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Development of regulatory and technical documentation for the examination of equipment operating under pressure

Abstract

Main problem: the article is devoted to the development of regulatory and technical documentation (methodological recommendations) for equipment operating under pressure. The authors consider the main problems of industrial safety at hazardous production facilities of the Republic of Kazakhstan. The main problems that arise during industrial expertise are studied and described: the lack of an examination procedure and a single form of expert opinion, the lack of low-quality expertise, the lack of proper expertise of experts, the lack of development of a modern fleet of equipment testing laboratories. The authors have developed methodological recommendations based on the practical experience of expert organizations, the study of international experience and analysis of regulatory legal acts in force on the territory of the Republic of Kazakhstan.

Purpose: development of methodological recommendations containing a new approach to the examination, analysis of regulatory legal acts, regulatory and technical documentation in force on the territory of the Republic of Kazakhstan, study of international expertise experience.

Methods: deduction, modeling, comparative, comparative law.

Results and their significance: In the course of research, the article describes in detail the tasks of state regulation in the field of industrial safety in the Republic of Kazakhstan. The analysis of normative-legal acts and normative-technical documentation is carried out. Based on the analysis of international experience, the ways of solving problems in the field of industrial safety for the Republic of Kazakhstan are given. The methodological recommendations developed by e - contain a general procedure for conducting an examination for the extension of the operational period and for a permit for use and uniform requirements for the preparation of an expert opinion. The results of the article will reflect the problems that hinder the effective provision of industrial safety in the Republic of Kazakhstan and essentially suggest ways to solve them.

Keywords: industrial safety, methodological recommendations, regulatory and technical documentation, hazardous production facility, risk, expertise.

Introduction

Currently, close attention is paid to the examination of industrial safety, which allows obtaining permission for the use of technologies, technical devices, materials at hazardous production facilities in an authorized state body, to extend the period of safe operation of industrial facilities. Often, foreign manufacturers supply equipment of inadequate quality, bypassing the stage of checking compliance with the requirements of the standards and regulations of the importing country, which increases the risks of accidents and incidents at hazardous production facilities, and also leads to a deterioration in the quality of finished products. Currently, when conducting an examination on industrial safety of equipment, a number of acute problems arise, such as: the lack of an examination procedure and a single form of expert opinion, the lack of low-quality expertise, the lack of proper competence of experts, the lack of development of a modern fleet of equipment testing laboratories. As a result, the risk of accidents and incidents at a dangerous production facility increases, as well as the corruption component during procurement and tenders [1].

These problems arise due to deficiencies in the regulatory framework and regulatory documents in force on the territory of the Republic of Kazakhstan. Problems of ensuring industrial safety in the Republic of Kazakhstan, which may arise as a result of shortcomings in the current regulations establishing requirements for conducting an industrial safety examination. Thus, the topic of this scientific research is relevant and timely.

Materials and methods

The following methods are used in the article for the purpose of research:

- comparative (in particular, comparative law), deductions, - modeling.

Results

At the present stage, Kazakhstan takes experience in ensuring industrial safety from and from the Russian Federation, which is confirmed by similar requirements, and sometimes by the standards themselves.

Currently, when improving and developing new methodological recommendations, the following are taken into account:

- applied value;
- use at the moment (as an internal standard of an expert organization), in the future;
- high-quality examination;
- unification for equipment of simple structures;
- unification of requirements during the examination in order to obtain permission for the use of equipment and technical diagnostics.

The applicant can only be the owner of the equipment. The methodological recommendations apply to the examination of equipment types, and are also calculated for the future. Taking into account the international experience in the examination, the examination will be carried out only for dangerous technical devices, such as equipment operating under pressure, lifting mechanisms. The guidelines apply exclusively to equipment operating under pressure. But at the moment it is allowed to apply simple structures to equipment [2].

The place of examination at the installation site of the equipment during its trial run. The equipment must be in operation, except for diagnostics. Analysis of technical documentation is allowed to be carried out remotely. Conducting tests of physical and chemical factors in the workplace. The methods and scope of testing of physical and chemical factors are determined by an expert organization.

