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DEVELOPMENT OF THE STANDARD TO ORGANIZE ENVIRONMENTAL PROTECTION DURING EMERGENCY OIL SPILLS**MIKALAI ROZUM, LUDMILA SPIRIDENOK**
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In the republic of Belarus the economic sector associated with oil and the products of its processing is well developed. It includes all the stages of the process of oil redistribution from production to the final delivery of the product to the consumer.

The following steps can be distinguished in the back of oil: oil production, its preparation for transportation, transportation, processing, storage, and distribution.

One of the potential risks associated with the operation of oil technical objects is that contingency situations which can appear in the course of operation may be accompanied by depressurization of the equipment. And it leads to the emergency oil spills (EOS). Emergency oil spills bring backlash that may occur in the social, economic and environmental spheres. The EOS one way or another causes negative impact on all of the elements of the environment: land, water, air, flora, and fauna.

The scale and nature of the environmental backlash, such as pollution of water, land and marsh as well as the conditions that should minimize and eliminate these effects and their effectiveness, depend on the amount of oil spilled, the landscape characteristics in the areas adjacent to the site of the EOS. A necessary condition for the success of the activities aimed at minimizing the consequences of oil spills is using the procedures of technical regulation on the basis of the developed technical regulations (TR) in the field of environmental protection.

The standard establishes general rules for the organization and order of works to protect the environment (water bodies, land, marsh landscapes) in case of accidents on the main oil pipelines and oil-products pipelines. Also this standard is used in the development of emergency response plans and the development of training sessions, ABC units plans the main oil pipelines and oil-products pipelines.

Implementing the standard minimizes the biological influence of oil or oil-product on organisms. Harmful effects are divided into 5 categories: direct poisoning fatalities, serious violations of the physiological activity, the effect of the direct encapsulation of living organism with oil, painful changes caused by the introduction of hydrocarbons into the body, as well as changes in biological features of the environment.

The most significant factor that affects the spread and impact of pollution on the natural environments is the type of environments (water bodies, land, marsh landscape). Taking this into account industrial classification of natural objects has been developed in the standard, and the classification of accidents on main oil and oil-product pipelines (MOPP) associated with leakage of the pumped product has also been provided.

Water bodies are classified according to the following criteria:

- a) type of WB according to [2];
- b) the hydrographical characteristics of WB;
- d) the relief of the terrain;
- d) the characteristics of the soil near the WB;
- e) the nature of the flora;
- g) the ecological and economic importance of the WB according to [3].

Lands are classified by the following features:

a) the purpose according to the STB 943-93, it is necessary to take into account the quantitative and qualitative impact of vegetation;

- b) the humidity of the lands in accordance with [4];
- g) soil porosity in accordance with State Standard (GOST) 25100.

Marshes are classified according to the following criteria:

- a) the occurrence of the conditions regarding the relief, according to [5, p. 38];
- b) cross-country equipment in accordance with construction rules and regulations (SNIP) III-42.

Typical technical processes to liquidate emergency oil and oil-product spills have been developed on the basis of the worked out classifications for each natural environment. Technical processes include both the organization of work on the oil or oil-product spill and production of technology works. All the works to localize and liquidate emergencies at MOPP are made with possible emergencies plans. These plans include typical scenarios of technological processes. The water protection provides measures to prevent the ingress of oil and petroleum products in the water body, the construction of protective structures, localization of spilled oil, floating oil collection and reclamation, shoreline restoration, etc. Liquidation of land pollution consists of three stages: the localization of oil or oil-product spill, oil gathering from the ground and land reclamation. To

liquidate pollution of marsh lands following operations are performed: preparation work, digging ditches to gather oil or oil-product in the marshes of I and II category SNiP (construction rules and regulations) III-42, flushing the oil from the marsh surface in the ditch, oil collecting from water surfaces swamp category III SNIP III-42 and ditches in the marshes of I and II category with the help of oil skimmer, collecting and disinfection vegetation polluted with oil.

Implementation of the developed standard is not intended to obtain a direct economic benefit. However using the standard statements establishes rules and procedures for the liquidation of oil-polluted environments (land, water bodies and wetland landscapes) during the accidents on main oil and oil-product pipelines. So it minimizes environmental pollution in case of emergency oil spills.

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