

International Conference on the Safety of Radioactive Waste Management, Decommissioning, Environmental Protection and Remediation: Ensuring Safety and Enabling Sustainability



Contribution ID: 309

Type: POSTER

Methodology for environmental impact assessment of uranium mining enterprises

JSC National Atomic Company “Kazatomprom” (“Kazatomprom” or “the Company”) is a national operator of the Republic of Kazakhstan for the import-export of uranium, rare metals, and nuclear fuel for nuclear power plants. The Company fully embraces the values of the United Nations Agenda for Sustainable Development, recognizes the importance and adheres to all 17 Sustainable Development Goals (SDGs). In the field of environmental protection, it contributes to the achievement of goals such as SDG 6 “Clean water and sanitation” and SDG 15 “Life on land” as well as accepts responsibility and takes measures to access and preserve biodiversity in the presence region.

Kazatomprom is a public company, and reporting on nature conservation and environmental measures should be done in accordance with the legislation of the Republic of Kazakhstan, as well as in line with the principles of sustainable development (ESG) and the requirements of global reporting (Global Reporting Initiative, GRI). However, in compliance with the legislation of the Republic of Kazakhstan, the environmental impact assessment and the reporting of potential impacts should be conducted according to the methodology and include information on the sources of environmental data.

The impact assessment should be carried out with the aim of developing measures to reduce the level of anthropogenic influence on environmental objects. To achieve this, it is necessary to differentiate the factors of industrial activity impact based on identified markers of uranium production facilities from other negative factors, such as natural background and other anthropogenic activities, including agriculture, other industrial production, transportation, and the livelihood of the local population.

To achieve this, the work should be conducted to analyze all types of emissions generated during the production activities of the industrial enterprise. Based on this analysis, factors, potential pathways, and markers of impact on environmental objects such as atmospheric air, atmospheric precipitation, groundwater, soil, vegetation, and animals are identified. The article provides a methodological description for assessing the state of each environmental object.

The presented Methodology for assessing the impact of industrial activities on the environment enables the development of effective measures to reduce the impact and provides recommendations for updating internal regulatory documents in the field of environmental protection. Additionally, visualization and mapping of the results of ecological studies facilitate perception, data analysis, and the development of measures, allowing for the assessment of the state of environmental objects through long-term studies.

The JSC NAC “Kazatomprom” program for environmental and social research enables enterprises to organize their activities on a continuous basis in accordance with a risk-oriented approach and generate environmental and social reporting in compliance with the legislation of the Republic of Kazakhstan and the provisions of GRI standards. According to these standards, the results of environmental studies are made available for review and discussion by various stakeholder groups.

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Track Classification: Track 2 - Managing the interrelationships in policy, strategy, legislation, and regulation