The tests are carried out at the point where the equipment is installed according to the plan (with the equipment disconnected). It is mandatory to measure the general background in the room. Next, the equipment is started, and measurements are carried out at the point of installation of the equipment. Measurements of the general background in the room are carried out. According to the test results, experts conclude about the influence of harmful factors generated from exported equipment. Requirements for specialists, qualification (category), which depends on the experience as an expert and the number of examinations conducted [3].

The sections of the expert opinion include: the title page, the content of the expert opinion, the section "the name of the expert opinion", the section "the content of the introductory part", the section "Information about the Customer's organization", the section "The name of the object of expertise", the section "Information about the technical documents considered during the examination for the object of expertise", the section "Information on the probability of exposure to harmful and hazardous production factors", section "Characteristics and purpose of the object of examination", section "Results of the examination", section "Final part".

The title page indicates:

- serial number of the conclusion, the name of the expert opinion, including the name of the exported technical device (indicating the factory and/or serial numbers);
- approved by the director of the expert organization.

The content of the expert opinion is drawn up on the second sheet of the conclusion. Sections and page number are specified (subsections are allowed to be included).

The section "the name of the expert opinion" indicates: the name of the expert opinion and the name of the equipment, the name of the manufacturer and the country of the manufacturer.

The section "content of the introductory part" of the expert opinion consists of subsections: the basis for the examination, information about the expert organization, information about the experts of the expert group.

The basis for the examination. This subsection specifies the contract number and the date of its conclusion. It is necessary to specify the main regulatory documents on the basis of which the examination is carried out.

Information about the expert organization. The information indicates: the main activity of the expert organization; details (addresses of the actual and legal location); number and date of issue of

the certificate for the right to conduct an industrial safety examination (including industries); surname, first name, patronymic of the first head of the expert organization.

Information about the experts of the expert group. Information about the expert group is indicated: the order on the creation of the expert group, the head and members of the expert group (surname, first name, patronymic; profession; education, information about the passage of industrial safety training).

The section "Information about the Customer's organization" specifies: the main activity of the Customer organization, details (addresses of the actual and legal location), the main activity of the organization (including the branch of the organization), surname, first name, patronymic of the first head of the organization.

In the section "Name of the examination object" there is: the name of the expert opinion and the name of the equipment (factory number), the year of manufacture, the name of the manufacturer and the country of origin.

The location of the equipment is indicated (the name of the company operating the technical device and the address of its actual location).

In the section "Information about the technical documents considered during the examination for the object of examination", the following documents are analyzed:

- constituent documents of the customer organization (Charter, regulations, documents on registration of a legal entity);
- design, engineering, operational, repair documentation for the technical device, as well as for the technological process in which this device is included;
- industrial safety declarations for a hazardous production facility;
- passport for the technical device, the manufacturer's manual (or instruction manual);
- internal instruction manual for operation and maintenance of the technical device;
- internal instructions for installation, repair, inspection and control of the estimated service life;
- certificate of the quality of installation of a technical device;
- the scheme of inclusion of the technical device in the technological line;

The section "Information on the probability of exposure to harmful and hazardous production factors" includes the following subsections:

- "information on external inspection (evaluation) of equipment";
- "information about the tests carried out at the manufacturer";
- "information about the tests carried out during the certification of equipment";
- "information about the conducted tests of the facility's operating environment";
- "information on conducting tests by non-destructive testing".

The subsection "Information on external inspection of a technical device" includes visual/external inspection by an expert (correctness of placement, presence of defects, serviceability of auxiliary equipment, compliance with safety, fire and industrial safety, electrical safety requirements).

In the subsection "Information on tests carried out at the manufacturer", the following information is indicated: numbers, date, results of test reports carried out at the exit control by the laboratory on the basis of the manufacturer and/or independent accredited laboratories involved (in the absence of such on the basis of the enterprise) [4].

In the subsection "Information on the conducted tests of the facility's operating environment" the following is indicated: numbers, date, results of test reports of physical and chemical factors.

