Legal Aspects of the Introduction of Digital Platforms and Solutions Aimed at Improving Occupational Safety at Main Pipeline Facilities

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Abstract

The article is devoted to the legal issues of the introduction of digital platforms and solutions aimed at improving occupational safety at pipeline transportation facilities. The possible criteria determining the priority of using digital solutions to improve the occupational safety of pipeline transportation employees are investigated. Hazard identification, risk assessment and risk management, as well as occupational injuries, are considered as sources of initial information for determining the need for the use of digital solutions for certain professions and positions at pipeline transportation facilities. Identification of hazards and occupational injuries are considered as factors that make it possible to reasonably determine the need and expediency of the primary testing of digital solutions aimed at improving occupational safety. It is worth noting that the existence of injuries in the framework of hazard identification is not the main and only factor in determining the level of risk. Hazard identification is aimed at identifying harmful and dangerous factors of the working environment and the labor process and is performed in order to prevent accidents, occupational diseases, emergencies and incidents. The risk management process consists in the development of measures aimed at eliminating/reducing risks and improving industrial safety. When managing risks, including the introduction of digital platforms and solutions aimed at improving occupational safety, all existing legal requirements regarding the employees’ rights and freedoms must be observed.
The article discusses and analyzes the legal aspects of the introduction of digital platforms and solutions aimed at improving occupational safety, in terms of regulation and sufficiency of the legal and regulatory framework. The work deliverables are of interest to professionals in legal regulation of occupational safety, professionals in industrial safety, as well as for conducting in-process control and special assessment of working conditions at main pipeline transportation facilities.

**Keywords list (en):** legal support of occupational safety at oil facilities, digital platform, hazard identification, risk analysis

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1 **Introduction**

Ensuring the safety of operation of oil facilities and employees working thereon is one of the significant issues on the agenda of the domestic FEC. The need and expediency of introducing digital platforms and solutions presented on the domestic and international markets aimed at monitoring the conditions of the process environment and the physical condition of an employee, the safety of employees of various professions and positions, is an urgent issue of process digitalization.

Conventional methods of improving occupational safety have been introduced and are used in almost all FEC enterprises. It is worth noting that the digital transformation trend has a significant potential for transformation of modern domestic industry, which has traditionally been considered quite conservative in the use of digital solutions to ensure occupational safety. The set of relevant tools, designated as Industry 4.0, includes the following methods, such as machine learning, machine vision, big data analytics, industrial internet of things, immersive technologies (virtual and augmented reality), unmanned aerial vehicles and gives an opportunity to look at the employees’ occupational safety in a new way. There is an urgent and legitimate question of determining the ways of entering digital transformation for large geographically dispersed FEC companies [1].

Also, an important factor is observation and compliance with the decisions taken to introduce certain innovations within the framework of actively changing health, safety and environmental protection laws [2]. In accordance with the Constitution of the Russian Federation, a citizen has the right to work in safe working environment complying with hygiene requirements. Besides, in accordance with the Constitution of the Russian Federation, the private life of a citizen is inviolable. Personal inviolability under the Constitution of the Russian Federation is under the jurisdiction of the state, including in the information space; i.e., in view of the use of digital technologies, all operations with digital data.
Legal Aspects of the Introduction of Digital Platforms and Solutions Aimed at Improving Occupational Safety at Production Facilities

Oil and petroleum products pipeline transportation facilities are sources of dangerous occupational hazards, and also belong to the category of high hazard. In order to reduce the risk of occupational hazards, experts of Transneft R&D, LLC have developed an algorithm for analyzing the need and expediency of implementing digital platforms and solutions at production facilities [3]. The algorithm includes the identification of the main parameters of industrial risk in labor activity and the determination of the expediency of using digital solutions [4].

As part of the developed algorithm, industrial injuries are one of the main indicators of increased risks for the groups of employees in which they are recorded. The analysis of occupational injuries in the context of causes and frequency of occurrence, recurrence, severity of injury to health makes it possible to identify production processes with increased risk for FEC employees.

The second main source of data on increased risks is the hazard identification. Hazard identification (identification of harmful and dangerous factors of the working environment and the work process) and risk assessment are performed in accordance with the occupational health and safety management system of the enterprise in order to prevent accidents, occupational diseases, accidents and incidents, substantiate the financing of measures to reduce risks to an acceptable and economically justified level.

Hazard identification and risk assessment are designed to address the following objectives:

- Identify known and possible hazards in the units;
- Assess the risks of the identified hazards in the context of the level of impact on an employee;
- Rank the level of assessed risk (high, moderate, low);
- Develop and implement measures that reduce high risks, keep moderate and low risks at the necessary acceptable level.

