliance with the requirements of the legislation on the rights of employees in the field of labor protection.

For this purpose, a labor protection service is created, the composition of which is determined depending on the size of the institution. If the number of participants in the educational process is 50 people or more, then a full-fledged labor protection service operates, in the case when there are less than 50 people – the functions of the service can be performed by employees on a part-time basis, if the number of participants in the educational process is less than 20 people – external specialists can be involved on a contractual basis.

Employees of the security service must undergo mandatory training on labor protection issues upon hiring and periodically, once every three years [8]. In their activities, they are guided by the legislation of Ukraine, regulatory legal acts on labor protection, the collective agreement and acts on labor protection that are in force within the institution. The labor protection service is directly subordinate to the head of the institution. The main tasks and functions of the specialists of this service are shown in Fig. 1.

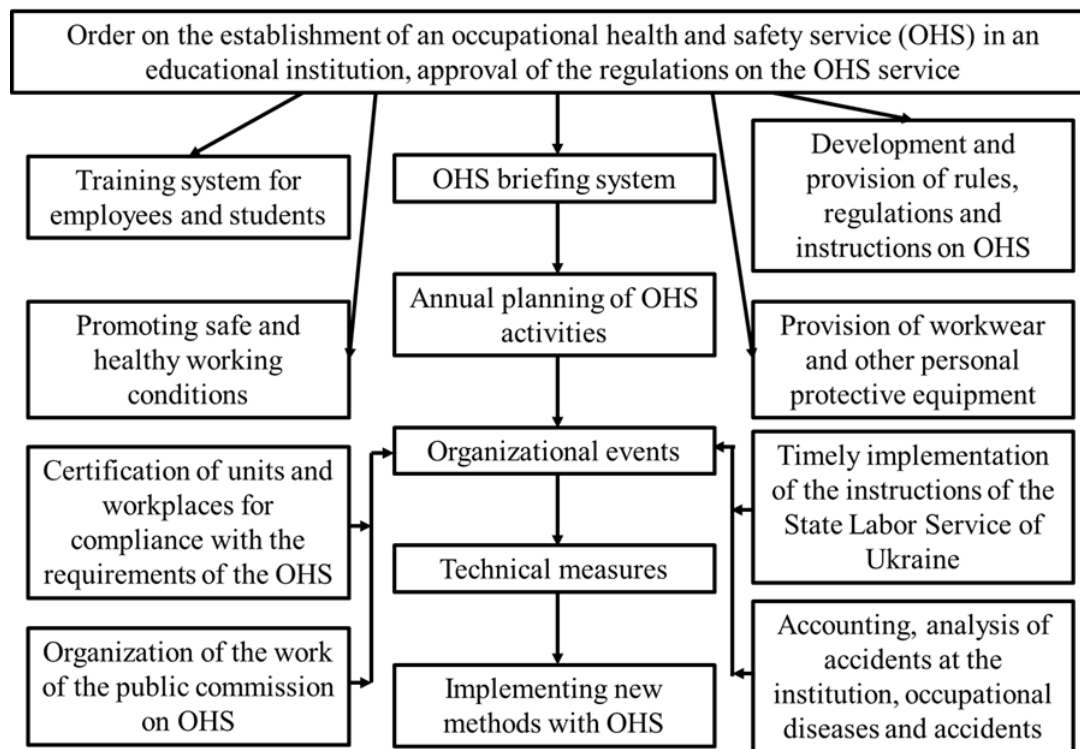


Fig. 1. Main tasks and functions of occupational health and safety service specialists

Source: compiled by the authors

In case of detection of violations of labor protection legislation, the service specialists have the rights shown in Fig. 2 [7–9]. Therefore, this publication is mandatory for the heads of the structural units of the institution to implement the instructions to eliminate existing shortcomings, the instruction of the labor protection specialist can only be canceled by the employer. If violations of labor protection pose a threat to the life or health of participants in the educational process, then the service specialists have the right to stop the work of the structural unit, demand the removal from work of persons who have not passed the medical examination, training, briefing, knowledge testing provided for by law and do not have access to the relevant work or do not comply with the requirements of regulatory legal acts on labor protection, send the employer a request for bringing to justice. The service specialists can also make proposals for encouraging employees to improve labor safety.