In the subsection "Information on conducting tests by non-destructive testing", the results of the report on the technical diagnostics of the technical device are indicated (the date of the diagnosis, the methods of non-destructive testing are used).

The section "Characteristics and purpose of the object of expertise" consists of subsections: general information; principle of operation; main technical characteristics.

The subsection "General information" indicates: the name of the equipment, purpose, scope and industry of application. If there are several models of a technical device and they generally have minor differences, then a table of differences between the models of technical devices is provided.

In the subsection "Principle of operation", the technological process in which the technical device is included is generally indicated, the principle of operation of the technical device is indicated in detail.

Diagrams (figures) include: the design of the technical device (indicating the details of the structure; dimensions; material (steel grade)).

If the steel grades are indicated in the passport in accordance with foreign regulatory documents, then it is necessary to identify (bring) in accordance with GOST.

Information based on passport data and design documentation for a technical device.

The subsection "Main technical characteristics" indicates the main technical characteristics of the device. The parameters of operation of this technical device are also specified.

The section "Results of the examination" includes the following subsections:

- information about the limit parameters of all harmful and dangerous factors arising during the operation of a technical device;

- information about design solutions that ensure that the values of harmful and hazardous production factors are brought to acceptable parameters, the level of their reliability.

- information on the compliance of the data obtained as a result of the examination with the norms in force in the Republic of Kazakhstan;

- information about the risk assessment of failures and consequences.

In the subsection "Information on the limiting parameters of all harmful and dangerous factors arising during the operation of a technical device", it is indicated: characteristics of the working environment, information about the danger of the working environment, signs of poisoning, analysis of information about the tests of the operating environment of the facility.

In the subsection "Information on design solutions that ensure bringing the values of harmful and hazardous production factors to acceptable parameters, the level of their reliability", the analysis of design solutions for compliance with industrial safety requirements, regulatory documents in force on the territory of the Republic of Kazakhstan is carried out. Compliance with industry requirements of industrial safety, electrical safety, fire safety, regulatory documents: GOST, ST. The identified inconsistencies are necessarily recorded in the Conclusion.

In the subsection "Information on the compliance of the data obtained as a result of the examination with the norms in force in the Republic of Kazakhstan", a generalized analysis of the data obtained is carried out, including: analysis of information, compliance with the industry and field of application, safety (admissibility) of inclusion in the technological process, analysis of technical documentation for compliance with the requirements of regulatory documents, compliance with the installation of a technical device.

The identified inconsistencies are necessarily recorded in the Conclusion [5].

In the subsection "Information on risk assessment of failures and consequences", an assessment of the risks of accidents is carried out. The standard methodology for determining the assessment of the probability of failure and the risks of emergency situations has been developed on the basis of the Standard [6].

The section "The final part" of the expert opinion provides reasoned conclusions, recommendations on technical solutions and measures (if necessary).

A comparative analysis of the developed methodological recommendations for the examination of equipment operating under pressure and the analysis of the current methodological recommendations and the current ones is given in Table 1.

Table 1 – Comparative analysis of the developed methodological recommendations for the examination and the current methodological recommendations

Proposed revision	Existing edition
Requirements for industrial experts: - the category depends on work experience; (minimum length of service – 5 years) and the number of examinations conducted; - training and testing of knowledge in personnel	Requirements for industrial experts: - higher technical education in the relevant industry; - work experience – at least 5 years; - training in certified training centers.
Establishes the duties of experts in terms of ensuring the reliability, objectivity of the results	Does not establish the duties of experts
Establishes the duties of experts in terms of ensuring the reliability, objectivity of the results	Does not establish the duties of experts
Contain uniform requirements for examination for obtaining a permit for use (Part 1) and technical diagnostics (Part 2)	It does not contain a unified approach to conducting an examination for obtaining a permit for use in an authorized body and technical diagnostics

