SRSTI 86.01:86.35:86.37 https://doi.org/10.52081/tst.2026.v03.i15.089

FORMATION OF A SAFETY CULTURE BY REGISTERING DANGEROUS SITUATIONS AT ENTERPRISES OF THE OIL AND GAS INDUSTRY

Sarabekova U. Zh.[1]* PhD, associate professor
Emanex@mail.ru, https://orcid.org/0000-0001-9548-8333
Tynymbay N. T.[1] 2nd year Master's student of the EP 7M11279 «Life Safety and environmental protection"
naziratynymbay@gmail.com, https://orcid.org/0009-0001-6637-5185

Annotation. This article discusses modern approaches to ensuring occupational safety and industrial safety at enterprises of the oil and gas industry. The main direction of the study is the use of the method of registration of hazardous situations as a tool for the formation of safe behavior of personnel and management of production risks. The formation of a security culture, the leadership role of managers, factors affecting the behavior of employees and the importance of information technologies in the process of security management were analyzed. In the course of the study, existing approaches to the detection and registration of dangerous situations, the possibility of preventing industrial injuries and accidents were considered. It is established that the information obtained as a result of the registration of hazardous situations makes it possible to assess the actual state of working conditions, identify hazardous factors in advance and make timely management decisions to eliminate them. In addition, the use of electronic information systems increases the efficiency of collecting, processing, storing and analyzing registered data. The proposed approach makes it possible to move from an instructive method to a risk-based management system in Occupational Safety Management and is considered as a practical tool aimed at preventing industrial injuries and accidents.

Keywords. Occupational Safety, industrial safety, hazardous situation, hazardous behavior, safety culture, personnel behavior, risk management.

Introduction. Currently, the oil and gas industry is one of the high-risk production facilities. The complexity of production processes, the variety of technological equipment, the presence of hazardous and harmful production factors increase the requirements for ensuring occupational safety and industrial safety. In this regard, the Prevention of industrial injuries, accidents and emergencies is one of the most important areas of enterprise management.

Improving occupational safety indicators is not limited to fulfilling regulatory requirements. The level of security at the enterprise is directly influenced by the behavior of employees, the attitude of managers to safety, interaction in the labor collective and the established safety culture. Therefore, in modern approaches to industrial safety management, special importance is attached to the management of the human factor and the behavior of employees [1].

Security culture describes the level at which an organization prioritizes security issues. Its formation depends on the position of the management, the readiness of employees to work safely and the ability to timely identify and register information about dangerous situations. By registering dangerous situations, it becomes possible not only to act after the accident has occurred, but also to identify its possible causes in advance and take preventive measures.

The relevance of the study is determined by the need to reduce production risks at the enterprises of the oil and gas industry, the formation of safe behavior of employees and the improvement of an effective system for collecting and analyzing information on Occupational Safety. In this regard, the use of the method of registration of hazardous situations as a preventive tool for Occupational Safety Management has important scientific and practical significance [2-4].

The purpose of the study is to identify the influence of the method of registering hazardous situations at enterprises of the oil and gas industry on the formation of safe behavior

of employees and improving the efficiency of Occupational Safety and industrial safety management.

Research materials and methods. The study was aimed at studying the features of Occupational Safety and industrial safety management at enterprises of the oil and gas industry of Kazakhstan. As materials of the study, data on working conditions, industrial safety indicators, the results of registration of hazardous situations, data on accidents and accidents, as well as information related to the Fulfillment by employees of labor safety requirements were used.

In the course of the study, theoretical and experimental methods were used in a comprehensive manner. During the theoretical study, an analysis of scientific papers and methodological materials devoted to the problems of Occupational Safety, Industrial Safety, Safety Culture and management of personnel behavior was carried out.

To identify dangerous and safe behavior, methods of analyzing the causes of industrial accidents and accidents, studying statistical data in the industry, identifying hazardous factors in the workplace, interviewing employees and "brainstorming" were used. Based on the identified factors, the use of checklists for monitoring the behavior of employees was considered [5].

When analyzing employee behavior, the ABC model was used. In this model, pre-behavioral conditions (Activator), human action (behavior), and consequences of action (Consequence) are considered in interconnection. This approach allows us to identify situations that lead to risky behavior and replace them with situations that encourage safe behavior.

In the course of the study, methods of mathematical analysis, mathematical statistics, comparative analysis and experimental research were also used. The results of registration of hazardous situations were compared with the indicators of industrial injuries and emergency situations, and their relationship was evaluated.In addition, in order to determine the role of modern information technologies in Occupational Safety Management, the possibilities of using electronic registration systems were considered. Such systems allow centralized collection, storage, processing and analysis of data on hazardous situations [6].

