ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

Dear Sir:

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Nuclear device using plutonium was detonated by the French government last Saturday (February 13, 1960) at Reggan, in the Sahara, 750 miles south of Algiers. Meteorological conditions had on that day indicated minimum fallout over populated areas. The device was exploded from a tower, one of several erected at the test site. It was the first experimental work of this nature by the French. On November 3, 1958 the Soviet Union had exploded a nuclear device in Siberia; since then all testing had been stopped under an informal moratorium entered into by the U. S., Britain, and the Soviet Union. (These powers have been negotiating for the past 15 months at Geneva on a formal nuclear test ban agreement; the revelation that France can manufacture nuclear exposives will make it necessary for her to be a part of such negotiations.)

The U. S. nuclear powered submarine Sargo came through the ice at the North Pole last week to become the third U. S. nuclear powered vessel to cruise to the pole. The Sargo, like the nuclear submarines Nautilus and Skate before her, was collecting oceanographic data, including information on the physical structure of the ocean bottom and sea and ice conditions in the area. She had left Pearl Harbor, Hawaii, on January 18, 1960 and had been under the ice for 2,744 miles after submerging at the edge of the ice pack in the Bering Sea southwest of Alaska.

Victoreen Instrument Co., Cleveland, manufacturer of nuclear instruments and electronic components, has acquired John E. Fast & Co., Chicago electronics firm specializing in development and manufacture of capacitors. Victoreen is paying $700,000 for all the outstanding stock of Fast in the transaction, which was approved by directors of both companies. Louis Kopinski, Sr., president of Fast, will continue as president of the company which will become a Victoreen subsidiary. David H. Cogan, president and chairman of Victoreen predicted that the acquisition would result in adding about $5 million a year to the company's sales volume. (Other FINANCIAL NEWS, p. 5 this LETTER.)

Seventh Scintillation Counter symposium, scheduled for next week (February 25-26) in Washington, D.C., will have four sessions of half-day each covering: scintillators; photomultipliers and associated electronics; scintillation track imaging; and astrophysical and space applications of scintillation counters. Sponsors are USAEC, American Institute of Electrical Engineers, Institute of Radio Engineers, and National Bureau of Standards. Chairman is G. A. Morton, RCA Laboratories, Princeton, N. J. (Other MEETINGS, COURSES, CONFERENCES, p. 4 this LETTER.)

Uranium ore processing plant to cost about $2 million will be built near Falls City, Texas, by Susquehanna-Western, Inc., Denver. The first in Texas and the 26th in the U. S., the plant is expected to take approximately 10 months to construct. With a capacity of 200 to 250 tons of ore per day, concentrates produced will be sold to the USAEC. (Other RAW MATERIAL NEWS, p. 2 this LETTER.)

ATOMIC ENERGY PATENT DIGEST...

PATENTS ISSUED February 2, 1960 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Method for fabricating radiation detectors. Nicholas Anton, inventor. No. 2,923,586 issued to inventor of record. (2) X-Ray analysis of geological formations. Philip W. Martin, Robert W. Pringle, inventors. No. 2,923,824 issued to inventors of record. (3) Apparatus for neutron well logging. Gilbert Swift, inventor. No. 2,923,825 assigned to Well Surveys, Inc.

PATENTS ISSUED February 2, 1960 to GOVERNMENTAL ORGANIZATIONS: (1) Random pulse generator producing fiducial marks. William F. Nielsen, inventor. No. 2,923,588 assigned to USAEC. (2) Method of producing lithium sulphate from beta spodumene. M. Archambault, J. U. MacEwan, C. A. Olivier, inventors. No. 2,923,600 assigned to Dep't. of Mines, Province of Quebec, Canada. (3) Method of isotope concentration. Thomas I. Taylor, William Spindel, inventors. No. 2,923,601 assigned to USAEC. (4) Process of separating zirconium from hafnium by solvent extration with an alkyl phosphate. Donald F. Peppard, inventor. No. 2,923,607 assigned to USAEC. (5) Method and means for electrolytic purification of plutonium. Carl W. Bjorklund, Robert Benz, William J. Maraman, Joseph A. Leary, inventors. No. 2,923,670 assigned to USAEC. (6) Electromagnetic separation of isotopes. Sidney W. Barnes, Clifford M. Cantrell, inventors. No. 2,923,822 assigned to USAEC. (7) Apparatus for producing high velocity shock waves and gases. Franklin R. Scott, Vernal Josephson, inventors. No. 2,923,852 assigned to USAEC.