Continuation of table 1

Take into account the risk-oriented approach	Do not take into account the risk-based approach
Contains a detailed procedure for the examination	Does not contain general information on the examination
Contains specific information for each section	There is no specific information for each section
Content of the expert opinion: title page content of the expert opinion 1 name of the expert opinion 2 introductory part 2.1 the basis for the examination 2.2 information about the expert organization 2.3 information about the experts of the expert group 3 information about the Customer organization 4 name of the object of examination 5 the purpose of the examination 6 information about the technical documents considered during the examination for the object of examination 7 Information about the probability of exposure to harmful and hazardous production factors 8 Characteristics and purpose of the object of expertise 8.1 General information 8.2 Operating principle 8.3 Main technical characteristics	The content of the expert opinion: 1) the name of the expert opinion; 2) the introductory part, including the basis for the examination, information about the expert organization, information about the specialists who conducted the examination of industrial safety, copies of the protocol for checking the knowledge of specialists on industrial safety, the availability of a certificate for the right to conduct an examination of industrial safety; 3) the list of objects of expertise to which the expert opinion applies; 4) information about the organization; 5) the purpose of the examination; 6) depending on the object of examination, information on the documents considered during the examination (design, design, operational, repair), technologies, technical devices and materials used at hazardous production facilities, hazardous technical devices, indicating the year of manufacture, manufacturer and country of manufacturer, brand, model, type, factory (identification) number or other information necessary for identification; 7) information about the equipment used during the examination of industrial safety
9 The results of the examination; 9.1 information on the limit parameters of all harmful and dangerous factors arising during the operation of a technical device 9.2 information about design solutions that ensure that the values of harmful and hazardous production factors are brought to acceptable parameters, the level of their reliability 9.3 information on the compliance of the data obtained as a result of the examination with the norms in force in the Republic of Kazakhstan 10 the final part 11 Appendices (Establishment of a specific list of required documents)	8) a brief description and purpose of the object of expertise; 9) the results of the examination; 10) the final part with reasoned conclusions, recommendations on technical solutions and measures; 11) appendices containing a list of normative legal, technical and methodological documentation used in the examination, acts of tests performed; 12) information on the probability of exposure to harmful and hazardous production factors on production personnel, the population, the environment, the degree of their damaging effects during operation, in case of accidents, incidents; 13) information on the compliance of the data obtained as a result of the examination with the norms in force in the Republic of Kazakhstan. 14) information on the limit parameters of all harmful and dangerous factors arising during the operation of a technical device; 15) information about design solutions that

Continuation of table 1

	ensure that the values of harmful and hazardous production factors are brought to acceptable parameters, the level of their reliability
Contains a standard program for conducting an industrial safety examination	Missing
Contains Standard programs for technical diagnostics of equipment	Contains Standard programs for technical diagnostics of equipment elements
Contains a typical methodology for determining the probability of failure and the risks of emergency situations"	Missing
Provides for the preparation of a calendar plan for complex technical devices or similar technically simple more than 2 units	Provides for the mandatory preparation of a calendar plan, regardless of the number and simplicity of the device
Provides for the extension of the operational life of no more than 5 years.	Provides for the extension of the operational period at the discretion of the expert organization

Discussion

The examination is carried out exclusively on one technical device. For a group of similar technical devices, the examination is carried out separately. With the preparation of an expert opinion for each model of equipment. The assessment of the technical condition of equipment operating under pressure in order to extend its operational life is carried out on the basis of technical diagnostics.

The main objectives of the examination are:

- control of the technical condition of the examined technical device in order to determine compliance with the technical documentation of the manufacturer, as well as regulatory documents in force on the territory of the Republic of Kazakhstan;
- establishment of places of defects (damages);
- determination of the causes of malfunctions and failures in the operation of equipment;
- forecasting the technical condition of the device for the upcoming period of operation with trouble-free operation and/or determining the remaining resource.

In case of an incident or an accident, technical diagnostics of the equipment is carried out before its commissioning.

The manufacturer sets the standard service life of the equipment in its passport (or operating manual).

The equipment is allowed for further operation with positive results of its diagnosis, in which the following is established:

- the condition of the main, deposited metal meets the requirements of the "Rules for ensuring industrial safety during operation of equipment operating under pressure", regulatory and technical documentation in force in the Republic of Kazakhstan;
- corrosion and erosive wear, changes in the geometric dimensions of equipment elements provide normative safety margins.

