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ТА СОЦІАЛЬНИХ КОМУНІКАЦІЙ

СОЦІАЛЬНО-ГУМАНІТАРНІ АСПЕКТИ РОЗВИТКУ СУЧАСНОГО СУСПІЛЬСТВА

МАТЕРІАЛИ V ВСЕУКРАЇНСЬКОЇ НАУКОВОЇ КОНФЕРЕНЦІЇ СТУДЕНТІВ, АСПІРАНТІВ, ВИКЛАДАЧІВ ТА СПІВРОБІТНИКІВ

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The methodology of the energy security risk index calcilation, adopted by the U.S. Energy Institute and the methodology of the International Energy Agency are the most common in the world. The main purpose of these methods is to obtain a single energy security risk index using existing data to calculate sub-indexes that describe geopolitical and economic conditions and environmental risks.

The comparative analysis shows the differences that exist in approaches to the standardization of individual indicators, the number of sub-index and the determination of weight coefficients for them. We identified the national approach deficiencies. There is a limited scope of the energy security aspects, the lack of a basis for comparison and the lack of a long statistical data series for energy security indicators, the slow updating of thresholds for indicators that is included in the normalization algorithm.

THE ORIGIN OF WATER HAMMER IN DISPLACEMENT PUMPS

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For a long time, a man has learned to use the liquid to his advantage. This has led to the emergence of such a machine as a pump, a hydraulic machine which converts the energy of the drive motor into the hydraulic energy of the fluid flow. Pumps in the narrow sense, are hydraulic machines which work only with elastic liquids. They are divided into two main groups: dynamic and displacement ones.

The main operating characteristics of pumps are the pressure and feed efficiency. Pumps are used safely with safety valves and their variants for providing proper operation. When we use these machines in a network the water hammer, a sudden valve overlap, arises. Dynamic changes of pressure are called pressure pulsations or water hammer. The term "water hammer" is used to adverse effects accompanied by pressure pulsations, like hammer blows can affect the system pipelines and their components. This phenomenon is the cause of additional increase in dynamic load on the pipeline, valves, fastening elements, calipers, and other system components.

Water hammer phenomenon was described quantitatively in 1897-1899 by N.E. Zhukovsky. It can not occur in the pipelines containing gas

because gas is easy to compress. We can identify two types of blows: a full(direct) and a partial (indirect) hydraulic shocks.

Water hammer may result in gap pipe, damage of fastening devices in pipes, pumps, foundations, pipe fittings and other negative aspects. This negative phenomenon leads to the emergence of resonance. The oscillations can be used to solve a problem as a directional control valve sticking.

Displacement pumps are widely used in engineering as a part of the pump unit. The unauthorized pressure in the network is a sharp overlap of the shut-off valve which leads to water hammer. We can put out a hammer or use some resonant oscillations to prevent a negative phenomenon such as a directional control valve sticking.

INFORMATION TECHNOLOGY OF MACHINE LEARNING DECISION-MAKING SYSTEM

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The aim of the AI techniques embedded in an intelligent decision support system is to enable these tasks to be performed by a computer, while emulating human capabilities as closely as possible.

Many IDSS implementations are based on expert systems, a well established type of KBS that encode knowledge and emulate the cognitive behaviours of human experts using predicate logic rules. They have been shown better performancer than the original human experts in some circumstances.

Expert systems emerged as practical applications in the 1980s and were based on research in artificial intelligence performed during the late 1960s and early 1970s. They typically combine knowledge of a particular application domain with an inference capability to enable the system to propose decisions or diagnoses.

Accuracy and consistency can be comparable to (or even exceed) those of human experts when the decision parameters are well known (e.g. if a common disease is being diagnosed), but performance can be poor when novel or uncertain circumstances arise.

Research in AI focused on enabling systems to respond to novelty and uncertainty in more flexible ways is starting to be used in IDSS. For example, intelligent agents that perform complex cognitive tasks without