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DIGITAL SOLUTIONS FOR OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT: THE TRANSFORMATION OF ERG IN KAZAKHSTAN

Modern industry is facing many challenges in the field of workplace safety. Global competition and the increasing complexity of production processes encourage companies to look for innovative ways to maintain business sustainability by improving production safety and preserving the labor potential of employees.

Under these conditions, ERG in Kazakhstan has made a strategic decision to introduce digital solutions into the Occupational health and Safety Management System (OHSMS). At the beginning of 2024, the management of Eurasian Group LLP initiated the development and active implementation of digital solutions within the framework of the development of the Unified Information System (UIS) of OHSMS. This step is aimed at improving the efficiency of occupational safety management, reducing the risks of occupational injuries and creating more transparent processes in the current OHSMS Management System.

Digitalization of critical risk control in the workplace

In April 2024, a pilot project on critical risk control (KCR) was launched at three enterprises of the Group. The KKR methodology is based on a risk analysis using the «bow tie» method, which allows for a simple and visual representation of the relationship between the risks of an incident, the causes of its occurrence and control tools aimed at preventing an incident and avoiding possible consequences.

The critical risk control process includes the following components:

Identification of critical risks of the site (workshop)

Identification of the most important «protective barriers»

Determining the point of control of the most important «protective barriers»

Control of the availability and operability of the most «important protective barriers»

Filling out checklists in paper form by working personnel, and in electronic form (KKR module in «EIS OHSMS») IT and the heads of the production department, in order to control the most important «protective barriers»

Elimination of violations of the most important «protective barriers» (when such facts are identified)

Analysis of the effectiveness of the KKR process

The introduction of KKR allows you to form a clear understanding of what controls are necessary to prevent injury or an accident at a particular workplace and production site.

The IT module of the KKR in the EIS « OHSMS « of the enterprise allows you to automate the basic processes for the identification, assessment and control of critical risks in the workplace. The use of the IT module of the KKR enables each of the managers of the production site (workshop) to promptly

collect and analyze data, which contributes to more accurate and timely decision-making aimed at ensuring the safe performance of work, reducing the likelihood of emergencies and minimizing the consequences of possible incidents.

Behavioral Security audits: Improving efficiency through automation

Behavioral safety Audits (PUB) are an important element of the occupational health and Safety Management System (OHSMS) in many large manufacturing holdings and enterprises. However, traditional methods of conducting such audits often require significant time and resources, which makes them unattractive and difficult to implement for many companies. The introduction of digital solutions during the PUB allows you to significantly simplify, speed up and improve this process.

The introduction of the PUB IT module into the «Unified Information System of OHSMS « (UIS OHSMS) for conducting behavioral security audits will allow ERG enterprises to automate the process of data collection and operational analysis. With this IT module, you can quickly capture the results of the conducted PUB, identify recurring problems and develop measures to eliminate them. In addition, the system allows you to assess the involvement of managers in the conduct of the PUB and promptly respond to identified violations.

In the future, it is planned to additionally use analytical tools, including those based on artificial intelligence solutions, integrated into the digital platforms of the Group's enterprises, including EIS OHSMS. This will allow for a deeper analysis of behavioral factors, identify hidden patterns and predict potential threats to occupational safety and health caused by the human factor. This approach opens up new opportunities for proactive safety management at work and allows our enterprises to adapt faster to changing conditions.

Registration of work permits for hazardous work: a digital approach

The implementation of the IT module «Work permit» will significantly simplify and improve the process of issuing work permits at our enterprises, providing higher accuracy, reliability and efficiency of the information entered, minimizing the likelihood of errors related to the human factor. The IT module «Work permit» in the «EIS OHSMS» allows you to centrally control the process of registration and execution of hazardous work, providing access to information in real time for all those involved in the

organization and conduct of hazardous work. In addition, the IT module allows you to quickly make the necessary changes to the issued work permits when working conditions change, notify all involved and interested parties, which makes the process more flexible and adaptive in modern production conditions.

The system for issuing electronic work permits at the next stage of its development will include not only standard procedures and requirements for issuing work permits, but also individual recommendations based on the analysis of data on previously carried out work at a specific workplace or site. This will allow us to take into account all the specifics of the work and ensure maximum safety for our employees and employees of contractors.

Production control: automation and process improvement

The implementation of the IT module «Production Control» in the «EIS OHSMS» allows real-time monitoring of compliance with the schedule of rounds (inspections) within the PC, the real state of workplaces, promptly record deviations from the norms, evaluate the implementation of measures based on the results of identified violations, etc.

The digital data of the production control results entered into the IT module «PC» also allows for a comprehensive analysis of the collected information and identify hidden threats that may be invisible with traditional control methods. This opens up new opportunities for incident prevention and minimizing workplace risks. In addition, automation of production control, when scaled to all enterprises of the Company, will reduce the documentary (paper) burden on specialists of OTIPB services of enterprises, giving them the opportunity to focus more on data analysis, trend identification, preventive measures and consultations on OHSMS.

Benefits of implementing digital solutions: increased efficiency and transparency

The introduction of digital solutions for the OHSMS provides our Company with a number of significant advantages. First of all, it is an increase in the efficiency of management processes in the field of occupational safety and industrial safety. Automation of routine operations can significantly reduce the time required to complete tasks, which in turn reduces costs and increases productivity. For example, digitalization of work permits allows you to reduce the time for their registration, and automation of production control reduces the time to identify and eliminate violations.

Another important advantage is the increased transparency of the processes. Digital solutions allow centralized storage and processing of all data related to the risk management of OHSMS, which makes the process more open and controlled. For example, the use of digital platforms for conducting behavioral security audits (PUB) allows you to quickly and easily access the results of their conduct, analyze them and take appropriate management measures aimed at developing a safety culture at the enterprise and increasing the level of trust on the part of employees.

In addition, digitalization reduces the likelihood of errors related to the human factor. Process automation reduces the number of manual operations and minimizes the risk of errors associated with incorrect data entry or misinterpretation of the information received. This is especially important in conditions where even a minor mistake can lead to serious consequences for the safety of production and employees.

The beginning of a long journey

The introduction of digital solutions for the OHSMS of ERG enterprises in Kazakhstan is not just a modernization of existing processes, but the beginning of a long way to transform the entire OHSMS risk management system in production. Digitalization opens up new opportunities to increase the efficiency and transparency of OHSMS management processes, improve safety culture and reduce the number of accidents at work. However, this process requires constant improvement and adaptation to new challenges. In the future, the Company plans to actively develop EIS OHSMS as a digital ecosystem, using its own developments and the best industry solutions.

The active implementation and development of digital solutions for the OHSMS Management System is a strategically important step towards creating a safe and efficient work environment. Companies and enterprises that are ready to invest in digitalization and improve their OHSMS processes today ultimately gain a competitive advantage in the long term through increasing the sustainability and success of the business.