Technical diagnostics of equipment that has fulfilled the standard service life consists of:

- external, internal inspections of equipment surfaces;
- control of geometric dimensions (internal, external diameters; height of the flared sections of pipes; deflection; displacement of the edges of the joined elements, etc.);
- control of welded joints and zones of the base metal by non-destructive methods of flaw detection;
- control of wall thickness by non-destructive method;
- measurement of detected defects (corrosion ulcers, erosion damage, dents, bulges, cracks, etc.);
- measurement of the hardness of the material;
- laboratory tests of metal properties and structure,
- if necessary: the chemical composition of the metal of the main elements of the equipment (if necessary);
- hydraulic testing;

- forecasting the terms and conditions of further operation of the equipment. The possibility, conditions, and terms of further operation with acceptable operating parameters are determined by the results of technical diagnostics.

Depending on the nature, degree, and location of damage to equipment elements, diagnostics can be carried out in full or in part.

With positive results of technical diagnostics, the equipment can be allowed for further operation.

The permissible service life of the vessel is established by the organization issuing the technical conclusion on the basis of a diagnostic examination.

This period should not exceed - 5 years.

The equipment that has fulfilled its regulatory operational period is required to be carried out within 1 year from the day before the end of the designated regulatory period.

In case of changes and additions, the introduction of regulatory legal documents establishing more stringent requirements for technical diagnostics, admission criteria, technical diagnostics for equipment that have been diagnosed, is carried out within 2 years before the end of the service life.

The expert opinion is issued on the letterhead of the expert organization in at least two copies (one copy for the expert organization and the Customer).

The title page indicates:

- serial number of the conclusion, the name of the expert opinion, including the name of the exported technical device (indicating the factory and/or serial numbers);
- approved by the director of the expert organization.

Conclusions

Transform the current model by:

- stricter requirements for the qualification of industrial safety experts;
- creation of independent certification organizations in the field of industrial safety, performing control and supervisory functions at the OPO, training of experts;
- development and implementation of an innovative policy in the field of industrial safety, designed for continuous improvement;
- development and implementation of standards, taking into account risk assessment, designed for the future (automation of equipment, validation of control methods).
- creation of a unified association of advanced scientific organizations, expert organizations, major industrial leaders, certification organizations in the field of industrial safety. This association would allow: to develop and support Policies, to voice current problems and solve them in a timely and substantive manner, to develop standards, to introduce achievements of the scientific and technical process (including modern equipment);
- cooperate with relevant associations of European countries.

THE LIST OF SOURCES

1 Постановление правительства РФ от 16 сентября 2020 года № 1477 «О лицензировании деятельности по проведению экспертизы промышленной безопасности». – [Электронный ресурс]. – Режим доступа: <https://docs.cntd.ru/document/565798085>

2 Приказ РК и.о. Министра индустрии и инфраструктурного развития Республики Казахстан от 6 апреля 2020 года № 186 «Об утверждении Правил оказания государственной услуги "Аттестация юридических лиц на право проведения работ в области промышленной безопасности». – [Электронный ресурс]. – Режим доступа: <https://adilet.zan.kz/rus/docs/V2000020340>.

3 Федеральный Закон «О промышленной безопасности опасных производственных объектов» от 21 июля 1997 г. № 116-ФЗ. – [Электронный ресурс]. – Режим доступа: <https://docs.cntd.ru/document/9046058>

4 Закон РК «О гражданской защите» от 11 апреля 2014 года № 188-V ЗРК. – [Электронный ресурс]. – Режим доступа: <https://adilet.zan.kz/rus/docs/Z140000188>.

5 Приказ Министра по инвестициям и развитию Республики Казахстан от 30 декабря 2014 года № 358 «Об утверждении Правил обеспечения промышленной безопасности при эксплуатации оборудования, работающего под давлением». – [Электронный ресурс]. – Режим доступа: <https://adilet.zan.kz/rus/docs/V1400010303>.

