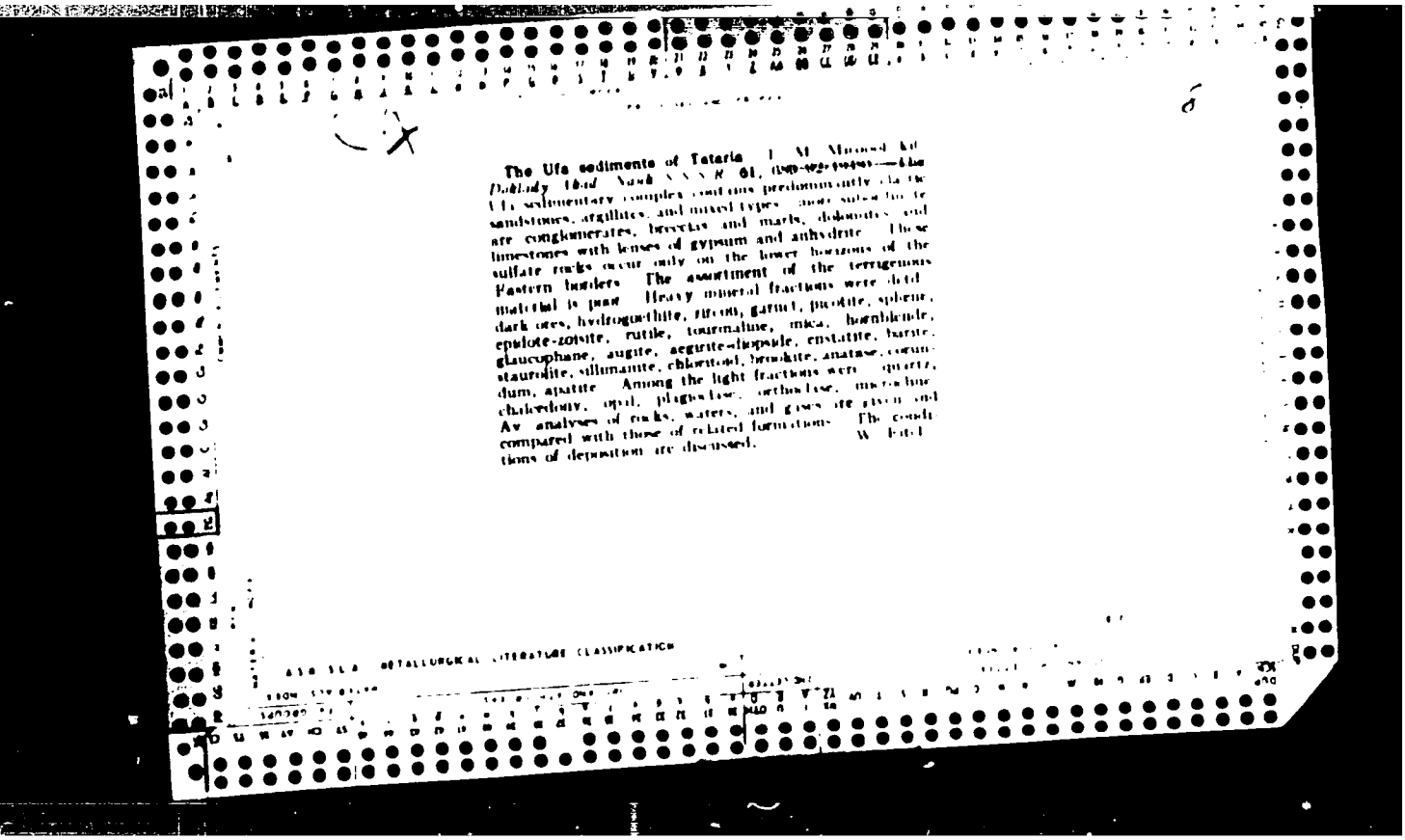
"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



The Ufa sediments of Tataria. I. M. Mirosol'skii. *Doklady Akad. Nauk S.S.S.R.* 61, [illegible]—The Ufa sedimentary complex contains predominantly clastic sandstones, argillites, and mixed types; more subordinate are conglomerates, breccias and marls, dolomites and limestones with lenses of gypsum and anhydrite. These sulfate rocks occur only on the lower horizons of the Eastern borders. The assortment of the terrigenous material is poor. Heavy mineral fractions were detd.: dark ores, hydroguethite, zircon, garnet, picotite, sphene, epidote-zoisite, rutile, tourmaline, mica, hornblende, glaucophane, augite, aegirite-diopside, enstatite, barite, staurolite, sillimanite, chloritoid, brookite, anatase, corundum, apatite. Among the light fractions were quartz, chalcedony, opal, plagioclase, orthoclase, microcline. Av. analyses of rocks, waters, and gases are given and compared with those of related formations. The conditions of deposition are discussed. W. Fitch

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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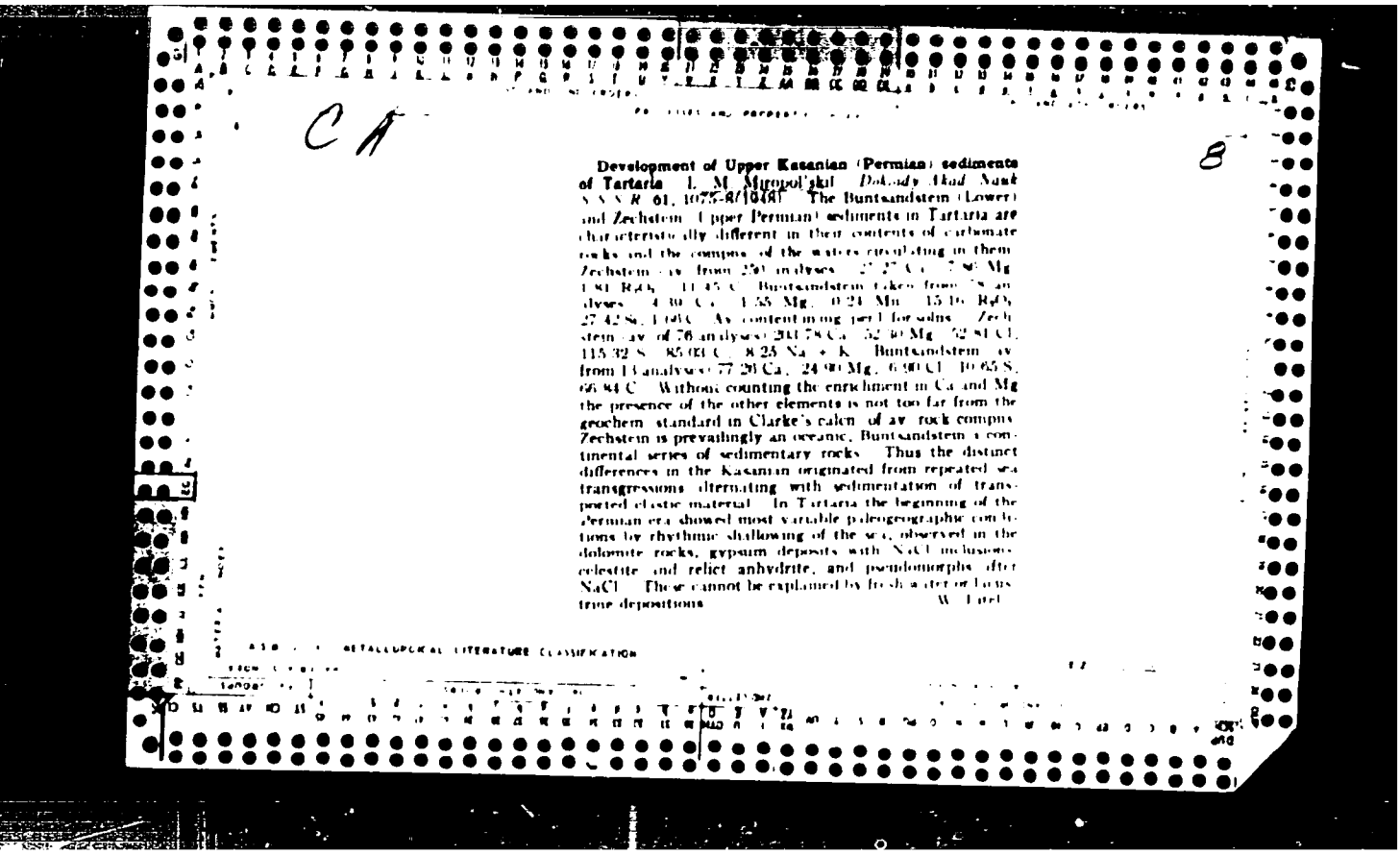

CA

8

Development of Upper Kasanian (Permian) sediments of Tartaria. I. M. Miropol'skii. *Doklady Akad. Nauk S.S.S.R.* 61, 1075-8(1948). The Buntsandstein (Lower) and Zechstein (Upper Permian) sediments in Tartaria are characteristically different in their contents of carbonate rocks and the compns. of the waters circulating in them. Zechstein (av. from 250 analyses): 27.27 Ca, 7.86 Mg, 1.81 R_2O_3, 11.45 C. Buntsandstein taken from 78 analyses: 4.30 Ca, 1.55 Mg, 0.24 Mn, 15.16 R_2O_3, 27.42 Si, 1.66 C. Av. content in mg. per l. for solns.: Zechstein (av. of 76 analyses) 203.78 Ca, 52.30 Mg, 52.81 Cl, 115.32 S, 85.03 C, 8.25 Na + K. Buntsandstein (av. from 13 analyses) 77.26 Ca, 24.90 Mg, 6.90 Cl, 10.65 S, 66.84 C. Without counting the enrichment in Ca and Mg the presence of the other elements is not too far from the geochem. standard in Clarke's calcn. of av. rock compns. Zechstein is prevailingly an oceanic, Buntsandstein a continental series of sedimentary rocks. Thus the distinct differences in the Kasanian originated from repeated sea transgressions alternating with sedimentation of transported clastic material. In Tartaria the beginning of the Permian era showed most variable paleogeographic conditions by rhythmic shallowing of the sea, observed in the dolomite rocks, gypsum deposits with NaCl inclusions, celestite and relict anhydrite, and pseudomorphs after NaCl. These cannot be explained by fresh water or lacustrine depositions. W. Fitel

METALLURGICAL LITERATURE CLASSIFICATION

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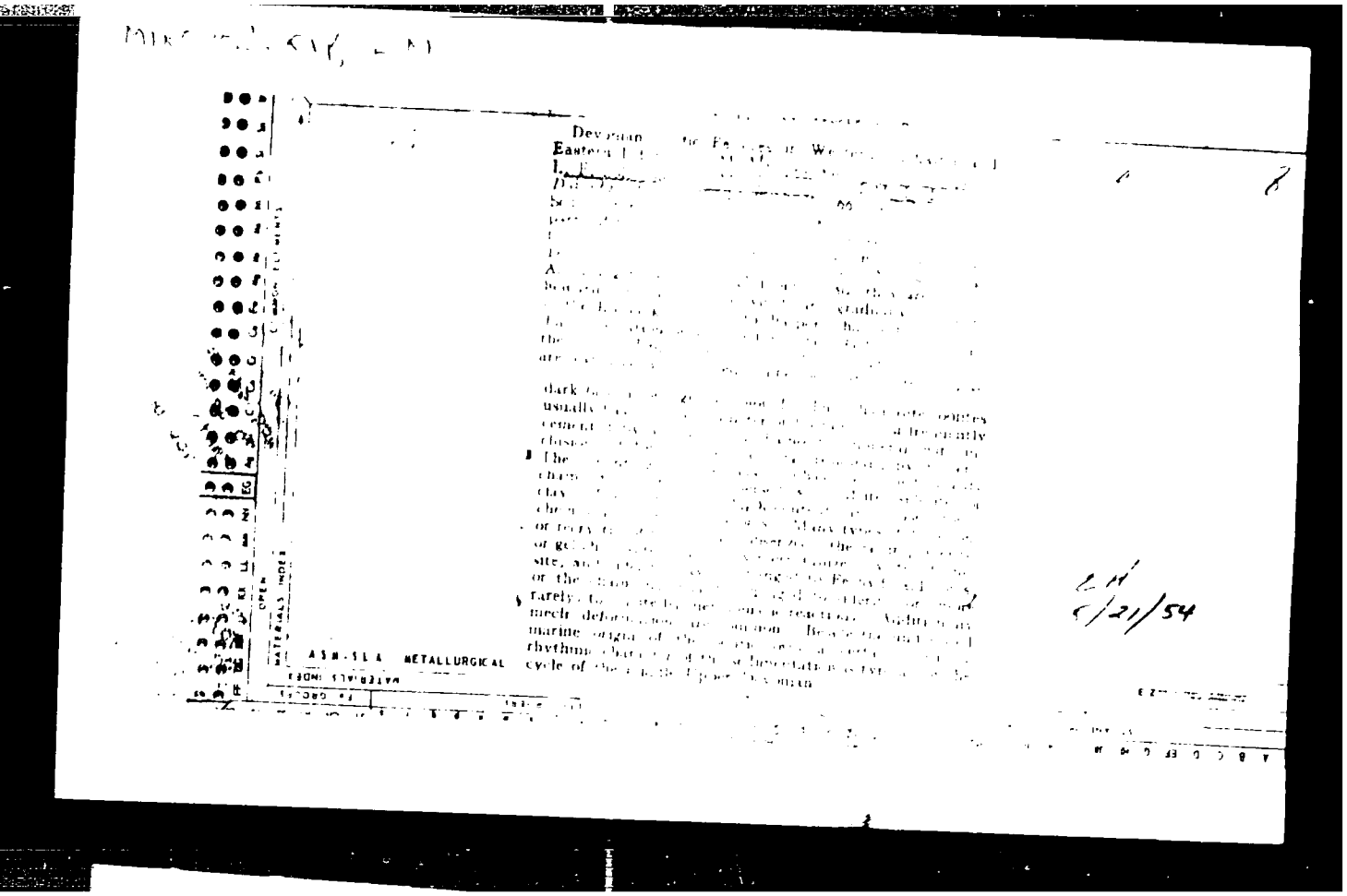