Results and discussion. The results of the study showed that the systematic registration of dangerous situations makes it possible to strengthen the preventive nature of Occupational Safety Management. In the process of registering dangerous situations, factors are identified that did not directly lead to an accident, but may be the cause of injury or accident in the future. Thus, the management of the enterprise can take preventive measures based on the preliminary signs of risk, and not act only after the incident has occurred (Tab. 1).

Table 1 – Stages of Hazardous Situation Registration and Management

Stage	Activity	Result
1. Hazardidentification	Workplace observation and identification of hazardous factors	Potentialhazardsareidentified
2. Registration	Recording information about the hazardous situation	A hazard record is created
3. Analysis	Assessment of causes, frequency, and possible consequences	The level and nature of risk are determined
4. Decision-making	Development of preventive and corrective measures	Measures to eliminate or reduce the hazard are established
5. Monitoring	Verification of implementation and effectiveness of measures	The probability of hazard recurrence is reduced

The registration of dangerous situations also contributes to increasing the attention of employees to safety issues. An employee becomes a direct participant in the security process when he identifies a dangerous factor that he encounters in his workplace and provides information about it. This, in turn, creates conditions for the formation of a safety culture and increasing the personal responsibility of employees (Tab. 2).

Table 2 – Key Factors Influencing the Formation of a Safety Culture

No.	Keyfactor	Description	Expectedresult
1	Leadershiprole	Support for safety requirements, clear instructions, and timely response to hazardous situations	Increased employee responsibility for safety
2	Employeebehavior	Identification of unsafe actions and development of safe behavior	Reduced risk of occupational injuries
3	Registrationofhazardoussituations	Systematic identification and registration of hazardous factors and situations in the workplace	Early identification of potential hazards
4	Motivationandfeedback	Encouragement of safe actions and provision of positive feedback	Reinforcement of safe work practices
5	Informationtechnologies	Collection, storage, processing, and analysis of safety data	Improved effectiveness of management decisions

The role of leaders was also identified as an important factor in the study. The personal attitude of the manager to the requirements of Occupational Safety, giving clear instructions to employees, supporting safe behavior and timely reaction to registered dangerous situations affects the formation of a safety culture in the team. Therefore, the effectiveness of the hazard registration system is associated not only with the collection of information, but with the adoption of specific managerial decisions based on that information.An analysis of the prerequisites and its consequences affecting the risky behavior of employees based on the ABC model showed additional opportunities for the formation of safe behavior. It is important not only to punish the dangerous behavior of the employee, but also to encourage safe behavior, give positive feedback and consolidate safe work practices [7-8].

The introduction of modern information technologies will increase the efficiency of the system for registering dangerous situations. Through electronic systems, it is possible to collect the recorded information into a single database and analyze the frequency of dangerous situations, their location, causes and the nature of recurrence. Such information allows management to assess the real state of working conditions and allocate resources in priority areas of high risk.

The results of the study showed that the introduction of the method of registration of hazardous situations into the general Occupational Safety Management System creates conditions for the transition from an instructive approach to a risk-based approach. At the same time, the recorded data should be used not only for accounting, but also for making decisions on improving working conditions, eliminating hazardous factors and preventing industrial injuries.Thus, the registration of hazardous situations is considered as an effective tool for the formation of safe behavior of employees, strengthening the role of managers in Occupational Safety Management, and identifying production risks at an early stage. Its combination with

information technology makes it possible to promptly collect and analyze data on Occupational Safety, forming the basis for a systematic improvement in the level of safety at the enterprise.

Registration of dangerous situations as a means of changing the behavior of employees the search for the main ways to improve the indicators of PP and OT exists not only in the field of right-wing regulation and public administration, but also in the field of relations between the management of the enterprise and employees. To take accurate and timely measures, it is necessary to have reliable information about working conditions and the state of industrial safety. In this regard, these issues related to the management of personnel behavior, the role of managers in the management process of HR and HSE, the existing methods of obtaining information about the state of working conditions, as well as the relationship of these issues with the registration of dangerous situations are considered in more detail [9].

The realization did not come immediately that many accidents can be prevented by changing the attitude of employees to occupational safety issues when they are thousands of kilometers from the workplace. To understand why this issue is given priority in oil and gas companies, it is necessary to consider the development of a safety culture. Summarizing the global approach, we understand the" security culture " as a set of characteristics and characteristics of the activities of organizations and the behavior of individuals, which determines that attention is paid to security issues, as the highest priority, determined by their significance.