Risk management is development and implementation of measures to eliminate/mitigate risks and improve occupational safety. Risk management measures according to the established practice are planned on a priority basis as follows:

- Elimination of danger in the bud, for example, monitoring the condition of equipment, including scheduled and regular maintenance and repair, replacement, etc., or minimizing/excluding employee contact with possible hazards, for example, additional protective structures or devices, automation of processes, the use of robotics;
- Possibility of replacing a high-level hazard factor with a factor of lower exposure to harmfulness and danger, for example, the use of safe or less dangerous technologies, materials, improvement of tools, equipment, etc.;
- Technical and organizational measures, for example, process automated control systems and video surveillance, digitalization of training and personnel knowledge assessment, etc.;
-Additional personal protective equipment, for example, industrial exoskeletons within the collaborative robotics.

Therefore, an additional risk-reducing factor may be the use of digital solutions aimed at improving occupational safety.

Hazard identification and risk assessment is performed for each profession, position, in view of the dangers arising from the personnel movements at the territory and visiting the unit facilities, departure on business trips, as well as related to the activities of employees of third-party contractors performing work in the territory or the customer’s unit facilities.

Section X of the Labor Code of the Russian Federation is devoted to occupational safety [5], which specifies the rights and obligations of an employee and employer related to occupational safety.

Among other things, in accordance with Article 214 of the Labor Code of the Russian Federation, the employer’s obligations include the following:

-Improvement of the conditions and level of employees’ occupational safety through appropriate measures;

-Ensuring occupational safety, assessing the level of occupational risks, including during the commissioning of new facilities, the organization of new workplaces;

-Monitoring of the state of working conditions in case of contesting employment duties, compliance with occupational safety requirements by employees, the correctness of the use of protective equipment, both collective and individual;

-Planning of measures aimed at preventing emergencies, preserving the life and health of employees in the event of such situations, and providing first aid to victims;

-Informing employees about all aspects of working conditions, including existing risks and their levels, measures and means used, as well as equipment used at workplaces and in the territory of the production facility that produces remote video, audio or other recording of work processes, in order to monitor the safety of work performance;

-Adoption of local occupational safety regulations, in view of the considerations of all stakeholders of the work process in the prescribed manner.

Thus, in the case of the application of additional measures and equipment as part of risk management, it is the employer’s responsibility to inform the employee about the use of this equipment, which provides remote video, audio or other recording of the production processes of the work performed.

The applicability of technologies implies the technical possibility of using the digital solutions under consideration in those conditions of production activity in which the need for increased risk management is determined. Important limiting factors may be the lack of necessary connection and communications at remote pipeline transportation facilities, the execution of a digital solution with an explosion protection level
appropriate to production conditions, harsh weather conditions for long-term operability of digital solutions [6].

31 Digital solutions considered to improve occupational safety and reduce the risk of injury are based on the following digital technologies:

- Precise point positioning technologies: GPS; Russian high orbit satellite navigation system (GLONASS) (outside buildings), Bluetooth (inside buildings); including with the equipment of production equipment [7];

- Video analytics, including in vehicles [8];

- Indicators and positioning technologies, including point-based ones, for example, a bracelet for monitoring the state of employee health physiological indicators [9];

- Portable and stationary monitoring systems [10];

- Immersive technologies (virtual and augmented reality) [11];

- Collaborative robotics, for example, industrial exoskeletons [12].

38 The Digital Transformation and Protection of Citizens’ Rights in the Digital Space Report of the Russian President Council for Civil Society and Human Rights indicates the absence in the current legal environment of our country of a code or other single set of legislative provisions, such as Traffic Rules or the Land Code, which would regulate the processes in the digital space. However, they point out that the legal regulation of digital processes is possible and is quite an urgent issue of modern lawmakers, since digitalization can contribute to the development of society and an individual only if the rights and freedoms of man and citizen are respected [13].

A special provision regarding the protection of the rights and freedoms of employees is compliance with the requirements of Federal Law No.152-FZ dated July 27, 2006, “On Personal Data” [14]. In accordance with Article 3(1) of Federal Law No. 152-FZ dated July 27, 2006, “On Personal Data”, personal data include any information regarding a directly or indirectly identified, or determined on the basis of such information, individual (personal data subject). Any action (operation) or set of actions (operations) is recognized as processing of personal data. For example, information about the movements of employees also refers to the personal data of an employee, since personal data, as indicated above, is any information related directly or indirectly to a specific or identifiable individual.

Based on the definition, information about the movements of an employee using digital solutions for occupational safety (video analytics, indicators and positioning technologies), information about the state of physiological health indicators (heart rate monitoring device, 1-lead ECG data receipt and transmission device) is personal data, and the application on the use of digital platforms implementing their collection is subject to the requirements of Federal Law No. 152-FZ dated July 27, 2006 “On Personal Data”.

On the basis of Article 6(1)(1) of Federal Law No.152-FZ dated July 27, 2006, “On Personal Data”, personal data shall be processed with the consent of the data
subject to the processing of her/his personal data. In the field under consideration, the data subject is an employee who uses digital solutions in her/his work.

The rights and obligations of an employee and employer in personal data protection during their processing, storage, transmission to third parties are enshrined in Articles 86 to 90 of the Labor Code of the Russian Federation. In particular, the personal data of an employee may be processed to ensure their personal safety. In the field under consideration, the use of digital platforms and solutions aimed at improving occupational safety falls under the employee personal safety, therefore, the data obtained through their application can be processed at the production facility.

