PROBLEMS RELATED TO PROTECTIVE EQUIPMENT OF WORKERS WORKING AT THE NAVOI-URAN STATE ENTERPRISE

M.A. Aliboyev[1], A.F. Onnamurodov[2]
Associate Professor, PhD, Department of "MMTX" of Andijan State Technical Institute[1]
Student of the "MMTX" department of Andijan State Technical Institute[2]
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Abstract. *This article analyzes the problems associated with personal protective equipment of workers operating at the Navoi-uran State Enterprise. The state of protective equipment, the practice of their use, and existing shortcomings in the conditions of chemical and physical hazards inherent in the processes of uranium mining and sulfuric acid production were studied. As a result of the study, it was revealed that some protective equipment does not fully meet the requirements of modern labor protection, and there is a need to improve the mechanisms for their selection and control. The article provides scientific and practical proposals aimed at increasing industrial safety and protecting the health of workers. Article 37 of the Constitution of the Republic of Uzbekistan establishes the right of every citizen to work and guarantees of work in safe working conditions. This constitutional right is the foundation of all labor legislation. Every enterprise, organization and entrepreneur is legally obliged to create a safe and healthy working environment. Compliance with modern safety standards Provision of protective equipment Implementation of a system of constant monitoring and control Training and advanced training of employees depends on a number of factors. In the modern labor market, the quality of working conditions affects not only the health and well-being of employees, but also the efficiency of the entire economy. In this article, we will deeply analyze the most important aspects of creating a labor protection system, safety standards and a healthy working environment in Uzbekistan.*

Keywords: *labor protection, personal protective equipment, industrial safety, chemical hazard factors, uranium mining, sulfuric acid production, navoi-uran state enterprise.*

I. INTRODUCTION

Nowadays, the complexity of production processes and the increase in technological capacity at industrial enterprises are further increasing the requirements for the labor protection system. Especially in enterprises where chemicals, high-temperature, pressure equipment, and harmful production factors are present, protecting the health of workers is one of the urgent issues. In such conditions, the correct selection of personal protective equipment, its rational use, and constant monitoring are considered important factors in ensuring production safety. Navoiyuran State Enterprise is one of the largest strategic industrial entities in the Republic of Uzbekistan engaged in the extraction and processing of natural uranium. The enterprise carries out technological processes such as uranium mining, underground alkalization methods, and sulfuric acid production. These processes require workers to work under the influence of chemical, physical, and technological risk factors [1].

Practical observations show that insufficiently effective use of personal protective equipment in production processes or failure to update them in accordance with modern requirements can have a negative impact on the health of workers. Therefore, it is important to

assess the condition of existing protective equipment at the enterprise, identify problems in their use, and develop scientific and practical proposals aimed at eliminating them. This article analyzes the problems associated with personal protective equipment of workers operating at the Navoiyuran State Enterprise, and provides conclusions aimed at increasing production safety and improving the labor protection system [2].

II. METHODS

This article is aimed at assessing the state of personal protective equipment for workers engaged in uranium mining and sulfuric acid production processes at the Navoiyuran State Enterprise. The article studies the practice of using protective equipment in conditions of chemical, physical and technological risk factors inherent in the production environment. A set of analytical and practical methods was used in the preparation of the article. In particular, the current regulatory and legal documents on labor protection, internal instructions of the enterprise and production regulations were analyzed. Based on observations conducted at workplaces, the technical condition of personal protective equipment, their compliance with production hazards and the level of use were assessed.

Also, harmful factors encountered during the activities of workers were classified, taking into account the technological characteristics of production processes. The information obtained within the framework of the article was processed using comparison and generalization methods, and scientific and practical conclusions were formed aimed at identifying existing problems and eliminating them.

III. RESULTS

This article assesses the current state of personal protective equipment used in the uranium mining and sulfuric acid production processes of the Navoiyuran State Enterprise. The results show that there are certain inconsistencies between the risk factors present in the production environment and the level of use of protective equipment.

