Operational Risk Management and Treatment of Technical Systems with Maintenance Support

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The purpose of this paper is to describe the area of risk management, in which maintenance can positively contribute to risk reduction and suggested reliability methods and maintenance tools can be used for risk treatment. The authors define the relationship between critical failure and risk and influence of preventive maintenance and redundancy on risk level. The risk level is defined as a product of critical failure probability and cost of critical failure losses. The proposed method enables to quantify risk treatment results. Benefits of the proposed risk treatment method based on preventive maintenance and redundancy applications are risk reduction and decreased costs (losses) of critical failure consequences within chemistry and nuclear power industrial technology. All decisions of maintenance have to be assessed according to economic criteria for specific objects and conditions in order to choose proper system maintenance.

Keywords: Maintenance, Risk Management, Preventive Maintenance, Redundancy, Risk Treatment

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References


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