6 Приказ федеральной службы по экологическому, технологическому и атомному надзору от 15 декабря 2020 года № 536 «Об утверждении федеральных норм и правил в области

промышленной безопасности "Правила промышленной безопасности при использовании оборудования, работающего под избыточным давлением». – [Электронный ресурс]. – Режим доступа: <https://docs.cntd.ru/document/573275722>.

REFERENCE

- 1 Postanovlenie pravitelstva RFot 16 sentiabria 2020 h. «O liyenzirovaniі deiatel'nosti po provedeniіu ekspertizy promyshlennoi bezopasnosti» [The Resolutions of the Government of the Russian Federation of September 16, 2020 № 1477 "On Licensing Activities for Conducting Industrial Safety Expertise"]. egfntd.kz. Retrieved from <https://www.egfntd.kz/rus/tv/398580.html> [in Russian].
- 2 Prikaz RK i.o. Ministra indusrii i infrastruktornogo razvitiia Respubliki Kazakhstan ot 6 apreliia 2020 h. № 186 [The Order of the RK Acting Minister of Industry and Infrastructure Development of the Republic of Kazakhstan of April 6, 2020 № 186 «On approval of the Rules for the provision of public services" Certification of legal entities for the right to carry out work in the field of industrial safety»]. adilet.zan.kz. Retrieved from <https://adilet.zan.kz/rus/docs/V2000020340> [in Russian].
- 3 Federalnyi Zakon «O promyshlennoi bezopasnosti na opasnykh proizvodstvennykh obektov» ot 21 iuliia 1997 h. № 116-FZ [The Federal Law of July 21, 1997 № 116-FZ "On industrial safety of hazardous production facilities"]. docs.cntd.ru. Retrieved from <https://docs.cntd.ru/document/9046058>[in Russian].
- 4 Zakon RK «O hrazhdanskoi zashchite» ot 11 apreliia 2014 h. № 188-V ZRK [The Law of the Republic of Kazakhstan of April 11, 2014 № 188-V ZRK "On Civil Protection"]. adilet.zan.kz. Retrieved from <https://adilet.zan.kz/rus/docs/Z1400000188>[in Russian].
- 5 Prikaz Ministra po investitsiiam i razvitiu respubliki Kazakhstan ot 30 dekabriia 2014 h. № 358 «Ob utverzhdenii Pravil obespecheniia promyshlennoi bezopasnosti pri ekspluatatsii oborudovaniia, rabotaiushcheho pod davleniem» [The Order of the Minister for Investment and Development of the Republic of Kazakhstan of December 30, 2014 №358 "On approval of the Rules for ensuring industrial safety during the operation of equipment operating under pressure"]. adilet.zan.kz. Retrieved from <https://adilet.zan.kz/rus/docs/V1400010303>[in Russian].
- 6 Prikaz federalnoi sluzhby po ekolohicheskomu, tekhnolohicheskomu i atomnomu nadzoru ot 15 dekabriia 2020 h. № 536 «Ob utverzhdenii federalnykh norm i pravil v oblasti promyshlennoi bezopasnosti «Pravila promyshlennoi bezopasnosti pri ispolzovanii oborudovaniia, rabotaiushcheho pod davleniem» [The Order of the Federal Service for Environmental, Technological and Nuclear Supervision of December 15, 2020 № 536 "On approval of federal norms and rules in the field of industrial safety" Industrial safety rules when using equipment operating under excessive pressure"]. docs.cntd.ru. Retrieved from <https://docs.cntd.ru/document/573275722> [in Russian].

