ARSEN'IEV, V.A., kand.biolog.nauk

Distribution of whales in the Atlantic sector of Antarctica.
Trudy VNIRO 33:76-95 '58. (MIRA 14:6)
(Antarctic regions—Whales)

ARSEN'YEV, V.A., kand.biol.nauk

Distribution of feeding grounds and congregations of whalebone whales in Antarctica. Trudy VNIRO 33:96-100 '58. (MIRA 14:6)
(Antarctic regions--Whales)

ARSEN'YEV, V.A., kand.biolog.nauk

Relation between the numbers of sighted and taken whales in the Antarctic whale fishery. Trudy VNIRO 33:101-104 '58. (MIRA 14:6)
(Antarctic regions--Whaling)

ARSEN'IEV, V.A.

Whale marking. Migr.shiv. no.1:161-169 '59.
(MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut rybnogo khozyaystva.

(Animals, Marking of)
(Whales)

PHASE I BOOK EXPLOITATION SOV/5462

Sovetskaya antarkticheskaya ekspeditsiya, 1955.

Vtoraya morskaya ekspeditsiya na d/e "Ob'" 1956-1957 gg.; nauchnyye rezul'taty (Second Marine Expedition on the Diesel-Electric Ship "Ob'", 1956-57; Scientific Results) Leningrad, Morskoy transport, 1960. 163 p. (Series: Its: [Materialy] no. 7) 1,200 copies printed.

Sponsoring Agency: Mezhdunarodnyy geofizicheskiy god and Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut.

Ed. (Title page): I.V. Maksimov, Doctor of Geographical Sciences, Professor; Ed.: Ye. I. Oksenova; Tech. Ed.: O. I. Kotlyakova.

PURPOSE: This book is intended for marine geologists and hydrologists.

COVERAGE: This is a collection of 9 articles on the hydrogeological and geological findings of the Second Soviet Marine Expedition, sponsored by the Arctic and Antarctic Scientific Research Institute of the Ministry of the Merchant Marine of the USSR as part of the International Geophysical Year program. The expedition, conducted on the diesel ship "Ob'" during 1956-57,

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Second Marine Expedition (Cont.) SOV/5462

covered the entire Indian Ocean and the coast of Antarctica between 0 and 120° east longitude. The present volume, the seventh and last in a series on the Second Expedition, describes the work of the Expedition in investigating the following: The geomorphology of the sea bottom, by means of sounding devices; the geological structure and profile of the East Antarctic waters and the southern part of the Indian Ocean, through the collection of benthic deposits; the seismic-acoustical determination of the thickness of friable bottom deposits; analysis of surface and depth suspensions; the relief of the bottom of the Davis Sea and the area north of it; the Gauss-Kergelen underwater range; the continental slope and shelf of Antarctica between 20 and 100° east longitude and 40 and 70° south latitude; the geomorphology of Queen Maud Land and Queen Mary Coast; glacier exaration; seasonal quantitative and qualitative longitudinal and latitudinal distribution of plankton in the Antarctic sector of the Indian Ocean; arctic fauna, including whales, seals, birds, fish, marine parasites, and microorganisms. The articles are written by members of the Institut okeanologii AN SSSR (Institute of Oceanology AS USSR); Institut geografii AN SSSR (Institute of Geography AS USSR), Zoologicheskiy institut AN SSSR (Zoological Institute AS USSR), and Institut rybnogo khozyaystva i okeanografii (Institute of Fish Industries and Oceanography). No personalities are mentioned. Each article is accompanied by references.

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Second Marine Expedition (Cont.) SOV/5462

AVAILABLE: Library of Congress (GB60.B58)

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ARSEN'YEV, V.A.

Distribution of whales and whaling possibilities in the Bering Sea. Trudy sov. ikht. kom. no.12:112-124 '61. (MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii.
(Bering Sea--Whales)

ARSEN'YEV, V.A.

Lesser rorquals (Balaenoptera acutorostrata Lac.) of Antarctica.
Trudy sov. Ikht. kom. no.12: 25-132 '61. (MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii.
(Antarctic regions--Whales)

ARSEN'YEV, V.F., gornyy inzhener; CHUDINOV, V.I., gornyy inzhener

Method of coal dust control in mining with cutter-loaders.
Ugol' 36 no.11:52 N '61. (MIRA 14:11)
(Mine dusts)

ARSEN'YEV, V.F., insh.

Effect of some mining factors on the capacity of the PKG-3 and PK-3 cutter-loaders. Izv. vys. ucheb. zav.; gor. zhur. no.8: 38-43 '61. (MIRA 15:5)

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(Kuznetsk Basin—Coal mining machinery)

ARSEN'YEV, V.I., inzh.

Feed-water-softening unit for locomotive and low-pressure boilers employing partial sodium-magnesium cation exchange. Prom. energ. 13 no.5:8-9 My '58. (MIRA 11:8)
(Water--Softening)

ARGEN'YEV, [illegible]

Cleaning compound for the bodies of passenger and electric multiple unit cars. Tsvet. met. transp. 46 no.10:71-72 O '64. (MIRA 17:11)

1. Nachal'nik Yuzhnoy khimiko-tekhnicheskoy laboratorii Yuzhnoy dorogi.

ARSEN'EV, Vladimir Klavdievich. Skvoz' taigu; putevoi dnevnik ekspeditsii po marshrutu ot Sovetskoi Gavani k gorodu Khabarovsku. Moskva, Molodaia gvardiia, 1930. 195 p. (Biblioteka ekspeditsii i puteshestvii.)

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So: LC, Soviet Geography, Part II, 1951/Unclassified.