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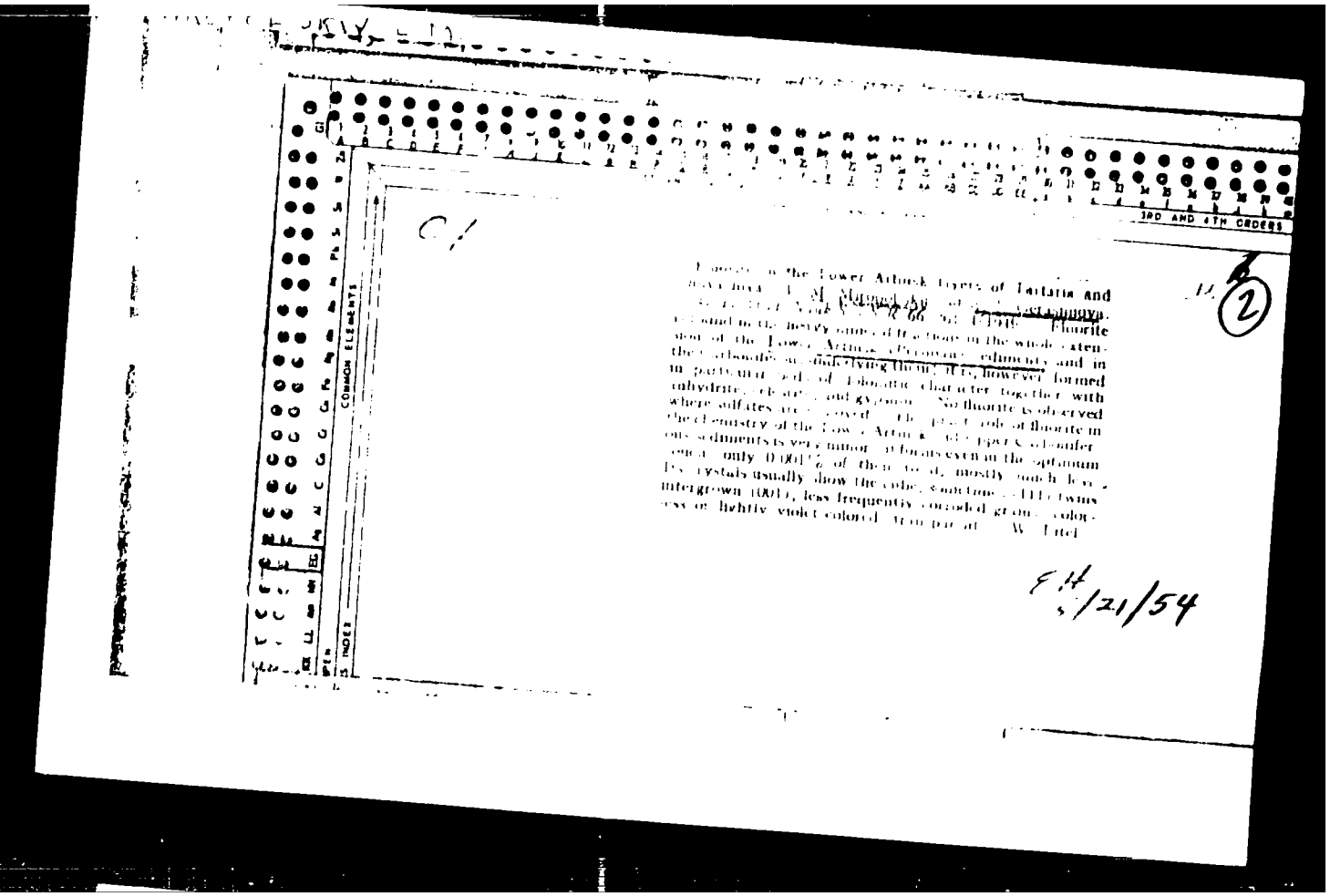

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

TRUFANOV, A.A.; ARBUZOV, A.Ye., akademik, glavnyy redaktor; MIROPOL'SKIY, L.M., professor, otvetstvennyy redaktor.

[Cross circulation in free flowing channels (working hypothesis of the theory of circulation)]O poperechnoi tsirkuliatsii v svobodnom ruslovom potoke (opyt rabochei gipotezy teorii tsirkuliatsii). Kazan', Izd-vo Kazanskogo filiala AN SSSR. 1950. 86 p. (Academiia nauk SSSR. Kazanskii filial. Trudy, seriia vodokhoziaistvennaykh problem no.1)

(Hydraulics) (MLRA 10:4)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOLSKIY, L.M., SOLONTSOV, L.F., KOVYAZIN, N.M.

Oolitic ores in lower Frasnian deposits of Bashkiria and the Tatar A.S.S.R. Izv.Kazan.fil.AN SSSR. Ser.geol.nauk no.1:11-20 '50.

(Bashkiria--Oolite) (Tatar A.S.S.R.--Oolite) (MLRA 10:1)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, L.M.

Stratigraphic independence of Ufa deposits in the Tatar A.S.S.R.
Izv.Kazan.fil.AN SSSR.Ser.geol.nauk no.1:35-46 '50. (MLRA 10:1)
(Tatar A.S.S.R.--Geology, Stratigraphic)

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158T49

USSR/Geophysics - Gypsum Jan 50
Clays

"Gypsum From the Goteriv Deposits in Tatar ASSR and From the Adjoining Regions of Ul'yanovsk Oblast," L. M. Miropol'skiy, N. M. Kovyazin, Kazan State U imeni V. I. Lenin, Geol Inst, Kazan Affiliate, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXX, No 3

Clays up to 30 meters wide make up basic stratum of upper Goteriv. Clays include gypsum, pyrite, hydrogoethite, barite, and rarely calcite. Types of gypsum formations in clays include: (a) clearly

158T49

USSR/Geophysics - Gypsum (Contd) Jan 50

bounded crystals, (b) their parallel concretions, (c) twin crystals, (d) groups, (e) spherulites, and (f) shorts ("korochki"). Submitted 24 Nov 49 by Acad D. S. Belyankin.

158T49

MIROPOL'SKIY, L. M.

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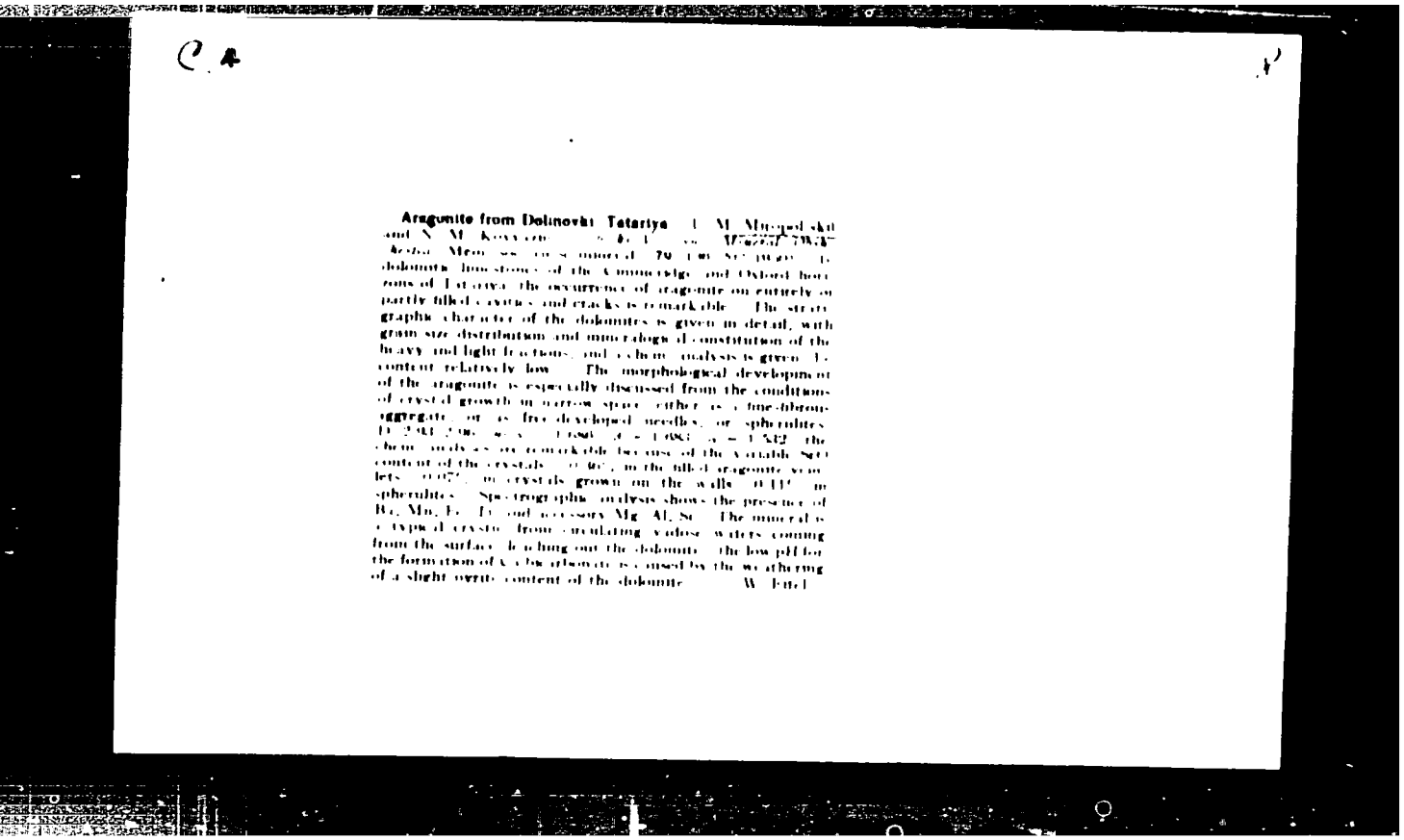

C.4

Aragonite from Dolinovki, Tatariya. [illegible] M. Mirgopol'skii and N. M. Koyvazin [illegible] *Mineral. Obsh. Chestn.* Mem. [illegible] mineral. 79 [illegible] Dolomitic limestones of the Kimmeridge and Oxford horizons of Tatariya, the occurrence of aragonite on entirely or partly filled cavities and cracks is remarkable. The stratigraphic character of the dolomites is given in detail, with grain size distribution and mineralogical constitution of the heavy and light fractions, and a chem. analysis is given. Fe content relatively low. The morphological development of the aragonite is especially discussed from the conditions of crystal growth in narrow space, either as a fine-fibrous aggregate, or as free-developed needles, or spherulites. D [illegible] the chem. analyses are remarkable because of the variable SrO content of the crystals [illegible] in the filled aragonite veinlets [illegible] in crystals grown on the walls [illegible] in spherulites. Spectrographic analysis shows the presence of Ba, Mn, Fe, Ti and accessory Mg, Al, Sr. The mineral is a typical crystal from circulating vadose waters coming from the surface, leaching out the dolomite. The low pH for the formation of a bicarbonate is caused by the weathering of a slight pyrite content of the dolomite. W. Eitel

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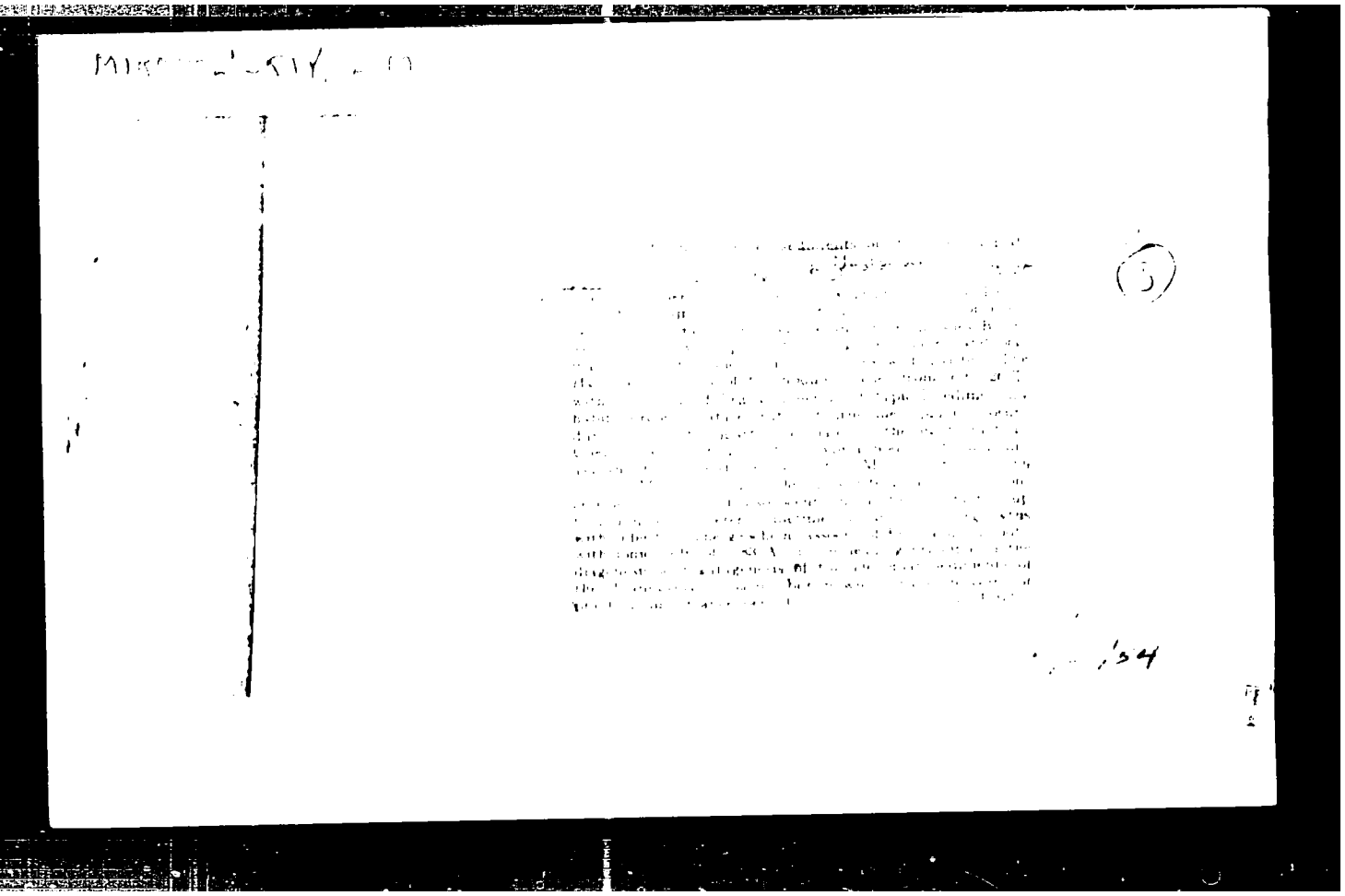

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

CA

Barite from Middle Jurassic sediments of Tartariya L. M. Mirgorod'skii and N. M. Kovyazin. *Zapiski Vsesoyuz. Mineral. Obshchestva* (Mém. soc. russe minéral.) **80**, 48–54 (1951). The systematic study of the crystallographic habit observed in Jurassic barite deposits shows that $BaSO_4$ was formed in septariae with spherosiderite concretions, associated with calcite, pyrite, gypsum, and hydrogoethite of secondary origin, formed during the period between the consolidation of the rock, and the katagenetic and hypogenetic reactions. Barite, ppted. from circulating subterranean solns., was formed in close relation to the decomps. of FeS_2 in the septariae, i.e., by a reaction of H_2SO_4 with $Ba(HCO_3)_2$ in the soln.

