

**DEVELOPMENT OF A CONTROLLED RESERVE-RESPIRATORY VALVE
OF RESERVOIRES FOR STORAGE OF TECHNICAL COMBUSTABLE
LIQUIDS WITH TAKING INTO ACCOUNT THE INHALATION PHASE
OF THE SMALL BREATH PHENOMENON**

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The study provides the calculated assessment of TCL parameters stored in large-tonnage reservoirs of the oil products distribution enterprise was carried out according to the improved method on the example of Oil depot «Kharkivska», «TATNEFT-AZS-UKRAINE» LLC (Kharkiv). The designing, analysis and description of the scheme of environmental protection technology (EPT) for the specified enterprise are carried out. The methods of determining the value of the mass hourly emission of TCL vapors caused by the phenomena of SRB and LRB during their storage at this enterprise with taking into account the inhalation phase of the phenomenon of SRB, have been improved and described. The mass hourly emission of TCL vapors has been determined according to the phenomena of SRB and LRB during their storage at the Oil depot in the environment according to the improved approach. The assessment of energy and economic effects from the implementation of the developed EPT at the Oil depot according to the improved approach.

The analysis of the nomenclature and parameters of the existing respiratory and safety valves of large-tonnage reservoirs for storage of TCL at the oil depots is carried out. On this basis, a new design of the device is proposed, which is an integral part of EPT (i.e. its executive device) from the negative impact of large-tonnage reservoirs for storage of TCL of the enterprise for storage and distribution of petroleum products (oil depot) as a special fire-explosive reusable container. The proposed device combines the functions of breathing valves to level the emissions of a mixture of vapors of TCL and atmospheric air from the phenomena of LRB and SRB, taking into account the inspiratory phase of the phenomenon of SRB, safety valve, and fire safety. The feature of the proposed design is that the tuning of the pressure valves in it are controlled by an electronic system as a function of the readings of the air temperature sensors and the degree of filling of the reservoir. The design calculation of the springs of all valves of the proposed device as elements of the valve control mechanism is performed.

In connection with the above, the list of recommendations for improving the level of ecological safety of the exploitation of reusable large-tonnage reservoirs for storage of TCL.