In accordance with Article 86(3) of the Labor Code of the Russian Federation, the source of personal data shall be the employee herself/himself. Obtaining personal data from third parties is possible only with prior notice to the employee and his written consent. All employee personal data should be obtained from the employee herself/himself. The employer is also obliged to notify the employee about the purposes of obtaining personal data, methods of their processing, etc. and to obtain written consent from the employee. In addition, according to Article 86(8), the employer is obliged to organize familiarization of the employee against signature with the company’s local regulatory documents on the use of personal data, the rules for their processing.

Therefore, the employer is obliged to conduct additional document management and educational activities to justify to the employee the importance of using modern digital transformation products in work processes [15].

Article 88 of the Labor Code of the Russian Federation regulates the transmission of personal data, in particular certain requirements to employers:

- Prohibition on the employee personal data transmission to third parties without her/his written consent, except in cases of preventing threats to the life and health of the employee, or other cases provided for by federal law;

- Possibility of transmitting employee personal data within the company in accordance with a local regulation, with mandatory employee’s familiarization with it against signature;

- Prohibition on requesting information about the employee’s health status, except in cases that relate to the issue of the employee’s ability to perform her/his employment duties.

These aspects should be taken into account when involving third-party companies in the processing of personal data. In particular, if it is necessary to involve a third-party company in the processing of personal data, the company is obliged to obtain the employee’s consent to the transmission of personal data, as well as to exercise careful control over the personal data protection in the third-party company.

Thus, the legal foundations for the use of digital platforms and solutions are laid down in the fundamental statutes of the Russian Federation, in the near future a more detailed study of such laws is planned, including in terms of protecting the rights and freedoms of citizens in the era of universal digitalization. For an employer implementing
digital technologies in production, the fundamental directions at the moment, from the point of view of protecting the rights of its employees, are informing them about the use of new technical means and obtaining the employees’ consent to use such technologies.

51 Conclusions

52 The introduction of digital platforms and solutions aimed at improving occupational safety at production facilities can be implemented not only for main pipeline transportation enterprises, but also for enterprises of other industries in which an occupational safety management system has been implemented and is actively used. Implementation algorithms allow preliminary assessment of the need and effectiveness of digital solutions, the possibility of reducing risks in production processes in which traditional risk management methods are applied, but do not bring the expected result. Before the large-scale introduction of digital solutions, it is advisable to analyze the readiness of personnel to use innovative devices in production activities that collect additional personal data, such as the state of physiological health indicators.

53 When implementing digital solutions in occupational safety at production facilities, the employees’ rights and freedoms must be ensured. On the one hand, digital solutions are aimed at improving occupational safety, which corresponds to the employer’s obligations under the Labor Code of the Russian Federation, on the other hand, it is necessary to ensure the right to privacy, personal and family secrets in accordance with the Constitution of the Russian Federation. The introduction of digital platforms and solutions that implement employee surveillance (geolocation or video surveillance), collecting information about the current state of physiological health indicators, etc. must also comply with the requirements of Federal Law No. 152-FZ dated July 27, 2006, “On Personal Data”, one of the fundamental laws regarding the protection of rights and freedoms. The information collected by digital platforms and solutions refers to the employees’ personal data. These requirements can be fulfilled by notifying employees about the collection of their personal data, obtaining consent for their processing and storage, as well as transmission to third parties. In addition, the employer must monitor its compliance and its contractors’ compliance with this law in case of their engagement. Thus, there are no legal barriers to the use of digital technologies.

54 Digital technologies are becoming more and more popular every year, a growing number of manufacturers are entering the domestic market with digital products, and their application in industry is expanding, including digital solutions in improving occupational safety. Digital technologies require careful consideration and justification from the point of view of privacy and personal data protection before their implementation.

References:


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Аннотация

The article is devoted to the legal issues of the introduction of digital platforms and solutions aimed at improving occupational safety at pipeline transportation facilities. The possible criteria determining the priority of using digital solutions to improve the occupational safety of pipeline transportation employees are investigated. Hazard identification, risk assessment and risk management, as well as occupational injuries, are considered as sources of initial information for determining the need for the use of digital solutions for certain professions and positions at pipeline transportation facilities. Identification of hazards and occupational injuries are considered as factors that make it possible to reasonably determine the need and expediency of the primary testing of digital solutions aimed at improving occupational safety. It is worth noting that the existence of injuries in the framework of hazard identification is not the main and only factor in determining the level of risk. Hazard identification is aimed at identifying harmful and dangerous factors of the working environment and the labor process and is performed in order to prevent accidents, occupational diseases, emergencies and incidents. The risk management process consists in the development of measures aimed at eliminating/reducing risks and improving industrial safety. When managing risks, including the introduction of digital platforms and solutions aimed at improving occupational safety, all existing legal requirements regarding the employees’ rights and freedoms must be observed.

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Ключевые слова: legal support of occupational safety at oil facilities, digital platform, hazard identification, risk analysis

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