

*Materials of Conferences***APPROACHES TO THE ORGANIZATION AND MONITORING OF PHYSICAL IMPACTS IN KAZAKHSTAN**

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Relevance. The need for monitoring of natural resources influence of physical factors on the environment in the Republic of Kazakhstan (RK) is regulated by law. However, the lack of guidance documents for industrial environmental control does not allow to organize the process of the monitoring and its control

Purpose. Develop methodological approaches to the organization and control of monitoring physical impacts on the environment and human health. Determine the types of monitoring, frequency and methodology of conducting.

Review of the literature. The concept of state environmental monitoring as “integrated system of observations on the state of the environment and natural resources in order to assess, forecast and monitor changes in their condition under the influence of natural and anthropogenic factors” is defined in the “Environmental Code”, Chapters 14, 16.

The article 131 of the Code establishes the requirements for the development of industrial environmental monitoring (IEM) program.

Duty of subsoil users to control physical effects in normal and emergency situations, environmental quality standards and emission, including the physical effects are regulated by the Environmental Code of Kazakhstan (ECRK) Article 1 item 48, 49, articles 23.25; Resolution of the Government of the Republic of Kazakhstan (RGRK) № 523 items 1.2.7, 1.5.2, 3.17, 3.17.16; Order of the Ministry of Environmental Protection №110-p, section 4, and the order of the Ministry of Environmental Protection №172- p item 3.3.b, Radiation – item 3.1.a.

In accordance with RGRK №523 item 3.17.16 to physical factors provided only operational (EMI).

Orders of the Minister of Environmental Protection, April 16, 2012 № 110-P and 379-number ø from December 11, 2013 approved Method of determination of emission standards in the environment. The paper describes a method for air-polluting chemicals. Permissible physical impact and methodology of the inventory of physical impacts are considered in the context of the impact on the air, the document does not contain methods for measurement, inventory forms and other types of reports for physical effects, which creates difficulties in processing the results

Order of the Minister of Environmental Protection, May 31, 2007 № 172-p approved list, forms and terms of exchange of information on the Unified State System for monitoring the environment and natural resources. Ministry of Environmental

Protection charged with monitoring for radiation background. Ministry of Health of the Committee of State Sanitary and Epidemiological Surveillance – for the effective dose rate of gamma radiation on the open space, noise in residential areas and the performance of regulatory instruments governing sanitary and epidemiological welfare of the population (Sanitary rules and norms (SRN), hygienic standards).

Methods of study The study used an analytical, historical, normative methods.

The results of the study. At the initial stage of the analysis of legal documents, determine the physical factors that are subject to control.

In all legal documents as a physical factor is described by the noise. In ECRK as physical factors is described as vibration, magnetic and other physical fumes (article 1 item 48). During an emergency expands the parameters analyzed physical factors, which along with the noise, vibration, include radiation, electromagnetic, temperature, light or other physical adverse effects (article 1 item 49). By the standards of environmental quality standards are established in accordance with the physical attributes of the environment, including the maximum permissible levels of noise, vibration, magnetic fields, radioactivity, heat, and other physical effects (Article 23 ECRK). By the standards of emissions are the amount of heat, noise, vibration, ionizing radiation and other physical influences (Article 25 ECRK).

Thus, different regulations and different sections ECRK defined to control different physical impacts.

Conducting environmental baseline studies for the physical factors stipulated by normative legal documents of the Republic of Kazakhstan (RGRK № 480), as well as monitoring of the effects and issues (RGRK №5 23).

Methods of monitoring regulations establishing maximum permissible levels of the corresponding physical factors are presented in Table.

We propose to carry out IEM of physical factors such as operational, emissions and impact on the areas of noise and vibration equipment, sources of electromagnetic and ionization-of ionizing (radioactive) radiation: rigs, drill cuttings, generators, pumps, etc 1 times per year. Projects can be use materials of current control of other organizations: the Agency for Consumer Protection, Materials Inventory physical effects, PSLAL, Certification of workplaces.

With group arrangement of artificial structures to carry out measurements on the distal location of the islands in 4 geographic areas.

The list of controlled physical factors is made using natural resources.

Operational environmental monitoring of the radiation situation in the performance of planned drilling operations, as well as in areas receiving

trap and temporary storage of oily sludge, temporary storage areas of equipment with sources of ionizing radiation.

During the IEM are taken into account the observations of previous years.

The results of industrial monitoring of physical factors are made in accordance with the lists,

forms and terms of the exchange of information on the management, approved by the Order of the MEP № 172-p of 31.05.2007 "United State monitoring system of environment and natural resources" and are used to assess the state of the environment within the reference to a common methodological basis.