One of the main activities of the labor protection service specialists of an educational institution is to train participants in labor protection. Let us consider this issue in detail.

Section 6 of the Model Regulation on the Procedure for Conducting Training and Testing Knowledge on Occupational Safety and Health (NPAOP 0.00-4.12-05) states that employees, upon hiring and periodically, must undergo training at the enterprise on occupational safety and health, providing first aid to accident victims, as well as on the rules of conduct and actions in the event of emergencies, fires, and natural disasters [8].

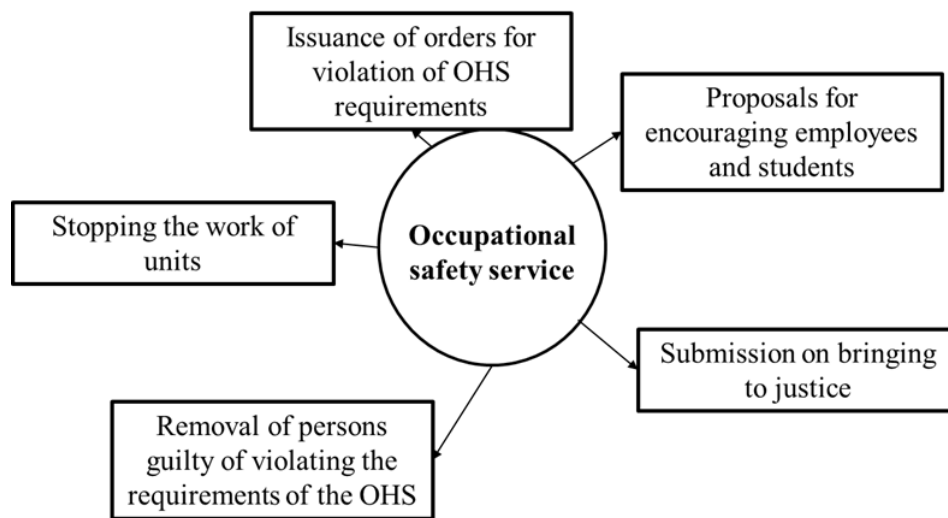


Fig. 2. Basic rights of occupational health and safety specialists

Source: compiled by the authors

By the nature and time of conducting, occupational safety briefings are divided into introductory, primary, repeated, unscheduled and targeted. A brief description of occupational safety briefings is given in Fig. 3.