It should be noted the positive impact of this activity on the state of industrial safety and labor protection at hazardous production facilities. Nevertheless, despite significant achievements in the field of labor protection in the oil and gas industry and the general tendency to reduce the number of accidents and accidents, the task of further reducing the level of injuries remains relevant. The main cause of industrial injuries in an accident is the human factor, and it should be given priority.

Since the 80s of the last century, an approach aimed at managing the behavior of people engaged in the construction, operation and maintenance of production facilities has been actively developing, special attention is paid to the leadership qualities of managers of various levels and their impact on the behavior of employees and, ultimately, on Occupational Safety in the workplace. Unfortunately, in Russian companies, the level of Labor and technological discipline leaves much to be desired, and the issues of increasing efficiency and improving the quality of the work performed are often given a secondary role. It is no coincidence that the insufficient attention of the first managers to the issues of integrating the Industrial Safety Administration into the overall management system of companies is the main obstacle that does not allow taking effective measures to reduce accidents and industrial injuries. However, in the upbringing of the younger generation of young oil workers and gas workers, change for the better is inevitable and the leading role should be played by senior leaders – leaders of Russian oil and gas complex companies [9.

Therefore, the retraining of personnel, as well as the training of young specialists, future leaders of Russian oil and gas companies, are the main tasks of higher educational institutions. Only highly professional managers, employees and employees can ensure the effective operation of the enterprise. As a result-a high level of training is able to ensure safe and accident-free work, create working conditions that allow minimizing the level of industrial injuries and the number of accidents.

The idea of improving the state of PF and PF at oil and gas industry facilities by changing the safety culture was discussed at the European Conference on Offshore Europe. The result of these discussions was the integration of various non-governmental associations, mainly contractors from the UK working on the continental shelf, and the development of an appropriate action program to improve the safety culture (StepChange in Safety). Derived from the safety culture development model and presented below. This picture shows the development of a safety culture in companies in the oil and gas industry. It is necessary to pay attention to the stage of progress. It also takes a long enough time to move from one level to another, as this is due to

changes in the behavior of employees. The most important consequence of the safety culture development model is the overall development of the organization or the company as a whole through the introduction of modern principles of ensuring occupational safety.

As can be seen from the main characteristics of the different levels, the security culture achieves its highest development at levels 4 and 5. At the same time, achieving an acceptable level of safety culture is impossible without great hard work, the common efforts of all employees of the organization and work experience in New conditions in accordance with the new rules are required. It is clear that mistakes will be made along the way, but the end result will be impressive. Thus, the development of personnel and the organization as a whole are interrelated things. The safety culture model shows the dependence of the state of the safety culture on changes in the behavior of employees. In this regard, over the past 10-15 years, a new direction of security has been actively developing in international practice, on the basis of which the ability to change the behavior of personnel (Behavior Based Safety) has been obtained [10].

Sharing the above method.Risky behavior is behavior that pushes an employee to the risk of injury. Safe behavior aims to protect the employee from injury. After determining the factors of "dangerous" behavior of personnel, a checklist is developed for monitoring behavior in the workplace in order to replace the "dangerous" behavior (Figure 1) of personnel with "safe"behavior.