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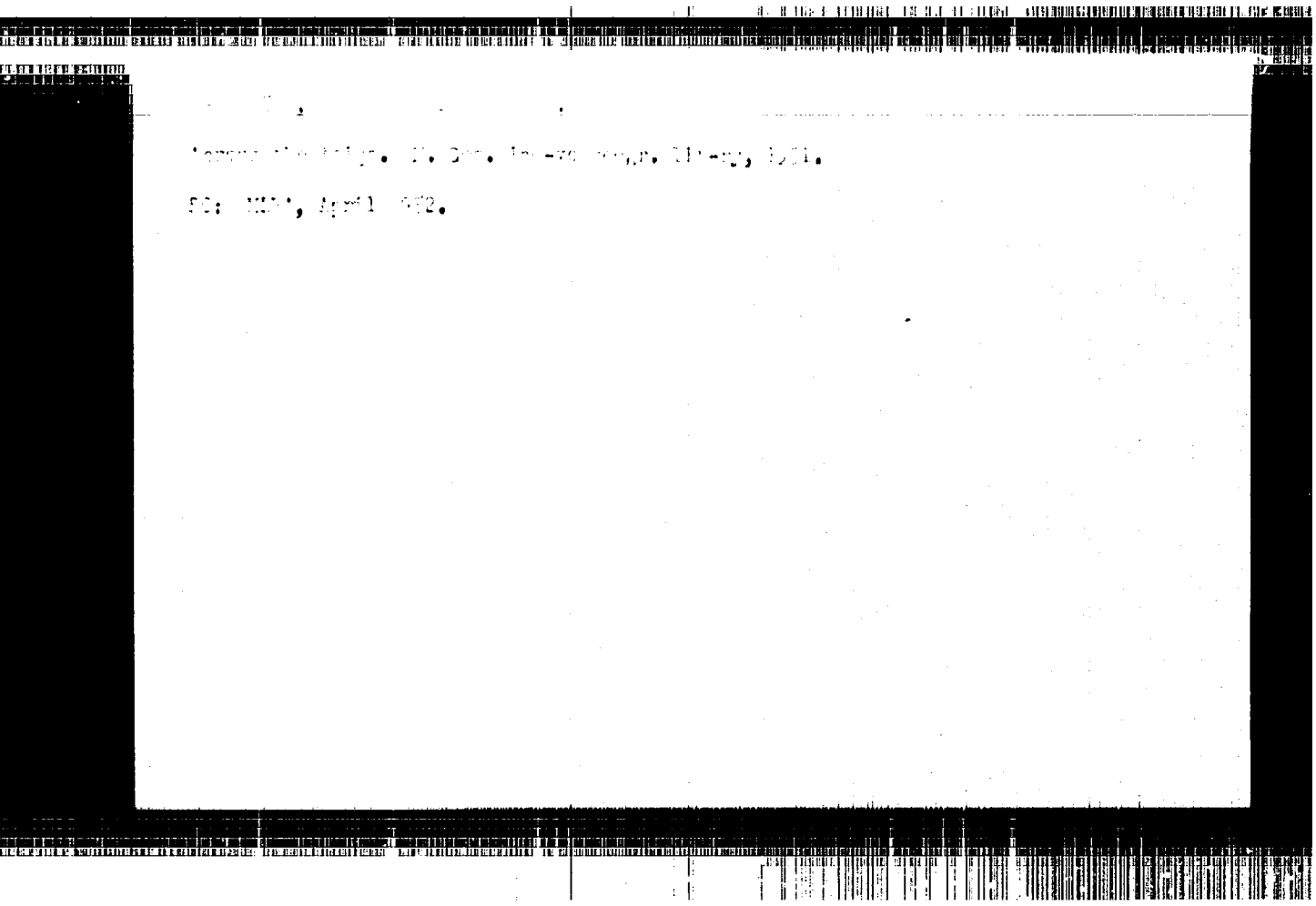

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322 p. Illus., Map.
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ARSEN'YEV, Vladimir Klavdiyevich, 1872-1930

[In the wilds of the Ussuri Region] V debriakh Ussuriiskogo kraia. [Moskva] Moskovskii rabochii, 1956. 486 p. (MLRA 9:9)
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ARSEN'YEV, Vladimir Klavdiyevich; CHERNOVA, F.A., red.; POTREBICH, M.N., tekhn. red.

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(Ussuriysk--Discovery and exploration)

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Dersu Uzala. Tashkent, Izd-vo "Esh gvardiia," 1962. 273 p. (MIRA 16:8)

(Soviet Far [illegible] travel)
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(MIRA 18:10)

ARSEN'YEV, V.P.

Rupture of the aneurysm of arterial angioma in the kidneys. Khirurgiia no. 9:65 S '53. (MLRA 6:11)

1. Iz khirurgicheskogo otdeleniya Kimrskoy gorodskoy bol'nitsy.
(Aneurysms) (Angioma) (Kidneys--Tumors)

ARSENT'YEV, V.P.

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BUKKOV, V.A.; ARSEN'YEV, V.S.

Attempting to split up the water masses in the contact zone of the Japan and Kurile currents. Trudy Inst. okean. 27:5-11 '58.
(Pacific Ocean--Ocean currents) (MIRA 11:4)

DOBROVOL'SKIY, A.D.; ARSEN'YEV, V.S.

Currents of the Bering Sea. Probl.Sev. no.3:3-9 '59.
(MIRA 13:4)

1. Institut okeanologii AN SSSR.
(Bering Sea--Ocean currents)

BURKOV, V.A.; ARSEN'YEV, V.S.; OVCHINNIKOV, I.M.

The concept of northern and southern tropical fronts in the ocean. Trudy Inst.okean. 40:108-120 '60. (MIRA 14:8)
(Pacific Ocean--Oceanography)

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Preparation of unclassified coal: Jigging unclassified coal at the "Verkhne-Duvanskaya" Central Preparation Plant. Ugol' 39 no 6:17-19 Je '64 (MIRA 17:7)

1. Verkhne-Duvanskaya tsentral'naya obogatitel'naya fabrika (for Zatoplyayev, Turow) 2. Gipromashuglеobogashcheniye (for Arsen'yev).

ARSEN'YEV, Ye.G. (Kazan')

Otorhinolaryngological Society. Kaz.med.zhur. no.5:103-104 S-O '60.
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(OTOLARYNGOLOGICAL SOCIETIES)

ARSEN'YEV, Ye.G., aspirant

Meniere's disease. Kaz. med. zhur. 4:68-73 Jl-Ag '63
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1. Kafedra otorinolaringologicheskikh bolezney (zav. - prof. N.N. Lozanov) Kazanskogo meditsinskogo instituta.

ARSEN'YEV, Yu., kand. tekhn. nauk

Stereophonic tape recorder for the accompaniment of a motion picture film. Radio no.3:26-27 Mr '65. (MIRA 18:6)

ARSEN'YEV, Yu. D.

"Some Questions on the Uneconomical Cycle of the Operation of Radial Compressed Gas Turbine Engines." Cand Tech Sci, Moscow Inst of Chemical Machine Building, Min Higher Education USSR, Moscow, 1954. (KL, No 1, Jan 55)

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SO: Sum. No. 556, 24 Jun 55

ARSEN'YEV, Yu. D.

