

III. ПРОМИСЛОВА БЕЗПЕКА У СУЧАСНИХ ЕНЕРГОЄМНИХ ТА ЕНЕРГОНЕБЕЗПЕЧНИХ УМОВАХ ВИРОБНИЦТВА

УДК 331.45(477):005.934

Bochkovskyi A. P. Doctor. Sc. (Tech.), Prof.
Sapozhnikova, N. Yu. PhD. (Tech.), Associate Prof.
Odessa National Polytechnic University, Odessa

ANALYZE THE SYSTEM OF PROFESSIONAL TRAINING IN THE FIELD OF LABOR PROTECTION AND INDUSTRIAL SAFETY IN UKRAINE AND THE EU

***Abstract.** A comparative analysis of educational programs for the preparation of students of higher educational institutions in Ukraine and EU countries was performed (on the example of the Republic of Poland) in matters of labor protection and industrial safety. Problems were identified that may increase the occupational risk level at the enterprises of Ukraine.*

***Keywords:** labor protection, higher education, occupational injuries, professional risk, industrial safety.*

***Анотація.** В роботі на основі порівняльного аналізу навчальних програм підготовки студентів вищих навчальних закладів України та країн ЄС (на прикладі Республіки Польща) в питаннях охорони праці і промислової безпеки, виявлено проблеми, які можуть сприяти підвищенню рівня професійного ризику на підприємствах України.*

***Ключові слова:** охорона праці, вища освіта, виробничий травматизм, професійні ризики, промислова безпека.*

The ratio of number of fatal accidents to the total number of registered accidents (the figure recommended by the ILO) in Ukraine 100 times exceeds the average for EU countries [1–3].

Thus, the question arises, why, despite of the same causes of accidents, their severity indicators differ so much? The answer to this question is be found in the context of two interrelated planes.

The first one relates to the quality of legal and regulatory framework of Ukraine on labor protection, which should be understandable not only for performance, but also quite comprehensive in terms of functioning of preventive mechanisms.

The quality of legal and regulatory framework is provided through the process of systematic implementation of comprehensive positive changes. This is a very difficult and responsible process, because errors made when changing the legislation will inevitably affect the overall labor safety and greatly impeded it.

Legal and regulatory framework of Ukraine on labor protection consists of more than 10,000 legal acts and is one of the largest and extensive in the legal system of the state. All legal acts of Ukraine on labor protection one way or another are interrelated, so to improve the situation in the field of labor protection and industrial safety means to promote an integrated approach. Such an approach means that altering a single document at the same time leads to changing of several others. However, in practice, these changes in the recent past occur discretely and in isolation [1, 4–6].

However, it is clear that changes and quality of the legislative framework is only the foundation, but a prevalent factor in the implementation of these reforms in the field of occupational safety is the formation of the alternate approach in the mind of employees to individual and collective security, as well as to labor culture. That is, the second most important issue within the frame of which it is necessary to consider the issues of improving the state of occupational safety for Ukraine on the way to the European integration, is the formation of safety and occupational health priorities in relation to any performance results. The formation of these priorities primarily happens when a person – future specialist obtains professional higher education.

But despite the European way of reforming the educational system in Ukraine, the level of training of Ukrainian specialists in the field of labor protection and industrial safety not only qualitatively (for the better) differs from the European, but in recent years significantly deteriorates compared to the previous academic training programs for students.

As an example, we can consider the system of training specialists in the field of labor protection and industrial safety of Ukraine and neighboring Poland. The choice of the Republic of Poland, as a referenced one, is due to the almost related to Ukraine number of economically active population (Ukraine – 20.1 million persons, Poland – 17.01 million persons) and kinds of economic activity (agriculture, engineering, metallurgy, coal, chemical industry, etc). However, despite these correlative indicators, the ratio of number of higher education institutions (HEIS) that train specialists on labor protection and industrial safety to the total number of HEIS in Poland almost 1.9 times more than in

Ukraine, at 1.18 times less by the number of economically active population [1, 4, 7, 8].

