R E V I E W

Technical University Press has published the monograph "Problems of Reliability and Ecological Safety in Cross-Country Oil- and Gas-Pipelines" by Professor of Georgian Technical University , Doctor of Engineering Sciences Dimitri Namgaladze.

The monograph consists of the Introduction, five chapters and contains 18 figures, 10 tables and a list of references that includes 60 titles.

At the present time, in the world there exist problems of surface and ground water and also problems of atmospheric air pollution which create hazards for man's life and the environment.

In the case of an accident, the products from faulty oil- and gas-pipelines get into the soil, water area, atmosphere, water medium. These phenomena, which may occur for various reasons, produce an adverse impact on the equipment of electric power stations, their reliability and service life. Therefore the creation of modern methodological models based on theoretical and experimental data for the investigation of the above-mentioned problems is a highly topical task.

The first chapter presents analytical numerical methods of detecting leakage from cross-country gas-pipeline segments.

The second chapter deals with the ecological aspects of gas-pipeline operation, exhaust of contaminants into the atmosphere and elaboration of environment protection measures. The exhaust of methane into the atmosphere and its action on the natural and social conditions during the operation of cross-country gas-pipelines are evaluated. Issues concerning the air quality, hydrology and the surface water quality are discussed. Modified methods of establishing a maximal concentration field formed as a result of contaminant exhaust are given.

Investigation of operating pipeline modes has been provided in the chapter third. Privately natural examination of operating pipelines; ascertainment of probability characteristics of corrosive depressions maximal depth of operating pipelines; ascertainment of internal and external losing parameters of the metal of operating pipelines under natural examination; specifying of correlation link between geometric parameters of corrosive depressions basing upon natural examinations; definition of coefficient of resistance at length via experimental way and definition of coefficient of resistance at length in case of artificial roughness and determination of equivalent roughness for corrosive pipeline have been reviewed.

Calculation of operating oil pipelines considering the variation of hydraulic resistance at length; physical mechanism and qualitative analysis of corrosive depression (cavity); impact of corrosive cavities to average speed variation in oil-trunk pipelines and calculation of operating pipelines at considering the variation of hydraulic resistance coefficient, have been reviewed in the chapter fourth.

The fifth chapter studied the phenomena of cross-country oil-pipeline leakage in the situation in which there exists a high ecological risk-factor for the environment.

The monograph will be useful for master's and doctor's degree students, scientists and researchers who are interested in the above-mentioned problems.

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