PATENTS ISSUED February 9, 1960 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Process for recovering lithium values from beta-spodumene. John A. Peterson, inventor. No. 2,924,507 assigned to International Minerals & Chemical Corp. (2) Electron accelerator. Arthur P. Davis, Adnan Waly, inventors. No. 2,924,714 assigned to Electronized Chemicals Corp. (3) Radioactivity measuring device. Lyle E. Packard, William S. Scott, Emerson P. Mason, Charles E. Soderquist, inventors. No. 2,924,718 assigned to Packard Instrument Co., Inc., La Grange, Ill. (4) Control apparatus. William B. Hamelink, inventor. No. 2,924,720 assigned to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

PATENTS ISSUED February 9, 1960 to GOVERNMENTAL ORGANIZATIONS: (1) Radiometric method for determining volume. Joseph L. Kalinsky, inventor. No. 2,924,719 assigned to Secretary of the Navy. (2) Apparatus for cleaning gases with electrostatically charged particles. Henry F. Johnstone, inventor. No. 2,924,294 assigned to USAEC. (3) Fuel handling mechanism. Leonard J. Koch, Ernest Hutter, inventors. No. 2,924,483 assigned to USAEC. (4) Solvent extraction process for plutonium. Herbert H. Anderson, Larned B. Asprey, inventors. No. 2,924,506 assigned to USAEC.

RAW MATERIALS...prospecting, mining, marketing...

CANADA: Gunnar Mines has made a second deal to extend its sales of uranium concentrates. Its first agreement was with Rayrock Mines (this LETTER, p. 1, February 2, 1960; Vol. 22, No. 13). The most recent agreement, with Canadian Dyno Mines, together with the Rayrock deal, assures Gunnar of markets for its uranium concentrates for about the next four years at maximum permissible delivery to Eldorado Mining & Refining. Gunnar will ship 175,000 lbs. monthly to Eldorado. Of this, 63,735 lbs. will be on Dyno account and 38,740 lbs. on Rayrock account, with the balance applied toward monthly quota of Gunnar's own contract. Gunnar will thus receive full payment monthly from Eldorado for its 75,525 lbs.; it will be paid by Dyno and Rayrock for the 102,475 lbs. it produces toward filling their contracts with Eldorado; and will receive $2.50 per pound in advance from Eldorado for 102,525 lbs., the delivery of which it has deferred on its own contract. When Gunnar has finished filling the Rayrock and Dyno contracts, it will then deliver remainder of its own contract, receiving contract price less the $2.50 advance. (The transaction was under the new Canadian policy of allowing a producing mine with excess capacity to complete the balance of contract of a mine whose own ores are exhausted; Gunnar in this case has the excess capacity, with Dyno and Rayrock no longer mining. This will give Rayrock a gross operating profit of about $4.8 million and Dyno about $11.8 million).

ATOMIC ENERGY CONTRACT NEWS...

AIRCRAFT REACTOR STUDIES: Blaw-Knox Co., Pittsburgh, has received contract from USAEC to study facilities required for testing an experimental indirect-cycle aircraft nuclear reactor which Pratt & Whitney Co. is developing at Middletown, Conn., for the U. S. Air Force and USAEC. Work with the experimental indirect-cycle reactor will be at the Commission's national reactor testing station, Arco, Idaho. General Electric Co. has been using aircraft nuclear propulsion program facilities there for the development of a direct-cycle aircraft reactor. Purpose of the Blaw-Knox study is to establish a basis for determining the most economic and practical method of testing the indirect-cycle reactor including design of new facilities and modification of those now existing.

RADIATION LABORATORIES: Vitro International division of Vitro Corp. of America will design a $4 million high-level radiation laboratory at Trombay, India under terms of contract recently awarded by the Indian government. To be located at the Indian Atomic Energy Department nuclear center, the laboratory, with more than 100,000 sq. ft. of floor area will be one of the largest integrated research facilities in the world. The radioactive laboratory will include facilities for radiochemistry and radioisotope and hot metallurgy operations. There will be a number of hot cell areas for experimental work with plutonium; movable dust doors will be provided between the cells. (Vitro are now working for the Government of India as consulting engineers on the fertilizer-heavy water production plant now under construction at Nangal, India. When completed, this plant will have a capacity of 1600 tons/day of nitro-limestone fertilizer and 16 tons per year of heavy water.)

