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Guide to emergency environmental situations and response to them in “Samruk-Energy” Group of Companies

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1. Purpose and scope

1.1. This Guide to emergency environmental situations and response to them (hereinafter – the Guide) provides a comprehensive description of:

- the requirements and effective approaches within the subsidiaries of “Samruk-Energy” JSC for timely response to potential environmental emergencies as well as those that have already occurred.

- measures aimed at preventing and managing emergency environmental situations, reducing damages and losses related to employee and public safety, environmental impact, financial and legal consequences, and the reputation and image of the Company.

- appropriate measures to prevent and mitigate identified risks and hazardous production factors within the Company.

1.2. This Guide is applicable to all subsidiaries, including all employees and contractors involved in work and service provision.

1.3. The application of this Guide to subsidiaries can be achieved through the development and approval of a similar Guide or by aligning the internal documents of subsidiaries with the content of this Guide in a manner prescribed by the Company. However, it is crucial to ensure that the requirements outlined in this Guide are not diminished in comparison to similar programs and internal documents of subsidiaries.

1.4. This Guide, along with the internal regulations of subsidiaries regarding emergencies and response, should be revised and updated following natural disasters and emergencies occurring in the areas where subsidiaries operate or within the subsidiaries themselves. Furthermore, it should be regularly reviewed to incorporate more modern and effective measures for emergency situations and response as they are identified.

2. Terms and abbreviations

Term abbreviation	Definition
Accident situation	A combination of conditions and circumstances that pose a potential risk of accidents and other incidents, which may result in explosions, fires, poisoning, death, or injury (including illness) to individuals and animals, as well as the destruction of buildings, structures, and/or technical devices, and the uncontrolled release of hazardous substances.
AS	Accident situations
“Samruk-Energy” JSC Group of Companies	Samruk-Energy JSC and legal entities where “Samruk-Energy” JSC holds 100 percent of voting shares (participatory interests) either through direct ownership or under trust management.
PFL	Petroleum, fuel and lubricants
Subsidiaries	Subsidiaries
Identification of hazards in emergency situations	the process of identifying and recognizing the existence of hazards in hazardous industrial facilities, as well as determining their characteristics
Company	Collective name for “Samruk-Energy” JSC and its subsidiaries

Risk assessment	Defining the numerical and/or descriptive measure of the identified risk through assessing the probability of its occurrence and potential damage to "Samruk-Energy" JSC.
Emergency situation/ State of emergency	a situation that arises in a specific area as a result of an accident, fire, harmful effects of hazardous production factors, a dangerous natural phenomenon, a catastrophe, a natural or other disaster, which can or have resulted in human casualties, harm to human health or the environment, significant material damage, and disruption of living conditions for people.
SE	Emergency situation/emergency

3. General provisions

3.1. Ensuring readiness for action during accident situations that may impact the environment, as well as the health and safety of individuals, is accomplished through the implementation of the following activities within the subsidiaries:

- identifying potential accident situations;
- developing AS response procedures (plans).
- maintaining preparedness for the execution of response, containment, and mitigation procedures (plans) to address potential accident situations.
- incorporating requirements and measures aimed at preventing or mitigating environmental impacts and mitigating consequences into procedures
- communicating the relevant procedures to personnel.
- ensuring the availability and maintenance of necessary resources, including competent staff, equipment, personal and collective protective gear, communication systems, etc.
- evaluating the capability and readiness to respond to emergencies through drills, exercises, and briefings, and involving relevant stakeholders, as applicable.
- Implementing necessary modifications to the procedures (plans) for preventing and responding to accident situations, based on the analysis of training exercises or responses to real accidents, while ensuring proper documentation.

3.2. The primary principles for ensuring readiness and response to accident situations in subsidiaries include:

- allocating financial resources and maintaining an inventory of material and technical resources in a state of readiness to promptly address and mitigate the consequences of potential accident situations.
- regularly testing response, containment, and mitigation procedures (plans) through practical exercises.
- establishing effective communication channels for promptly notifying relevant responsible parties within the company, as well as external stakeholders such as government agencies and emergency response services, in the event of accident situations;
- conducting analyses of the causes of accident situation to gain valuable experience, prevent similar incidents, and enhance the environmental awareness of subsidiary personnel (including contractors) regarding the consequences and emerging risks.

4. Responsibilities, accountability, and authority

4.1. The Company recognizes that prioritizing the reduction of potential adverse effects caused by its subsidiary's operations on the environment is in the best interest of the Company itself.

4.2. All departments within the subsidiaries, as well as employees and contractors' personnel, bear the responsibility for adhering to and implementing the requirements outlined in this Guide.

4.3. The heads of subsidiaries are accountable for introducing and ensuring the implementation of this Guide, approval of a similar Guide or aligning the internal documents of subsidiaries with the content of this Guide.

4.4. To comply with the Sanitary Rules of the RK, subsidiaries are required to develop appropriate documentation that aligns with the hazard classification of their facilities . This documentation should consider scenarios for potential accident situations, including potential adverse environmental consequences, as well as establish procedures for employee response and the subsequent mitigation of consequences.