USSR/ Engineering - Turbine testing

Card 1/1 Pub. 128 - 1/26

Authors : Arsen'ev, Yu. D., and Zaydel', R. R.

Title : A problem in determining the efficiency of a turbine stage during an undetermined working condition

Periodical : Vest. Mash. 2, 3-11, Feb 1954

Abstract : An attempt was made to determine the coefficients which affect the efficiency of operation of turbine stages during an unspecified working condition. Formulas are presented for calculating various stages of reaction, angles of attack at air inlets, changes in hydraulic loss and the gas velocity at the exhaust nozzle. Seven USSR references (1933-1953). (Graphs, drawings, diagrams.

Institution : .....

Submitted : .....

ARSEN'YEV, Yu.D., kandidat tekhnicheskikh nauk.

Principles of approximated similarity applications. Teploenergetika 4 no.3:55-57 Mr '57. (MIRA 10:3)

1. Energeticheskiy institut AN SSSR.
(Dimensional analysis)

AUTHOR: Arsen'yev, Yu.D.

89 -1-15/18

TITLE: Saturated Steam Utilization Effectiveness in Atomic Power Plants (Effektivnost' ispol'zovaniya nasyshchennogo para na atomnykh elektrostantsiyakh)

PERIODICAL: Physics and Thermotechniques of Reactors (Fizika i teplotekhnika reaktorov), Supplement Nr 1 to Atomnaya energiya, 1958, USSR

ABSTRACT: Heat cycles, in which saturated steam is used, are of special interest for atomic electric power plants, in spite of their low degree of efficiency, for technical and economic reasons. The use of saturated steam makes special demands both upon the heat cycle and upon the construction of the turbines. The following of them are discussed:

1.) The peculiar features of a cycle of saturated steam.
2.) The number of steam separators in dependence on initial pressure.
3.) The influence exercised by steam pressure upon the degree of efficiency of the cycle.
4.) The maximum turbine efficiency when working with saturated steam.

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Saturated Steam Utilization Effectiveness in Atomic Power Plants

09 -1-15/18

There are 5 figures and 5 references, 4 of which are Slavic.

AVAILABLE: Library of Congress

Card 2/2 1. Atomic power plants-Heat transfer 2. Reactors-Heat transfer

89 -1-16/18

AUTHOR: Arsen'yev, Yu.D.

TITLE: Particular Features of Heat Cycles in Heterogeneous Boiling Water Reactors (Osobennosti teplovogo tsikla v kipyashchim geterogennym reaktorom)

PERIODICAL: Physics and Thermotechniques of Reactors (Fizika i teplotekhnika reaktorov), Supplement Nr. 1 to Atomnaya energiya, 1958 (USSR)

ABSTRACT: Theoretical considerations lead to the following conclusions:

1.) In a boiling water reactor the negative steam reactivity Δk_D mainly determines the load coefficient of the reactor β and the steam volume at the end of the channel δ.

2.) The peculiar feature in the interpretation of the thermal cycle is that a maximum degree of efficiency can be attained in the case of a given load coefficient. A thermodynamical increase of β is connected with a reduction of the degree of efficiency.

3.) A cycle with overheated steam makes it possible, with respect to a cycle with separated steam and with β being the same, to increase the degree of efficiency η_i of the cycle and thus to lower the specific steam consumption d_e.

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Particular Features of Heat Cycles in Heterogeneous Boiling Water Reactors

89 -1-16/18

4.) Selection of the steam cycle is the most effective if the analysis of $\eta_i = f(\beta)$ is accurately carried out.

There are 9 figures and 4 references, 1 of which is Slavic.

AVAILABLE: Library of Congress

Card 2/2 1. Reactors-Heat transfer

89-4-13/23

AUTHOR: Arsen'yev, Yu.D.

TITLE: On the Double Cycle of a Boiling-Water Reactor (O dvoynom tsikle kipyashchego reaktora)

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 4, pp. 367-370 (USSR)

ABSTRACT: A boiling-water reactor can be constructed in such a manner that not only the steam coming direct from the reactor is fed into the turbine, but in addition also steam of medium pressure, which is produced by the water circulating in the reactor. For the second method of steam production it is possible to use either a device for heat transfer or a self-evaporizer.
If, instead of a heat transfer device a self-evaporizer is used, the entire construction is considerably simplified. However, also the degree of efficiency may be improved irrespective of the fact that a considerable amount of power is necessary for the reactor itself and that the circulating pumps have to cope with a considerable pressure drop.
It is a particular feature of the cycle with a self-evaporizer that the degree of efficiency is only little diminished in the

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case of a considerable reduction of the temperature t_p, because, if the reactor operates continuously, the temperature drop t_T leads to an increase of pressure in the self-evaporizer p_o. It is therefore to be recommended to reduce the temperature of the water producing the steam in the cycle of the self-evaporizer. In this way the number of regenerators can be reduced and the pressure drop in the circulating pumps may be kept on a lower level. There are 2 figures, 2 tables, and 3 references, 2 of which are Soviet.

SUBMITTED: December 7, 1957

1. Reactors--Design 2. Reactors--Heat transfer 3. Reactors--Operation

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SOV/96-59-5-5/19

AUTHORS: Arsen'yev, Yu.D., Candidate of Technical Sciences and Averin, Ye.K., Candidate of Technical Sciences

TITLE: The Approximate Determination of the Optimum Cycle for Two-Circuit Atomic Power Stations (O priblizhennom opredelenii optimal'nogo tsikla dvukhkonturnykh atomnykh stantsiy)

PERIODICAL: Teploenergetika, 1959, Nr 5, pp 29-33 (USSR)

ABSTRACT: This is a theoretical article on determining which intermediate temperature in two-circuit atomic power stations gives the lowest cost. Once the maximum and minimum temperatures of the overall cycle are fixed there is only one intermediate temperature that gives the highest thermal efficiency in two-circuit system. In actual power stations the practical engineering possibilities in building reactors, and other economic considerations, usually over-ride the thermal efficiency. It is, therefore, quite a complicated matter to determine the best intermediate temperature and a number of simplifying assumptions are usually made. For instance, if the cost of fuel is not included the power costs least when the maximum amount is generated, which happens with

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The Approximate Determination of the Optimum Cycle for Two-Circuit Atomic Power Stations

the temperature given by Expression (1). This expression has been derived by a number of Soviet and foreign authors. There has been some dispute about the correct definition of the maximum temperature: it should, of course, be the surface temperature of the protective tubes round the fuel elements. Formulae are then derived for the cost of electric power, with allowances for the deterioration and for repair of the reactor, the biological shielding, the auxiliary equipment for the reactor and the remaining conventional equipment of the power station. The effects on costs of unit size of set, steam conditions and the like are also considered. Expression (4) is then derived for the intermediate temperature that gives the lowest cost. However, despite the simplifying assumptions that have been made, the expression can only be solved by the method of successive approximations. This happens because the component corresponding to reactor cost is itself a function of the output and the intermediate temperature.

