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WORKING FACTORS AND ITS ANALYSIS IN THE „MAN – MACHINE – ENVIRONMENT" SYSTEM

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In the research literature, the work environment is often characterized as a physical, chemical, biological, social and cultural complex of factors that affect an employee at workplace. The work environment is part of the „man-machine-environment" system. In this system, „man" refers to a person as the subject in the workplace (e.g. operators, decision-makers), „machine" is the general name for any object controlled by man (including tools, machinery, computers, systems and technologies), and „environment" describes the specific working conditions under which man and machine interact (e.g. temperature, noise, vibration, lighting, radiation, chemicals, hazardous gases etc.). Environment creates a wider or narrower set of factors which are affecting this system. The goal of this whole system is to create optimum conditions to achieve required results. The three main goals of optimization are to ensure safety, high efficiency and economy of „man-machine-environment" system. From the point of view of problem solving in this system the physical factors are very important and may represent a significant risk for employees. These factors affect the human senses, burden the nervous system and can negatively affect to overall health and cause stress. Stress is a physical, mental, or emotional factor that causes bodily or mental tension and it can have negative impact on work performance. These factors can be external (from the environment, psychological, or social situations) or internal (illness). According to official statistics, more than every fourth employee in the EU is experiencing work-related stress. Examination and assessment of working conditions from the point of view of their impact on employees is challenging, time-consuming and it is essential to do it regularly (in certain cycles, e.g. annually) in order to achieve reliable results. By comparing the results from previous and current assessments, it is possible to capture developmental tendency, identify progress or regress and subsequently decide on the next steps. If the implementations of these assessments become an enterprise's rule and an integral part of the occupational health and safety management system, it can represent the one of the pillars for successful business. Also new public opinion surveys may be useful in detecting potential risks. These surveys help to understand the differences between opinions and needs of people in different age, gender, level of education, profession etc. The paper is supported by KEGA project 041TUKE-4/2018.
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