4.5. The distribution of responsibilities and authority for each subsidiary's facilities should be outlined in accordance with the developed documentation

4.6. The duties and authority of responsible individuals in regard to implementing measures to ensure human safety, environmental protection, and the elimination of accident situations must be communicated clearly. These responsibilities and powers can be established through subsidiary-specific orders or specified in job descriptions.

4.7. Subsidiaries should develop Methods, Instructions, Plans, Recommendations, Regulations, and other relevant internal documents detailing actions to mitigate the consequences of environmental pollution. These documents should be approved through subsidiary-specific orders and made accessible to all employees.

4.8. In the event of accident situation, employees are required to act in accordance with the Methods, Instructions, Plans, Recommendations, Regulations, and other applicable internal documents developed by the subsidiary.

5. Identification of environmental hazards

5.1. The identification of specific environmental situations is an ongoing process through which the potential impacts of subsidiaries on the environment are determined.

5.2. Accident situations are assessed based on various criteria:

- 1) the scale of environmental impact.
- 2) identification of environmental aspects and risks.
- 3) identification of storage sites for hazardous substances, materials, and wastes.
- 4) analysis of legislative and other requirements.
- 5) evaluation of damage resulting from their occurrence.
- 6) probability of occurrence.

5.3. The following environmental accident situations may occur during subsidiaries' operations:

- 1) fires and explosions due to improper storage of flammable and explosive waste.
- 2) spills of oils, fuels, and lubricants.
- 3) emergency release or discharge of toxic untreated effluents, dam breaches, etc.
- 4) spill or release of corrosive, toxic, flammable, or carcinogenic materials.
- 5) damage to mercury-containing lamps and mercury thermometers.
- 6) mechanical damage to lead-acid batteries without drained electrolyte.
- 7) dusting of ash dumps, including during coal pouring.
- 8) exceeding emission/discharge standards for harmful substances into air, soil, and water bodies.
- 9) soil erosion during mining operations.
- 10) rupture of fuel oil and ash pipelines.
- 11) other accident situations.

5.4. The causes of accident situations and accidents can be attributed to various factors:

- 1) Equipment failure or malfunction.
- 2) insufficient competency of service personnel;
- 3) actions of third parties;
- 4) design flaws in mechanisms and equipment.
- 5) physical and moral deterioration of equipment and mechanisms.
- 6) low labor and technological discipline.
- 7) natural disasters, among others.

5.5. During the stage of hazard identification, preliminary recommendations may be provided to reduce the risks of accidents, assessing their adequacy, or determining the need for a more comprehensive analysis of hazards and risk assessment.

5.6. To prevent the occurrence of accident situations within the subsidiary organization and ensure prompt response when they do occur, it is essential to identify all potential emergency situations that could impact the environment. This identification process involves engaging all relevant specialists responsible for equipment operation, workplace safety, emergency management, and environmental protection within the subsidiary organization. Possible emergency situations can be identified through various means, including:

- 1) identifying and updating environmental aspects within the structural units.
- 2) analyzing previously experienced emergency situations.
- 3) considering the introduction of new equipment into operation.
- 4) assessing the use of new substances and materials.

5.7. It is important to note that all possible accident situations should be taken into account, irrespective of their scale, whether they occur solely at hazardous production facilities or non-hazardous ones. In the event of an emergency situation at any such facility, the consequences can be significant and far-reaching, including environmental damage, threats to human life and health, and destruction of buildings and structures.

6. Risk assessment and prevention of accident situations

6.1. Risk assessment involves the identification and analysis of each stage of risk existence, starting from the source of danger to its ultimate consequences within a specific system and situation.

6.2. Initial risk assessment is conducted following the completion of the risk identification procedure. The results of the assessment are used to plan and justify measures aimed at reducing risks to an acceptable and economically justified level.

6.3. Risk analysis encompasses a range of methods, techniques, and software tools that enable a comprehensive identification of hazards and assessment of emergency risk. Quantitative methods of accident risk assessment (which take precedence), qualitative methods of accident risk assessment, or a combination of both (semi-quantitative accident risk assessment) can be employed. Quantitative data provides an overview of the larger picture, while qualitative data adds detail and considers human factors in survey results. It is recommended to consistently carry out qualitative and/or quantitative assessments for:

- a) the possibility of incident and accident occurrence and development;
- b) the severity of consequences and/or damage resulting from potential incidents and accidents;
- c) the level of danger associated with an accident and the corresponding risk indicators.

6.4. Emergency prevention encompasses a proactive set of measures aimed at minimizing the risk of accident situations, safeguarding people's health, and reducing environmental damage and financial losses in the event of their occurrence.

6.5. Based on forecasting and situational assessment, the level of risk for the occurrence of accident situations is determined.

6.6. The following measures are included in the list of prevention and response actions for accident situations within the Company's operations:

- development of accident situation prevention and response plan.
- personnel training for accident situations.
- implementation of evacuation measures for subsidiary employees.