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The Approximate Determination of the Optimum Cycle for Two-Circuit Atomic Power Stations

Hence, for approximate determination of the intermediate temperature it is best to make use of the relative fuel cost and the relative reactor component, as given in Expression (5). When the appropriate substitutions are made, expression (6) is derived and gives the intermediate temperature in more convenient form when used in conjunction with expression (6a). In deriving the formulae it has been assumed that the fuel cost per kilowatt hour of thermal output of the reactor is constant, whereas when enriched uranium fuel is used it depends considerably on the thermal output. This question is considered in somewhat more detail. The decrease in fuel cost with increase in thermal output of the station is characteristic of atomic power stations. It results from the increased amount of energy that is released per unit volume of active zone in a given time. Large errors can arise if this point is not watched when Eq (6) is used. Other assumptions are also made in the derivation of Eq (6); for example, it is supposed that the minimum temperature difference in the steam generator between

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the heat transfer medium and the working substance is always positive. It is, therefore, of interest to examine how far Eq (6) corresponds to the operating data from actual stations that have been designed on the basis of detailed examination. Intermediate temperature and thermal efficiency calculated from Eq (6) for a number of practical conditions are plotted in Fig 2, which also includes points calculated from the data given in Table 1 for a number of Soviet and foreign power stations. In practical stations when the fuel costs are high, the intermediate temperature and the efficiency are made high. The opposite circumstance occurs when the station is intended mainly to produce plutonium. Changes in the thermal output of a reactor, the thermal efficiency, the electrical output and the increase in power cost as functions of the cycle temperature are graphed in Fig 3. It is concluded that although a number of simplifying assumptions are made in deriving Eq (6), the resulting curves in Fig 2 correspond reasonably closely to data for

existing atomic power stations. The equation is, therefore, suitable for approximate calculations of the thermal circuit parameters. Finally examples are given to illustrate the approximate choice of the best cycle in atomic power stations and it is concluded that by use of Eq (6) it is quite simple to analyse the influence of individual components of the power cost. Such analysis is of considerable interest in examining the future development of thermal cycles in atomic power stations. There are 3 figures, 1 table and 15 references, 9 of which are Soviet, 1 French and 5 English or translations to Russian from English.

ASSOCIATION: Energeticheskiy Institut AN SSSR (The Power Institute, Academy of Sciences, USSR)

ARSEN'YEV, Yu.D., kand.tekhn.nauk; SPUNDE, Ya.A., kand.tekhn.nauk

Designing radial turbines. Energomashinostroenie 5 no.2:27-31 F '59. (MIRA 12:3)

(Gas turbines--Design)

AUTHOR: Arsen'yev, Yu.D. (Cand.Tech.Sci.) 30V/96-59-10-5/22

TITLE: Selection of the Optimum Exhaust Vacuum for Turbines at Atomic Power Stations

PERIODICAL: Teploenergetika, 1959, Nr 10, pp 27-34 (USSR)

ABSTRACT: In atomic power stations fuel costs are low and the cost of power is governed mainly by capital charges. This is why low steam pressures are economically acceptable in atomic power stations. However, with low steam pressures very large turbines are required for a given output, and the output may be restricted by the possible rate of steam flow through the exhaust. Therefore, Soviet and foreign atomic power stations tend to use a considerable number of relatively low-output turbines. The maximum output of 1500 r.p.m. sets is greater than that of 3000 r.p.m. sets; for example, a saturated steam turbine with two exhausts at a vacuum of 0.05 atms can have an output of 75 MW at 3000 r.p.m. and 300 MW at 1500 r.p.m. In large regional power stations it is desirable to increase the unit output to 400-600 MW, and this is difficult in atomic power stations running at low steam pressures. The easiest way of increasing the unit output is to raise the exhaust pressure, which also reduces the

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capital cost of the set and of the machine room as a whole. The object of this article is to consider the possibility of increasing the unit output of a turbine by raising the exhaust pressure; this is done by analysing the principal characteristics of the station, such as the cost of power, and the relative capital charges. The influence of turbine vacuum on the station efficiency and the unit output of set is first considered. The saturated steam cycle represented by the iS diagram of Fig 1 corresponds in its initial data to a cycle for a reactor operating with water under a pressure of 28 atms. The assumed efficiencies and steam consumptions as functions of vacuum are plotted in Fig 2, and heat drop and steam consumption data as functions of exhaust vacuum in Fig 3. The law of change of turbine output as a function of condenser pressure is given by Eq (3). The influence of condenser vacuum on the cost of power and on the capital cost is then considered. Graphs of power cost as a function of vacuum assuming constant cost of heat in the reactor are plotted in Fig 4. The capital costs are analysed into a number of components

Selection of the Optimum Exhaust Vacuum for Turbines at Atomic Power Stations

which are considered in turn. Changes required in the flow paths of turbines to deal with increased output are illustrated in Fig 5. It is based on calculations on increasing the output of a saturated steam turbine of the Khar'kov Turbo-Generator Works from 70 MW with an exhaust pressure of 0.04 atms to 140 MW with an exhaust pressure of 0.094 atm. Numerical data are given about the resulting changes in the dimensions of the turbine and rough cost calculations are made. A brief analysis is then given of the influence of turbine cost on the selection of condenser vacuum. The relative fuel cost, including the cost of preparing the active zone of the reactor, is very low when natural uranium is used and not a great deal higher when enriched uranium is used. It is to be expected that in the future this component of the cost will become even lower. With low steam conditions the cost of the turbine room is relatively high, and in general is appreciably higher with saturated steam than with super-heated steam conditions. Of course, in stations with experimental reactors made with a high factor of safety the relative cost of the machine room is lower than

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Selection of the Optimum Exhaust Vacuum for Turbines at Atomic Power Stations

it will be in normal operational stations. American experience is referred to in this connection. A number of calculations are then made with reference to an atomic power station designed for a steam pressure of 28 atms and for a vacuum of 0.04 atms. In the first variant considered the number of turbines is six. In the second variant it is assumed that the reactor is more highly rated and that the capital costs on the reactor are reduced, increasing the relative cost of the machine room, so that if the exhaust pressure is 0.075 atm, four turbines are required. In the third variant it is further assumed that the fuel charges are reduced and then with an exhaust pressure of 0.01 atms the number of turbines is three. The capital cost of the second variant is 7% less than that of the first: the third variant is 9% less. The vacuum pressure corresponding to minimum
Card 4/5 specific capital investment is always greater than that corresponding to minimum power cost. If two stations

Selection of the Optimum Exhaust Vacuum for Turbines at Atomic Power Stations

are of similar power cost, that with the lower capital cost will be brought into service more quickly and sometimes this can be decisive.