W. Eitel

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

CA

Sphalerite in Devonian sediments of southwestern Tatariya L. M. Miropol'skii and G. L. Miropol'skaya *Doklady Akad. Nauk S.S.S.R.* 80, 425–8(1951). cf. C.A. 46, 3463d. The assocn. of sphalerite with pyrite and galenite is typical for wide regions of the eastern Russian platform. It is generally explained by diagenetic crystn. from fine-disperse ppts. in a reducing medium. New deep-borings gave important results concerning the secondary character of the formation of ZnS from H_2O solns.; the mineral is often observed on the walls of cavities of the country rock. The metasomatism is regional. Not only is it assocd. with spherosiderite, but it is observed in all kinds of calcareous sediments and clayey sediments. The strongly reducing conditions are shown by the abundant org. fossils and bituminous layers locally rich in FeS_2, rarer with chalcopyrite. Quartz is usually older than ZnS, but calcite is always younger. Distinct crystals of ZnS are rare, mostly the mineral is fine-cryst. The crystals sometimes show a characteristic zoning with brownish and yellowish bands. The spectral analysis shows the presence of Fe (abundant), Cd, Cu, little Sn, and only traces of Mn and In. Local enrichments in Cd are not yet explained, also not the assocn. with chalcopyrite. W. Eitel

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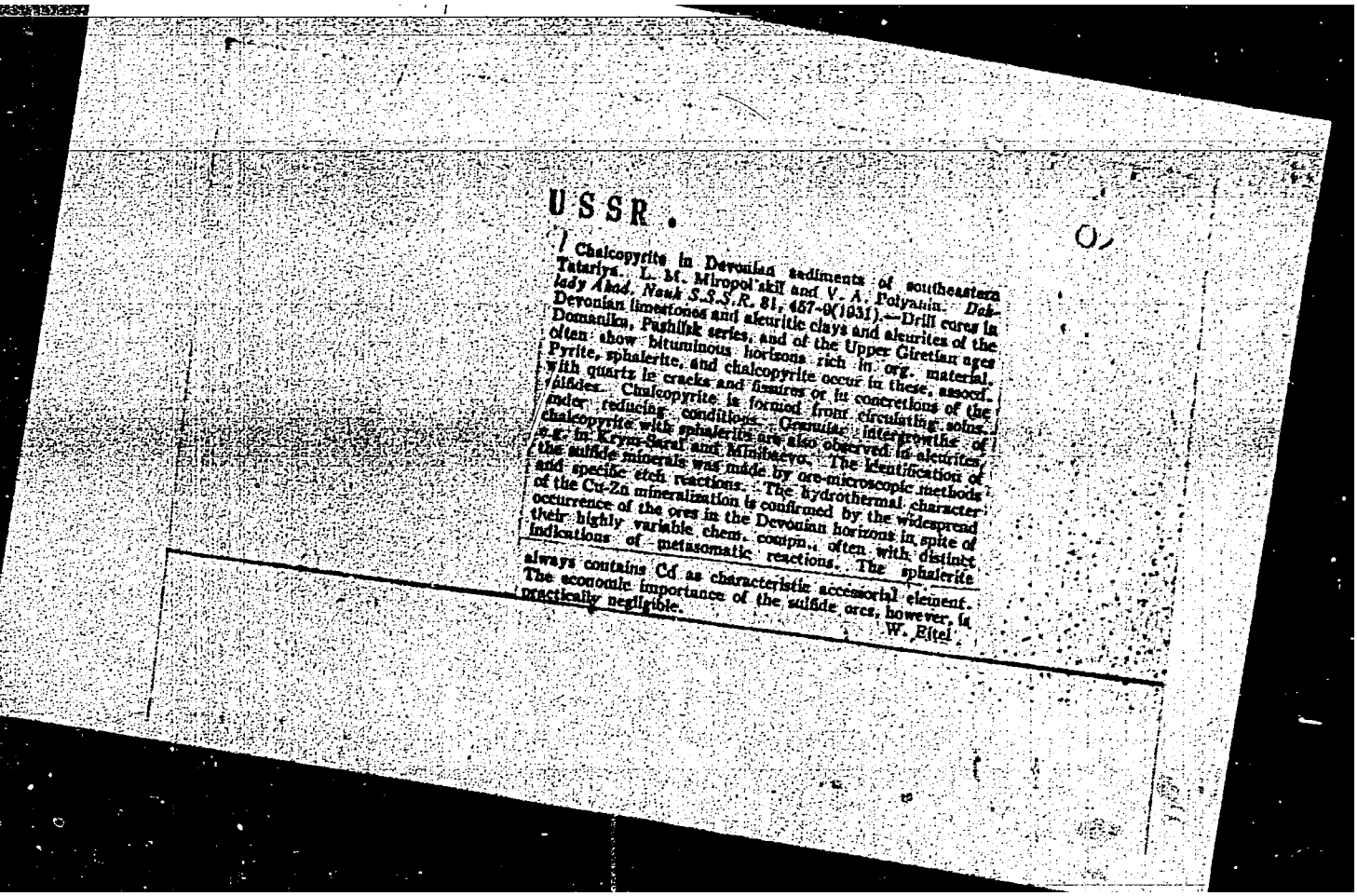

USSR.

Chalcopyrite in Devonian sediments of southeastern Tatariya. L. M. Miropol'skii and V. A. Polyanin. *Doklady Akad. Nauk S.S.S.R.* 81, 467-9(1931).—Drill cores in Devonian limestones and aleuritic clays and aleurites of the Domanikn, Pashiisk series, and of the Upper Giretian ages often show bituminous horizons rich in org. material. Pyrite, sphalerite, and chalcopyrite occur in these, assocd. with quartz in cracks and fissures or in concretions of the sulfides. Chalcopyrite is formed from circulating solns. under reducing conditions. Granular intergrowths of chalcopyrite with sphalerite are also observed in aleurites, e.g. in Krym-Gurat and Minibaevo. The identification of the sulfide minerals was made by ore-microscopic methods and specific etch reactions. The hydrothermal character of the Cu-Zn mineralization is confirmed by the widespread occurrence of the ores in the Devonian horizons in spite of their highly variable chem. compn., often with distinct indications of metasomatic reactions. The sphalerite always contains Cd as characteristic accessorial element. The economic importance of the sulfide ores, however, is practically negligible.

W. Ritel

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, L.M.; MIROPOL'SKAYA, G.L.

Galena in Devonian sediments in southeastern Tartarya. Doklady Akad. Nauk S.S.S.R. 83, 903-5 '52.
(CA 47 no.15:7382 '53)
(MLRA 5:6)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, L.M.; SOLOMTSOV, L.F.; MIROPOL'SKAYA, G.L.

Study of minerals in the lower Famennian deposits in eastern Tatar Republic and in neighboring regions of Bashkiria. Izv.Kazan.fil.AN SSSR. Ser.geol.nauk no.2:3-6 '54. (MLRA 8:11)
(Tatar A.S.S.R.--Geology, Stratigraphic) (Bashkiria--Geology, Stratigraphic)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, L.M. (Kazan')

Topogeochemical study of Permian deposits in Tatarstan based on the example of the Sakmara-Arti stratifications. Uch.zap.Kaz.un. 115 no.10:108-111 '55. (MLRA 10:5)
(Tatar A.S.S.R.--Geology, Stratigraphic)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, L.M.; DISTANOV, U.G.

[Natural resources of the Tatar Republic] Bogatstva nedr Tatarii. Kazan', Tatknigoizdat, 1956. 74 p. (MLRA 9:7)
(Tatar A.S.S.R.--Natural resources)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

BLUDOROV, A.P.; KIRSANOV, N.V.; DISTANOV, U.G.; TUZOVA, L.S.; AR'UZOV, A.Ye., akademik, redaktor.; MIROPOL'SKIY, L.M., redaktor; SHAPOVALOVA, G.A., redaktor; PAVLOVSKIY, A.A., tekhnicheskiy redaktor.

[Tertiary coal-bearing deposits of the central and southern regions of Bashkiria] Tretichnye uglenosnye otlozheniia tsentral'nykh i iuzhnykh raionov Bashkirii. Moskva, Izd-vo Akademii nauk SSSR, 1956. 138 p. (Akademiia nauk SSSR. Kazanskii filial, Kazan. Geologicheskii institut. Trudy, no.3)

(MLRA 9:10)

(Bashkiria--Coal geology)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Leonid Mikhaylovich; SERGEYTOVSKIY, Yu.V., redaktor; FEODOT'YEV, K.M., redaktor; MOSKVICHEVA, E.I., tekhnicheskiy redaktor.

[Topogeochemical investigation of Permian deposits in the Tatar Republic] Topogeokhimicheskoe issledovanie permskikh otlozhenii v Tatarii. Moskva, Izd-vo Akademii nauk SSSR, 1956. 263 p. (MLRA 9:6)
(Tatar A.S.S.R.--Geology, Stratigraphic)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, L.M., professor, otvetstvennyy redaktor; FEODOT'YEV, K.M., redaktor izdatel'stva; PAVLOVSKIY, A.A., tekhnicheskiy redaktor

[Petroleum and gas resources of the Ural and Volga provinces; proceedings of a conference on the petroleum and gas resources of the Ural and Volga regions (May 10-15, 1954)] Neftegazonosnost' Uralo-Volzhskoi oblasti; trudy soveshchaniia po probleme neftegazonosnosti Uralo-Povolzh'ia (10-15 maia 1954 g.). Moskva, 1956. 346 p. (MLRA 10:1)

1. Akademiya nauk SSSR. Kazanskiy filial.
(Ural Mountain region--Petroleum geology)
(Volga Valley--Petroleum geology)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIKOPOL'SKIY, L.M.; GERASIMOVA, Ye.T.

Glauconite in deposits of the Devonian carbonate formation in the Tatar A.S.S.R. Izv. Kazan. fil. AN SSSR. Ser. geol. nauk. no.5: 41-47 '56. (MLRA 10:4)

(Tatar A.S.S.R.--Glauconite)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 1, p 77 (USSR) 15-57-1-481

AUTHOR: Miropol'skiy, L. M.

TITLE: More on the Sulfide Mineralization in the Devonian Rocks of Tataria (Yeshche o sul'fidnoy mineralizatsii v devonskikh otlozheniyakh Tatarii)

PERIODICAL: Uch. zap. Kazansk. un-ta, 1956, Vol 115, Nr 16, pp 251-266.

ABSTRACT: The author sharply criticizes the statements of B. A. Uspenskiy and N. V. Kirsanov (Uch. zap. Kazansk. un-ta, 1954, 114, Nr 7) in reference to his previous paper (RZhGeo, 1955, 3094) and reaffirms his point of view on the hydrothermal origin of the sulfide mineralization in the Devonian deposits of Tataria and the adjoining regions of Bashkiria and the Udmurt Republic. He denies the correctness of the view of N. V. Kirsanov on the sedimentary origin of this mineralization.

Card 1/1

B. I. R.

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

Translation from: Referativnyy zhurnal, Geologiya, 195[illegible], Nr 8, pp 77-78 (USSR) 15-57-8-8242

AUTHORS: Mironol'skiy, L. M., Mironol'skaya, T. L.

TITLE: Ankerite in the Lower Sivetian Deposits of Eastern Tatariya (Ob ankerite v nizhnesivetskikh otlozheniyakh na vostoke Tatarii)

PERIODICAL: Uzh. zap. Kazansk. un-ta, 1956, Vol 116, Nr 8, pp 190-193.

ABSTRACT: The authors describe a concretion of ankerite from the base of a sandstone (D_3). The vertical diameter of the concretion is at least 15 cm. Megascopically the ankerite is dark gray and dense. Under the microscope, the principal part of the mass, localized in the central part of the concretion, is seen to have a granular structure. Isolated sections of fine-grained material may be seen against this background. In such sections the ankerite is uniformly turbid because of the disseminated

Card 1/3

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Ankerite in the Lower Givetian Deposits of Eastern Tatariya (Cont.) 15-57-5-6242

nation of fine pelitic material. Coarser grained aggregates of ankerite are the result of recrystallization of the fine-grained material. Cone-in-cone structure in the upper and lower part of the concretion adds inhomogeneity to the ankerite. In these parts of the section, approximately at right angles to the direction of cone development, the ankerite has a megascopic mottled color. The cones in such sections have a concentric, zonal structure. The diameters of the bases of the cones do not exceed 0.5 cm, and the lengths range up to 1.2 cm. The microscope shows the individual cone to consist of a number of smaller cones enclosed within it. The number of these cones ranges from 3 to 14, and they are separated from one another by coatings of clay. The authors are inclined to believe that this cone-like structure developed in the ankerite by recrystallization of a special type, occurring at the surface of the concretion by metasomatism. The refractive indices of ankerite from the sections with the coarsest structure and of acicular crystals in the cones are No 1.742-1.738 and Ne 1.520-1.532. The specific gravity of the coarse-grained ankerite is near that of the acicular crystals. The ankerite in the cones, relative to the coarse-grained type, has

Card 2/3

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Ankerite in the Lower Givetian Deposits of Eastern Tatariya (Cont.) 15-57-5-8242

a higher content of Ca and, in part, of Fe; the Mg content is lower.
Card 3/3

K. N. R.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

SUBJECT: USSR/National Economy 25-5-10/35

AUTHOR: Miropol'skiy, L.M., Professor, Deputy Chairman of the Presidium of the Kazan Branch of the USSR Academy of Sciences

TITLE: For the National Economy (Dlya narodnogo khozyaystva)

PERIODICAL: Nauka i Zhizn' - May 1957, No 5, p 24 (USSR)

ABSTRACT: The most important section of the USSR Academy of Science in Kazan is the chemical school headed by Academician A.E. Arbuzov. Since its foundation in 1945, chemists have produced many new phosphoro-organic compounds, which proved very useful for agricultural purposes. "Oktametil", for instance, is an insecticide approved by the Ministry of Chemical Industry as being a very effective vermin killer, especially suited to destroy insects on cotton and citrus plants. A drug for curing serious eye diseases (glaucoma) was developed by Academician Arbuzov. It is a phosphoro-organic medicine approved for production by the USSR Ministry of Health, as it has proved to be superior to many imported drugs for similar purposes. The anorganic chemistry laboratory developed a new highly effective method for electric polishing of metals. Another useful contribution of a Kazan scientist, E.A. Robinson, is the monograph

Card 1/2

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, L.M.

Fundamental problems of mineralogy. Report No.1: Theory on species and varieties in mineralogy. Izv.Kazan.fil.AN SSSR. Ser.geol.nauk no.6:17-25 '57. (MIRA 12:1)
(Mineralogy, Determinative)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, L.M.

Magmatic manifestations in the Kama-Volga area. Izv.Kazan.fil. AN SSSR. Ser.geol.nauk no.6:27-31 '57. (MIRA 12:1)
(Kama Valley--Rocks, Igneous)
(Volga Valley--Rocks, Igneous)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, L.M.

Study of the lithology of the upper sedimentary cover of the Tatar A.S.S.R. and adjecent areas of neighboring provinces, as an introduction to further study of Quaternary, Neocene, Cretaceous, Jurassic, and Permian sediments. Uch. zap. Kaz. un. 117 no.4:3-11 '57. (MIRA 11:6)
(Tatar A.S.S.R.--Rocks, Sedimentary)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, L.M.

Two formations of sediments as a basis for dividing Devonian sediments in the eastern Tatar A.S.S.R. Izv. Kazan. fil. AN SSSR. Ser. geol. nauk no. 7:3-9 '59. (MIRA 14:4)
(Tatar A.S.S.R.—Geology, Stratigraphic)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, L.M., glav. red.; SEYFUL-MULYUKOV, R.B., otv. red.; AVER'YANOV, V.I., red.; MIROPOL'SKAYA, G.L., red.; URAZAYEV, I.M., red.; SHISHKIN, A.V., red.; YUSUPOV, S.M., red.; KALANTAROV, A.P., red.izd-va; POLENOVA, T.F., tekhn. red.

[Characteristics of the distribution of oil and gas fields in the Volga-Ural region] Zakonomernosti razmeshchenila mestorozhdenii nefti i gaza Volgo-Ural'skoi oblasti. Moskva, Izd-vo AN SSSR, 1963. 365 p. (MIRA 17:2)

1. Kazanskiy filial AN SSSR (for Aver'yanov, Miropol'skaya, Urazayev, Yusupov).

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

GALIYEV, U.Z.; STANKEVICH, Ye.F.; KAVEYEV, M.S., rukovoditel' raboty; MIROPOL'SKIY, L.M., doktor geol.-mineral. nauk, prof., otv. red.