7. Development of accident situation prevention and response plans

7.1. During the operation of subsidiary facilities, components of the natural environment may become polluted, including atmospheric air, surface and groundwater, soil, vegetation, and others. All Company facilities are sources of environmental pollution.

The purpose of implementing measures to eliminate the incurred pollution is to reduce the damage caused to the environment. For the purpose of determining these measures, it is necessary to develop Accident Situations Prevention and Elimination Plan (hereinafter referred to as the Plan).

7.2. When developing the Plan, the following should be considered:

- examination of all production (main) processes and other auxiliary activities related to accident situations (waste, emissions, discharges).
- decisions should be made regarding the storage of hazardous and non-hazardous waste, considering environmental and legislative requirements of the Republic of Kazakhstan.
- development of actions in case of deterioration of atmospheric air quality caused by emergency emissions of pollutants into the air, posing a threat to human life and/or health.
- description of the organizational structure of subsidiary employees involved in accident situation management, outlining the responsibilities of respective individuals.
- development of an internal inspection plan-schedule and procedures for removing any violations discovered during inspections.
- training of subsidiary employees on actions to be taken in case of accident situation.
- provision of personal protective equipment (PPE) to subsidiary employees involved in the elimination process.
- And other related matters.

The Plan may be amended in agreement with the management of the subsidiary.

7.3. In the event of occurrence of accident situation, a set of immediate priority measures aimed at mitigating the consequences of environmental pollution should be implemented, including:

- formation of a team consisting of responsible personnel for the elimination of pollution consequences.
- immediate response to the emergency situation (fire extinguishment, equipment shutdown, leak containment, etc.).
- remediation of contaminated land (removal of contaminated soil and subsequent technical reclamation through backfilling with clean soil, sand, sawdust).
- reduction/minimization of pollutant emissions into the atmosphere.
- implementation of measures for the demercurization of mercury-containing waste, along with timely conclusion of contracts for the disposal of hazardous and non-hazardous waste.
- and other measures in accordance with the pollution of the environment.

8. Liability insurance covering damages resulting from unintentional pollution

8.1. The main objective of mandatory environmental insurance is to ensure the effective mitigation of environmental damage caused to natural components due to accidents occurring during environmentally hazardous business and other activities.

8.2. Mandatory environmental insurance is carried out through the establishment of contractual agreements between the insurer and the policyholder, in strict accordance with the regulations outlined in the Law "On Mandatory Environmental Insurance," the Civil Code of the Republic of Kazakhstan, and the Environmental Code of the Republic of Kazakhstan.

8.3. It is imperative for subsidiary organizations engaged in environmentally hazardous economic and other activities to obtain and maintain a valid mandatory environmental insurance policy to operate legally.

8.4. The mandatory environmental insurance policy should only be procured from licensed insurers who are authorized to provide coverage for the specific type (class) of mandatory insurance required.

8.5. All accidents must undergo comprehensive investigations to facilitate proper analysis, risk assessment, and effective organization of mitigation efforts, aimed at minimizing potential losses and adverse impacts.

8.6. Environmental insurance within subsidiary organizations encompasses various risks that may arise from unforeseen circumstances, including but not limited to:

- sudden and significant pollution of the surrounding natural environment resulting from an accident or incident;
- emergency situations that occur during the execution of hazardous activities, involving both subsidiary employees and subcontractors working within the subsidiary's premises;
- instances of exceeding permissible limits or accidental releases of pollutants into the atmosphere, water bodies, or onto the terrain, which can encompass solid, liquid, or gaseous substances;
- generation of harmful effects such as vibrations, odors, noises, or other adverse impacts related to electromagnetic, temperature, light, physical, chemical, and biological factors, surpassing acceptable thresholds, levels, volumes, and other relevant criteria.

9. Regulatory references

No	Document title
1	Code of the Republic of Kazakhstan "On Public Health and Healthcare System" dated July 7, 2020, No. 360-VI.
2	Labor Code of the Republic of Kazakhstan dated November 23, 2015, No. 414-V RKL
3	Environmental Code of the Republic of Kazakhstan dated January 2, 2021, No. 400-VI RKL
4	Law of the Republic of Kazakhstan "On Civil Protection" dated April 11, 2014, No. 188-V RKL
5	Law of the Republic of Kazakhstan "On Mandatory Environmental Insurance" dated December 13, 2005, No. 93.
6	Law of the Republic of Kazakhstan "On mandatory insurance of employees against accidents in the performance of their job responsibilities" dated February 7, 2005, No. 30-III.
7	Environmental Management Systems. Requirements and Guidelines for Use ISO 14001-2015.
8	"Samruk-Energy" JSC Development Strategy for 2022-2031 dated October 29, 2021 (Meeting minutes No. 11/21).
9	Corporate Governance System Policy of "Samruk-Energy" JSC Group of Companies dated November 8, 2021 (Meeting minutes No. 12/21).