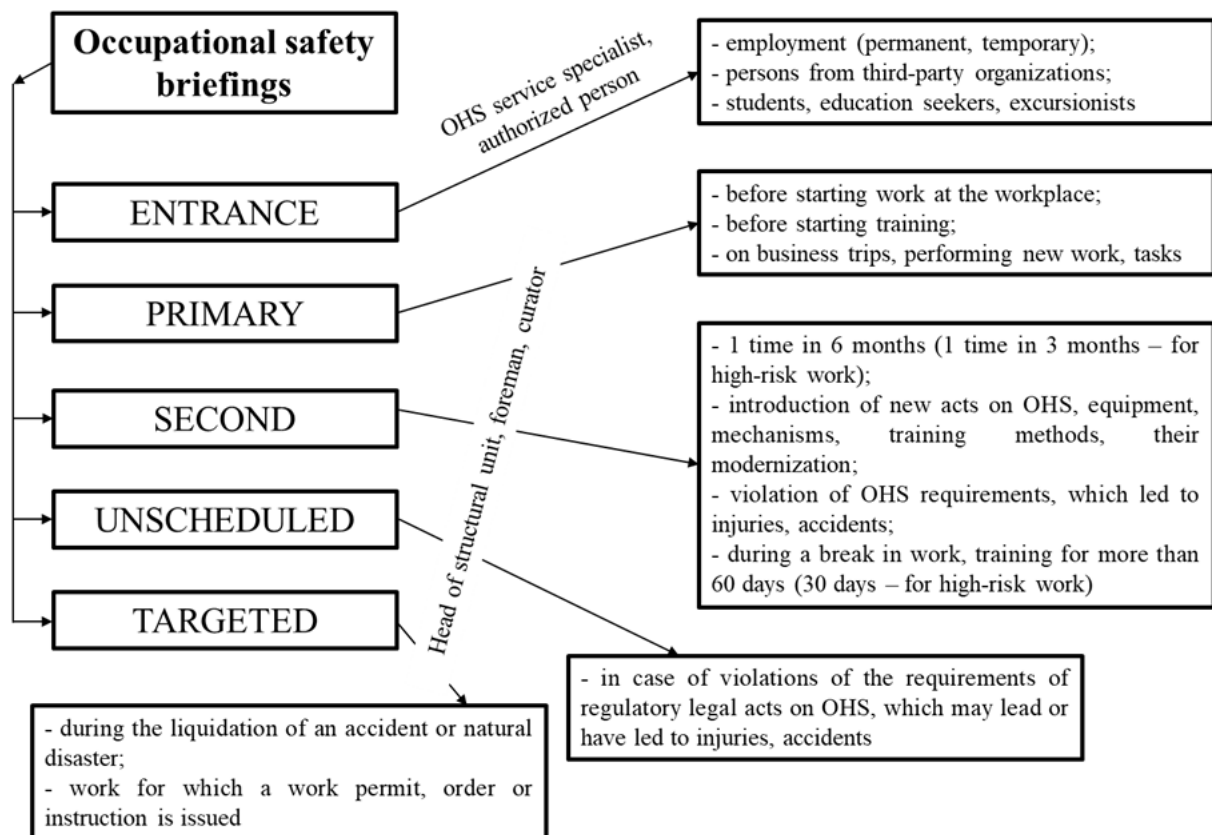


Fig. 3. Characteristics of briefings on labor protection issues

Source: compiled by the authors

It should be noted that the introductory briefing is conducted by a specialist of the labor protection service or another specialist in accordance with the order (order) of the head of the institution, who, in accordance with the procedure established by the Standard Provisions, has undergone training and knowledge testing on labor protection issues, and the primary, repeated, unscheduled and targeted briefings are conducted by the immediate head of the structural unit, foreman, supervisor.

Primary, repeated, unscheduled and targeted briefings are completed by testing knowledge in the form of an oral interview or using technical means, as well as by testing the acquired skills of safe work methods by the person who conducted the briefing.

If the results of the testing of knowledge, skills and abilities regarding the safe performance of work are unsatisfactory after the primary, repeated or unscheduled briefings, additional briefing and retesting of knowledge are conducted within 10 days. If the results of the knowledge test after the targeted briefing are unsatisfactory, admission to work is not granted. Re-testing of knowledge is not allowed.

An equally important function of the specialists of the occupational safety service of an educational institution is participation in the investigation of accidents, occupational diseases, breakdowns, etc.

Thus, according to operational information from education management bodies of regional, Kyiv city state (military) administrations, higher and professional pre-higher education institutions of municipal and state ownership, which fall under the jurisdiction of the Ministry of Education and Science of Ukraine, in 2022, among students and employees of educational institutions, the following were recorded [10]:

- 1379 accidents with students during the educational process, including 5 fatal cases;
- 575 fatal non-work-related injuries that occurred with students at home, including 272 children who died;
- 99 accidents/acute occupational diseases at work among employees of educational institutions, enterprises, institutions and organizations, including 7 fatal cases.

Therefore, let us consider the algorithm of actions when investigating accidents, occupational diseases, accidents, etc. The investigation of accidents and their recording is carried out in accordance with the Procedure for conducting an investigation and recording accidents, occupational diseases and accidents at work, approved by the Resolution of the Cabinet of Ministers of Ukraine dated April 17, 2019 No. 337 [11].