Card 5/5 There are 7 figures and 13 references, of which 12 are Soviet and 1 English).

ASSOCIATION: Energeticheskiy institut AN SSSR
(Power Institute, Acad. Sci. USSR)

26.1310

AUTHORS: Argen'yev, Yu. D., Averin, Ye. K.

TITLE: The Problem of Determining the Optimum Thermal Cycle in Nuclear Power Plants by Approximation

PERIODICAL: Atomnaya energiya, 1960, Vol. 9, No. 2, pp. 133 - 134

TEXT: The authors of the present "Letter to the Editor" discuss problems arising in the calculation of the best thermodynamic cycle corresponding to the lowest costs of electric energy, as well as the difficulties of an exact calculation. They particularly refer to similar work done by D. D. Kalafati (Refs. 1-4) discussing it and criticizing the results. In Ref. 1, the postulate that costs of electric energy be a minimum led to equation (1) for the mean temperature of the working substance: $T_{1c}^{m.opt} = \sqrt{T_p^{max} T_{2c}/(1-z)}$; T_p^{max} denotes the maximum temperature on the wall (T_w) of the fuel element; T_{2c} denotes the condenser temperature (T_{con}); $z = \eta_t$. For inexpensive fuel, z may be set equal to zero, and equation (1)

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The Problem of Determining the Optimum Thermal Cycle in Nuclear Power Plants by Approximation

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B006/B059

then reads as follows: $T_{1c}^{m.opt} = \sqrt{T_p^{max} T_{con}}$ (2). In Ref. 1, either the wall temperature (T_w) or the temperature in the center of the fuel element (T_{cen}) was substituted for T_p^{max}. In the present article, it is shown that in (1) and (2) T_{cen} and T_p^{max} cannot be equated if plane or cylindrical fuel elements are considered. Proof is given and discussed in detail. The second section of the article briefly points out that equations (1) and (2) in Refs. 1 and 2 are applied to both cycles with and without regenerative preheating of the water. This leads to the wrong conclusion that a cycle with regenerative heating has the higher efficiency. In the third section, the authors briefly discuss the use of equations (1) and (2) to calculate the cycles of boiling-water reactor power plants; and in the last section, they criticize the fact that in Refs. 1-4 the influence of changes in electric power or of the parameters of the steam conveyed to the turbine on costs was not considered. Problems of investment and operating costs are discussed, and the equations derived in

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The Problem of Determining the Optimum Thermal Cycle in Nuclear Power Plants by Approximation

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B006/B059

Refs. 1-4 are said to be of minor importance. There are 1 figure and 4 Soviet references.

SUBMITTED: March 24, 1960

Card 3/3

S/089/60/010/001/005/020
B006/B063

21.1200

AUTHOR: Arsen'yev, Yu. D.

TITLE: Optimum Temperature for Regenerative Water-heating Systems in Atomic Power Plants With Water-cooled Water-moderated Energy Reactors (WWER)

PERIODICAL: Atomnaya energiya, 1960, Vol. 10, No. 1, pp. 19-25

TEXT: The author determined the optimum temperature for regenerative water-heating systems by the method of the "basic point"; this temperature, t_r^{opt}, corresponds to a minimum cost of electric energy, c_e (kopecks/kwh). For atomic power plants with water-cooled water-moderated energy reactors (WWER), t_r^{opt} is shown to equal the maximum temperature which can be determined from the steam parameters after the first turbine stage. The "basic-point method" used to determine the effect of the regeneration temperature, t_r, upon c_e is described in Ref. 5; the selection of the basic point (to whose parameters all others are referred) has no effect

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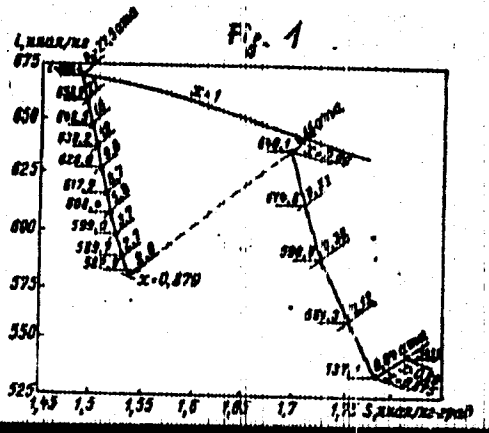
upon the result. The effect of t_r upon the efficiency of the power plant and the average power of the turbine is examined first. For this purpose, an AK-70 (AK-70) turbine is considered, for which the operating cycle of steam is shown in Fig. 1 in the form of an i(S) diagram. Fig. 2 shows the thermal scheme of the second cycle of the power plant, and the respective characteristics for different t_r are tabulated. The discussion is extended to the calculation of power costs δc_e and the specific investment δq_k as a function of t_r, again carried out by the basic-point method (the parameters referring to this point are single-primed, while the others are double-primed). The relative variation in efficiency is thus given by $\delta\eta = \eta'/\eta'' - 1$ and $q_k = q_k''/q_k' - 1$, similar relations holding for other relative variations. Fig. 4 illustrates the relative changes in fuel costs δa_T and specific investment $\delta q_{m\ r}$ for machinery as a function of

t_r, and Fig. 6 illustrates δq_k as a function of t_r, as well as the percentage of investment for machinery $b'_{m.3}$ as a function of t_r. It is stated in conclusion that δc_e decreases in all variants with a rise of t_r, irrespective of fuel costs. This means, $t_r^{opt} = t_r^{max}$. There are 7 figures, 1 table, and 7 Soviet references.