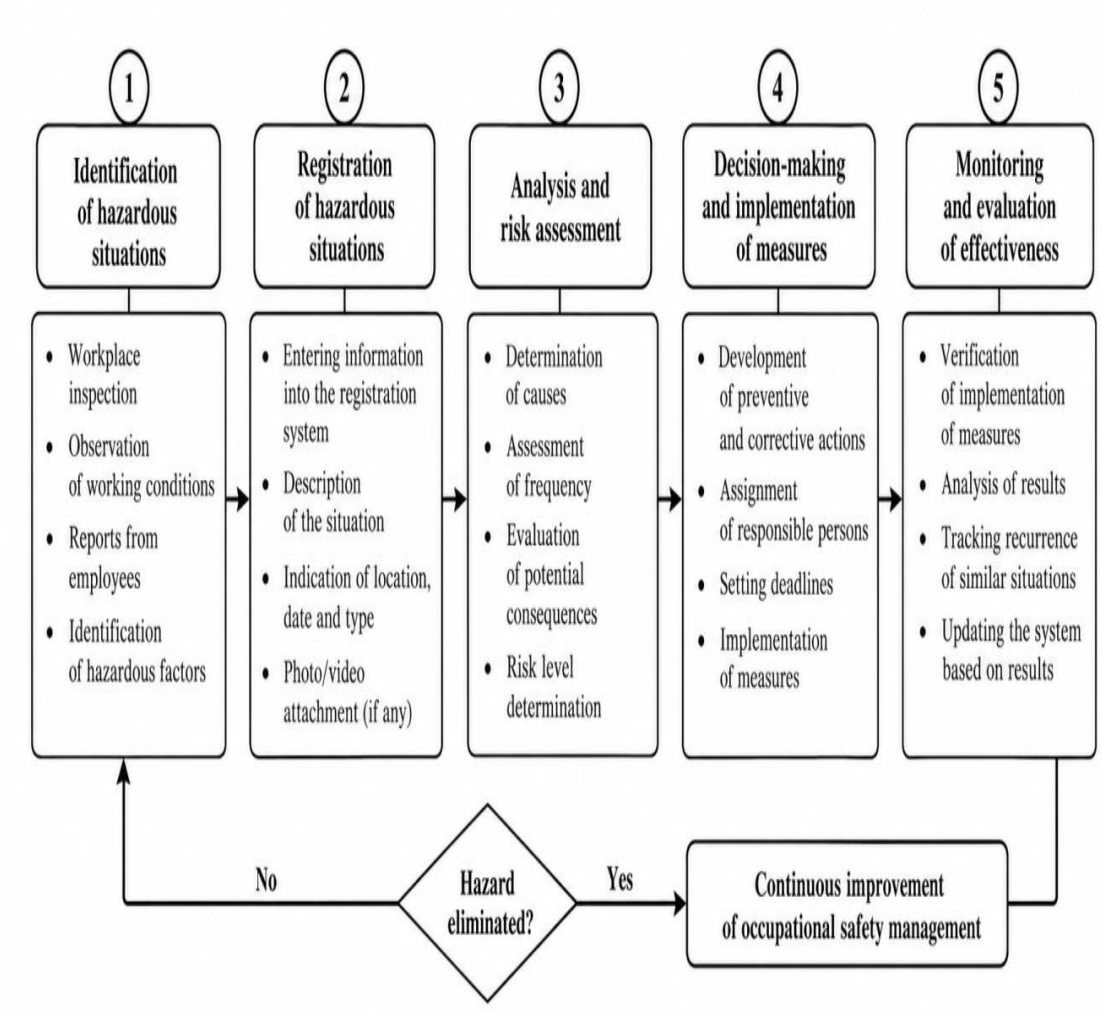

Figure 1 – Process of Hazard Identification, Registration and Risk Management

In order to use the right methods for managing employee behavior, it is necessary to have knowledge of how to motivate people to ensure safety. It is known that the technological process is aimed at improving the security situation, but what approaches can be trusted when describing the behavior of people, what studies were carried out scientifically and there is reliable evidence?

The two main methods generally recognized are Model A [all based on behavioral psychology developed by Skinner about 60 years ago] and the 50 principles of a general safety culture in E. S. Geller's book A Guide to safety Psychology, published in 1996. According to the ABC model (according to the first letters of words: activator (previous actions), behavior (behavior), consequence (consequences) behavior can (Table 3) be changed by changing situations before "dangerous" behavior or by analyzing the consequences of one or another perfect action.

Table 3 – ABC Model for the Formation of Safe Employee Behavior

ABC element	**Description**	**Significanceforsafetymanagement**
A – Activator	Conditions and factors occurring before an employee's action	Identification of conditions that may trigger unsafe behavior
B – Behavior	The employee's specific action or behavior	Identification and assessment of safe and unsafe actions
C – Consequence	Results occurring after the employee's action	Reinforcement of safe behavior through appropriate feedback
Result	Replacement of unsafe actions with safe actions	Development of sustainable safe work practices

Thus, the goal of the organization's management is to identify and eliminate negative situations that precede "dangerous" behavior, as well as to identify the behavior of personnel, the consequences of which are "safe" and motivate personnel to do so. As a result of using this method, the likelihood of "safe" behavior of employees increases. Another American psychologist E. S. Geller attaches great importance to the"behavioral aspect" and the employee motivation program. Its recommendations are based on practical experience and are aimed at improving interaction between employees in matters of ensuring safety. As one of the principles of E. S. Geller, the following can be cited: it is not enough to reward employees for the absence of accidents - it is necessary to motivate employees for "safe" behavior. Security is not a simple feeling that is confirmed by the 50th principles, many of which contradict generally accepted security laws. It is important that all employees of the organization participate in the process of ensuring security. Finally, there are standard interventions that are part of the existing program to change the behavior of employees in the organization in order to change "dangerous" behavior to "safe". Such interventions include the following elements: leadership, observations, and reaction. At the same time, the goal of leadership is to change the behavior of the organization's personnel. Considering that the main cause of accidents in the Russian oil and gas industry is the low level of Organization of work, do not doubt that the potential for changing the behavior of personnel by "intervening" at enterprises in the Russian oil and gas industry is enormous [10-11].