Fig. 4 shows the sequence of actions of the victim, witnesses of the accident and the work manager, specialists of the labor protection service or an authorized person for labor protection in the event of an accident or occupational disease in an educational institution.

Upon receipt of information about an accident and/or acute occupational disease (poisoning) from the immediate supervisor, a message from a healthcare institution, a statement from the victim, his family members or a person authorized by him, the head of the institution is obliged to notify the organizations listed in Fig. 5, using means of communication and no later than the next working day to provide a paper notification in accordance with Appendix 2 of the above-mentioned Resolution [11].

Next, a commission is formed in the educational institution to investigate accidents and/or acute occupational diseases (poisonings) that are not subject to special investigation. The commission is formed by order of the head of the institution no later than the next working day after receiving information about the accident and/or acute occupational disease (poisoning) from the immediate supervisor, a message from the health care institution, a statement from the victim, members of his family or a person authorized by him.

The commission includes representatives of the organizations listed in Fig. 5, i.e.: the head (specialist) of the labor protection service or an official entrusted by the employer with the performance of labor protection functions (chairman of the commission), representatives of the territorial body of the Pension Fund of Ukraine, the primary trade union organization or a person authorized by employees for labor protection, an occupational health doctor of the territorial body of the State Service for Labor (in the event of an acute occupational disease (poisoning)), other representatives of the institution, officials of the State Service for Food, Consumer Protection and Consumer Protection, the State Emergency Service (if necessary and with appropriate approval). The commission cannot include the victim's immediate supervisor.

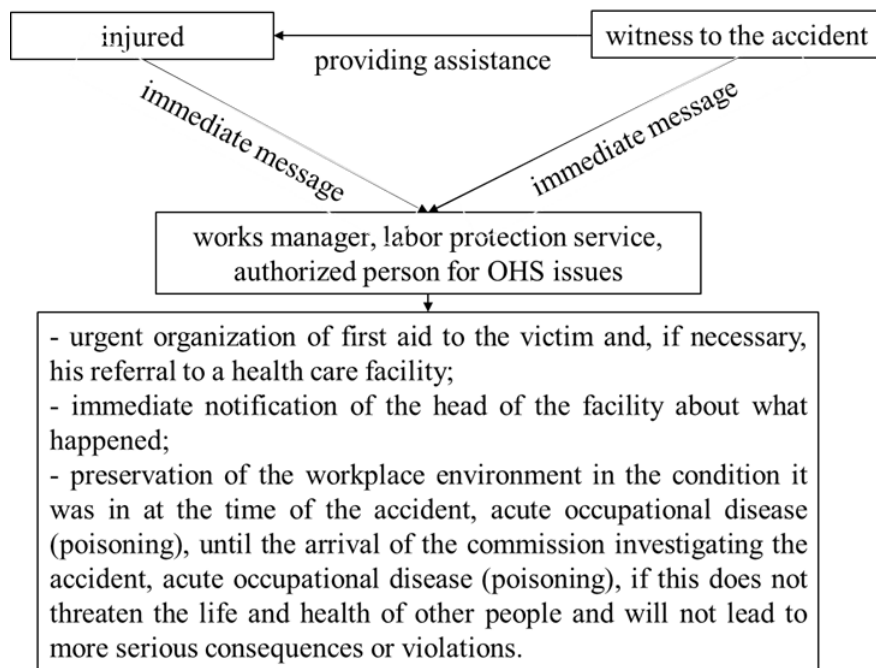


Fig. 4. Sequence of actions in the event of an accident or occupational disease in an educational institution