SUBMITTED: March 24, 1960

Legend to Fig. 1: i (kcal/kg) as a function of S(kcal/kg.deg) for an AK-70 turbine; ama = atm.abs.

Fig. 1



Legend to Fig. 2: Second thermal cycle of the power plant: 1) steam generator; 2) high-pressure cylinder; 3) low-pressure cylinder; 4) steam separator; 5) generator; 6) condenser; 7) pump; 8) preheater of condensate, using the steam from the ejectors, and the steam leakage of the turbine; 9) low-pressure preheater; 10) deaerator; 11) high-pressure preheater (ama = atm.abs.).

Legend to the Table: 1) characteristics; 2) number of high-pressure preheaters; 3) α of separator; 4) α of deaerator; 5) d_e kg/kwh; 6) α and $1-\Sigma\alpha$ are expressed in %. Alphas denote the portions of steam coming from the low-pressure (α_1, α_2) and the high-pressure preheater (α_3-α_6); N_T''/N_T' is the average turbine power;

$$\frac{N_T'}{N_T''} = \frac{d_e''(1-\Sigma\alpha'')}{d_e'(1-\Sigma\alpha')}.$$

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SHUMSKIY, Yefim Grigor'yevich, prof.; BOGDASAROV, Boris Aleksandrovich, kand. tekhn. nauk. Prinimal uchastiye ARSEN'YEV, Yu.D., kand. tekhn. nauk; KALABIN, V.P., doktor tekhn. nauk, prof., retsenzent; BYSTRITSKAYA, V.V., inzh., red.; CHERNOVA, Z.I., tekhn. red.; EL'KIND, V.D., tekhn. red.

[General heat engineering] Obshchaia teplotekhnika. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1961. 459 p. (MIRA 15:2)

1. Voyennaya Ordena Lenina Akademiya bronetankovykh voysk (for Kalabin).

(Heat engineering) (Power (Mechanics))

ARSEN'YEV, Yu.D., kand.tekhn.nauk

Analyzing the optimum parameters of a steam generator for an atomic power plant with VVER type reactors. Teploenergetika 8 no.11:18-22 N '61. (MIRA 14:10)

1. Energeticheskiy institut AN SSSR.
(Atomic power plants)

PHASE I BOOK EXPLOITATION SOV/6049

Arsen'yev, Yuriy Dmitriyevich

Analiz termodinamicheskogo tsikla atomnykh elektrostantsiy metodom bazovoy tochki (Analysis of the Thermodynamic Cycle of Atomic Power Stations by the Base-Point Method) Moscow, Gosatomizdat, 1962. 134 p. 2500 copies printed.

Ed.: A. I. Voronova; Tech. Ed.: S. M. Popova.

PURPOSE: This book is intended for engineers and scientific workers in power engineering and for advanced students specializing in atomic electric power plants.

COVERAGE: The determination of the optimum thermodynamic cycle for atomic and other electric power plants by the method of "the basic point" (or basic constants) is presented; the basic constants are taken from a preliminary basic calculation in which the thermodynamic cycle is arbitrarily chosen. The optimum thermodynamic cycle is determined on the basis of technical and economic calculations; as a result, the minimum

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Analysis of the Thermodynamic (Cont.) SOV/6049

expenditure for producing electric power at such factors as varying fuel component and unit capital investments are found. A system of equations, analogous to the equations of the theory of similarity, is derived. As an example, the optimum cycle for an atomic plant with a water-cooled water-moderated power reactor is determined. G. N. Kruzhilin, Corresponding Member Academy of Sciences USSR, is mentioned. There are 40 references: 37 Soviet and 3 English.

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Analysis of the Thermodynamic (Cont.) SOV/6049

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AVAILABLE: Library of Congress

SUBJECT: Nuclear Electric Power Engineering

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ARSEN'YEV, Yu.D., kand. tekhn. nauk

Relationship between the power output of an electric power plant and the initial parameters of the operating cycle. Teploenergetika 11 no.5:95-96 My'64. (MIRA 17:5)

ACCESSION NR: AP4037635 S/0096/64/000/006/0022/0026

AUTHOR: Arsen'yev, Yu. D. (Candidate of technical sciences); Skirnov, S. I. (Engineer)

TITLE: The problem of analytical determination of optimum parameters for atomic power plants by the base point method

SOURCE: Teploenergetika, no. 6, 1964, 22-26

TOPIC TAGS: similarity theory, atomic power plant, atomic reactor, nuclear reactor, atomic electric power plant

ABSTRACT: To obtain high economy of operation of an atomic power plant, the authors examined a means of selecting optimum parameters corresponding to minimum theoretical costs for electrical energy in kopecks/kwh. By using the base point method, a system of approximations was developed which made it possible to obtain simple analytical relationships capable of being refined by further calculation. The basic approach consists in replacing the numerous specific cost indices with generalized, dimensionless complex variables characterizing the technico-economic relations in the base point. These variables also contain cost reducing coef-

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ACCESSION NR: AP4037635

ficients for the equipment which reflect the dynamics of changes in capital outlays on individual groups of equipment. The method was developed in 1958 at the Energeticheskiy institut imeni G. M. Krzhizhanovskogo (Krzhizhanovskiy Power Institute).

ASSOCIATION: ENIN

SUBMITTED: 00	DATE ACQ: 09Jun64	ENCL: 00
SUB CODE: NP	NO REF SOV: 009	OTHER: 000

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ARSEN'YEV, Yu.D., kand. tekhn. nauk; SMIRNOV, S.I., inzh.

Analytic determination of optimum parameters of atomic electric power plants using a basic point method. Teploenergetika 11 no.6, 2-26 Je '64. (MIRA 18:7)

1. Energeticheskiy institut im. G.M.Krzhizhanovskogo AN SSSR.

ARSEN'YEV, Yu.M.

Ulan-Bator. Geog. v shkole 24 no.5:14-20 S-O '61. (MIRA 14:8)
(Ulan-Bator--Description) (Mongolia--Culture)

ARSEN'YEVA, G.P.

Experimental investigations of transitional motor cycles in electric twisting spindles used for twisting capron fibers. Izv.vys. ucheb.zav.; tekh.tekst.prom. no.2:144-155 '58. (MIRA 11:5)

1. Moskovskiy tekstil'nyy institut.
(Spindles (Machine tools)) (Electric motors) (Nylon)

ARSENTYEV, G. P.