To manage the behavior of employees, it is necessary, first of all, to determine which behavior can be considered "dangerous".Currently, the following methods for determiningт "dangerous" behavior have been tested in practice:

-Analysis of accidents, accidents that may or may not occur;

-Analysis of current statistics by industry;

-Analysis of workflow Hazard sources;

-Employee interviews

* "Brainstorm"

Without delving into the issues of the basics of management, I would like to note that the management of production units is not fundamentally different from other types of business activities; risk management is included in the responsibility of a manager at any level. The general scheme of the instruction process-planning, execution, evaluation, feedback is shown below (Figure 2):

* Sufficiently detailed planning, taking into account possible options;

* Perform work according to the plan;

* Assess the situation and learn from the problems that arise and attempts to solve them;
* Feedback from the performer - what was done correctly and what was good;
* Implement improvements;
* Transfer the experience gained to people who are not part of your team.

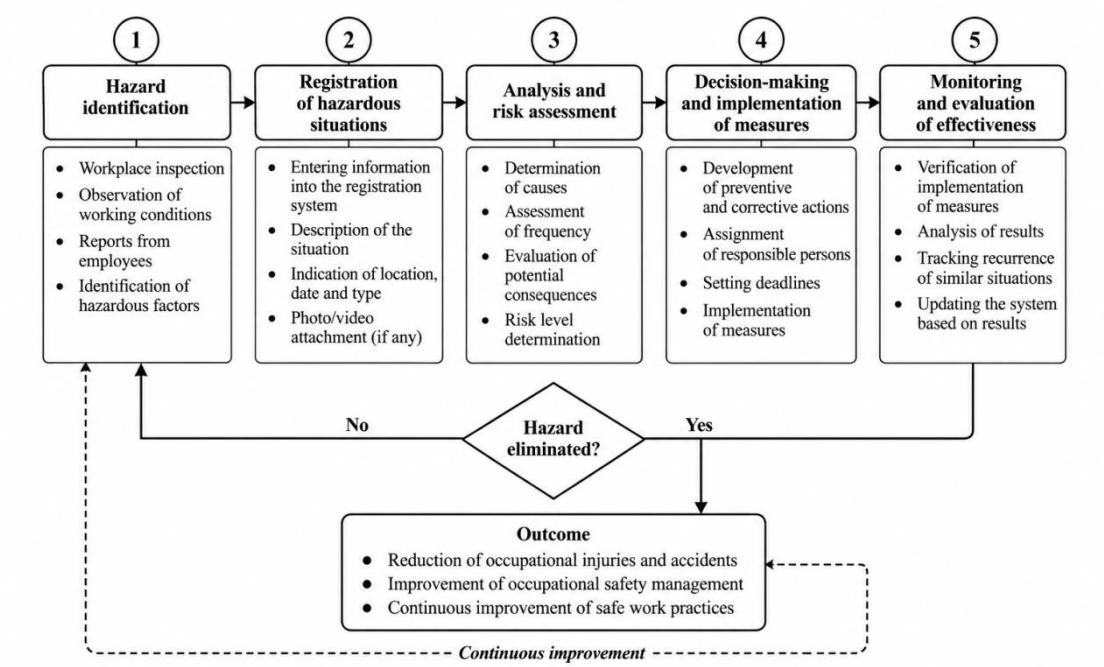

Figure 2 – Process of hazardous situation registration and risk management

From the point of view of the author, nine main aspects of the management of production units can be distinguished. White rectangles are a standard pbiot organization service. Dark rectangles are important milestones in the leader's activity. Dark shadow rectangles located in the corners are the four psychological aspects of management.It is known that the behavior of people in a team affects the personal qualities of a person, for example, attitude to work and the microclimate in the team. All these factors depend on each other. Research has shown that the behavior of Fisheries leaders and their commitment to safety principles are key factors for workers in determining fishing behavior and regarding compliance with safety regulations. The manager is able to prevent an incident by setting high personal standards, providing clear instructions for carrying out work, appointing competent employees for its implementation, forming the personal interest of employees in compliance with safety standards, and ensuring exemplary order in the workplace [12].

Its role is not only to ensure the fulfillment of production requirements. It is no coincidence that most managers admit that 80-90% of the problems that arise are associated not with a lack of technical competence, but with the organization of work and Personnel Management. Ultrasecurity reflects the effectiveness of the work and management of the enterprise and is determined primarily by the staffing and its motivation for more productive and high-quality work. The formation of the necessary personnel potential in the conditions of the functioning of the market and the rational use of human resources require a long-term personnel policy for the training of young personnel, the use of more advanced forms and methods of working with them. The leading role in the training and retraining of specialists in the field of PB and OT should be assigned to higher educational institutions with the active participation of oil and gas companies.