Source: compiled by the authors

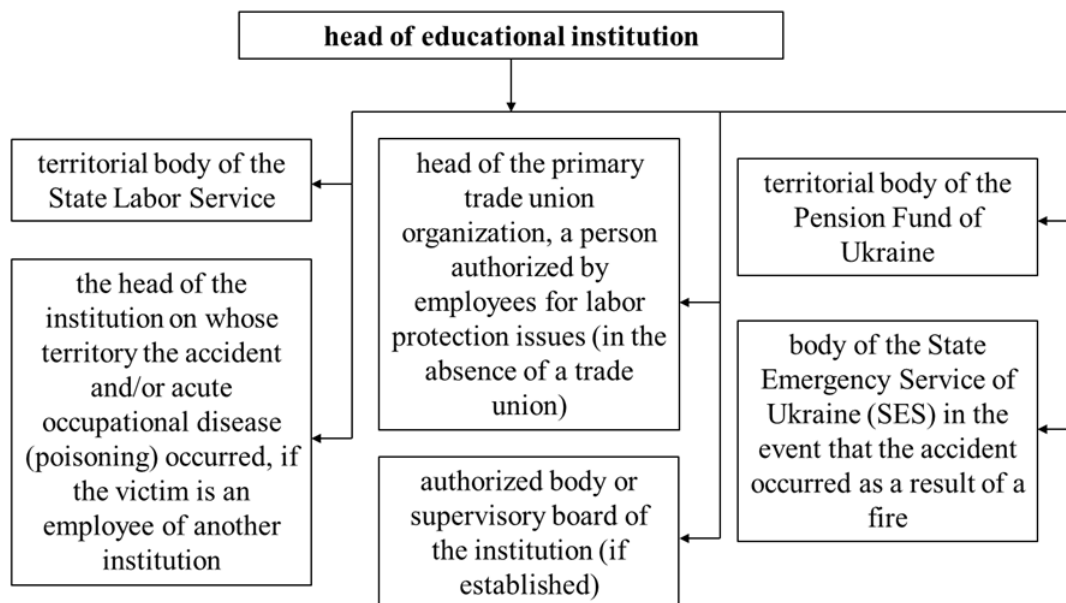


Fig. 5. List of organizations for reporting an accident

Source: compiled by the authors

The following are subject to special investigation: fatal accidents, group accidents, deaths of participants in the educational process while performing their labor (official) duties, acute occupational diseases (poisoning) that resulted in serious or fatal consequences, accidents, the fact of which was established in court, and the organization in which they occurred was liquidated without a legal successor, accidents that caused serious consequences, including possible disability of the victim, cases of disappearance of employees while performing labor (official) duties, accidents

involving persons working under the terms of a civil law contract, on other grounds provided for by law, accidents that occurred with persons actually admitted to work without a labor contract (contract). In this case, the State Labor Service and/or its territorial body shall form a special investigation commission and its representative shall be the chairman of the commission. The composition of the commission is similar to the previous case, with the exception of some changes.

The investigation of an accident and/or acute occupational disease (poisoning) by the institution's commission is conducted within 5 working days from the date of formation of the commission, and a special investigation – within 15 working days.

The main actions of the institution's commission or special commission in the event of an accident and/or occupational disease (poisoning) are shown in Fig. 6.