[Underground waters of the eastern part of the trans-Kama region.] Podzemnye vody Vostochnogo Zakam'ia. Kazan, 1964. 113 p. (Akademiia nauk SSSR. Kazanskii filial. Trudy. Seria geologicheskikh nauk, no.8) (MIRA 18:5)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

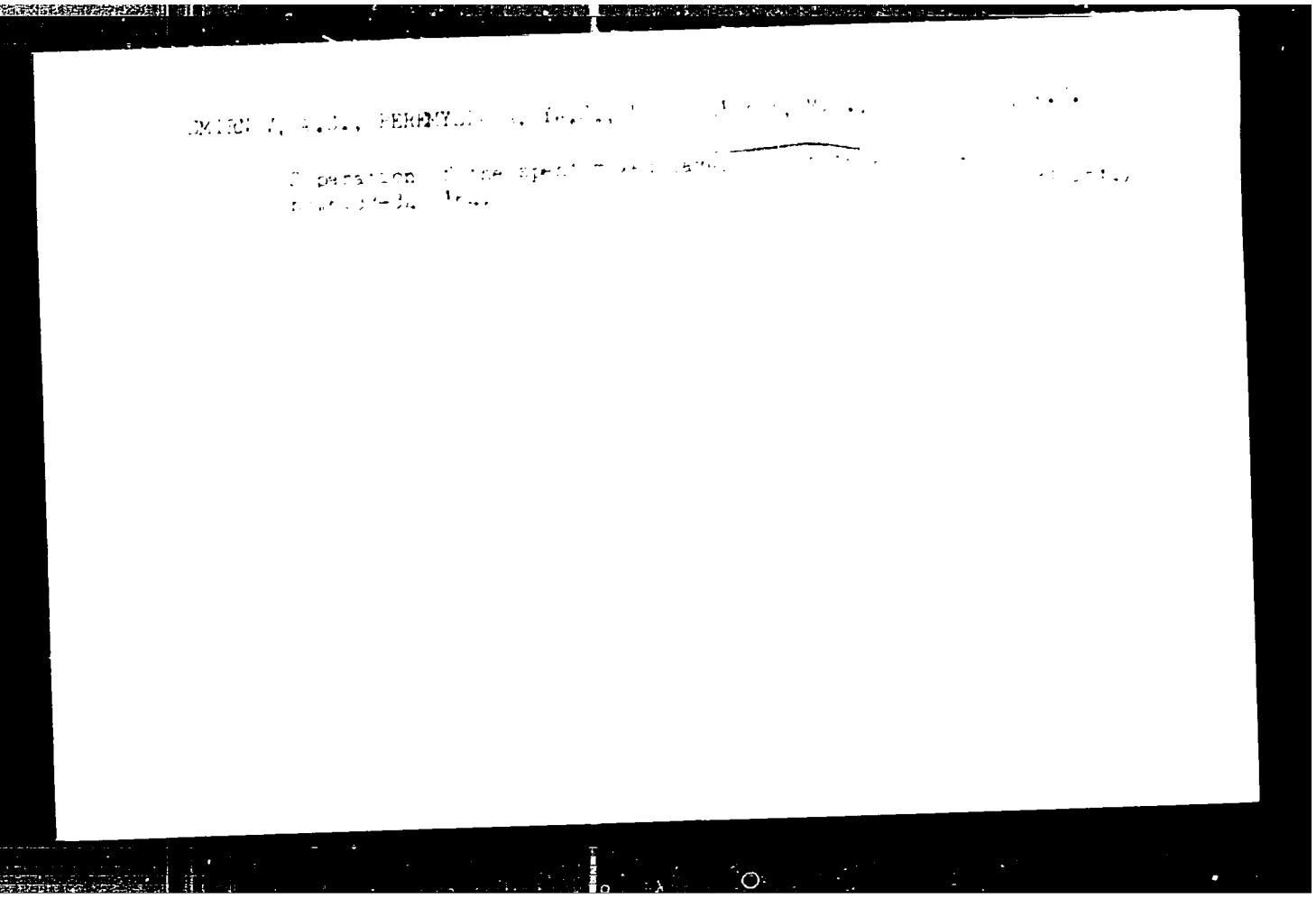
"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

BLUDOROV, Aleksandr Pavlovich; MLADOPOL'SKIY, L.K., zam. deyatel' nauki RSFSR doktor geol.-miner. nauk, prof., otv. red.

[History of the Paleozoic coal accumulation in the south-eastern part of the Russian Platform] Istoriia paleozoiskogo uglenakopleniia na IUgo-Vostoke russk i platformy. Moskva, Izd-vo "Nauka," 1964. 274 p. (MIRA 17:5)

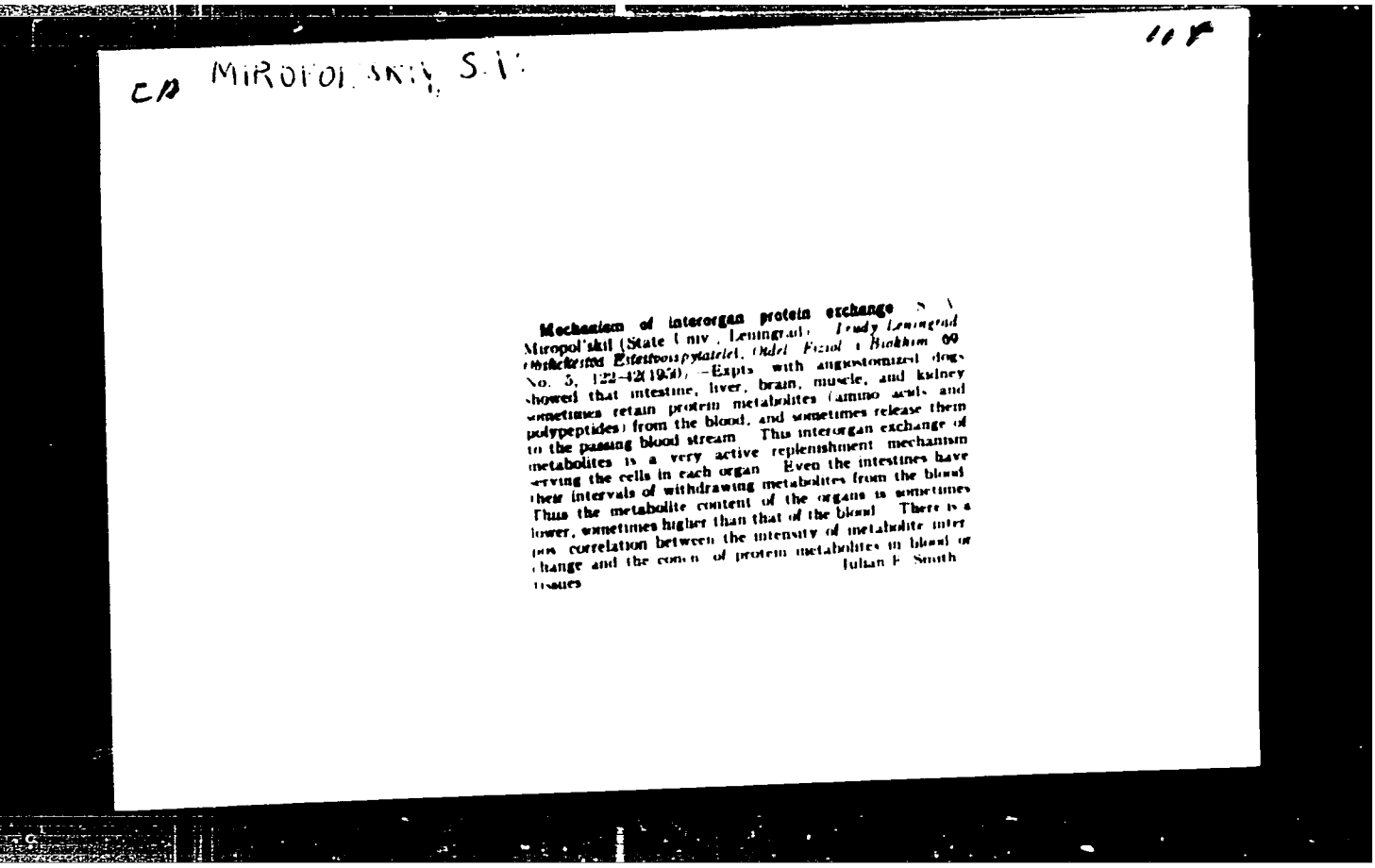
APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



CA MIROPOL'SKII, S. V.

Mechanism of interorgan protein exchange. S. V. Miropol'skii (State Univ., Leningrad). *Trudy Leningrad Obshchestva Estestvoispytatelei, Otdel Fiziol. i Biokhim.* 69 No. 5, 122–42 (1959).—Expts. with angiostomized dogs showed that intestine, liver, brain, muscle, and kidney sometimes retain protein metabolites (amino acids and polypeptides) from the blood, and sometimes release them to the passing blood stream. This interorgan exchange of metabolites is a very active replenishment mechanism serving the cells in each organ. Even the intestines have their intervals of withdrawing metabolites from the blood. Thus the metabolite content of the organs is sometimes lower, sometimes higher than that of the blood. There is a loose correlation between the intensity of metabolite interchange and the concn. of protein metabolites in blood or tissues. Julian F. Smith

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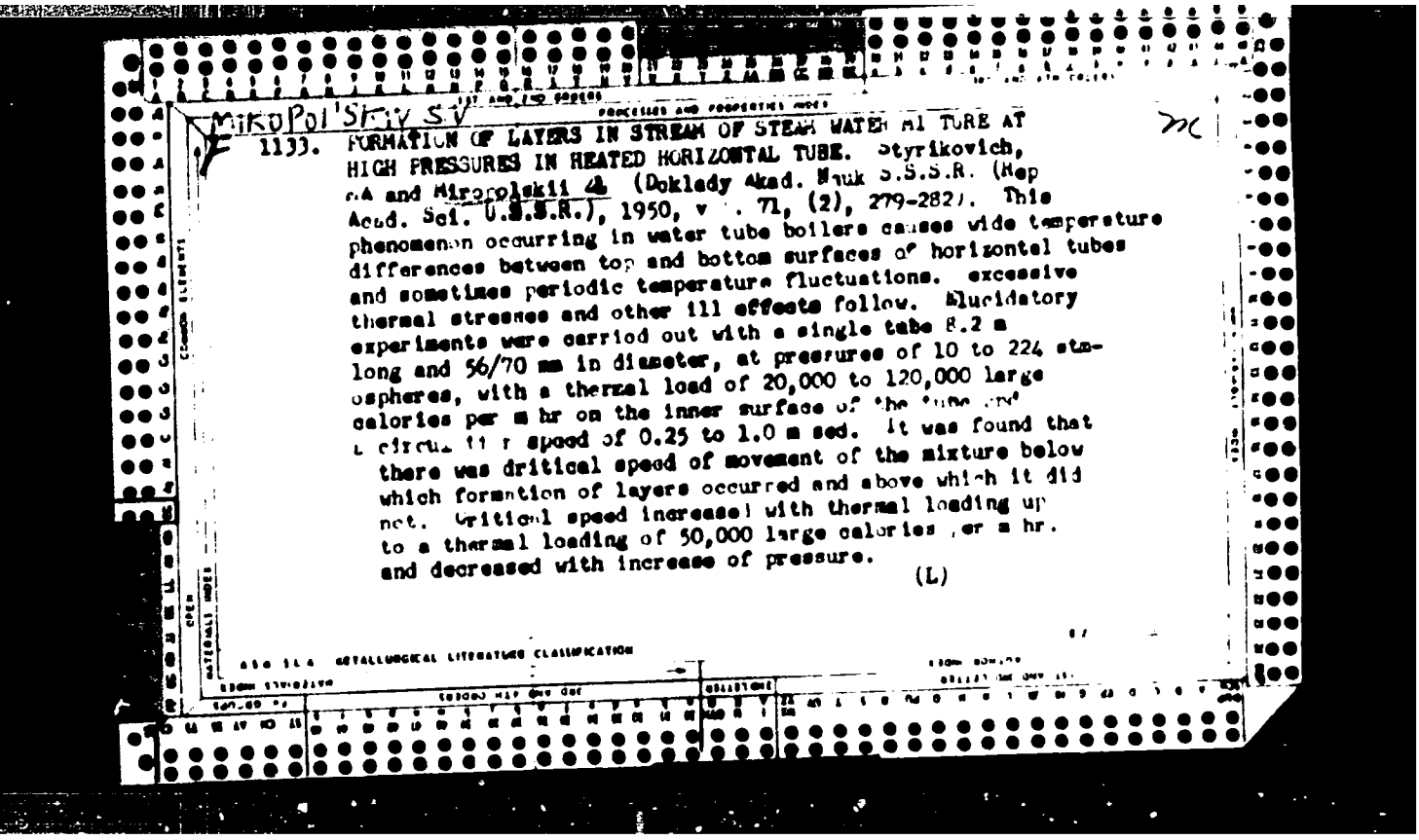
"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



MIKROPOL'SKIY S.V

1133. FORMATION OF LAYERS IN STREAM OF STEAM WATER MIXTURE AT HIGH PRESSURES IN HEATED HORIZONTAL TUBE. Styrikovich, M.A and Miropolskii Z.L. (Doklady Akad. Nauk S.S.S.R. (Rep Acad. Sci. U.S.S.R.), 1950, v. 71, (2), 279-282). This phenomenon occurring in water tube boilers causes wide temperature differences between top and bottom surfaces of horizontal tubes and sometimes periodic temperature fluctuations. excessive thermal stresses and other ill effects follow. Elucidatory experiments were carried out with a single tube 8.2 m long and 56/70 mm in diameter, at pressures of 10 to 224 atmospheres, with a thermal load of 20,000 to 120,000 large calories per m hr on the inner surface of the tube and circulation speed of 0.25 to 1.0 m sec. It was found that there was critical speed of movement of the mixture below which formation of layers occurred and above which it did not. Critical speed increased with thermal loading up to a thermal loading of 50,000 large calories per m hr. and decreased with increase of pressure.

(L)

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOLSKIY, S V

F

M

1438. TEMPERATURE CONDITIONS IN HORIZONTAL STEAM GENERATING TUBES AT HIGH PRESSURES. Styrikovich, M.A. and Mirepol'skii, Z.L. (Izvest. Akad. Nauk SSSR, Otdel. Tekh. Nauk (Bull. Acad. Sci. U.S.S.R., Sect. Tech. Sci.), Oct. 1951, 1495-1512). Laboratory experiments are described on tubes 56 and 40 mm in internal diameter at pressures ranging from 36 atm. up to critical pressure.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

TSIREL'SON, Simon Aronovich; RAZRAN, Mikhail Avraamovich. Prinimala uchastiye TSIREL'SON, E.A.; MIROPOL'SKIY, S.V., kand. biol. nauk, retsenzent; CHICHENEV, A.I., inzh., retsenzent; BOBOSHKO, S.B., nauchnyy red.; GORDON, L.A., nauchnyy red.; YEGOROV, S.A., nauchnyy red.; KAZAROV, Yu.S., red.; KRYAKOVA, D.M., tekhn. red.

[Livability on board ships]Obitaemost' sudov. Leningrad, Sudpromgiz, 1963. 266 p. (MIRA 16:3)
(Merchant seamen--Accommodations on shipboard)
(Ships--Heating and ventilation)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 6347-66 EWT(1) GW

ACC NR: AP5025615 SOURCE CODE: UR/0033/65/042/005/0977/0980

AUTHOR: Mironovskiy, V. N.

