ASSESSMENT OF WORKING CONDITIONS IN THE SANITARY AND HYGIENIC LABORATORY

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ОЦЕНКА УСЛОВИЙ ТРУДА В САНИТАРНО-ГИГИЕНИЧЕСКОЙ ЛАБОРАТОРИИ

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Аннотация. Статья посвящена оценке условий работы, причем особое внимание уделяется разработке плана действий по улучшению упомянутых условий в санитарно-гигиенической лаборатории. Рассматриваются такие понятия как специальная оценка условий труда, вредных и опасных факторов в санитарно-гигиенической лаборатории.

Abstract. The article is devoted to the assessment of working conditions with special attention paid to the development of an action plan to improve said conditions in the sanitary and hygienic laboratory. Such concepts as special assessment of working conditions, harmful and dangerous factors in a sanitary and hygienic laboratory are considered.

Ключевые слова: анализ условий труда, система управления охраной труда, план мероприятий, улучшение условий труда.

Keywords: analysis of working conditions, occupational safety management system, action plan, improvement of working conditions.

Labor protection maintains its importance today in every production dueto the fact that health and lives of each employee depend on compliance with the rules of labor protection.To ensure the safety of workers, a special assessment of working conditions is carried out, which normally includes measures aimed at identifying potentially dangerous and harmful factors in the workplace and assessing their impact on the employee. It is the accuracy of the assessment that determines

the efficacy and safety of work, so it must meet all the requirements of international standards in the field of labor safety.Special attention is given to improving working conditions, since it affects overall results of individual's work.Related factors include person's working capacity, state of their health, their attitude to work – all of this depends on the state of the workplace.Therefore, with the improvement of working conditions, the productivity increases, which allows the employer to improve economic performance results of the enterprise. The sanitary and hygienic laboratory likewise carries out special assessment of working conditions, as conducted research (testing) of samples uses chemical reagents (alkalis, acids, solvents, etc.), as well as equipment that has a direct impact on the health of the laboratory workers.Employees of the sanitary and hygienic laboratory are being exposedover extended periods to unfavorable factors of production, which negatively affect the state of their health, and in some cases leads to work-related diseases.Work-related factors that influence laboratory workers can be divided into three groups: chemical factors, physical factors and factors of the labor process.

Chemical factors include harmful chemicals, which are a substance that, upon contact with the human body in case of violation of safety requirements, can cause work-related injuries or diseases, or deviations from the norm in the state of health detected by modern methods, both during work and in the long-term life of the current and subsequent generations [2].Chemical production factors have a special effect on the human body, since they can penetrate the body invarious ways, for example, through the respiratory organs, mucous membranes, skin, or through the gastrointestinal tract. Handling harmful chemicals poses risks of poisoning and burns, gas contamination of the working area air during work related to ammonia and acids, as well as the accumulation of heavy metal salts in the body. Physical factors influence a person by certain meteorological conditions or microclimate. These conditions include: temperature, humidity, air's velocity and its barometric pressure. A change in these microclimatic parameters may negativelyaffect the condition of laboratory workers and their efficacy. Another physical factor that affects majority of the sanitary and hygienic laboratory workers is noise. Noise is defined as a set of sounds of different intensity and frequency, randomly changing over time, arising in production conditions and causing unpleasant sensations and objective changes in various functional systems of the body for workers [3].Noise can change the heart rate and increase or decrease blood pressure, thereby affecting the cardiovascular system. It's worth mentioning that frequency of exposure and noise levels directly affect the state of the central nervous system. Another physical factor in the sanitary and hygienic laboratory is electromagnetic fields,the sources of which may includea personal computer (PC), and various equipment that is utilized in laboratory research.The electromagnetic field (EMF) is a special form of matter that occurs when moving particles interact with electric charges [4].Prolonged and regular exposure to EMF can lead to increased fatigue, sleep disorders, headaches, low blood pressure, development of diseases of the central nervous system and disorders of the cardiovascular system. Factors of the labor process. The severity of labor is a characteristic of the labor process, reflecting the predominant load on the musculoskeletal system and functional systems of the body (cardiovascular, respiratory, etc.) that ensures its activity [5]. The severity of labor in the sanitary and hygienic laboratory is characterized by the mass of the lifted and manuallymovedcargo, the statistical load (the value of the statistical load per shift when holding the load, the application of effort), as well as the working posture and the inclination of the body.Physical labor requires a significant degree of muscular effort and corresponding energy expenditure. When performing muscle work, a change in the morphological composition of blood and its physicochemical properties may occur (the number of red blood cells and leukocytes increases, etc.), which indicates an increase in the functions of hematopoietic organs. Work-related diseases include pathology of the musculoskeletal systemand diseases of the upper extremities.Labor intensity is a characteristic of the labor process, reflecting the intensity of work through intellectual, sensory and emotional tension, as well as the monotony and working pattern[5]. Consequently, all three groups of production factors (chemical, physical and labor process factors) have a negative impact on the health of employees of the sanitary and hygienic laboratory. To reduce and prevent this impact, a special assessment of working conditions is carried out. Itmust be carried out by all enterprises where there is at least one employee under an employment contract. Special assessment of working conditions is a set of multi-stage system measures that are used to determineharmful and (or) hazardous production factors, as well as to assess the level of their impact on workers.Special assessment of working conditions is held at least once every five years. The exception is true to workplaces with optimal or acceptable working conditions, since the declaration automatically prolongs the results of the Special assessment of working conditions and is valid until an accident occurs at the workplace due to the fault of the