Electric spindles used in capron throwing. Tekst. prom. 18 no.1:20-22 Ja '58. (MIRA 11:2)

(Nylon) (Spinning machinery)

ARSEN'YEVA, G.P.

Results of testing electric spindles for capron twisting. Tekst. prom. 18 no.3:47-49 Mr '58. (MIRA 11:3)
(Textile machinery--Electric driving) (Nylon)

ARSEN'YEVA, G. P.; KELER, V. V.

Coordination of the operations of electric spindles and intake cylinders during the run and slowdown till the complete stop of a ringless twister. Izv. vys. ucheb. zav.; tekh. tekst. prom. no.4:111-121 '62. (MIRA 15:10)

1. Moskovskiy tekstil'nyy institut.

(Spinning machinery—Electric driving)

ARSEN'IEVA, G.F.; KFIER, V.V.

Electric drive of a ringless twisting machine with electric spindles for the twisting of nylon yarn. Izv. vyss. uchebn. zav.; tekh. tekst. prom. no.4:134-137 '64.

(MIRA 17:12)

1. Moskovskiy tekstil'nyy institut.

ARSEN'YEVA, G.P.

Ways to increase the operative capacity of twisters. Khim. volok. no.1:50-51 '65. (MIRA 18:2)

1. Moskovskiy tekstil'nyy institut.

ARSEN'YEVA, G.F.; KRASNOV, V.S.

Using the method of electric tensometry for torque measurements in testing small capacity electric motors. Izv. vys. ucheb. zav.; tekh. teks. prom. no.6:115-117 '65. (MIRA 19:1)

1. Moskovskiy tekstil'nyy institut. Submitted September 29, 1964.

PAVLOV, A.V.; VASIL'EVSKAYA, N.D.; KOR'HENEVSKAYA, Ye.S.; [illegible], T.M.; L., V.P.; ARSEN'YEVA, G.P.

Geochemistry of coal-bearing sediments in southern Yakutia; concerning A.A. Kodikov's article. Lit. i pol. iskop. no.4:140-143 Jl-Ag '64. (MIRA 17:11)

1. Nauchno-issledovatel'skiy institut geologii Arktiki, Leningrad.

[redacted], I. P.

"Surgical Significance of Variants of the Arteria Brachialis."
Cand Med Sci, Rostov-on-Don State Medical Inst, Rostov-on-Don, 1953.
(RZhBiol, No 1, Jan 54)

SO: Sum 432, 29 Mar 55

USSR / Human and Animal Morphology (Normal and Pathological). 8
Circulatory System. Blood Vessels.

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 2948

Author : Maklatsov, P. F.; Arsen'yeva, I. P.
Inst : Rostov-on-Don Medical Institute
Title : Further Study of Esophageal Blood Supply

Orig Pub : Tr. Otchetn. nauchn. konferentsii (Rostovsk.-n/D. med. in-t) za 1956 g. Rostov-na-Donu, 1957, 203-207

Abstract : Vessels supplying various segments of the esophagus (E) are described. Thirty specimens were studied. The main vessels supplying E approach this organ from its lateral aspects; then, once within the wall of E, they go down along E branching off towards the anterior and posterior surfaces. The best conditions of blood supply are found in the superior third of the thoracic section of E; second is the abdominal section; then the

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cervical and the lower two thirds of the thoracic sections of E. The cervical and abdominal sections of E have a permanent source of blood supply; the vessels of the thoracic section vary greatly in number and origin.

L 40998-65 EWT(d) EWP(e)/EPA(e)-2/EWT(m)/EWP(w)/EPF(n)/EWP(t)/EWG(k)/EW [illegible]
EPR/EWP(t)/EWP(k) [illegible] Pc-4/Pg-4/Pr-4/Ps-4/Pt-4

ACCESSION NR: AR5015646 S/0081/64/000/012/E056/E056

SOURCE: Ref. zh. Khimiya. Abs. 2E376

AUTHOR: Shreyber, G. K.; Arsen'yevn, L. N.

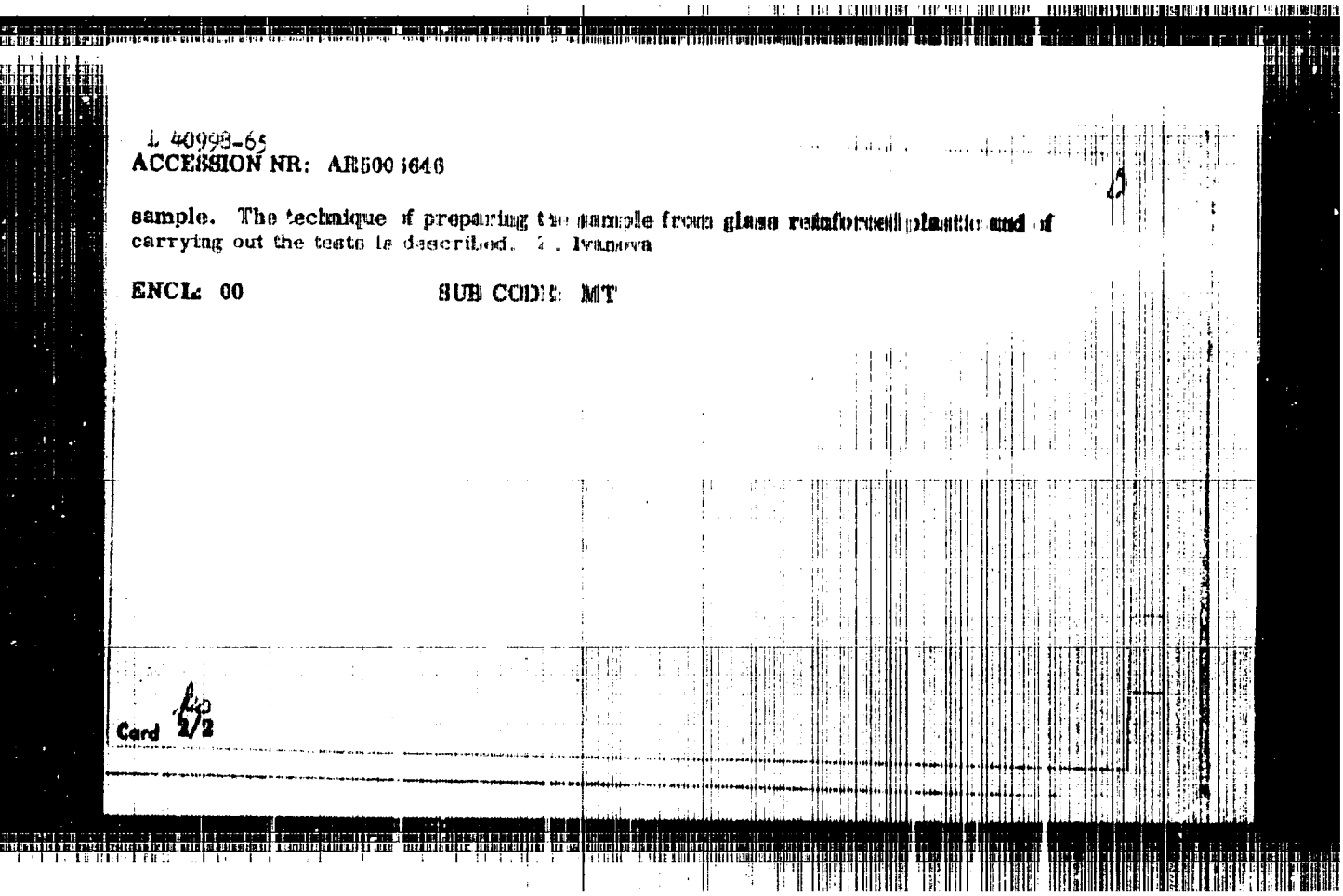
TITLE: Technique of determining the fatigue strength of glass reinforced plastics prepared by the winding method