The personnel, human (intellectual) potential of the enterprise's employees has become a real, competitive resource with real value. Modern approaches to solving the complex tasks of enterprise development and disaster Injury Reduction lie in the creation of a team of leaders, an organizational culture of integrated corporate structures and the development of management

programs to stimulate the labor of workers, which include material and intangible incentives and higher stages - moral and inspiring motivation. In the Foreign world, the latter is the key to mobilizing the personnel, Labor and personal potential of employees of integrated corporate structures and allows you to solve any tasks.Of course, a new generation of employees of the Russian oil and gas industry is trained in the current conditions of the functioning of the market, where new technologies are introduced, including in the field of industrial, environmental safety and labor protection, and the attitude to the quality and results of labor of each employee is the basis for his professional growth and stability of the company in the market. Gradually comes the understanding that a security culture is the key to our future. The purpose of the work style aimed at changing the behavior of employees is to achieve a global level in ensuring safety, overcome the framework of compliance with the rules and adhere to the principles of continuous improvement.

At the highest level of security culture, people's actions depend on understanding the importance of problems, and this is not someone's priority today (Figure 3).

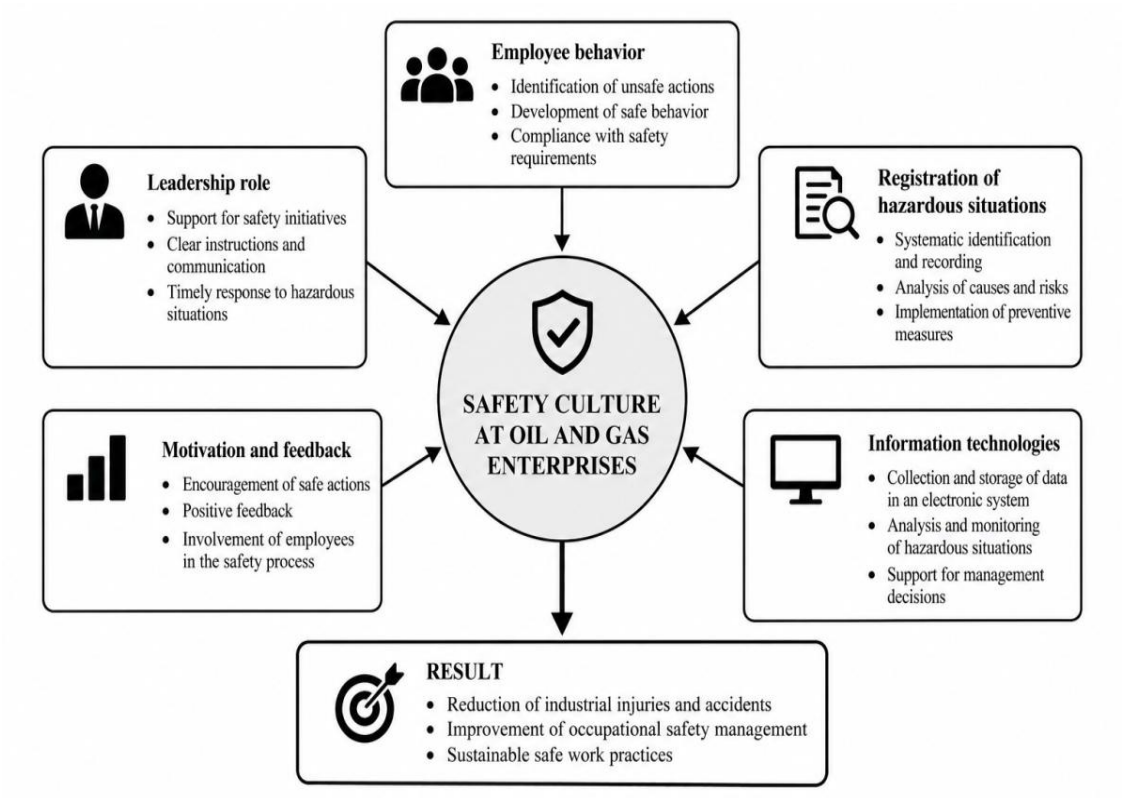

Figure 3 – Main factors influencing the formation of a safety culture at oil and gas enterprises

The influence of modern information technologies on the process of managing labor protection and industrial safety at enterprises in the oil and gas industry. New information technologies are rapidly changing our world, have a direct impact on production technologies, methods of organizing and developing society. Progress in the computer and communication industries has led to the development of systems that radically change the nature of management work, the structure of organizations and the way companies work, their relationship with other firms, and competition in the market. Therefore, understanding the impact of modern information technologies on the management process and using them to gain an advantage in competition, increase productivity and make effective decisions is an important aspect of the work of any modern company [13].

