Tasks of the enterprise for the implementation of the new concept of Russia in the fight against industrial injuries

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Abstract. The high level of occupational injuries and occupational morbidity in Russia and abroad requires urgent solutions. The article discusses the main features of the new concept of combating injuries and occupational morbidity. Recommendations are given to allow enterprises to identify workplaces with dangerous and harmful working conditions that require priority attention, and to develop an effective occupational safety management system.

1 The situation with occupational injuries and occupational morbidity in the Russian Federation

The Sustainable Development Goals established in 2015 determine the directions of work of states and enterprises for the preservation of the natural environment and the development of human capital. To achieve them, it is necessary to carry out systematic work aimed at improving the efficiency of work on environmental protection and labor protection at the management levels - international, state, regional. The achievement of sustainable development by individual enterprises will contribute to the achievement of sustainable development by States.

Today, an important problem requiring urgent solution is the damage to health at work in the course of professional activity. According to the International Labor Organization, 340 million industrial accidents occur annually in the world, 160 million occupational diseases are registered, 2.3 million workers die annually for these reasons. The average age of the dead is 40 years, therefore, in almost all countries of the world, there is a loss of GDP due to the death of the able-bodied population [http://www.ilo.org].

In the Russian Federation, in recent years, there has been a tendency to reduce the overall occupational injuries, but against this background, injuries with severe consequences are growing. It should be noted that according to the well-known pyramid of accidents proposed by DuPont, by the time of the fatal accident, about 20 accidents with severe consequences, 200 minor accidents and 2000 microtraumas had already occurred at work. Based on these statistics, taking into account the increase in fatal injuries, it can be assumed that the data on injuries provided by enterprises are incomplete, since the growth of injuries with severe consequences in the world is accompanied by an increase in the number of lighter accidents.
while in the Russian Federation, according to statistics, the opposite trend is observed (Table 1).

According to Table 1, it can be seen that in 2021 there is a decrease in the total number of accidents (compared to 2019, their number decreased from 23,300 cases to 21,600) [1]. But the number of accidents is still high. During the same period, the number of accidents with serious consequences has increased, and the number of fatal group accidents has also increased.

The analysis of industrial injuries with severe consequences in the sectoral context allows us to conclude that the largest number of accidents occurs in the construction and manufacturing industries. At the same time, the increase in fatal industrial injuries in 2021 can be called significant in the "mining; manufacturing" industries, and small in the "provision of electric energy, gas; construction" industries.

As a result of the analysis of industrial injuries with severe consequences, four main causes of accidents can be identified: technical (design and technological); organizational; sanitary and hygienic; psychophysiological.

Traditionally, the following causes of industrial injuries are distinguished:

1. Technical reasons: design flaws in the means of labor, mechanisms and equipment, omissions when working with equipment, as well as its malfunctions.
2. Organizational reasons: insufficient information or complete lack of information, various kinds of mistakes made when training personnel directly at the workplace, lack of instructions or ignorance of personnel with instructions at the workplace, as well as the use of tools for work other than intended.
3. Sanitary and hygienic reasons: poor microclimate, quality and composition of air in the room, high content of harmful substances in the air of the working area.
4. Psychological reasons: insufficient attentiveness of the staff at work, obvious fatigue, increased nervousness.
5. Subjective reasons: unsatisfactory state of health of the employee, dizziness, weakness, lack of concentration, alcohol or drug intoxication.

In 2021, the largest number of accidents that led to severe injuries or death occurred due to poor organization of work - 31.3%, in second place - violation of traffic rules - 10.7%, in third place - violations of labor regulations by employees and labor disciplines, while the number of accidents that occurred for this reason, have a positive development dynamics (compared to 2019), while other reasons are negative (Figure 1).

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of accidents that occurred during the year</th>
<th>total number of accidents with disability for 1 working day or more</th>
<th>including accidents with serious consequences</th>
<th>including accidents with serious consequences</th>
<th>including accidents with serious consequences</th>
<th>including accidents with serious consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>23,300</td>
<td>5,860</td>
<td>1,331</td>
<td>4,161</td>
<td>368</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>20,500</td>
<td>5,171</td>
<td>1,216</td>
<td>3,594</td>
<td>361</td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>21,600</td>
<td>5,491</td>
<td>1,337</td>
<td>3,807</td>
<td>347</td>
<td></td>
</tr>
</tbody>
</table>
According to the Ministry of Labor of Russia, on average, three accidents per 1000 employees per year occur at manufacturing enterprises in the aerospace industry, the number of days of temporary disability per accident is 54.75 days. One of the reasons for the high level of industrial injuries and occupational morbidity at Russian enterprises is the high degree of depreciation of fixed production assets. Figure 2 shows the renewal coefficients and the degree of depreciation of fixed assets for 2011-2020. An analysis of working conditions at machine-building enterprises shows that the incidence of morbidity with temporary disability is directly dependent on harmful and unfavorable factors of the working environment. Due to the unsatisfactory organization of production and the work of enterprise personnel in hazardous working conditions, the level of occupational morbidity continues to be high (table 2) [1].

