

METHODOLOGICAL APPROACHES TO ENVIRONMENTAL RISK MANAGEMENT IN INDUSTRIAL ENTERPRISES

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ABSTRACT

The risk is a constant companion of any business activity in today's dynamic economic, political and social environment. The market economy, the globalization, the competition ramp-up, the financial and economic crises create risks for businesses every single day and hour putting the risk management at the heart of modern management. This article discusses about methodological approaches to environmental risk management in industrial enterprises.

KEYWORDS: *Methodology, Approaches, Ways, Risk Management, Industrial Enterprises, Management, Environmental Risks*

INTRODUCTION

Modern urbanization and more and more increasing man-made impact on the environment inevitably lead to an increase in environmental risk for the population of industrial cities, increasing the probability of emergencies occurrence. The purpose of the article is to study the environmental risks and practical approaches to its quantitative assessment to justify the socio-economic efficiency of enterprises' production activities in the interests of system management of human security. [1] The article identifies the main factors (technological, economic, etc.) that affect the environmental risk of industrial enterprises. A model of a two-level environmental risk management system aimed at full control of the enterprise environmental risk is presented. The method of trees allowing calculating probability of emergence and development of ecological risks is offered. Organizational and methodical guidance for the implementation of a two-level system of enterprises' environmental risk management have been developed. [2] The article is intended for researchers, employees, management of industrial enterprises and Supervisory bodies dealing with environmental problems of industrial enterprises. A plan to reduce or eliminate the initial risk will be developed including a set of measures with assigned responsible persons, due dates and financial resources; the residual risk will be assessed and further mitigation measures taken if this risk is still not acceptable; the final risk will be assessed and measures taken in cases where the expected level is other than low or very low. [3] The following recommendations can be made for successful risk management in industrial companies: Conduction of continuous environmental monitoring, construction of additional treatment facilities, and implementation of low-carbon and non-waste technology will coordinate the overall risk management process in the company, develop a security program and follow its implementation together with the supervisors at various levels throughout the

organization; Introduction of a system for promoting all good achievements in the area of occupational health and safety, and imposition of penalties for serious violations of the safety rules; Holding regular meetings with the employees to discuss health and safety issues (working conditions, incidents and accidents), for discussing and recommending improvements of the workplace safety, and encouraging the employees to stay updated on current site safety issues. [4] Maintaining and encouraging the employee participation in identification of the hazards and development of safety measures; Use of collective protective measures to reduce the need for personal protective equipment; Involving as many specialists and managers as possible in the risk management process. [5] Agreement on the sources of information to be used and obtaining sufficient information. Ensuring the employees participation in the assessment of the work areas, diligent and accurate completion of surveys and questionnaires referring to the working conditions. Provision of complete records, including a risk assessment program with the corresponding manner, means, scope and level of its implementation, hazards identified, groups of employees and types of assets exposed to risk, assessment of risk elements, decisions based on the risk assessment, regulatory framework and information used, measurement data, observations, actions recommended and taken, and conditions for revision. Every aspect of the risk assessment needs to be recorded; Provision of a security program, which should be comprehensive, balanced, realistic and feasible. [6] The leading criterion in determining risk management priorities in the company is to ensure employees health and safety. The risk reduction concept should not promote risk reduction at any cost, which sometimes may be too expensive, but rather reduce the risk to a reasonable, acceptable level that is also affordable for the company (price/benefit ratio). [7] The program should include due dates and persons responsible, financial resources required. Regular monitoring of the program implementation, evaluation, opinions and additional recommendations during the program implementation, making any adjustments if necessary are also required. Risk management is part of the general management of the industrial company, therefore it should be closely linked to all other aspects of the company's management. [8]

Hazardous chemicals are chemicals, the direct or indirect impact of which on a human being can cause acute and chronic diseases or death. Especially dangerous consequences are typical for emergencies at enterprises that use hazardous chemicals, since they have a detrimental effect not only on people, but also on the environment, causing gas pollution, contamination of land and water. Risk is everywhere, but scholars have different perceptions and definitions of risk. In environmental risk assessment and management, risk is generally defined as a loss caused by a deviation between the actual situation and the expected situation (that is, the actual value and the expected value) of an event. It is characterized by the probability and The product of the consequences of harmful events. Environmental risk refers to the actual or potential threats to the organism and the environment caused by the organization's business activities, such as emissions, waste, and resource depletion. [9] For, the environmental risks caused by their waste discharge mainly fall into the following categories: environmental risks caused by soil or land pollution; environmental risks caused by water pollution; environmental. Environmental risks caused by damage to the health of residents around employees, environmental risks caused by the adverse effects of waste on the local ecosystem. [10] Multifactorial models have been used in risk assessment methods based on the expert method and in creating an information-analytical risk forecasting system. This methodological approach seemed appropriate to assess the risk of

the environmental impact taking into account a number of features of current research, among which there is a comprehensive assessment of all the factors that determine the environmental risk from chemically hazardous sites. [11] Moreover, this will make it possible to analyze the environmental risk of accidental release of hazardous chemicals comprehensively from the point of view of chemical, environmental, and industrial safety. The high level of competence of these employees in the issues we are studying along with their optimal number in the sample allowed us to obtain reliable results. The method of expert evaluations is based on gathering opinions on the posed problem, the analysis, and processing of received judgments and the generalization of the survey results. Extensive knowledge of the subject of research and the accumulated experience of the expert allows us to compensate for the lack of information or the inability to use it to model the possible consequences of technological accidents at chemically hazardous sites.

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