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SUMMARIES

SPECIAL MODES OF THE OPERATION OF SUPERCONDUCTOR INDUCTIVE STORAGE DEVICE OF THE ELECTRIC POWER IN A POWER SYSTEM CONTENTS. *T.Kokhreidze, V.Metreveli.* "Energy". №3(71). 2014. Tbilisi. p. 4-6. geo. sum geo.engl.rus.

The paper deals with the electric circuit of superconductor inductive storage device of the electric power in a power system contents and special working modes: energy saving mode in superconductor inductive storage device of the electric power; energy output mode from superconductor inductive storage device of the electric power; marginal discharge mode of superconductor inductive storage device of the electric power.

There is shown that the systematic scheme of superconductor inductive storage device of the electric power effectively provides input and output of the power in and from the storage device and its operation in parallel with a power system. At the same time, the scheme provides optimally a voltage changing rule over the storage device, especially during emergency evacuation of the power. Ill.1, bibl. 3.

A REVIEW OF THE ENERGY STRATEGIES OF GEORGIA AND REGIONAL COUNTRIES. *Z.Gachechiladze, I.Pirveli, N.Sumbadze.* "Energy". №3(71). 2014. Tbilisi. p. 7-12. geo. sum geo.engl.rus.

The paper provides an overview of the main directions of energy policy of Georgia and sets out important issues that need to be included in a new energy strategy of Georgia, which is based on the new challenges that are faced by the energy sector of country, new strategic objectives and analysis of the energy strategies of the regional countries. Taking into account energy strategies of the regional countries, strategic location of Georgia and economic potential of the country's renewable energy resources, Georgia will have to maximize benefits from the local renewable energy and transform into a platform for regional trade. Bibl. 5.

SUPERCONDUCTING STATIC COMPENSATING DEVICE OF A NEW GENERATION AS ONE OF THE MOST EFFECTIVE MEANS OF DECREASING ELECTRIC LOSSES AND VOLTAGE STABILIZATION. *T. Kokhreidze, K. Kokhreidze.* "Energy". №3(71). 2014. Tbilisi. p. 13-17. geo. sum geo.engl.rus.

We consider the electric circuit and the control system of a superconducting static compensating device (SCSCD) of a new generation. The realization of the circuits for a metallurgical works with electric arc furnaces (EAF) and units for steel complex machining (SCM) will provide a quick compensation of the reactive power of the load and improve the quality of electric power, and also will ensure an increase of the load factor and decrease of electric power losses.

The basic SCSCD relations are obtained for the analysis of data on electric power decrease and voltage stabilization. Ill. 2, bibl. 2.

IMPROVEMENT OF ENERGY INDICES OF THE MULTI MOTOR ASYNCHRONOUS ELECTRIC DRIVE. *B.Tchunashvili, A. Petrosyan.* "Energy". №3(71). 2014. Tbilisi. p. 18-20. rus. sum geo.engl.rus.

A method is suggested for controlling reactive power compensation to improve the energy performance of multi-motor asynchronous electric pumping stations, consumed by a total compensation of reactive power from the network. The loss of reactive power in the power transformer substation power supply network is taken into account. Which provides a block diagram of the developed system. The methodology of calculating the parameters of the system elements is suggested. Ill. 1, bibl. 2.

THE INFLUENCE OF ACCOUNTING UNEVEN CLEARANCE ELECTRICAL MACHINERY. *K.Tsereteli, N.kereselidze.* "Energy". №3(71). 2014. Tbilisi. p. 21-25. geo. sum geo.engl.rus.

There is stated the problem of accounting uneven clearance of electric machines in the article. We have reviewed existing methods of calculation magnetic fields of machine. There is formulated requirements to modern management method and also there is pointed impact of the uneven clearance of characteristics of the machine. Performed analysis showed, that this methods of calculation have an approximate character, they allow us to solve only quasistatic tasks. It's not considering influence of clearance changes during rotation of the rotor. It's not considered discreteness of the task. On the basis of critical remarks there were formulated requirements for modern management methods. Specified influence of uneven clearance at description of the machine. Irregularity of clearance adversely effects on the operation of the machine. In some cases there arises such additional vents and moments, which distort mechanical description of engine. As a result there are extra loss of steel and lowering of Coefficient of efficiency. Ration principles of calculation should give us the solution of this problem. Bibl. 7.