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Қысыммен жұмыс істейтін жабдыққа сараптама жүргізу бойынша нормативтік-техникалық құжаттаманы әзірлеу

Мақала қысыммен жұмыс істейтін жабдыққа арналған нормативтік-техникалық құжаттаманы (әдістемелік ұсыныстарды) әзірлеуге арналған. Авторлар Қазақстан Республикасының Қауіпті өндірістік нысандарындағы өнеркәсіптік қауіпсіздіктің негізгі мәселелерін қарастырды. Өнеркәсіптік сараптама жүргізу кезінде туындайтын негізгі мәселелер зерделенді және сипатталды: сараптама жүргізу тәртібінің және сараптамалық қорытындыны ресімдеудің бірыңғай нысанының болмауы, сапасыз сараптаманың болмауы, сарапшылардың тиісті құзыретінің болмауы, сынақ зертханалары жабдықтарының қазіргі заманғы паркін дамытудың болмауы. Авторлар сараптама ұйымдарының практикалық тәжірибесі, халықаралық тәжірибені зерделеу және Қазақстан Республикасының аумағында қолданылатын нормативтік-құқықтық актілерді талдау негізінде әдістемелік ұсынымдар әзірледі. Қысыммен жұмыс істейтін жабдыққа сараптама жүргізу және қолданыстағы әдістемелік ұсыныстарды талдау бойынша әзірленген әдістемелік ұсынымдарға салыстырмалы талдау жүргізілді. Авторлар бақылау-қадағалау функцияларын жүзеге асыратын өнеркәсіптік қауіпсіздік

саласында тәуелсіз сертификаттау ұйымдарын құру бойынша ұсынымдар, сондай-ақ сараптама жүргізу кезінде тәуекелге бағдарланған тәсіл ұсынды.

Зерттеу барысында мақалада Қазақстан Республикасындағы өнеркәсіптік қауіпсіздік саласындағы мемлекеттік реттеудің міндеттері егжей-тегжейлі сипатталған. Нормативтік-құқықтық актілер мен нормативтік-техникалық құжаттамаға талдау жүргізілді. Халықаралық тәжірибені талдау негізінде Қазақстан Республикасы үшін өнеркәсіптік қауіпсіздік саласындағы мәселелерді шешу жолдары келтірілген. Өзірленген әдістемелік ұсынымдар пайдалану мерзімдерін ұзартуға және қолдануға рұқсатқа сараптамалық қорытындыны ресімдеу бойынша бірыңғай талаптарға сараптама жүргізудің жалпы тәртібін қамтиды баптың нәтижелері Қазақстан Республикасында өнеркәсіптік қауіпсіздікті тиімді қамтамасыз етуге кедергі келтіретін мәселелерді көрсетуге және мәні бойынша оларды шешу жолдарын ұсынуға мүмкіндік береді.

Түйінді сөздер: Өнеркәсіптік қауіпсіздік, әдістемелік ұсынымдар, нормативтік-техникалық құжаттама, қауіпті өндірістік нысан, тәуекел, сараптама.

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Разработка нормативно-технической документации по проведению экспертизы оборудования, работающего под давлением

Статья посвящена разработке нормативно-технической документации (методических рекомендаций) для оборудования, работающего под давлением. Авторами рассмотрены основные проблемы промышленной безопасности на опасных производственных объектах Республики Казахстан. Изучены и описаны основные проблемы, возникающие при проведении промышленной экспертизы: отсутствие порядка проведения экспертизы и единой формы оформления экспертного заключения; некачественная экспертиза; отсутствие должной компетенции экспертов; отсутствие развития современного парка оборудования испытательных лабораторий. Авторами разработаны методические рекомендации на основании практического опыта экспертных организаций, изучения международного опыта и анализа нормативно-правовых актов, действующих на территории Республики Казахстан. Авторами предложены рекомендации по созданию независимых сертификационных организаций в области промышленной безопасности, осуществляющие контрольно-надзорные функции, а также риск-ориентированный подход при проведении экспертизы.

В ходе исследований в статье подробно описаны задачи государственного регулирования в области промышленной безопасности в Республике Казахстан. На основании анализа международного опыта приведены пути решения проблем в области промышленной безопасности для Республики Казахстан. Разработанные методические рекомендации содержат общий порядок проведения экспертизы на продление эксплуатационного срока, разрешение применения. Результаты статьи позволят отразить проблемы, препятствующие эффективному обеспечению промышленной безопасности в Республике Казахстан и предложить пути их решения.

Ключевые слова: промышленная безопасность, методические рекомендации, нормативно-техническая документация, опасный производственный объект, риск, экспертиза.

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