CITED SOURCE: Tr. M-va in-t tekhnologii i kaz. prom-sti, vyp. 46, 1964, 225-234

TOPIC TAGS: fiberglass, glass reinforced plastic, fatigue strength, glass plastic mechanical property, polyester resin, aluminoborosilicate fiberglass, strength test

TRANSLATION: The fatigue strength of glass reinforced plastics prepared from polyester resin PN-1 with an [illegible] aluminoborosilicate fiberglass in the form of a braid as a [illegible] The tests were carried out on round [illegible] mounted in the machine. [illegible] with resin, [illegible] tested [illegible] reinforcing layers in the

Card [illegible]



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sample. The technique of preparing the sample from glass reinforced plastic and of carrying out the tests is described. [illegible] Ivanova

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L 10292-66 EWP(e)/EWT(m)/EWP(w)/EWP(j)/T/EWA(c)/EWP(b)/ETC(m)

ACC NR: AT5028827 JD/WW/WB/RM/WH SOURCE CODE: UR/2982/65/000/054/0117/0120

AUTHORS: Shreyber, G. K.; Arsen'yeva, L. N.

ORG: Moscow Institute of Petrochemical and Gas Industry (Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti)

TITLE: Influence of the medium on the fatigue strength of laminated glass-reinforced plastic materials

SOURCE: Moscow. Institut neftekhimicheskoy i gazovoy promyshlennosti. Trudy, no. 54. 1965. Oborudovaniye neftegazovoy i neftekhimicheskoy promyshlennosti (Equipment of the petroleum-gas and petroleum-chemical industry), 117-120

TOPIC TAGS: laminated plastic, reinforced plastic, plastic strength, vinyl plastic, polyester plastic, fatigue strength, fatigue test/ PN 1 binder

ABSTRACT: The effect of several media on the fatigue strength of braided or laminated glass-reinforced plastics was studied. The media were: air, sea water, distilled water, gasoline "kalosha," and petroleums with 2.8% and with 0.3% sulfur content respectively. The specimens consisted of 30 alternate layers of continuous alkali-free glass fibers and polyvinylacetate. The alternate layers were bonded to

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each other by polyester resin PN-1 binder. The experimental procedure followed that previously described by the authors (Metodika ispytaniy steklotekstolitov poluchennykh metodom namotki, na ustalostnuyu prochnost'. Trudy NIIKh i GP, vyp. 46, 1964). The experimental results are tabulated and presented graphically (see Fig. 1). Correlation equations for the construction of diagrams was derived by the method of A. K. Mitropol'skiy (Statisticheskoye issledovaniye, t. I, II, III, IV, VZLTI, 1952-1954) and M. Ya. Shashin (Metodika opredeleniya srednikh veroyatnykh znacheniy tsiklicheskoy dolgovechnosti. Zavodskaya laboratoriya, No. 6, t. XVIII, 1952). It is concluded that different media have different effects on the endurance limit of laminated glass-reinforced plastics. Water was found to be the most aggressive medium. It lowers the fatigue strength of the plastic by approximately 50%. Salts in sea water had no effect on the fatigue strength, whereas petroleum decreased the fatigue strength, the effect being more pronounced at the higher sulfur content of the petroleum. The fatigue strength in gasoline

Corrosion fatigue 18
44, 55

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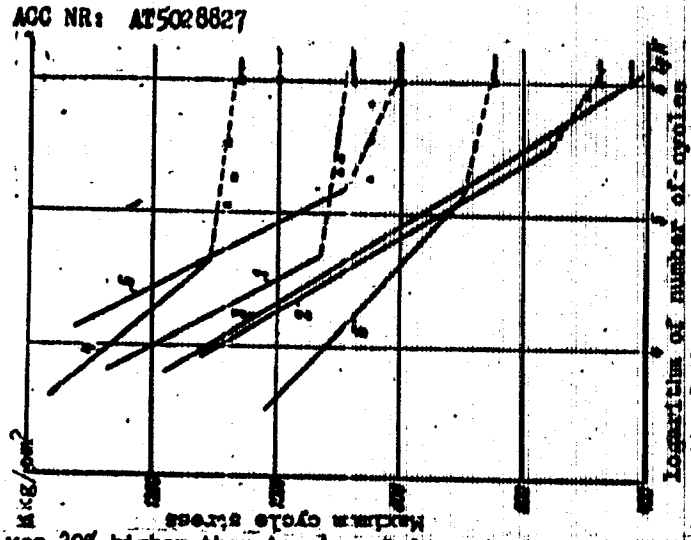

Fig. 1. Fatigue diagrams for laminated glass-reinforced plastic acted upon by different media. 1 - air; 2 - sea water; 3 - distilled water; 4 - gasoline "Galosha"; 5 - low-sulfur petroleum; 6 - high-sulfur petroleum.

was 20% higher than in air. Orig. art. has: 1 table and 1 graph.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 007

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