THE SYSTEMATIC ASPECTS OF A MATHEMATICAL-DESCRIPTIVE CENSUS OF THE PLANNING PROCESS OF LABORATORIAL-EXPERIMENTAL EXAMINATION ON THE FLOATING WAVE-SOFTENING HYDRO-TECHNICAL BUILDINGS CHAIN MODELS COMPLEX WAVE-GENERATOR. *Z.Tsikhelashvili, T.Gvelesiani, K.Khazalia.* "Energy". №3(71). 2014. Tbilisi. p. 26-28. geo. sum geo.engl.rus.

The systematic aspect of a mathematical-descriptive census of the planning process of laboratorial-experimental examination on the Floating wave-softening hydro-technical buildings chain models complex in laboratorial conditions using wave-generator.

For completing the goal, the use of descriptive models is offered, which gives the planning personnel of the experiments opportunity to actively use the psycho-physical logical "unclear discussions" of specialist-experts in reflecting of the abundance of possible planned-reality states of the examination process procession of chain models experimental examination, in dimensionless degree-criterial assessment scales, according to the following rankings: "bad condition", "medium condition", "good condition". Bibl. 1.

TO CONSIDER JOINT INTERESTS UNDER OPTIMAL COMPENSATION OF REACTIVE LOAD IN DISTRIBUTION AND FEEDING NETWORKS. *G.Macharadze, P.Akhaladze.* "Energy". №3(71). 2014. Tbilisi. p. 29-32. geo. sum geo.engl.rus.

The paper analyzes consideration of joint interests under optimal reactive load in distribution and feeding networks. If there are differences of interests in the distribution and feeding networks, so the difference occur in the optimal value of the reactive load compensation network. Need to develop a method which solves the problem of compensation of the reactive load and give us the maximum effect of the global scale on the basis of joint interests. Ill. 2, tabl. 1.

CALCULATION OF DISPLACEMENTS OF A SHEATHED FINITE ELEMENT VIA DISPLACEMENTS OF ITS COMPONENT PARTS. *Z.Gubelidze, T.Ninidze, B.Khachidze.* "Energy". №3(71). 2014. Tbilisi. p. 33-38. rus. sum geo.engl.rus.

To calculate the matrices and vectors of the reaction of multi-layered sheathed finite elements of double curvature, we consider a finite element n^2 with inner component parts. A field of displacements is given preliminarily using nonlinear functions (polynomial). After some transformations we obtain a matrix, by means of which displacements of any point of the coordinate surface of the sheathed finite element are calculated by means of displacements of its component parts. This will make it possible to express generalized deformations and generalized forces by the well-known geometric and physical relations in terms of displacements of the coordinate surface. 3 figs, 2 tables, 3 refs.

ECONOMIC ASPECTS OF USING ASYNCHRONOUS GENERATORS AT SMALL HPP WITH CAPACITY OF 1 MW. *M.Keburia, I.Katamadze, Z.Papidze.* "Energy". №3(71). 2014. Tbilisi. p. 39-44. geo. sum geo.engl.rus.

There carried out the economic calculations and represented the comparative, positive and negative factors of synchronous and asynchronous generators. There are also considered the influence curves of generators prices, as well as shown that using of asynchronous generators is reasonable at the capacity of 50 KW, but synchronous generators should be used at larger capacities. Ill. 3, bibl. 2.

MECHANICAL IMPACTS OF THE BOILING LIQUID ON HEATING SURFACE. *E.Machavariani, N.Ksovreli, M.Jixvadze.* "Energy". №3(71). 2014. Tbilisi. p. 45-49. geo. sum geo.engl.rus.

Report is dedicated to the description of the obtained results at the initial stage of the theoretical and experimental study of the mechanical interaction of the boiling liquid on the heating surface.

Theoretical background, describes the use of laboratory facilities, methods for testing and experimental results are presented. It is shown that the experimental values of the reactive force occurred during boiling, much higher than the theoretically calculated values. Concluded that this discrepancy calls for further study of the conditions of thermal and mechanical interactions at the phase boundary. Are formulated future research tasks. Ill. 4, bibl. 2.

NATURAL GAS – ALTERNATIVE FUEL FOR AUTOMOBILE ENGINES: MYTHS AND REALITY. *E.Machavariani, D.Rusishvili, G.Ananiashvili.* "Energy". №3(71). 2014. Tbilisi. p. 50-54. geo. sum geo.engl.rus.

The article describes the prospects of using natural gas as fuel for automobile engines. Were analyzed on environmental, economic and operational safety natural gas vehicles. It is shown that natural gas an environmental, economic and operational points of view, is more secure than liquid oil products. Bibl. 4.