ORG: Moscow State University, Physics Department (Moskovskiy gosudarstvennyy universitet, Fizicheskiy fakul'tet)

TITLE: Gravitational radiation of double stars

SOURCE: Astronomicheskiy zhurnal, v. 42, no. 5, 1965, 977-980

TOPIC TAGS: gravitation field, double star, galaxy, galactic radiation, binary star

ABSTRACT: Two contradictory theories concerning the nature of the gravitational field responsible for gravitational waves are examined. The objects studied are stars of the W UMa type, whose density in the neighborhood of the sun is greater by a factor of 15 than the density of eclipsing variables of all other types; this relation holds true for most W UMa stars in the range of periods 0-1 day. The gravitational radiation of the part of the galaxy closest to us is determined almost completely by stars in this class. Using data on these stars and the formula for the

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Card 1/3

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ACC NR: AP5025615

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intensity of gravitational radiation of a system of two material points moving in circular orbits around a common center of inertia, the spectral density function of the galaxy is $\rho(T) = 2Nf(2T)\ \phi\ (T)$, where N is the number of W UMa stars in the galaxy, T is the period of the gravitational wave (see fig. 1). The total intensity of galactic gravitational radiation is $\approx 10^{38}$ ergs/sec. If all the galaxies of the universe had such a radiation intensity during the lifetime of the universe ($\approx 10^{10}$ years), the accumulation of gravitational radiation would be $\approx 5 \cdot 10^{-20}$ erg/cm^3. In turn, the density of the flux of gravitational radiation near the earth would be $\approx 10^{-7}$ erg/sec·cm^2. In comparison with closely spaced double stars the contribution of other sources of gravitational radiation is negligible. The value $5 \cdot 10^{-20}$ erg/cm^3 therefore can be accepted (with an accuracy to one order of magnitude) as the lower limit of gravitational radiation in space. An appendix describes the method used to determine the number of W UMa stars in the galaxy. "The author expresses appreciation to Ya. P. Terletskiy, B. V. Kukarkin and P. G. Kulikovskiy for

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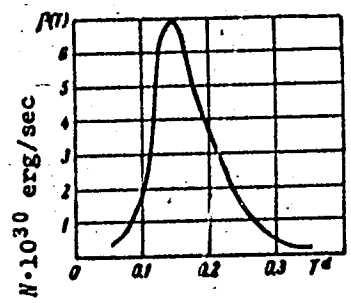

Card 2/3 Fig. 1.

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 6347-66
ACC NR: AP5025615

useful advice and discussion of the results of the work." Orig. art. has: 4 formulas, 4 figures.

SUB CODE: AS/ SUBM DATE: 03Feb65/ ORIG REF: 011/ OTH REF: 003

nw
Card 3/3

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

VOLOSTNOVA, M.B.; PREOBRAZHENSKIY, M.A. [deceased]. Prinimali uchastiye: DRINEVICH, M.D.; KOROLEVA, M.K.; MIROPOL'SKIY, Ya.A.. YEROFEYEV, I.A., red.; FEDOTOVA, A.F., tekhn.red.; KOVALENKO, V.L., tekhn.red.

[Dictionary of Russian transcriptions of geographical names] Slovar' russkoi transkriptsii geograficheskikh nazvanii. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv. RSFSR. Pt.2. [Foreign geographical names] Geograficheskie nazvaniia na territorii zarubezhnykh stran. 1959. 167 p. (MIRA 12:5)
(Geography--Dictionaries)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Ya.A.

Chinese geographic names and their Russian transliteration. Geod. i kart. no.4:61-64 Ap '62. (MIRA 15:12)
(China—Names, Geographical)
(Chinese language—Transliteration into Russian)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/123/61/000/003/015/023
A004/A104

AUTHOR: Miropol'skiy, Yu. A.

TITLE: On the calculation of cam mechanisms of forging and stamping automatics by the trapezoidal rule of acceleration variations of the pusher

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 3, 1961, 3, abstract 3V12 (V sb. "Issled. i raschety mashin kuznechno-shtamp. proiz-va. [ENIKMASh, v. 1]", Moscow, 1959, 64-97)

TEXT: The author presents the results of investigations carried out by ENIKMASh on cams profiled by the rule of constant acceleration of the pusher; motion ensuring the cosinusoidal variation of the pusher acceleration; motion ensuring the variation of the pusher acceleration by an equilateral and modified trapezium. The calculation of the main dimensions of cam mechanisms is given: axial and offset cam mechanisms with forward displacement of the pusher and with rotating disk cam; cam mechanisms with forward displacement of the pusher and the cam; cam mechanisms with rocking displacement of the pusher and rotating disk cam. The author presents a calculation example of a cam mechanism with

Card 1/2

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/123/61/000/003/010/023
A004/A104

On the calculation of cam mechanisms ...

rocking displacement of the pusher of the ejection mechanism drive of the A-1[illegible]3 cold-upsetting automatic. There are 14 figures and 4 references.

Ya. Golombik

[Abstractor's note: Complete translation]

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Yu.A.

New method for calculating coordinates of the effective profile of a cam. Kuz.-shtam.proizv. 1 no.4:19-26 Ap '59.
(MIRA 12:10)

(Cams)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Yu.A.

Determining the dynamic load acting on the cutoff mechanism of the advancing type of upsetter. Kuz.-shtam. proizv. 2 no.6:27-31 Je '60. (MIRA 13:10)

(Forging machinery)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Yu.A

Selecting the motion principle for cam-mechanism followers of automatic forging presses. Trudy Inst. mash. Sam.po teor. mash.20 no. 79:12-26 '60. (MIRA 13:12)
(Cams)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

Automation of Cold [Metal] Stamping Production SOV/5580

COVERAGE: The collection contains reports delivered at the Eight Scientific and Technical Conference by workers of machine and instrument plants, design organizations, and scientific research and educational institutes. The Conference was sponsored by the Kiyevskiy oblastnyye pravleniye Nauchno-tekhnicheskogo obshchestvennykh [illegible] Ukrainian Administration of the Scientific and Technical Society of the Machine-Building Industry) and by the Gorodskoy komitet profsoyuza rabotnikov [illegible] Industry). The part of the Conference was held in the Republican Administration of the Scientific and Technical Society of the Machine-Building Industry). The part of the Conference was held in the [illegible] achievements and practical experience (especially at the [illegible] Plant, the VEF Plant, and [illegible] Plant) in the [illegible] production. The Conference also served to acquaint a wide number of machine and instrument builders with the latest state of automation in these fields and with the prospects for its further development. Papers dealing with the principles in the design and operation of automatic devices, and methods of production lines [illegible] with the use of electronic computers are mentioned. References accompany most of the articles.

TABLE OF CONTENTS:

Foreword 3

Card 1/5

PART I BOOK EXPLOITATION SOV/5580

Golubev, I.M., Doctor of Technical Sciences, Professor, and I.P. Tarabanovskiy, Candidate of Technical Sciences, Docent, eds.

Avtomatizatsiya shtampovochnogo proizvodstva (Automation of Cold [Metal] Stamping Production) Kiyev, Mashgiz, 1961. 282 p. 6,500 copies printed.

Sponsoring Agency: Gosudarstvennyy [illegible] Ukrainskoy [illegible] Nauchno-tekhnicheskogo obshchestva mashinostroitel'noy promyshlennosti; Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti; Gorodskoye pravleniye nauchno-tekhnicheskogo obshchestva mashinostroitel'noy promyshlennosti.

Ed.: M.S. Sorokin, Tech. Ed.: M.S. Gorodetskaya. Chief Ed.: (Southern Dept. Mashgiz): V.K. Serdyuk, Engineer.

PURPOSE: This collection of articles is intended for workers at machine and instrument plants and design institutes.

Card 1/5

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

Automation of Cold [Metal] Stamping Production SOV/5580

Miropol'skiy, Yu. A. Classification and Selection of the Arrangement of Cam Mechanisms for Automatic Die-Forming Machines 206

Orlikov, M.L., and Ye. Ya. Antonovskiy. Some Problems in the Methods of Designing Cam Mechanisms 229

Belozerov, Yu. A. Mechanization and Automation of Stamping Operations in Instrument Making 237

Gutnik, M.A. Automation of Stamping Operations 244

Zhagiro, V.I. A Modern Automatic Press 259

Tartakovskiy, I.P. Determination of the Basic Parameters of Vibratory Presses for Trimming Operations 264

Podrabinnik, I.M. Automatic Machine for Fabricating Wire Products 272

AVAILABLE: Library of Congress

Card 5/5

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9-13-61

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Yu. A.

Determing dynamic loads in swinging-type cam gear on cold headers.
Kuz.shtam. proizv. 3 no.3:23-26 Mr '61. (MIRA 14:6)
(Forging machinery)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Yu.A.

Effect of a faulty manufacture of cams on the dynamics of automatic cold headers. Kuz.-shtam. proizv. 3 no.9:28-31 S '61. (MIRA 14:9)

(Forging machinery)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

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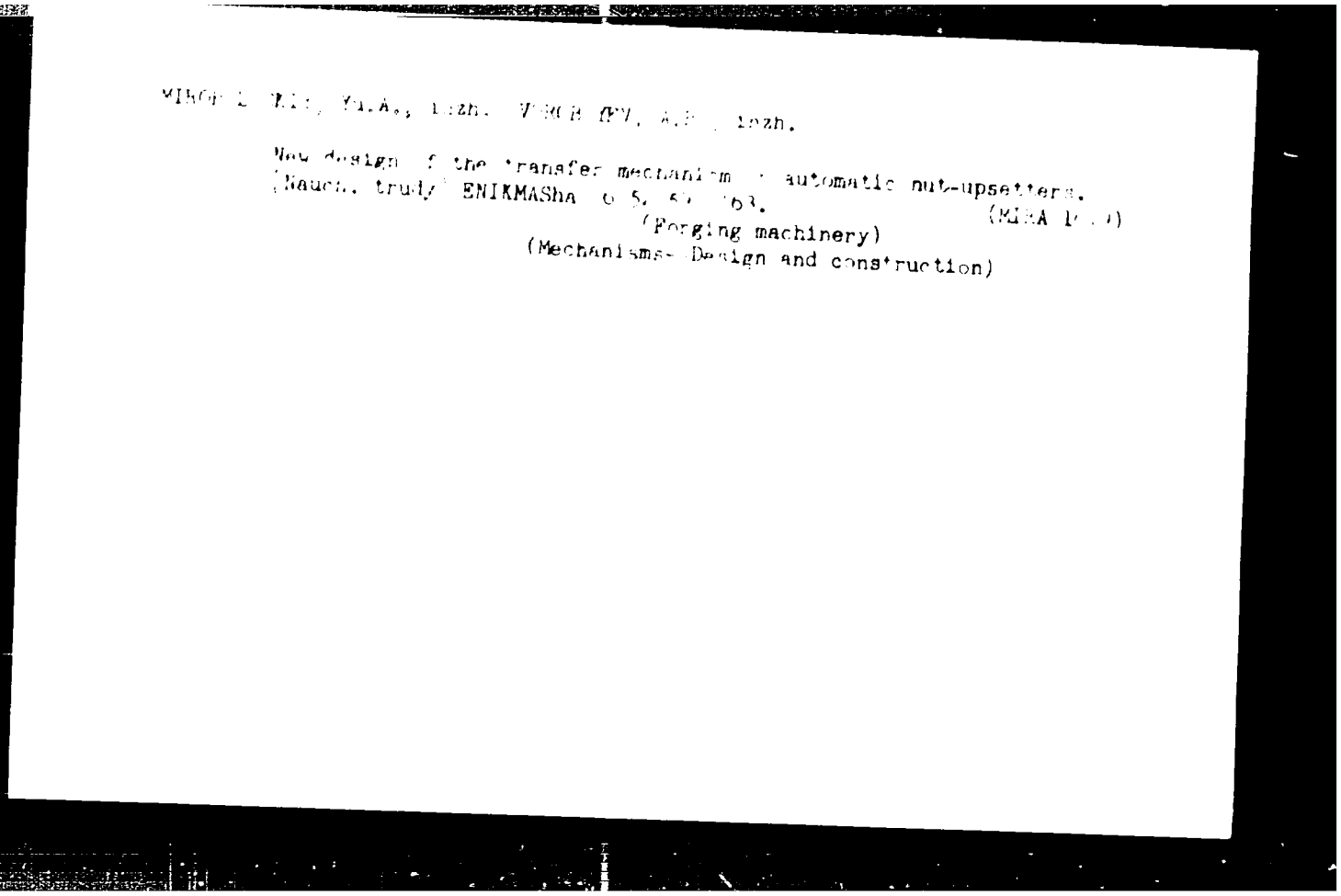

MIROP[illegible], Yu.A., inzh. [illegible], A.[illegible], inzh.

New design of the transfer mechanism of automatic nut-upsetters. (Nauch. trudy) ENIKMASha [illegible] '63. (MIRA [illegible])

(Forging machinery)
(Mechanisms--Design and construction)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Yu.A.; VARLAMOV, N.S.

High-speed motion-picture photography in investigating processes and equipment for forging and die stamping. Kuz.-shtam.proizv. 5 no.5:43-47 My '63. (MIRA 16:9)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Yu.A., inzh.

Determining the torque on the camshaft of a cold heading machine. [Nauch. trudy] ENIKMASha 8:18-35 '64. (MIRA 18:3)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

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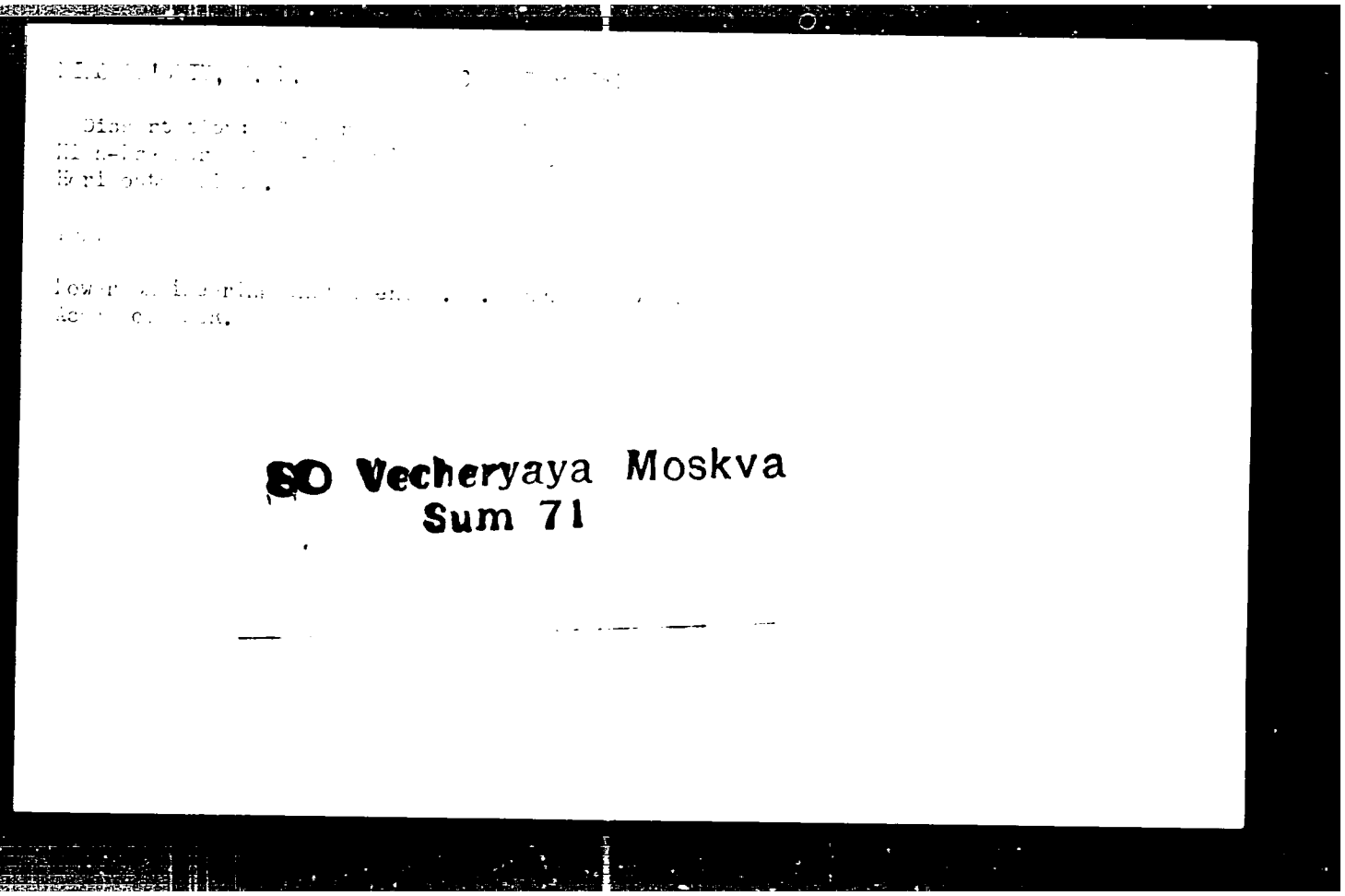

SO Vecheryaya Moskva
Sum 71

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Z. L.