The world's transnational oil companies currently in operation are geographically distributed, multi-functional production and commercial systems across the planet. Without a

timely assessment and analysis of various indicators characterizing the state of production facilities, it is impossible to make decisions in the field of ensuring labor protection, industrial and environmental safety. Changes in the field of Information Technology have allowed global multinational companies to receive information from any regions in real time, store it in a single format, form reports and various databases, which ultimately contributes to minimizing production costs when implementing planned decisions made at the corporate level (Tab. 4).

Table 4 – Effectiveness of an Electronic Information System for Hazard Registration

Area	Electronicsystemcapability	Benefitfortheenterprise
Datacollection	Registration of hazardous situations in a unified system	Improved completeness and timeliness of information
Datastorage	Centralized storage of registered information	Improved accessibility and preservation of safety data
Dataanalysis	Analysis of frequency, location, causes, and recurrence of hazardous situations	Identification of priority risk areas
Monitoring	Tracking hazardous situations and corrective actions	Timely implementation of preventive measures
Managementdecisions	Providing analyzed information to management	Evidence-based and timely decision-making
Riskmanagement	Identification of high-risk areas	More effective allocation of resources and reduction of production risks

Scientific novelty of the theoretical provisions and results of experimental studies obtained by the author.The author has adapted, scientifically substantiated and used the method of registration of hazardous situations at enterprises in the oil and gas industry of Kazakhstan, which is of significant importance for improving the occupational safety conditions of employees. When applying the method of registration of a dangerous situation, theoretical provisions for the occurrence of accidents and accidents have been summarized, which make it possible to take into account various factors affecting the state of IC and IC at work. Taking into account the state of the safety culture and the motivation of people's behavior, for the first time, consistent actions were systematically analyzed to introduce a method of registering hazardous situations at the enterprises of the oil and gas industry of Kazakhstan [14-15].

For the first time, solutions were proposed and worked out to implement the method of registering dangerous situations in the electronic network of the enterprise. On the basis of a unified approach to obtaining, processing and analyzing data, recommendations were made to improve existing methods of obtaining information about the state of working conditions and industrial safety.For the first time, the results of the application of the method of registration of hazardous situations at the enterprises of the oil and gas industry of Kazakhstan were presented and an analysis of the relationship between injury indicators and dangerous situation registration cards was carried out, on the basis of which conclusions were made regarding the improvement of methods for improving the safety of working conditions of oil and gas industry workers.The development of theoretical provisions and the application of the method of registration of dangerous situations on their basis became possible due to the integrated use of theoretical and experimental research methods. The solution of a number of new tasks on labor protection and industrial safety set in the work was made possible thanks to the well-known achievements of the listed scientific disciplines and does not contradict their provisions, based on Strictly proven

conclusions of such fundamental and Applied Sciences as mathematical analysis,mathematical statistics, optimization theory and experimental planning.

Conclusion: The developed theoretical provisions and new solutions were experimentally tested.The method of registration of hazardous situations used in the dissertation is used by personnel and management in the field of industrial, significantly increases attention to the issues of environmental safety and labor protection, contributes to the search for the most effective solutions in production management and can be recommended for practical application to reduce injury by accident. The production activities of oil and gas industry enterprises aimed at reducing injuries, the risk of accidents, emergencies and associated costs lead to an improvement in the quality and safety of production and, ultimately, the successful financial and economic development of the enterprise.

The method of registration of hazardous situations is a practical tool for managing industrial, environmental and labor protection and will be more effective in preventing accidents and accidents. The results confirm a downward trend in accidents with injuries.

The recommendations proposed by the author on improving the working conditions of oil and gas industry workers through the use of the hazard registration method provide a consistent transition from a prescriptive approach in the field of safety to a risk assessment-based approach, as well as allow planning and organizing a system for recording data on working conditions and the state of industrial safety. Decisions made on the basis of high-quality and timely information on the state of working conditions help to reduce financial and human costs for the enterprise and reduce environmental and man-made risks as a whole. In addition, the individual theoretical results of the work are a certain contribution to the overall Occupational Safety Management System.