ESTIMATION OF ENERGY SAFETY CRITERIA OF GEORGIA. N.Uplisashvili, T.Kokhreidze. "Energy". №3(71). 2014. Tbilisi. p. 55-59. geo. sum geo.engl.rus.

The problem of energy security of Georgia has become urgent after independence. This article discusses the mechanisms by which it is possible to assess the situation of energy security and after analysis, develop appropriate measures, by adopting three security levels: normal, alarm and crisis. Using chosen appropriate indicators, comparison is made between factual indicators and criteria indicators and later taking appropriate measures for keeping up high performance level. Tabl. 3, bibl. 7.

RIVER – ISSUES OF HYDRO-ECOLOGICAL BALANCE OF THE BLACK SEA. I. Mikiashvili, N.Goliadze. "Energy". №3(71). 2014. Tbilisi. p. 60-64. geo. sum geo.engl.rus.

Agricultural water intake hydro-systems at the rivers are aimed at delivering clean water to the customers. It has been proven by the researches that when designing, constructing and operating the hydroengineering facilities, it is necessary to elaborate such constructions and the operation modes of the hydro-systems which, except for the main function of the hydro-systems, will provide previously existing natural ecological balance along the entire length of the river, from the river head to the confluence. Bibl. 10.

THE INNOVATIVE TECHNOLOGY FOR INCREASE OF PRODUCTIVITY OF LIVESTOCK. Z.Paresishvili. "Energy". №3(71). 2014. Tbilisi. p. 65-68. geo. sum geo.engl.rus.

As a result of experimental observation by means of using the bioenergyactivator Biorag, a positive result has been achieved. Within the period of experimental six months the live weight of the cattle was increased by 22.1%, milking was increased by 16.7%, practically the risk and factors of diseases have been lowered, the growth of cattle was carried out normally, as well the terms of intensive feeding and absorption of food was increased. Ill 1, tabl. 2, bibl. 4.

FIBROUS CONCRETE IN HYDRO TECHNICAL CONSTRUCTION. M.Papiashvili, G.Dalakishvili, K.Khazalia. "Energy". №3(71). 2014. Tbilisi. p. 69-73. geo. sum geo.engl.rus.

In hydro technical construction, as well as in other type construction building materials and building technologies are, to a certain extent, determining construction price, periods of constructed objects (especially of hydro electro stations) redemption and construction life duration. In hydro technical constructions concrete and reinforced concrete are generally used which besides many positive properties have a number of disadvantages which especially show up in case of interaction with water and in stressed operating conditions. The work considers the advisability of using of fibrous concrete in construction generally and in hydro technical constructions particularly. In Georgia experiments on fibrous concrete were carried out in the 90th of the last century but due to the definite reasons the development and implementation of this technology was consigned to oblivion. In many countries of the World fibrous concrete is often used as, in many cases, it works better on compression, bending and stretching and is distinguished with more economy compared to traditional reinforced concrete with rod reinforcement. Ill. 1, tabl. 3, foto 3.

EXPERIMENTAL PHYSICAL-MECHANICAL RESEARCH OF CONCRETE HYDRAULIC ADMIXTURE IN MINOR RECURRING STATIC LOAD. M. Lordkipanidze, T. Nareklishvili, N.Tabatadze, Sh.Melelashvili. "Energy". №3(71). 2014. Tbilisi. p. 74-77. geo. sum geo.engl.rus.

Brief description of durability of concrete in recurrent static loads is presented. Physical-mechanical properties of of concrete with hydraulic admixture in minor recurring static loads are described. Besides, base concrete deformation at each initial load stage is less than the deformation of the concrete with admixture and creep flows are almost equal. Deformations obtained in minor recurring static loads are equal to the limit deformation in short loads both for base concrete and concretes with admixture. Ill 1, bibl. 6.

EXPERIMENTAL STUDIES OF THE PHYSICAL AND MECHANICAL INDEXES OF HYDRAULIC CONCRETE WITH ADMIXTURE UNDER SHORT-TIME LOADING. N.Tabatadze. "Energy". №3(71). 2014. Tbilisi. p. 78-80. geo. sum geo.engl.rus.

Experimental studies of the physical and mechanical indexes of hydraulic concrete with admixture (xypex admix C-1000) were carried out under short-time loading. Concrete examples are considered, new methods for running experiments are elaborated and appropriate conclusions are made. Ill. 1, bibl. 3.