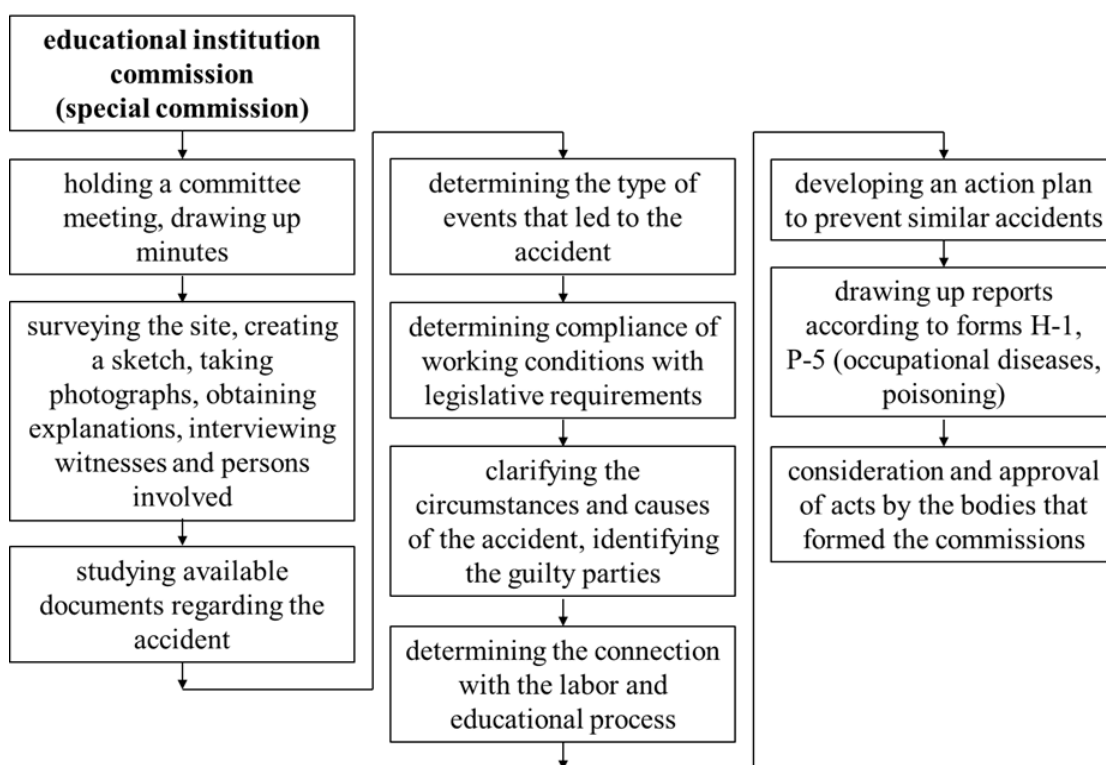


Fig. 6. Main actions of the institution's commission or special commission in the event of an accident and/or occupational disease (poisoning)

Source: compiled by the authors

It should be noted that the decision on recognition of an accident and/or acute occupational disease (poisoning) as related or unrelated to production (labor or educational process) is made by the commission (special commission) by voting by a simple majority of votes. In the event of an equal number of votes of the members of the commission (special commission), the vote of the chairman of the commission (special commission) is decisive.

Disciplinary, administrative, material and criminal liability may be applied for violation of labor protection legislation (Fig. 7) [7, 8].

At the end of this work, we will consider the latest implementations in the field of labor protection at the Dniprovsky State Technical University (Kamianske, Dnipropetrovsk region).

Teachers involved in labor protection issues, together with the labor protection service, introduce the DIALux evo program for designing artificial lighting for premises (administrative, research, production) into the educational and work process.

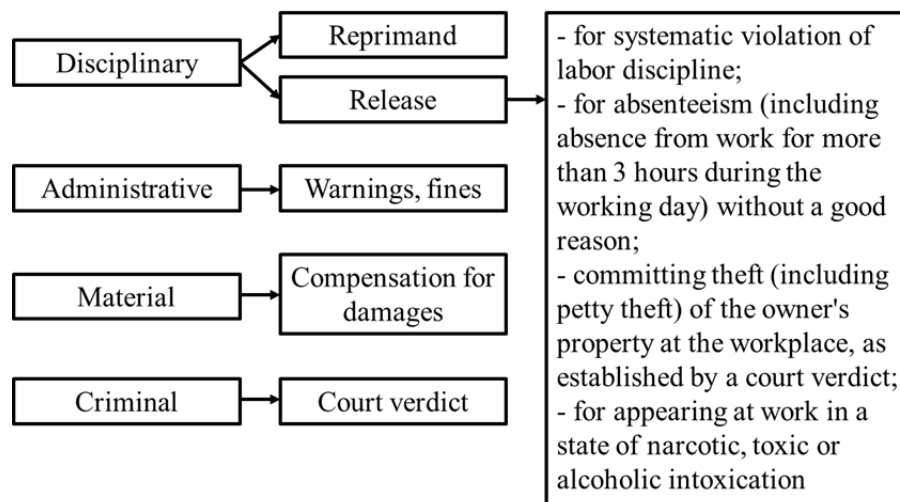


Fig. 7. Types of liability of employees for violation of labor protection legislation

Source: compiled by the authors

The advantages of this product are free of charge, clarity of perception, focus on maximum simplification of lighting calculations, increased functionality and openness for any manufacturers of lighting products, taking into account all modern requirements for design and calculation of lighting.