Normative documents RK on methods and standards of physical impacts

Physical factor	Operating Area		On sanitary protection and residential area	
	Methods for determination of	Standards	Methods for determination of	Standards
Noise	SSRK 12.1.050-86	SSRK 12.1.003-83	SSRK 23337-78	CH PK 2.04-03-2011
Vibration	SSRK 31319-2006 SSRK 31192.2-2005	RGRK № 168 SSRK 31192.1-2004	* SSRK 31191.1-2004 (ISO 2631-1:1997) SSRK 31191.2-2004 ISO 2631-2:2003	**
The electromagnetic field industrial frequency	SRK 1150-2002	SRK 1150-2002	SRK 1150-2002	SRK 1150-2002
The electromagnetic field radio	SRK 1151-2002	SRK 1151-2002	SRK 1151-2002	SRK 1151-2002
Electrostatic fields	SRK 1149-2002	SRK 1149-2002	–	–
The electromagnetic field workplaces operators of personal computers and video display terminals	RGRK 1430	RGRK 1430	–	–
Microclimate	SSRK 12.1.005-88	SSRK 12.1.005-88 RGRK № 168	–	–
Illumination	SSRK 24940-96	BCRK 2.04-02-2011 RGRK № 168	–	–
Ionizing (Radiation Incident)	Order of the Chairman of the Committee of State Sanitary and Epidemiological Surveillance 8 September 2011 №194 Guide P 2.2. / 2.6.1. 1195 – 03	RGRK 201	Приказ 194	RGRK № 202

Notes: * SRN 3.01.032-97 № 3.05.038-97,
** SRN № 3.01.032-97.

The frequency of monitoring and reporting Annual (in four climatic seasons (Article 269 ECRK) taking into account conditions of operation of the state conservation area north of the Caspian Sea. Propose to reduce to 2 times a year;

Reporting – Annual consolidated as part of the monitoring report in-ones for 3 months after the reporting period

Conclusions. We have recommended:

- monitor physical factors conducts as emissions, operational and impact;
- list of physical factors to determine the presence of sources;
- use materials of current control of other organizations: the Agency for Consumer Protection,

Materials Inventory physical effects, PSLAL, Certification of workplaces;

- When planning to use the TEM physical effects designed scheme developed by us;
- Multiplicity of environmental control 2 times during the warmer months;
- Always conduct baseline studies.

References

1. GOST 12.1.050-86 "Methods of measurement noise in the workplace".
2. GOST 23337-78 4 "Methods for measuring noise in residential areas and in residential and public buildings".
3. GOST 31191.1-2004 (ISO 2631-1: 1997) Vibration and shock measurement of whole-body vibration and evaluation of human exposure to Part 1: General requirements.

4. GOST 31191.2-2004 ISO 2631-2: 2003 Mechanical vibration and shock measurement of whole-body vibration and evaluation of human exposure to Part 2 vibration in buildings.
5. GOST 31297-2005 Noise Engineering method for determination of sound power levels of the industrial enterprises with multiple noise sources for the evaluation of sound pressure levels in the environment.
6. Standard ISO / IEC 17025-2009 General requirements for the competence of testing and calibration laboratories, General requirements for the competence of testing and calibration laboratories.
7. GOST 24940-96 Buildings and and facilities Methods of measuring light.
8. Code of the Republic of Kazakhstan dated January 9, 2007 № 212-III "Environmental Code of the Republic of Kazakhstan".
9. RGRK dated 18 April 2012 № 480 On approval of rules of organizing and conducting baseline environmental studies in conducting petroleum operations in the Kazakh sector of the Caspian Sea.
10. RGRK dated April 26, 2012 № 523 On approval of the Rules of the organization and conduct of industrial environmental monitoring during oil operations in the Kazakh sector of the Caspian Sea.
11. Order of the Chief State Sanitary Doctor of №194 from 08.09.2011 "On approval of guidelines for radiation hygiene".
12. Order of the Minister of Environment of the Republic of Kazakhstan dated 31 May 2007 № 172-p On approving the list, forms and deadlines for the exchange of information on the Unified State System Monitoring for Environment and Natural Resources.
13. Order of the Chairman of the Committee of State Sanitary and Epidemiological Surveillance of September 8, 2011 № 194 On approval of the "Guidelines on radiation hygiene".
14. Sanitary rules "Sanitary requirements to air quality in urban and rural areas, soils and their security, content areas of urban and rural settlements, the conditions of work with sources of physical factors that affect human" Approved by the Resolution of the Government of the Republic of Kazakhstan dated 25 January. – 2012. – № 168.
15. SN RK 2.04-03-2011 Protection against noise.
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17. Guidelines on Hygienic assessment and prevention of adverse effects of industrial vibration № 1.05.001-95SRK 1151 – 2002 Radio frequency electromagnetic fields. Permissible levels and requirements for monitoring.
18. SRK 1151 – 2002 Radio frequency electromagnetic fields. Permissible levels and requirements for monitoring.
19. Hygienic standards "Sanitary requirements for radiation safety" approved by the Decree of the Government of the Republic of Kazakhstan of February 3. – 2012. – № 201.

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