

DECISION MAKING SUPPORT SYSTEM FOR PREVENTION OF EMERGENCIES ON THE ALLOCATION TERRITORY OF CHEMICALLY DANGEROUS OBJECTS

Popov O.O., Yatsyshyn A.V., Artemchuk V.O., Kutsenko V.O.

*SI «Institute of Environmental Geochemistry of National Academy of Sciences of Ukraine»,
Kyiv, Ukraine*

The authors developed modern informational and analytical computer system. This system is powerful decision support tool for the prevention of natural and technogenic emergency situations (ES) which are associated with chemical pollution of atmosphere on the allocation territory of critically important objects (TPP, NPP, factories and other dangerous enterprises, which are atmospheric polluters). The system is based on the principles of GIS and environmental mapping. It includes scientific, methodological, software and informational provision of monitoring and civil protection tasks, control and management of air quality in the influence areas of technogenic objects.

Developed system consists of subsystem of database management and knowledge, mathematical software, visualization subsystem and decision support subsystem.

Application of developed software means during work of Unified State System of Civil Protection and management of the activity performed by the State Emergency Service of Ukraine will help to solve following important tasks: 1) determination of different scenarios of emergency situation appearance and development in everyday operational mode; it in its turn will create opportunity to develop new more efficient or to improve existing planning measures to protect the population and territories from possible emergency situations and action measures for civil defense forces; 2) development and implementation of purposeful scientific and technical programs for such emergencies prevention and possible losses reduction; 3) organization and conduction of emergency monitoring and determination of their appearance risks; 4) determination of emergency areas, conduction of continuous forecast of emergency possible spread area and evaluation of possible consequences extent in ES mode.

The efficiency of obtained results is confirmed by implementation acts in the Office of Informational and Analytical Support of Ministry of Emergencies of Ukraine, the Ukrainian Scientific and Research Institute of Civil Protection of the Population and Territories from Emergency Situations of Technogenic and Natural Character, the State municipal enterprise “Ivano-Frankivs’kteplokomunenergo”, the Dnipropetrovsk Regional Center of Hydrometeorology, the Department Organizing Activities of Civil Defense of State Emergency Service of Ukraine, the separated department “Scientific and Technical Center” of State Enterprise NNEGC “Energoatom”.