DIALux evo is a universal complex for lighting calculations of indoor and outdoor artificial lighting. The result of the design is the determination of the number of lamps required to provide a given value of illumination, their location, and power.

For example, consider the design of artificial lighting for the administrative premises of the university's occupational health and safety service. The room has dimensions $H \times B \times L = 3.2 \times 3 \times 5$ m.

To ensure comfortable working conditions, according to DBN V.2.5-28:2018 [12], the average illumination on the working surface from the general lighting system is recommended $E = 500$ lux.

On the websites of luminaire manufacturers, you can download an information file with their necessary characteristics for the calculation. In this case, the design was performed for the Feron AL511 24W LED luminaire. The calculation results are shown in Fig. 8.

This program also allows you to analyze the distribution of illumination over the working surface (Fig. 9), which is important when designing local or local lighting in the room.

As can be seen from Fig. 9, the task of distributing illumination has been completed, its average indicator on the working surface is $E = 546$ lux. It is necessary to install 15 lamps, their total power is 360 W, the average price of one lamp is 400 UAH, and therefore the total price of the lighting installation is 6000 UAH.

Conclusions. Occupational safety issues in an educational institution are dealt with by the occupational safety service, the composition of which depends on the size of the institution, namely the number of participants in the educational process. The tasks, functions and powers of the occupational safety service have been analyzed in detail, among which the organization of preventive measures on occupational safety, monitoring the implementation of the requirements of legislative and regulatory acts on these issues, training participants in the educational process on occupational safety and life safety, development of regulations, instructions, the section "Occupational Safety" of the collective agreement, other occupational safety acts that operate within the institution, issuing mandatory instructions to the heads of the structural units of the institution to eliminate existing deficiencies in occupational safety, etc.