USSR/Physics - Steam Turbines
Thermodynamics

11 Mar 50

"Stratification of the Flow of a Stream-Water Mixture at High Pressure in a Heated Horizontal Tube," M. A. Styrikovich, Corr Mem, Acad Sci USSR, Z. L. Miropol'skiy, Power Eng Inst imeni Krzhizhanovskiy, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXI, No 2, pp 279-282

Shows critical velocity (1-4 m/sec) of steam-water mixture vs heat load (20-70 x 103 kg-cal/sq m hr) for various pressures (36-215 at). Similarly, critical velocity vs pressure for various heat loads. Also superheat (0-170° C) of upper-generator tube vs velocity of steam-water mixture (0.2-3.2 m/sec) for various pressures (36-182 at). Submitted 21 Dec 49.

PA 165T82

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

STYRIKOVICH, M.A.; MIROPOL'SKIY, Z.L.

The Effect of a Slope Angle on the Operating Temperature of the Wall of a Steam Generating Tube under High Pressure

Dok AN SSSR, Vol 96, No 1, 1 Sep 54, p. [illegible]

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

NSA

Engineering

3273
TEMPERATURE REGIME OF HORIZONTAL SKIN PRES-
SURE STEAM BOILER TUBES. M. A. Styrikovich and
Z. L. Miropol'skii. Izvest. Akad. Nauk S.S.S.R. Otdel
Tekh. Nauk, 1493-1513(1951) Oct. (In Russian)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Z. L.

PA 228T84

USSR Engineering - Heat Exchange, Jul 52
Processes, Equipment

"Temperature Conditions of the Metal of Steam Generating Pipes for a High-Boiling Organic Heat-Carrier," F. F. Bogdanov, Z. L. Miropol'skiy

"Iz Ak Nauk, Otdel Tekh Nauk" No 7, pp 1026-1030

Studies possibility of using horizontal pipes in heat-exchanging equipment with diphenyl oxide-diphenyl mixt as heat-carrying medium. States that overheating of upper portion of pipe wall takes place due to segm of vapor and liquid phases at low velocities of flow in such pipes. Concludes that horizontal boiling pipes cannot be used in boilers with natural circulation. Submitted by Acad M. V. Kirpichev 20 Jun 51.

228T84

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

9. Montnly List of Russian Accessions. Library of Congress, [illegible]

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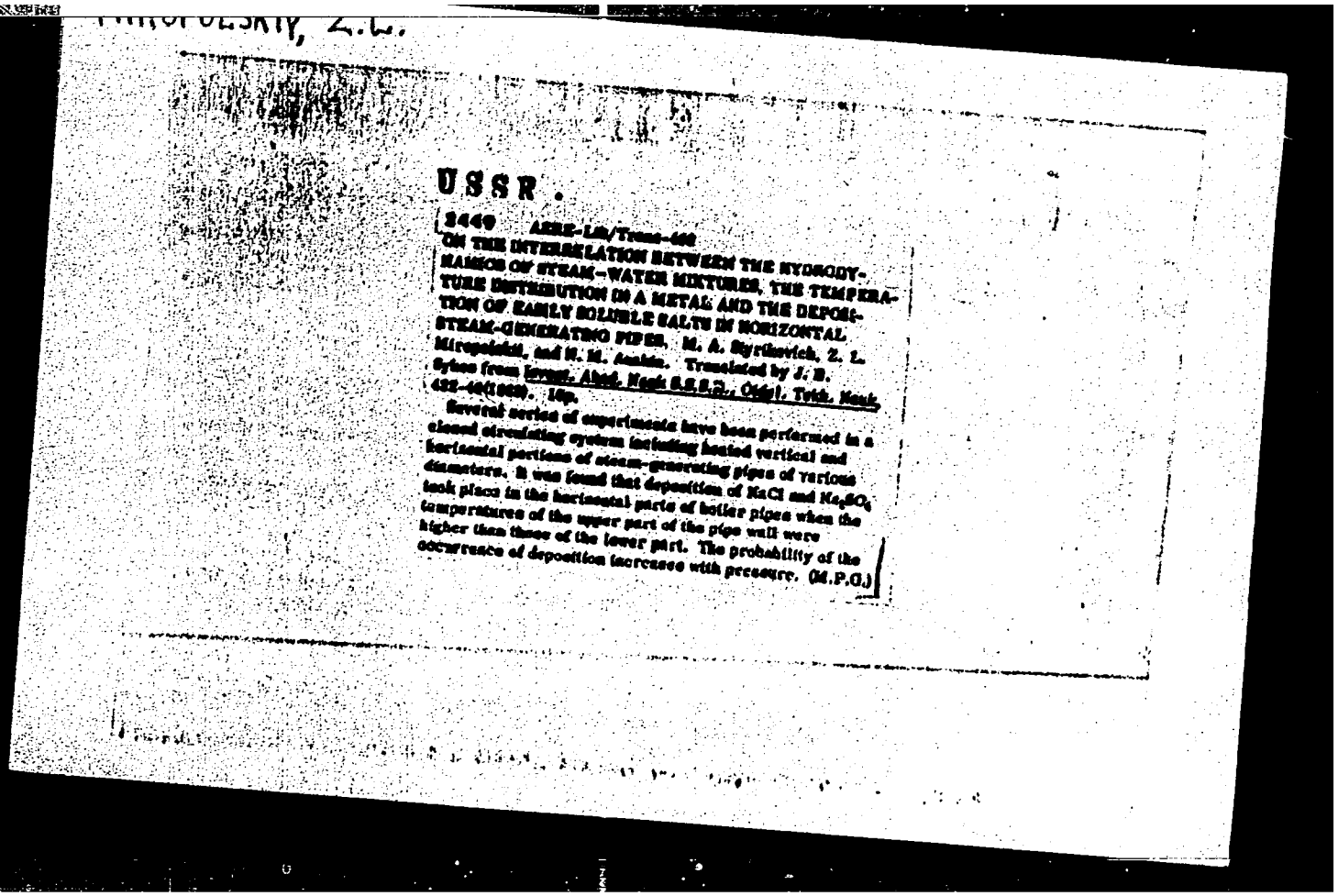
"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



USSR.

2449 AERE-Lib/Trans-468
ON THE INTERRELATION BETWEEN THE HYDRODYNAMICS OF STEAM-WATER MIXTURES, THE TEMPERATURE DISTRIBUTION IN A METAL AND THE DEPOSITION OF EASILY SOLUBLE SALTS IN HORIZONTAL STEAM-GENERATING PIPES. M. A. Styrikovich, Z. L. Miropolskii, and N. M. Anakin. Translated by J. B. Sykes from Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk, 432-440(1959). 16p.

Several series of experiments have been performed in a closed circulating system including heated vertical and horizontal portions of steam-generating pipes of various diameters. It was found that deposition of NaCl and Na_2SO_4 took place in the horizontal parts of boiler pipes when the temperatures of the upper part of the pipe wall were higher than those of the lower part. The probability of the occurrence of deposition increases with pressure. (M.P.G.)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

SOV-124-58-3-3020

Translation from: Referativnyy zhurnal Mekhanika 1958 Nr 3 p 68 (USSR)

AUTHORS: Styrikovich M A Miropol'skiy Z L

TITLE: On the Operational Temperature Conditions of Horizontal and Inclined High-pressure Steam-generating Tubes (O temperaturnom rezhime raboty gorizontal'nykh i naklonnykh parogeneriruyushchikh trub pri vysokikh davleniyakh)

PERIODICAL: V sb.: Gidrodinamika i teploobmen pri kipenii v kotlakh vysokogo davleniya. Moscow: AN SSSR, 1955, pp 229-254

ABSTRACT: The article presents the results of experimental research on the operational temperature conditions of horizontal and inclined tubes with an internal diameter from 32 to 56 mm. The angle of inclination is from 0° to 10°, the pressure range is from 36 to 182 atm abs, and the heat transfer rate is from 40×10^3 to 230×10^3 kcal/m^2 hour. Description of the installation is given. Experimental methods are described in detail. Numerous graphs are presented. It has been established that there exists a considerable range of operational conditions during which increases are observed in the metal temperature of the upper parts of the tube wall. These increases are due

Card 1/2

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On the Operational Temperature Conditions of the High Pressure (cont.)

to unequal distribution of the vapor and the liquid phases over the height of the cross-section. Such an overheating may cause damage due to cracking or corrosion. It has been found that the overheating Δt of a tube wall depends on the geometric dimensions of the tube, the reduced velocity of the liquid and the steam, the heat-transfer rate, and the pressure. The value Δt increases with an increase in the tube diameter and the heat-transfer rate, and decreases with an increase in the circulation velocity. With an increase in the reduced steam velocity, all other conditions being equal, Δt increases at first and begins to decrease later. With an increase in pressure there is an increase in the values of the limiting circulation velocity at which the values of Δt decrease to a small amount of the order of 5 to 10°. With an increase of the angle of slope to 10° at the pressure of 100 atm abs, the value of Δt decreases to about 13 or 14, and at higher pressures (140 to 180 atm abs) decreases approximately to 12. The article concludes that an employment of horizontal tubes in high pressure natural circulation boilers is not permissible. Bibliography: 4 references.

A. A. Gukhman

Card 2/2

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

USSR/Physics - Hydrodynamics

Card 1/1 Pub. 41 - 11/15

Author : Miropol'skiy, Z. L. and Styrikovich, M. A., Moscow

Title : Use of γ Rays in studying the hydrodynamics of diphase systems

Periodical : Izv. AN SSSR, Otd. Tekh. Nauk, 154-156, Sep 55

Abstract : Describes method of determining density of a water-steam system in a boiler by measuring the lessening of the intensity of a beam of γ rays when passed through such a medium. Describes experimental setup. Presents theoretical calculation of the processes involved in diphase media. Drawings, formulae, graphs.

Institution:

Submitted : April 14, 1955

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

Subject : USSR/Power Eng.

Card 1/1 Pub. 110-a - 6/14 AID P - 4081

Authors : Styrikovich, M. A., Corr. Memb., Academy of Sciences, USSR, M. E. Shitsman, and Z. L. Miropol'skiy, Kand. Tech. Sci. Power Institute, Academy of Sciences.

Title : Some data on temperature changes in a vertical boiling conduit at near-critical pressures.

Periodical : Teploenergetika, 12, 32-36, D 1955

Abstract : Tests with vertical boiling pipes at different pressures and various flue temperatures are explained. Some temperature changes in the pipe walls were noticed, which seemingly have considerable importance for establishing conditions of normal performance of vaporating-surfaces of super-high pressure boilers. Seven diagrams. Three Russian references, 1951-1952.

Institution : None

Submitted : No date

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Z. L. (Cand. Tech. Sci.) and SHITSMAN, M. E. (Cand. Tech. Sci.)

Experiments on Heat Transfer and Permissible Specific Thermal Loading in the Steam Raising Tubes of Boilers.

report presented at sci. and tech. [illegible] Heat exchange [illegible] aggregate State of Matter (By Comm. on High Steam Conditions, Power Inst. AS USSR, and Inst. Thermall Engineering, AS UkrSSR), Kiev, [illegible] Sep 57.

Power Inst. Acad. Sci. USSR

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Z.L.

Manufacture of movable steam boilers in England. Mul. tekh.-ekon. inform. no.1:92-93 '57. (MIRA 11:4)
(Great Britain—Boilers)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Z. L.

AUTHORS: Miropol'skiy, Z. L., Shitsman, M. Ye.

TITLE: Heat Emission to Water and Steam at Variable Heat Capacity Near the Critical Region) (Teplootdacha k vode i pari pri peremennoy teployemkosti (v okolo-kriticheskoy oblasti)

PERIODICAL: Zhurnal Tekhn. Fiz., [illegible], Vol. [illegible], Nr [illegible], [illegible] USSR

ABSTRACT: The results of investigations of the local coefficients of heat emission to not boiling water and to overheated steam at pressures of from 4 to 280 at are given. In this investigation where the water and the steam moved within a pipe in a turbulent current distribution following was noticed in the regions of sub- and overcritical pressures: 1) The application of the known formula for the computation of the heat emission to not boiling water or to overheated steam cannot give satisfying results for those temperature regions where the values of the Pr- figure change in connection with the variation of the specific heat of the medium. 2) A formula is given here for the computation of the local values of the coefficient of the heat emission to water and steam within the above mentioned limits of the parameter variation. This contains the known figures: Nu, Re, and Pr. The mean current temperature is assumed as the determining temperature for the computation of Nu and Re. In the computation of Pr the determining temperature is assumed to be equal to either the

Card 1/2

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Heat Emission to Water and Steam at Variable Heat Capacity (Near [illegible] the Critical Region)

wall temperature, if Pr_f is greater than Pr_w, and [illegible] the current temperature if Pr_f is smaller than Pr_w. The [illegible] of the formula given here is practically [illegible] temperature of more than [illegible]. There are [illegible] references

ASSOCIATION: ENIN AN USSR, Moscow (ENIN AN SSSR, Moskva

SUBMITTED: December [illegible], 1956

AVAILABLE: Library of Congress

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

10(4); 21(5); 24(8) PHASE I BOOK EXPLOITATION SOV/2457

Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya po primeneniyu radioaktivnykh i stabil'nykh izotopov i izlucheniy v narodnom khozyaystve i nauke. 2d, Moscow, 1957

Teplotekhnika i gidrodinamika; trudy konferentsii, tom. 4 (Heat Engineering and Hydrodynamics; Transactions of the All-Union Conference on the Use of Radioactive and Stable Isotopes and Radiation in the National Economy and Science, Vol 4) Moscow, Gosenergoizdat, 1958. 88 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR, and USSR. Glavnoye upravleniye po ispol'zovaniyu atomnoy energii.

Eds.: M. A. Styrikovich (Resp. Ed.), G. Ye. Kholodovskiy, and M. S. Fomichev; Ed. of Publ. House: L. N. Sinel'nikova; Tech. Ed.: N. I. Borunov.