employer or employee, or in case an occupational disease caused by harmful or dangerous factorsis detected. The regulatory legal document regulating the organization and conduct of the Special assessment of working conditions is the Federal Law of the Russian Federation No. 426 dated December 28, 2013 "On special assessment of working conditions". How is a special assessment of working conditions is carried out in a sanitary and hygienic laboratory? Firstly, a laboratory submits an application to conduct a Special assessment of working conditions to specialized organizations that conduct this event. After the application has been accepted, a list of workplaces is compiled where a special assessment of working conditions will be carried out.Next, it is necessary to notify the employees of laboratory about the conduct of the Special assessment of working conditions, and provide them with the schedule of the procedure.It is also necessary to familiarize employees of the sanitary and hygienic laboratory with the results of the Special assessment of working conditions under their signature. Protocols for assessing the class of work under the influence of production factors at the workplace in question are compiled. Those protocols include information about the employer, the workplace, measuring instruments, as well as the actual and normative values of the measured parameters and specific regulatory documents establishing the method of measurement and evaluation and regulating the MPC, remote control, normative values of the measured and evaluated factor. One of the normative documents is: SanPiN 11.2.3685-21 "Hygienic standards and requirements for ensuring the safety and (or) harmlessness of environmental factors for humans". After drawing up a map of a special assessment of working conditions for each workplace of the sanitary and hygienic laboratory, and drawing up protocols for each production factor, a summary statement of the results of a special assessment of working conditions is compiled. This statement is subsequently published on the official website of the organization, if there is one. Violations of confidentiality of personal data of employees is strictly prohibited. Based on the results of a special assessment recommendationsare made to improve working conditions. It is important to develop an action plan for a specific workplace that needs to be implemented, which will justify a reduction in the class of working conditions in the future.The procedure for planning measures to improve working conditionsis related toone of the main tasks of the employer, which is, according to Article 214 of the Labor Code of the Russian Federation, is to create safe working conditions.To create these conditions, it is necessary to conduct a comprehensive assessment of the technical and organizational level of the workplace, as well as an assessment of the factors of the production environment and the labor process. Based on these estimates, the employer creates such working conditions that cannot lead to harm of the health of the employees. Therefore, every year the employer takes measures to improve working conditions and work-related safety at the enterprise.The standard list of measures to improve working conditions and occupational safety and reduce occupational risks was approved by the Order of the Ministry of Health and Social Development of Russia dated 01.03.2012 N181n (as amended. dated 06/16/2014). Based on the recommended measures, it can be concluded that the development of an appropriate plan allows the employer to minimize damage to the life and health of the employees.Conducting a special assessment of working conditions in a sanitary and hygienic laboratory is an obligatory aspect in the labor process, since the safety of working conditions, the life and health of laboratory employees depend on it. It is the accuracy of the assessment that determines the efficacy and safety of work, so it must meet all the requirements of international standards in the field of occupational safety. Labor protection is the most important industry in the present time. Since specialists in the field of labor protection do everything possible to ensure that employees of various enterprises preserve their health and life. Therefore, carrying out a special assessment of working conditions is necessary for all employers, because the working capacity, life and health of people depend on it.

Bibliographic list:

1. Dangerous and harmful production factors. URL: https://www.protrud.com/опасные-и-вредные-производственные-факторы / (Accessed: 01.03.2023)

2. Life safety: a textbook / V. A. Kozlovsky, A.V. Kozlovsky, O. L. Uporov. Yekaterinburg: Publishing House of the Russian State prof.-ped. un-ta, 2013 314 p.

3. Zhovtyanskaya E.V. Harmful production factors. The influence of harmful physical factors of the production environment on the human body. / E.V. Zhovtyanskaya. – village. MaksatikhaTver

region, 2015.

4. Electromagnetic field, its effect on a person, measurement and protection. Access mode: https://pcgroup.ru/blog/elektromagnitnoe-pole-ego-vliyanie-na-cheloveka-izmerenie-i-zaschita / (Accessed: 01.03.2023)

5. Devisilov V. A. D32 Labor protection: textbook. – 3rd ed., ispr. and add. – M.: FORUM:INFRA-M, 2013 – 448 p.: ill. – (Vocational education).