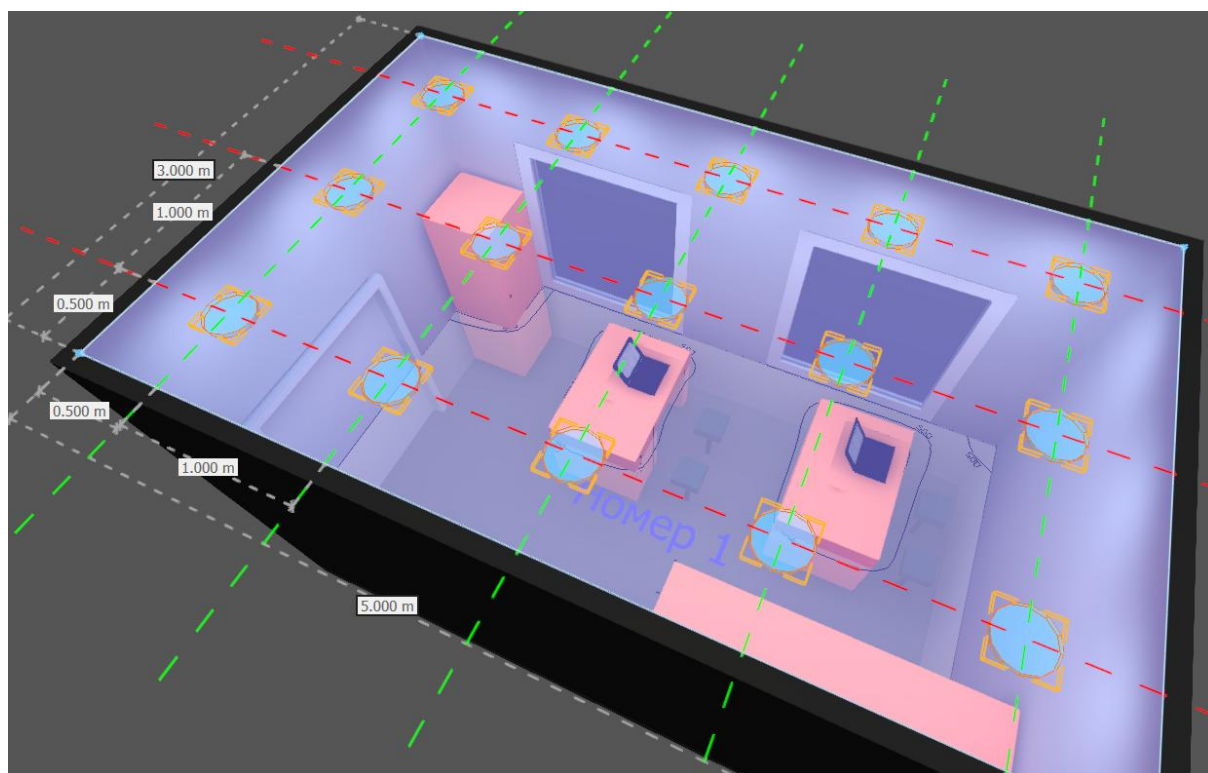


Fig. 8. Results of the design of artificial lighting for an administrative building
Source: compiled by the authors

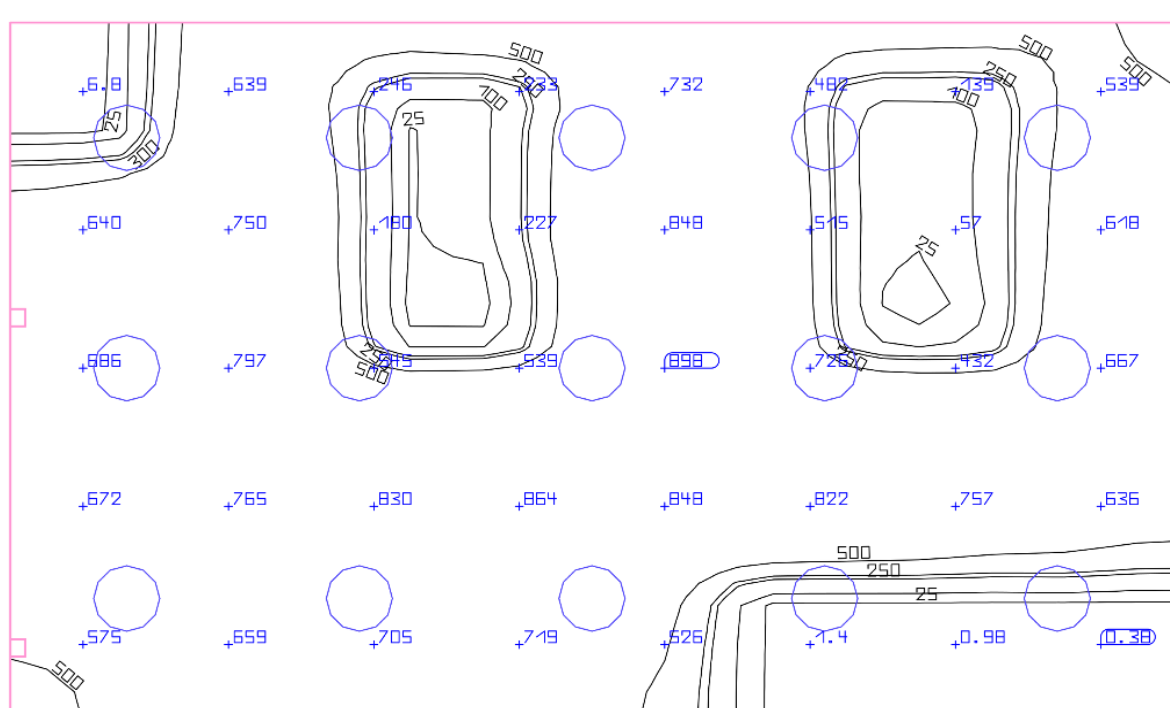


Fig. 9. Distribution of illumination over the working surface of an administrative building
Source: compiled by the authors

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