In addition, the planned number of academic hours for studying subjects related to labour protection and industrial safety issues in higher educational institutions of the Republic of Poland is 1,5–1,7 times more than in Ukraine. Study programs in HEIS of Ukraine include the study of three disciplines for students, with a total number of 180 hours:

- «Life Safety»;
- «Fundamentals of Labour Protection»;
- «Industrial Labour Protection».

At Polish HEIS, students in the framework of educational programs implementation, study significantly more subjects related to labour protection and industrial safety. Among them such as follows:

- «Safety and Ergonomics»;
- «Labor Physiology»;
- «Human Factor in relation to Systems of Enterprises»;
- «Labor Protection Management»;
- «Organization of Occupational Safety»;
- «Risk Assessment and Analysis»;
- «Analysis and Control of Contamination in a Production Environment» and others.

By the way, the like with the Polish HEIS situation is evidenced in other EU countries, where the issues of labor safety are considered not only within the given disciplines, but are necessarily integrated in a wide range of related disciplines and curricula at all levels of training, starting from primary school [1, 4, 9].

But even in this, compared to European universities, pared format of disciplines associated with occupational health, industrial safety and safety during emergencies, in recent years there has been visible some negative trends of failures for the relevant departments to provide advice to students on «Labour protection and safety in emergencies», the withdrawal of such sections out of the graduation projects, merge of the appropriate disciplines for some criteria, the significant reduction in the number of classroom hours for their studying, replacement exams by tests, dismissive (minor) attitude to issues of labour protection, industrial safety and civil protection, as well as moral and physical obsolescence of the relevant departments infrastructure.

These trends contradict both the current legislation of Ukraine in the field of occupational safety and common sense, and do not contribute to the maintenance of high professional level of Ukrainian graduates in the labour protection and industrial safety issues.

Comply with Article 21 of the law of Ukraine «On Labour Protection», the design of production facilities, development or modification of processes (both of technical and intellectual nature), means of production and others (that is, all the actions that a student performs within the process of writing the degree project) must be conducted in full compliance with the requirements of legal and regulatory acts on labor protection.

The above Article of the law of Ukraine also provides for the compulsory examination of project documentation for compliance with the requirements of this Article. Only highly qualified experts (in high educational institutions they are academic teaching staff of Health and Safety or Labor Protection departments) carry out verification of such conformity and the relevant examination.

Given that a thesis project is essentially the qualification characteristics of the graduate as a future leader of an enterprise, who, comply with Article 13 of the law of Ukraine «On labour protection», bears direct responsibility (from administrative to criminal, Article 44 of the Law) for the safety, life and health of every member of the team, so his expertise in the industrial safety is of top priority. Qualification of teachers of the respective departments in the field of labor protection and industrial safety is to be confirmed and is being constantly improved by availability and development of scientific and scientific-methodical papers, practical experience and training certificates proving the right for teaching of the relevant disciplines and providing advice on section «Labour Protection and Safety in Emergencies» for the diploma projects. Such training, according to the «Model provisions on training and testing of knowledge on labour safety» (NPAOP 0.00-4.12-05) can and must be taken by lecturers of Health and Safety (Labour Protection) departments.

In other words, consultations and advices given within the section «Labour protection and safety in emergencies» by graduate education departments contradict with the requirements of the current Standard regulations. The deletion of sections «Health and safety in emergencies» out of the graduation projects of students and lack of its qualified expert check for compliance with the applicable legislation requirements, contest the legitimacy of the graduation project itself and, as a result, the received diplomas on higher education [1, 2, 4, 6].

It is also of concern the initiative to merge, in the curricula and work programs, such diverse in their intent and essence subjects as, for example, «Industrial Labour Protection» and «Civil Protection», which demand different levels of knowledge and competence from students. Such a merger is not only in conflict with section 2.1. of the Model regulations (NPAOP

0.00–4.12–05), but also makes it impossible the qualitative mastering of the material for the lack of elementary logical link between these disciplines.

In addition, it set us wondering the practice that includes various forms of knowledge control per semester on the specified disciplines for students of different groups, but those listening to lectures in a single class.

Directions for reforming the higher and professional education in Ukraine should be determined by the priority and exclusivity of issues related to labor protection and industrial safety in the curriculum of training specialists comply with the all-European concept, which can be conventionally represented as a continual process of learning and improving knowledge in matters of occupational health and safety through the whole time of employment for each person.