Table 2. Information on occupational morbidity for 2015-2021 [1]
A new concept of work to reduce OCCUPATIONAL injuries AND occupational diseases and

2. Considering that organizational causes are in the first place among the causes of accidents with serious consequences, it is necessary to take effective measures on the part of the state aimed at eliminating the organizational causes of violations in production and stimulating the work of labor protection enterprises [2].

Realizing the need to reduce occupational injuries and occupational morbidity, to ensure favorable working conditions, the state develops legal documents aimed at regulating the activities of enterprises and organizations in the field of labor protection. It should be noted that from March 1, 2022, a number of regulatory legal acts developed by the Ministry of Labor of the Russian Federation, aimed at improving the efficiency of enterprises to ensure safe working conditions, began to operate [3]. Today, all enterprises must conduct a special assessment of working conditions, identify and assess production risks and, based on these data, build work on labor protection: conduct employee training, use the necessary personal protective equipment, develop labor protection management systems, plan medical examinations, etc. From March 1, 2022, a new version of the Labor Code of the Russian Federation is in force and a number of documents have been adopted to encourage enterprises to change their approach to the organization of work on labor protection.

3. Tasks of the enterprise for the implementation of the new concept

It should be noted that the changes in the legislation are aimed at changing the organization of work of labor protection enterprises. Until recently, not all enterprises carried out a special assessment of working conditions, not all enterprises developed occupational health and safety management systems. Today, the company's security strategy should be completely rebuilt [4] (Figure 3). It is necessary to start work with a special assessment of working conditions, it is necessary to analyze working conditions and eliminate the most dangerous conditions, if possible. To develop an effective OHMS, enterprises, in addition to the recommendations of the resolution on OSHMS, should take into account the recommendations of GOST R ISO 45001-2020 [5] and the Concept of zero injuries "Vision zero", developed by the International Social Security Association [http://visionzero.global].

These documents were developed on the basis of the experience of enterprises implementing occupational safety management systems and enterprises seeking to reduce occupational injuries. They emphasize the need for initiative management and involvement in the work on labor protection and identification of production risks of employees of the enterprise [6]. At some enterprises, it is accepted.
In cases of application of the recommendations of GOST R ISO 45001-2020 in the process of developing the OHMS, the following stages of implementation must be performed:

- Assessment of the conditions in which the enterprise operates (external and internal), suppliers, consumers of products, as well as the requirements of the company's personnel;
- Assessment of the requirements of state regulatory documents on labor protection;
- Development of the company's policy in the field of OHMS;
- Determination of the powers, duties and responsibilities of the management and personnel of the enterprise, creating conditions for the manifestation of initiative;
- Consulting with employees;
- Formation of a work program in the OHMS;
- Training of employees of the enterprise in order to increase their competencies, as well as to create interest in the development of the OHSMS;
- Determination of the composition of documents necessary for the effective operation of the OHSMS and their development (these should be documents required by the GOST R ISO 45001-2020 standard and additional documents, the need for the development of which the company has determined for itself);
- Formation of a program to prepare for the occurrence of anticipated emergencies;
- Development of indicators to assess the effectiveness of the OHMS functioning;
- Carrying out production control, monitoring and auditing of the system, analysis of the effectiveness of the system by the management of the enterprise and identification of ways to improve its operation.

The most difficult stage in the development of the OHSMS is the stage of identifying occupational risks. The company needs to develop an algorithm for identifying and assessing harmful and dangerous production factors operating in the workplace, and develop a methodology according to which, from among the identified hazardous and harmful production factors operating in the workplace, those are selected, the elimination of which must be included in the labor protection work program in the first place.

The following approach can be recommended to enterprises:

- Analyze working conditions and select workplaces (production sites) with the most harmful and dangerous working conditions;
- Conduct an analysis of the morbidity of persons working in these workplaces;
- Add jobs to the matrix (depending on the number of lost working days);
- Analyze the causes of the greatest loss of working time.
Table 3. Matrix for the analysis of working conditions and loss of working time by reasons occupational injuries and morbidity

<table>
<thead>
<tr>
<th>Loss of working time due to illness, days</th>
<th>Classes of working conditions</th>
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<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1-30</td>
<td></td>
</tr>
<tr>
<td>31-70</td>
<td></td>
</tr>
<tr>
<td>71-100</td>
<td></td>
</tr>
<tr>
<td>100 and more</td>
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</table>

4 Conclusion

Following the new concept of organizing work on labor protection, applying the additional requirements specified in GOST R ISO 45001-2020 and Vizion Zero for the formation of an OMS will allow the enterprise to more effectively conduct work on labor protection, take into account the requirements of stakeholders, change the approach to planning work on protection labor, increase the interest, initiative and interest of the staff in improving the efficiency of the OMS. This will improve working conditions, increase the working time fund, increase labor productivity, increase production output, in addition, improving working conditions will reduce payments for unsatisfactory working conditions, reduce the loss of working time fund established as compensation for work in harmful working conditions.

References

1. Information about the work of the technical labor inspectorate of trade unions in 2021. Appendix No. 2 to the resolution of the Executive Committee of the FNPR dated 04/19/2022 No. 6-4. (Moscow, Technical Labor Inspection of the FNPR, 2022)