PURPOSE: This collection of articles is intended for scientists and laboratory workers concerned with the use of radioactive and stable isotopes.

Card 1/5

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOLSKIY, Z. L.; SHNEYEROVA, R. I.

"Measurement of volumetric vapor content in a steam-generating [illegible] aid of bremsstrahlung."

report submitted for [illegible] Mas. Tr[illegible] [illegible]

Krzhizhanovskiy Power Inst.

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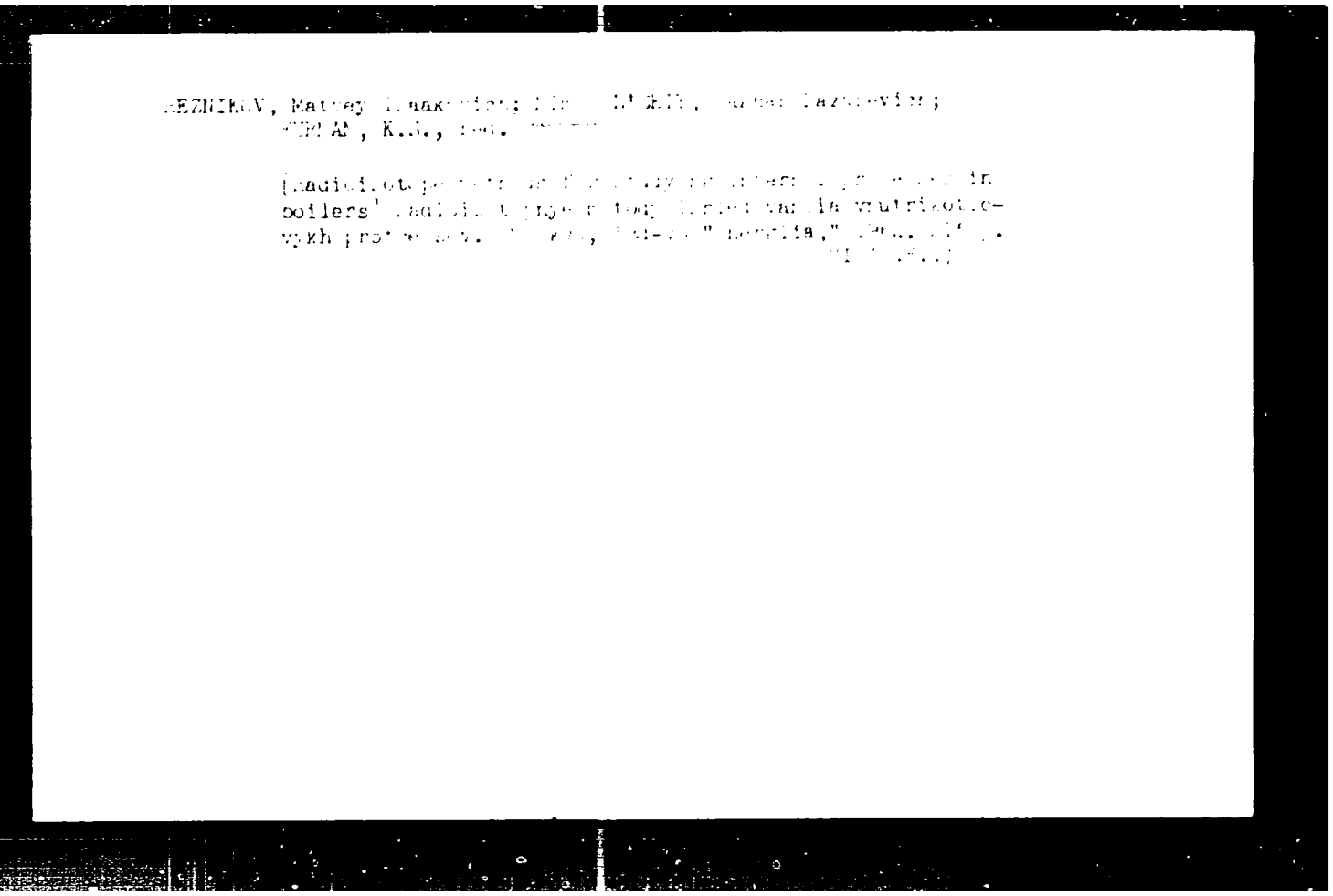
"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Z.L.

Fluctuations of the flow rate in evaporation channels in the presence of an elastic medium in the superimposed unit of the tract. Inzh.-fiz. zhur. [illegible] : [illegible]-15 Ag '[illegible]. ([illegible])

1. [illegible] eticheskiy [illegible] [illegible], [illegible].

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

SOV/96-58-6-11/24

AUTHOR: Miropol'skiy, Z.L., Cand.Tech.Sci. and Shneyerova, R.I., Engineer

TITLE: The generalisation of experimental data on temperature conditions in the metal of horizontal and slightly sloping boiling tubes (Obobshcheniye eksperimental'nykh dannykh po temperaturnym rezhimam metalla gorizontal'nykh i slabo naklonennykh kipyatil'nykh trub)

PERIODICAL: Teploenergetika, 1958, Vol 5, No.6. pp. 56-60 (USSR)

ABSTRACT: When a steam/water mixture moves in slightly sloping tubes, it separates out into layers, so that the tube is unevenly heated The effect depends on a large number of factors and many tests had to be made in the study of it. The tests were made on two semi-full-scale rigs: a closed-circuit circulating system with an oil-fired furnace in Regional Electric Power Station No 2. of Mosenergo, and a rig of the direct-flow type using externally supplied steam and water in the Heat and Electric Power Station of the All-Union Thermotechnical Institute, where the experimental sections were radiantly heated by electric furnaces. In most tests the tubes were heated uniformly over the perimeter, but some were heated from one side only. In the tests at the All-Union Thermotechnical Institute, in addition to wall temperature measurements, the steam/water flow structure was studied by means of γ irradiation. The test conditions are tabulated; some of the results have already been published. The present article attempts to work out the test data

Card 1/3

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

The generalisation of experimental data on temperature conditions in the metal of horizontal and slightly sloping boiling tubes.

obtained in this work by means of dimensionless criteria, and a procedure is proposed for calculating the wall temperatures of horizontal and sloping boiling tubes. Separation into layers occurs over a wide range of circulation and pressure conditions. Under such conditions the temperature of the lower part of the tube, where the water is, is little above the saturation temperature; in the upper part of the tube cooling occurs by transmission of heat to the steam. An equation is given to determine the maximum temperature and the assumptions made in its derivation are described. To use this equation directly for practical calculations, one would need to know the variations in the heat-transfer coefficient to wet steam in contact with the upper part of the tube and the proportion of the tube perimeter that is free of liquid under various experimental conditions. As this information is lacking, the test data must be formulated as dimensionless criteria and the relationships between them indicated. The appropriate dimensionless formulae are then derived. Equation (2) for the temperature difference between top and bottom of the tube, is a function of 14 dimensional magnitudes, and is reduced to an equation with nine dimensionless criteria. Available test data is then used to express this formula concretely. Criteria required in the work are plotted in figs.1. and 2. Finally, an expression is

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

The generalisation of experimental data on temperature conditions in the metal of horizontal and slightly sloping boiling tubes.

obtained by means of which the test data can be worked out A graph of the test results for a uniformly heated horizontal tube worked out in this way is given in fig.3, with an equation defining the best line through the points. The scatter of the test points is accentuated because they relate to a variety of rigs and not all are equally accurate. The concurrence between the straight line and the results of various authors is discussed. When the tube is heated from one side only, the highest temperatures occur on the side of the tube where the heat flux is greatest. The maximum temperatures were the determining factor in working out the test data and an equation is given that corresponds to the results given in fig 4 The case of sloping tubes is similarly treated by an equation and fig.5 The results show that the least permissible circulation rates depend on numerous factors, but at high temperatures and rates of heat flow, very high circulation speeds would be required to secure uniform temperature distribution round the tube The possibility of drops of highly-concentrated salt solutions forming in the tubes must be considered, and the probable behaviour of various salts present in boiler water is discussed. There is 1 table, 6 figs & 12 lit references (Soviet)

ASSOCIATION: Power Institute Acad. Sci. USSR. (Energetickeskiy Institut AN SSSR)

Card 3/3 1. Boiler tubes--Thermal effects 2. Boiler tubes--[illegible]

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

AUTHOR: Miropol'skiy, Z.L. 89-1-16/1

TITLE: Radioactive Deposits in the Steam Section of Atomic Power Plants (Radioaktivnyye otlozheniya v parovodyanom trakte atomnykh silovykh ustanovok)

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

ABSTRACT: When dealing with the problem of radioactive contamination in steam circulation systems with direct steam generation, the quantity and the compositions of the radioactivities in the steam must be known. It is necessary also to know the type, the radiation energy, and the half-lives especially of γ-rays, because their presence renders access to the steam parts difficult.
In heterogeneous boiling water reactors there are three causes for the radioactive contamination of steam-carrying parts:
1.) The cans of fuel elements have become leaky and radioactive fission products find their way into the steam circulation system.
2.) Corrosion- and erosion products, which have been within range of the active part of the reactor for a long time, now that

Card 1/2

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Radioactive Deposits in the Steam Section of
Atomic Power Plants

they have become radioactive, penetrate into the steam section through the circulation system.

3.) Corrosion- and erosion products of the steam section penetrate into the active part of the reactor where they are activated, after which they again enter the steam duct after some time.

The amount of radioactive contamination in the water-steam part was calculated and the radiation doses for those parts were determined in which radioactive deposits may occur. There are 1 figure, 2 tables, and 10 references, 6 of which are Slavic.

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Card 2/2 1. Atomic power plants-Radioactive contamination 2. Radioactive substances-Contamination 3. Reactors-Radioactive contamination

USCOMM-DC-54744

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

8(6), 21(9)

SOV/111-59-4-6654

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 4, pp 38-39 (USSR)

AUTHOR: Miropol'skiy, Z. L.

TITLE: Radioactive Deposits in the Steam-Water Circuit of Atomic Power Plants

PERIODICAL: V sb.: Fiz. i teplotekhn. reaktorov. M., Atomizdat, 1958, pp 205-215

ABSTRACT: At atomic power plants with heterogeneous boiling reactors, three factors cause radioactive contamination of the steam-water circuit: (1) leaks through the jackets of heat-producing elements that result in nuclear fuel and fission products getting into the loop; (2) elution of corrosion products and erosion of materials that were in the core for a long time and that have considerable activity; (3) activation of erosion and corrosion products of the steam-water circuit which is outside the reactor core and activation of the outside substances that penetrate into the loop. Most difficulties in servicing the

Card 1/2

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SOV/112-59 4-6654

Radioactive Deposits in the Steam-Water Circuit of Atomic Power Plants

steam-water circuit of a boiling reactor are due to radioactive isotopes that have a radioactive half-life of a few dozen days. Formulae are developed for determining the radioactive contamination of the steam-water circuit and the irradiation dose coming from contaminated circuit components. The hazard of chemical-element activation and of loop contamination by fission products is discussed. Estimates made for large atomic power plants with boiling reactors have shown that 24 hours after the turbine shutdown, the irradiation doses due to radioactive deposits near the turbine do not exceed permissible values. In the case of a damaged jacket of a heat-producing element and peretration of a few hundred grams of the nuclear fuel into water, the irradiation doses can exceed the normal values several times.

G. Ye. M.

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MOSTINSKIY, I.L.; MIROPOL'SKIY, Z.L.

Investigation of heat exchange during surface boiling of water and methyl alcohol on a horizontal tube. Nauch.dokl.vys.shkoly; energ. no.3:157-164 '58. (MIRA 12:1)

1. Rekomendovano Energeticheskim institutom AN SSSR.
(Heat--Transmission)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Z.L., kand. tekhn. nauk; SHITSMAN, M.Ye., kand. tekhn. nauk.

Methods of calculating heat transfer to water and steam in the near-critical range. Energomashinostroenie 4 no.1:6-11 Ja '58. (Heat--Transmission) (MIRA 11:1)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

SOV/[illegible]-5[illegible]-11-11/[illegible]

AUTHOR: Mir[illegible]ol'skiy, [illegible], Candidate of Technical Science
Mostinskiy, I.L., Engineer

TITLE: Critical Heat-flow During Uniform and Non-Uniform Heating of the Perimeter of Steam-Raising Tubes (Kriticheskiye teplovyye potoki pri ravnomernom i neravnomernom [illegible] perimetra [illegible] trub)

PERIODICAL: Teploenergetika, [illegible], Nr 11, pp 64-[illegible] (USSR)

ABSTRACT: A good [illegible] of work [illegible] been done on critical values of heat flow in vertical tubes with uniform heating but in practical conditions the tubes are often unevenly heated. By the use of forced draught and enriched [illegible], thermal loading in boilers can be raised to [illegible] where there is critical [illegible] and tubes are [illegible]. This work describes tests made with uniform and non-uniform distribution of heat flow round the tube perimeter. For uniform heating the tubes in the experimental section were made of steel EYA-1T: the length of the heated section was 160 mm and the internal diameter 5.[illegible] - 6 mm. In the tests with non-uniform heating, tubes of variable wall

Card 1/4

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SOV/[illegible]-11-11/21

Critical [illegible] Perimeter [illegible] Steam-[illegible] Tubes

thickness as depicted in Fig.1, were heated by electric current. The requisite range of wall thickness was obtained by turning the steel tubes off-centre in a lathe. The eccentricity was 0.[illegible], so that when the tubes were heated the heat-flow diagram was as sketched in Fig.2. Because of the non-uniform heating of the perimeter of the experimental tube, the temperature is also non-uniform and there is heat transfer by thermal conductivity in the metal. To reduce this effect, two longitudinal channels were milled in the outer surface of the tubes as shown in Fig.1. The test equipment is illustrated in Figs.3a and b. The tests are made with superheated steam at pressures up to 3[illegible]0 at[illegible] and temperatures up to [illegible]00°C. The experimental procedures and instrumentation are described. The crisis condition, that is transition from [illegible]-type boiling to filmwise boiling, may be difficult to

Card 2/4

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

SOV/9[illegible]-5-11-11/2[illegible]

Critical Heat-Flow During Uniform and Non-Uniform Heating of the Perimeter of Steam-Raising Tubes

recognised at high pressures and the methods used for this observation are described. The test results obtained with uniform tube heating are graphed in Fig.4. The results are in good agreement with previously published data, including some American results. The corresponding test results with non-uniform heating of the tube are plotted in Fig.5. The critical heat flow is of the same general character as with uniform heating but the numerical values are higher. In Fig.6, a graphical comparison is made between test data obtained with uniform and non-uniform heating. It will be seen that the critical thermal flux on the front surface of the tube with non-uniform heating is 1.6 - 1.[illegible] times

Card 3/4

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

SOV/96-5[illegible]-11-11/21

Critical [illegible] Heat-Flow During Uniform and Non-Uniform Heating of the Perimeter of Steam-Raising Tubes

higher than its uniform heating. This may be explained by the presence of rotary motion in the turbulent flow. There are 5 figures and 4 Soviet references.

ASSOCIATION: Energeticheskiy institut AN SSSR (Power Institute of the Academy of Sciences, USSR)

Card 4/4

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Z.L., kand.tekhn.nauk; SHITSMAN, M.Ye., kand.tekhn.nauk; MOSTINSKIY, I.L., inzh.; STAVROVSKIY, A.A., inzh.