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МҰНАЙ-ГАЗ САЛАСЫ КӘСІПОРЫНДАРДА ҚАУІПТІ ЖАҒДАЙЛАРДЫ ТІРКЕУ АРҚЫЛЫ ҚАУІПСІЗДІК МӘДЕНИЕТІН ҚАЛЫПТАСТЫРУ

Сарабекова Ұ.Ж.[1], PhD, доцент
Тынымбай Н.Т.[1], **7**М11279 – «Өміртіршілігінің қауіпсіздігі және қоршаған ортаны қорғау» ББВ2-курс магистранты

[1]*Қорқыт Ата атындағы Қызылорда университеті, Қызылорда қ., Қазақстан*

Аннотация. Бұл мақалада мұнай-газ саласы кәсіпорындарында еңбек қауіпсіздігі мен өнеркәсіптік қауіпсіздікті қамтамасыз етудің заманауи тәсілдері қарастырылады. Зерттеудің негізгі бағыты – қауіпті жағдайларды тіркеу әдісін персоналдың қауіпсіз мінез-құлқын қалыптастыру және өндірістік тәуекелдерді басқару құралы ретінде қолдану. Қауіпсіздік мәдениетінің қалыптасуы, басшылардың көшбасшылық рөлі, қызметкерлердің мінез-құлқына әсер ететін факторлар және ақпараттық технологиялардың қауіпсіздікті басқspy процесіндегі маңызы талданды. Зерттеу барысында қауіпті жағдайларды анықтау мен тіркеудің қолданыстағы тәсілдері, өндірістік жарақаттану мен авариялардың алдын алу мүмкіндіктері қарастырылды.

Қауіптіжағдайлар тіркеу нәтижесінде алынған ақпарат еңбек жағдайларының нақты жай-күйін бағалауға, қауіпті факторларды алдын ала анықтауға және оларды жою бойынша уақтылы басқарушылық шешімдер қабылдауға мүмкіндік беретіні анықталды. Сонымен қатар, электрондық ақпараттық жүйелерді пайдалану тіркелген деректерді жинау, өңдеу, сақтау және талдау тиімділігін арттырады. Ұсынылған тәсіл еңбек қауіпсіздігін басқаруда нұсқамалық әдістен тәуекелге негізделген басқару жүйесіне көшуге мүмкіндік береді және өндірістік жарақаттану мен авариялық жағдайлардың алдын алуға бағытталған практикалық құрал ретінде қарастырылады.Мақалада мұнай-газ кәсіпорындарында қауіпті жағдайларды тіркеу арқылы еңбек қауіпсіздігін басқаруды жетілдіру және қауіпсіздік мәдениетін қалыптастыру.

Кілт сөздер. Еңбек қауіпсіздігі, өнеркәсіптік қауіпсіздік, қауіпті жағдай, қауіпті мінез-құлық, қауіпсіздік мәдениеті, персоналдың мінез-құлқы, тәуекелдерді басқару.

ФОРМИРОВАНИЕ КУЛЬТУРЫ БЕЗОПАСНОСТИ ПУТЕМ РЕГИСТРАЦИИ ОПАСНЫХ СИТУАЦИЙ НА ПРЕДПРИЯТИЯХ НЕФТЕГАЗОВОЙ ОТРАСЛИ

Сарабекова У. Ж., PhD, доцент
Тынымбай Н. Т. магистрант 2 курса ОП -7М11279 – Безопасность жизнедеятельности и охрана окружающей среды

Кызылординский университет имени Коркыт Ата, г. Кызылорда, Казахстан

Аннотация. В данной статье рассматриваются современные подходы к обеспечению безопасности труда и промышленной безопасности на предприятиях нефтегазовой отрасли. Основное направление исследований-использование метода регистрации опасных ситуаций как средства формирования безопасного поведения персонала и управления производственными рисками. Проанализировано формирование культуры безопасности, руководящая роль руководителей, факторы, влияющие на поведение сотрудников, и значение информационных технологий в процессе внедрения безопасности. В ходе исследования были рассмотрены существующие подходы к выявлению и регистрации опасных ситуаций, возможности предупреждения производственного травматизма и аварий. Установлено, что информация, полученная в результате регистрации опасных ситуаций, позволяет оценить фактическое состояние условий труда, заранее выявить опасные факторы и своевременно принимать управленческие решения по их устранению. Кроме того, использование электронных информационных систем повышает эффективность сбора, обработки, хранения и анализа фиксированных данных. Предложенный подход позволяет перейти от инструктивного метода управления безопасностью труда к системе риск-ориентированного управления и рассматривается как практический инструмент, направленный на предупреждение производственного травматизма и аварийных ситуаций.

Ключевые слова. Безопасность труда, промышленная безопасность, опасная ситуация, опасное поведение, культура безопасности, поведение персонала, управление рисками.