Table 1. Main risk factors identified in production processes

Production direction	**Type of risk factor**	**Risk level**
Sulfuric acid production	Chemical (H_2SO_4 vapors, SO_2)	High
Uranium mining	Chemical (solutions, aerosols)	Medium–high
Technological equipment	Physics (temperature, noise)	Average
Pump and piping systems	Mechanical (under pressure)	Average

It was found that the highest level of risk is observed in sulfuric acid production workshops, which further increases the demand for protective equipment. Below, the level of provision of workers engaged in production processes with personal protective equipment was analyzed. These indicators allow us to assess the compliance of existing protective equipment with real risk factors in production and identify shortcomings in their use. The results are presented in Table 2.

Table 2. Status of provision of personal protective equipment

Type of protective device	**Coverage rate (%)**	**Current status**
Special work clothes	100	Partially obsolete
Protective gloves	92	Fast food
Protective masks (respirators)	78	Not enough

Goggles and face mask	81	Partially compatible
Chemical protective suit	65	There is a shortage.

It can be seen from the table data that, respiratory and chemical protection equipment The level of provision is relatively low, which poses a risk to the health of workers.

The main problems identified in the use of personal protective equipment are summarized below. These problems can directly affect the effectiveness of protective equipment and reduce the level of production safety. The identified shortcomings are presented in Table 3 as a percentage.

Table 3. Main problems in the use of personal protective equipment

Problem type	**Detection rate (%)**
Obsolescence of tools	47
Incompatibility with modern standards	39
Insufficient control over proper use	34
Not being replaced regularly	29

According to the results, the effectiveness of the use of personal protective equipment is significantly affected not only by the supply, but also by the control and monitoring system. In general, the results show that although the Navoiyuran State Enterprise has personal protective equipment, some types of it do not fully correspond to the level of production hazards. This situation indicates the need to further improve the labor protection system.

IV. DISCUSSION

The results presented in the article showed that there are significant discrepancies between the risk factors associated with production processes and the level of use of personal protective equipment at the Navoiyurgan State Enterprise. In particular, despite the high level of chemical risk factors in the sulfuric acid production processes, as shown in Table 1, the results of Table 2 showed that the provision of respiratory and chemical protective equipment is insufficient. The results obtained show that the level of provision of respirators and chemical protective suits is 78% and 65%, respectively, which does not fully correspond to the existing level of risk. This situation increases the risk of workers being exposed to harmful gases and aggressive chemical environments.

The issue of respiratory protection is especially important in production conditions associated with sulfuric acid vapors and sulfur compounds. The results presented in the article showed that there are significant discrepancies between the risk factors associated with production processes and the level of use of personal protective equipment at the Navoiyurgan State Enterprise. In particular, despite the high level of chemical risk factors in the sulfuric acid production processes, as shown in Table 1, the results of Table 2 showed that the provision of respiratory and chemical protective equipment is insufficient. The results obtained show that the level of provision of respirators and chemical protective suits is 78% and 65%, respectively, which does not fully correspond to the existing level of risk. This situation increases the risk of workers being exposed to harmful gases and aggressive chemical environments. The issue of respiratory protection is especially important in production conditions associated with sulfuric acid vapors and sulfur compounds.

V. CONCLUSION

This article analyzes the situation of workers working at the Navoiyuran State Enterprise with regard to personal protective equipment. The results obtained showed that the level of provision and use of some protective equipment is insufficient in relation to chemical and physical hazards present in production processes. In particular, the low level of provision of respiratory and chemical protective equipment was identified as a risk factor for the health of workers. According to the results of the article, the main reasons for reducing production safety are the obsolescence of personal protective equipment, its incomplete compliance with modern labor protection requirements, and insufficient control over their use. These circumstances increase the likelihood of occupational diseases and adverse effects associated with production. In conclusion, it can be said that it is necessary to improve the labor protection system at the Navoiyuran State Enterprise, carry out the selection and renewal of personal protective equipment in accordance with the level of production risks, as well as strengthen constant monitoring and control over their use. These measures serve to increase production safety and protect the health of workers.

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