The defined negative trends in terms of unsystematic approach to reforming the legislative framework for the labour protection and professional training system are already expressed in the negative dynamics of the increase in the number of accidents in Ukraine.

Thus, only for the first half of 2020, the number of accidents compared to the same period in 2019, increased by 3.1 %, while the number of fatally injured in some regions of Ukraine has increased significantly (in Volynsk – 3.7 times, in Cherkasy – 7 times, in Kiev – 1.7 times). Institutional causes has traditionally been the main ones for accidents occurred because of non-compliance with instructions on labor protection (36.4 % of the total) and through the personal negligence (14.8 %, respectively).

Despite some delayed in time negative effect associated with the introduction in recent years the measures in law reform and education in terms of health protection, affecting the industrial security, we can make a prediction on the increase of number of indicators in the nearest future.

Література

1. Бочковський А. П. Наукові основи управління ризиками виникнення професійних небезпек: дис. ... доктор техн. наук: спец. 05.26.01. НТУДП, Дніпро, 2019. 385 с.
2. Bochkovsky A. P. Actualization of the scientific principles elaboration on evaluating the risks of occupational danger occurrence. *Naukovyi Visnyk Natsionalnoho Hirnychoho Universytetu*. 2018. Vol. 6. P. 95–103.
3. Bochkovsky A. P. Methodological basis for the use of markov processes for risk assessment in systems «man-machine-environment». *Вісник Львівського державного університету безпеки життєдіяльності*. 2018. № 18. С. 88–95.

4. Bochkovsky A. P., Sapozhnikova N. Yu., Gogunskii V. D. Labour protection and industrial safety in Ukraine: problems of transition period and perspective ways of development. *Зернові продукти і комбікорми*. 2016. № 4(64). С. 42–50.

5. Bochkovskiy A. P., Sapozhnikova N. Yu. Promising directions for improving regulatory legal framework of Ukraine on labor protection for enterprises producing food and beverage. *Екологічна безпека та збалансоване ресурсокористування*. 2015. № 2(12). С. 85–93.

6. Бочковський А. П. «Людський фактор» та ризик виникнення небезпек: випадковість чи закономірність: монографія. Одеса: Юридична література, 2015. 132 с.

7. Бочковський А. П. Теоретичні аспекти універсалізації оцінки професійного ризику в системах управління охороною праці. *Вісник Львівського державного університету безпеки життєдіяльності*. 2016. № 14. С. 134–151.

8. Нетребський О. А., Бочковський А. П. Актуалізація «людського фактора» у сталому розвитку людства. *Харчова наука і технологія*. 2012. № 4(21). С. 100–103.

9. Бочковський А. П., Сапожнікова Н. Ю. Формалізація системи автоматизованого контролю і підвищення безпеки виробництв. *Вісник Львівського державного університету безпеки життєдіяльності*. 2017. № 15. С. 114–123.

Інформація про авторів:

Bochkovskyi Andrii P., Doctor of Technical Science (s), Associate Professor, Department of Systems Management Life Safety Odessa National Polytechnic University, Professor, Odessa, Ukraine, e-mail: andrew.bochkovsky@gmail.com, ORCID: <http://orcid.org/0000-0002-4166-3148>

Sapozhnikova Natalia Yu., Candidate of Technical Science (s), Department of Systems Management Life Safety Odessa National Polytechnic University, Senior Lecturer, Odessa, Ukraine, contact number: +38067-99-11-828, e-mail: n.sap.bzd@gmail.com, ORCID: <http://orcid.org/0000-0001-6181-4022>

Бочковський Андрій Петрович, доктор технічних наук, доцент, кафедра управління системами безпеки життєдіяльності Одеського національного політехнічного університету, професор кафедри, м. Одеса, Україна, e-mail: andrew.bochkovsky@gmail.com,

Сапожнікова Наталя Юріївна, кандидат технічних наук, кафедра управління системами безпеки життєдіяльності Одеського національного політехнічного університету, доцент кафедри, м. Одеса, Україна, контактний телефон: +38067-99-11-828, e-mail: n.sap.bzd@gmail.com.