

Development of methods and systems of non-decaying control and technical diagnostics of complex technical objects and systems

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Developed the new methods and systems of non-decaying control and technical diagnostics which will provide the substantial rise of safety and vitality of complex technical objects and systems during operation. To solve this problem system approach and algorithms developed are based on the new priority principle: opportune revelation, guaranteed identification and system diagnostics of factors and risk situations, and operative foresight, probable estimation of untenured and crucial situations concerning safety management in the process of preventing untenured and crucial situations. Strategy of risk management defines the main requirements to properties and qualitative indices of information technologies of revelation, identification, estimation, classification, ranging the risk situations and foresight of their dynamics.

It is proposed the method of opportune revelation of risk situations, and operative prevention of their change into the crucial, extraordinary or accidental ones as the strategy of risk management and guaranteed safety providing in the dynamics of complex technical systems functioning. The method is based on new principles of realization of information technologies of system analysis and risk situations foresight in the dynamics of management the safety of complex technical systems directions of the project are in development and introduction of information technologies and software for untenured, crucial and extraordinary risk situations on the basis of conception proposed and strategy of technogenously and ecologically dangerous objects safety management.

There are developed new mathematical models, system approach and algorithms of system definition of untenured, crucial and extraordinary risk situations for technogenously and ecologically dangerous objects in the conditions of incompleteness, vagueness, inaccuracy of input information at the limit of time for forming and realization of solutions.