Effect of inlet conditions on the critical thermal flows during the boiling of water in pipes [with summary in English]. Teploenergetika 6 no.1:80-83 Ja '59. (MIRA 12:1)

1. Energeticheskiy institut AN SSSR.
(Steampipes) (Thermodynamics)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

Akademiya nauk SSSR. Energeticheskiy ... [illegible] ... sent
O. M. Krzhizhanovskiy

Teploenergetika, vyp. 1 (Heat Power Engineering, Nr 1) Moscow, Izd-vo AN SSSR, 1959. 143 p. Errata slip inserted. No. of copies printed not given.

Ed. of Publishing House: V. A. Kotov; Tech. Ed.: Yu. V. Bylina; Editorial Board: V. A. Baum, Doctor of Technical Sciences, Professor (Resp. Ed.); G. Ye. Khlodovskiy, Doctor of Technical Sciences; M. I. Tushchenkova, Candidate of Technical Sciences; Z. L. Miropol'skiy, Candidate of Technical Sciences (Secretary); and S. G. Boyarkov, Candidate of Technical Sciences.

PURPOSE: This work is intended for scientists and engineers working in the field of steam boilers.

COVERAGE: This is a collection of 9 articles on the circulation of water and water-vapor mixture in boilers, bubbling processes, pulsation of pressure, temperature fields in combustion chambers, radiation heat transfer between gray bodies, and the solution of nonlinear problems of mathematical physics. There is also an article describing processes occuring in the steam boiler of a solar heat energy station. References appear at the end of each article.

were conducted at thermohydroelectric laboratories in cooperation with Heat and Electric Power Plant (TETs) No. 9.

Sargalovskiy, G. O., Ya. G. Vinokur, V. A. Kolokolkov, and V. I. Fatukhov. Experimental Investigation of Vapor and Gas Contents in a Bubbling Process 40

It was found that the distribution of volume vapor content and air content along the elevation of the bubbling volume at insignificant reduced velocities of vapor or air, and at low boiler water salt content, remains qualitatively the same under varying pressure and characteristics of the perforated plate. An increase in the weight level at atmospheric pressure results in a decrease of vapor content. An increase in the reduced velocity of steam when the water is of low salt content increases the volume vapor content.

Zaryanov, S. I. Pulsations of Pressure in the Flow of Gas—Liquid Mixtures in Pipes 46

The article describes experiments in pressure pulsation in four 14 m long pipes of different diameters--25.8, 47.4, 74.7 and 99.8 mm. The flow velocity changed from 0.2 to 5m/sec. The gas content changed from 0.05 to 0.95. Graphical representation of experimental results are given.

Miropol'skiy, Z. L., and E. I. Smayevova. Investigation of a Flow of Vapor Water Mixture in Pipes by / Radiation 53

In this article the authors describe problems in determining the average values of steam volume contents φ av. in pipes and in conduits of rectangular cross section. The results obtained are also valid for conduits of arbitrary geometrical shapes. Diagrams and graphs are given.

Khrustalev, B. A. and S. S. Filisonov. Temperature Fields in Combustion Chambers 62

Three kinds of furnace heating chambers were investigated. Experimental data show that under condition of approximate self-modeling temperature fields these chambers perform according to load. It is stated that the approximate independence of dimensionless temperature fields from the load occurs in various combustion chambers which differ from each other according to geometric characteristics and the type of combustion processes.

Shchegolev, D. M. Steam Boiler of a Solar Heat Energy Station 70

The author presents data on the performance of steam boilers operating on solar heat energy. General diagrams of a boiler and tables of principal characteristic are given.

Surinov, Yu. A. Investigation of Radiation Heat Transfer in Systems of Gray Bodies 79

The author develops a theory of radiation and radiation heat transfer. The equations appearing in this article permit a theoretical-probability interpretation. The article is divided into two parts: 1) Solution of a mixed problem on radiation heat exchange in a system of gray bodies in a diathermal medium, and 2) Solution of a mixed problem of radiation heat

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PAGE 1 BOOK EXPLOITATION SOV/3477

Akademiya nauk SSSR. Energeticheskiy institut im. G.M. Krzhizhanovskogo

Problemy energetiki; sbornik perevodnykh statey (Problems of Power Engineering; Collection of Articles Dedicated to Academician G.M. Krzhizhanovskiy) Moscow, 1959. 851 p. Errata slip inserted. 2,500 copies printed.

Eds.: of Publishing House: B.D. Artemiyev, P.V. Zolotov, P.I. Zubkov, and G.M. Meyerov; Tech. Ed.: I.I. Prusakova; Editorial Board: A.V. Vinter, Academician (Deceased), V.I. Popkov (Resp. Ed.) Corresponding Member, Academy of Sciences USSR, V.I. Veyts, A.S. Pistrovich, M.A. Pyrtovich, K.F. Chernukov, K.A. Krasnovo, Candidate of Technical Sciences, K.K. Eyler, Candidate of Technical Sciences, M.K. Lebedev, Candidate of Technical Sciences, and L.S. Rudenko.

PURPOSE: This collection of articles is intended as a tribute to the memory of Academician G.M. Krzhizhanovskiy.

COVERAGE: The collection contains sixty articles by former students and coworkers of the deceased Academician. The articles deal with problems of a wide range of subjects in the field of power engineering: problems of the regional development of electrical and thermal power engineering; power engineering technology and the physics of combustion. No personalities are mentioned. References to given after most articles.

Klimenko, F.I. Some Special Features of Power Development in Power Engineering in the U.S.A. 167

Zakharin, A.G. Methods of Determining Technical-Economic Indices of Rural Electrical Networks 175

Piratovna, P.I.R. The Present State and Prospects of Future Use of Electricity in Rural Regions of the USSR 186

Lisitsyn, B.F., I.I. Frumin and A.D. Adamov. Electrification of Field Crop Cultivation in the USSR 196

Zinenko, I.K. Investigation of the Energy Balance of an Electric Thresher Unit 210

Markovich, I.M., S.A. Lovelius. Extremely Long-Distance Transmissions of 500 kv 223

Likhtsin, M.A. Static Condensers for Transverse Compensation of Long-Distance A-c Transmissions 242

Gorodskiy, V.M. Effect of Forcing and Regulating Excitation on the Dynamic Stability of Long-Distance Transmissions 262

Matyushin, V.M. On the Insufficiency of the Method of the Equivalent Generator for the Investigation of Stability of Electric Transmission With Small Disturbances 280

Kolosovskiy, O.F., O.V. Klimovich. The Limit of Static Stability of a Multi-unit Station With Strong Regulation of Excitation 297

Voynes, I.A., S.S. Glikovskiy, O.Ye. Butkevich, Series Connection of Capacitors for Increasing Transient Stability 308

Gorodskiy, V.I., M.S. Litvinov. Commission for the Long Distance Trans-mission of Electrical Energy at the Power Engineering Institute Imeni G.M. Krzhizhanovskiy 318

Eyler, K.K. Coefficients of Hydraulic Resistance to the Movement of Gas-Liquid Mixtures in Vertical Tubes 327

Leont'yev, A.I. Calculation of Turbulent Friction in the Flow of a Compressed Gas Around a Flat Plate 337

Pushchenkova, E.I. Investigation of the Structure of an Axially-Symmetric Supersonic Stream in a Nozzle 343

Dorfer, G.F. Conditions for Regenerative Heating Systems With Flame Burning of Fuel 351

Mirgorodskiy, A.S., M.A. Styrikovich, M.Ye. Shitsman. Heat Trans-fer in Steam-generating Tubes at High Pressure 371

Kaverin, S.I., I.A. Arabadzhiyev. Calculation of Resistance and of Heat Exchange in a Stream of Undercompressed Liquid in the Presence of a Positive Pressure Gradient 401

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Z.L.; SHNEYEROVA, R.I.

Investigation of steam-water flow in pipes by means of gamma rays. Teploenergetika [Energ. inst.] no.1:53-61 '59. (MIRA 13:2)

(Pipe--Hydrodynamics)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

AUTHOR: Miropol'skiy, Z. L., Candidate of Technical Sciences SOV/96-59-3-9/21

TITLE: Temperature Conditions in the Metal of the Steam-Raising Surfaces of Once-Through Boilers (Temperaturnyy rezhim metalla parogeneriruyushchikh poverkhnostey pryamotochnykh kotlov)

PERIODICAL: Teploenergetika, 1959, Nr 3, pp 40-44 (USSR)

ABSTRACT: This article is a general review of published work on the subject. As steam conditions are raised, the operating temperatures in metal heating-surfaces approach limiting values. It is, therefore, important to develop methods of calculating the metal temperature throughout the steam/water path of the boiler. Temperature conditions when operating below the critical pressure are first considered. Diagrams of the temperature distribution, the flow and the temperature of the internal wall surface of a tube are given in Fig 1. The diagram relates to the whole length of a coil of a once-through boiler with uniform heat flux distribution round the surface and length of the tube. In the first section of the tube the temperature of the working medium and of the wall are below the saturation temperature; here, existing

Card 1/4

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Temperature Conditions in the Metal of the Steam-Raising Surfaces of Once-Through Boilers

methods of calculating the temperature are well established However, false results are likely to be obtained in temperature and pressure regions where the specific heat of the medium is rapidly changing Several previously published methods of making these calculations are reviewed The effect of the change-over from dropwise to filmwise evaporation is considered Typical data on temperature changes in the walls of the tube with increase in the heat flux at high pressures are plotted in Fig 2. It is shown that for low values of steam content in the working medium the maximum permissible thermal fluxes are governed by the conditions of transfer from bubble to filmwise boiling. Graphical data about the limiting conditions at which the transfer to filmwise boiling occurs are seen in Fig.3. Values of the critical and permissible heat fluxes at pressures of 26, 100, 180 and 220 atm obtained in tests with tubes 8 mm diameter heated over a length of 160 mm are plotted in Fig.4. Some ideas about the safe operation of boiler tubes during filmwise

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Temperature Conditions in the Metal of the Steam-Raising Surfaces of Once-Through Boilers

boiling are given by superposed curves of permissible thermal fluxes. The possible occurrence of dangerous conditions at the start or the end of the evaporative zone is explained. Conditions are somewhat more difficult if the steam-raising tubes are arranged horizontally or with a slight slope, as in Fig.1b. Uniformly-heated horizontal tubes are treated in equation (4) and equation (5) refers to a tube heated from one side only. Temperature conditions at super-critical pressures are then considered. Here a single-phase medium flows through the entire boiler but the use of ordinary methods of calculation of heat-transfer coefficient with forced convection can lead to serious errors in a number of cases. The temperature changes of the medium and the walls for this case are plotted in Fig.5, which refers

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Temperature Conditions in the Metal of the Steam-Raising Surfaces of Once-Through Boilers

to both vertical and horizontal tubes. There are 5 figures and 14 references of which 13 are Soviet and 1 English.

ASSOCIATION: Energeticheskiy Institut AN SSSR (Power Institute of Ac.Sc.USSR)

Card 4/4

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STYRIKOVICH, M.A.; MIROPOL'SKIY, Z.L., kand.tekhn.nauk; SHITSMAN, M.Ye., kand.tekhn.nauk; MOSTINSKIY, I.L., inzh.; STAVROVSKIY, A.A., inzh.; FAKTOROVICH, L.Ye., inzh.

Effect of superimposed elements on the setting up of boiling crisis in the steam generating pipes. Teploenergetika 7 no.5:81-88 My '60. (MIRA 13:8)

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(Heat--Radiation and absorption) (Boilers)

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Report presented at the Conference on Heat and Transfer
Minsk, USSR, [illegible]

270. V. I. Borowoy, L. K. Toms, Fusion of Bodies at High Supersonic Gas Flow.

271. A. J. Ede, The Heat Transfer Coefficient for Flow in a Pipe.

272. S. I. Brihkova, L. S. Shtemenko, Experimental Investigation of Slip and Temperature Jump at Rarefied Air Flow Near the Solid Wall.

273. A. N. Devoine, On Some Results of the Investigation of Heat Transfer by Rarefied Gas at Natural Convection.

274. A. S. Ginsburg, O. I. Roslyakova, Heat Transfer at the Process of Radiative-Convective Baking by Infrared Rays

275. V. A. Baum, Influence of the Mass Transfer Coefficient on Water Temperature Distribution in the Assembly of the Water-Moderate Water-Cooled Reactor.

276. V. I. Subbotin, S. P. Kashevsky, V. I. Sidorov, Investigation of Heat Removal by Liquid Metal Heat Agents on Models of Flat Heat Fuel Elements.

277. E. M. Fainzilber, Some Principal Problems of Criterial Methods of Heat Transfer Surface Investigation.

278. P. I. Povarnin, Application of the Thermodynamic Similarity Principles for Heat Transfer Calculations.

279. W. N. Medvedev, Generalization of the Newton Law of Cooling of Bodies

280. V. K. Shmertakov, Peculiarities of Heat Transfer Through the Wall with Longitudinal Fins at Surface Cooling.

281. A. V. Kas'yanov, Investigation of Convective Heat Transfer in Aluminum Pipes with Fins.

282. C. J. Schneller, Some Problems of Heat and Mass Transfer Studied in The National Research Institute of [illegible]

283. I. T. Kuperin, Intensification of Heat Transfer [illegible] Surface by Means of [illegible]

284. M. [illegible], S. S. [illegible], [illegible]

285. [illegible] Mirofelsky, M. E. Shitsman, Critical Heat Flow at [illegible] in Ducts.

286. [illegible] Transfer [illegible]

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

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STYRIKOVICH, Mikhail Adol'fovich; REZNIKOV, Matvey Isaakovich. Prinimal uchastiye MIROPOL'SKIY, Z.L., kand. tekhn. nauk; BORUNOV, N.I., tekhn. red.

[Methods for the experimental study of processes taking place inside the boiler]Metody eksperimental'nogo izucheniia vnutrikotlovykh protsessov. Moskva, Gos. energ. izd-vo, 1961. 367 p. (MIRA 14:11)
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SHNEYEROVA, R.I., inzh.; SHVARTS, A.L., kand.tekhn.nauk; MIROPOL'SKIY, Z.L., kand.tekhn.nauk; LOKSHIN, V.A., kand.tekhn.nauk

Experimental study of the real steam contents and useful heads in tilted pipes. Teploenergetika 8 no.4:63-67 Ap '61. (MIRA 14:8)

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(Boilers)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

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B102/B138

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AUTHORS: Miropol'skiy, Z. L., Shitsman, M. Ye.

TITLE: Critical heat flows for water boiling in channels

PERIODICAL: Atomnaya energiya, v. 11, no. 6, 1961, 313 - 321

TEXT: Experimental data obtained by several authors are evaluated and analyzed by introducing dimensionless critical parameters. Such parameters may be interrelated by $\frac{q_{cr} l_0}{a' r \gamma''} = f\left(\frac{w_0 l_0}{\nu'}, \frac{w_0 l_0}{a'}, \frac{r}{c_p' T_s}, \frac{w_0''}{w_0'}, \frac{\gamma''}{\gamma'}\right)$ (1). γ - specific weight, (kg/m^3), ν - kinematic viscosity (m^2/sec), μ - dynamic viscosity (kg·sec/m^2), σ - surface stress, r - evaporation heat, λ - heat conduction coefficient, a - thermal diffusivity, T_s - saturation temperature, w_0', w_0'' - reduced velocities (m/sec), q - specific thermal flux, q_{cr} - specific critical heat flux, l_0 - characteristic length (m). Analysis of available data shows that channel cross-sectional dimensions

Card 1/6

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