The Norwegian company Noratom A/S has been awarded a $350,000 contract by the Egyptian Atomic Energy Commission to construct an isotope laboratory. The contract also provides for the training of Egyptians in isotope work at the Norwegian Atomic Energy Institute. (Noratom was formed in 1957 by a group of Norwegian industrial, financial and maritime companies to manufacture and sell nuclear reactors and allied equipment.)

Contract for design and construction of a new laboratory to be installed in the buildings of No. 2 reactor at Windscale, Cumberland, has been awarded by the U. K. Atomic Energy Authority to E. G. Erwin and Partners, London. The new laboratory, which will cost about £1 million, will allow the handling and examination of several thousand fuel elements a year from the U. K. nuclear power stations and also from experimental reactors. Specially designed remote control apparatus will permit the handling of burnt fuel elements, and allow removal of rods from their containers without distortion.

INSTRUMENTATION: Contract to install the criticality incident detection system at Windscale has been awarded by the U. K. Atomic Energy Authority to Avo Ltd., London, a company in the Metal Industries Group. The system was designed by the Authority for the detection of radiation in the second plutonium processing plant now being installed at Windscale.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...

NEW PRODUCTS: Four new carbon-14 labeled radiochemicals are available from this processor. Two that should be of interest to chemists working with hydrocarbons are 1-butene-1-C-14 and hexamethyl -C-14 benzene. Another labeled compound, 4-(2, 4-dichlorophenoxy) butyric-1-C-14 acid will interest those studying plant growth regulators, while tripalmitin (Glyceryl-1,3-C14) is useful in the chemistry of fatty acids. --Research Specialties Co., Richmond, Calif.

Now offered by this firm is the compound known to biochemists as HMG; it is labeled with C-14. Its availability in this labeled form will be of use in studying the manner by which cholesterol is synthesized in the body and how it deposits along the walls of arteries. The HMG-C-14 offered is a white crystalline solid with a specific activity of 1.58 millicuries per millimole. --Tracerlab, Inc., Waltham 54, Mass.

Large all-stainless steel hood for handling radioisotopes and other radioactive materials features crevice-free round-corner construction to facilitate decontamination. Called a California-type hood, it is 36-in. deep, 84-in. high, and available in lengths of 6,7,8, and 10-ft. --S. Blickman, Inc., 8400 Gregory Ave., Weehawken, N.J.

NEW BOOKS & OTHER PUBLICATIONS...

Nuclear Power Plant. E. Openshaw Taylor. Review of the basic ideas underlying nuclear power generation. 184 pages.--Philosophical Library, Inc., 15 E. 40th St., New York 16. ($7.50)

Principles of Radioisotope Methodology. Grafton D. D. Chase, Joseph L. Rabinowitz. Text or laboratory manual for the beginner. 286 pages.--Burgess Publishing Co., 426 S. Sixth St., Minneapolis 15, Minn. ($6.00)

Radiation Biology. J. H. Martin, editor. Proceedings of the 2nd Australasian Conference on Radiation Biology held in 1958 at Melbourne. 304 pages.--Academic Press, Inc., 111 Fifth Ave., New York 3. ($11.00)

Photographic Dosimetry at Total Exposure Levels Below 20 mr. Margaret Ehrlich, William L. McLaughlin. Technical note no. 29 of National Bureau of Standards. No. PB-151,388. (50¢).....Radiation Induced Ultra-Violet Absorption in Methyl Methacrylate as a Method of Dosimetry. D. R. Johnson, Wright Air Development Center. No. PB-161,034. (50¢)--Office of Technical Services, Wash. 25, D. C.

Ground Zero Locators. J. D. Loconti, H. W. Coles, C. D. Thron, Quartermaster Research & Engineering Center. No. PB-159,015 (Microfilm, $2.40; Photostat, $3.30) .....Conceptual Design of 20Mw Nuclear Heating Plant. G. Caravella, R. Epstein, et al., Vitro Corp. of America. Design work by Vitro on nuclear power plant with prime purpose the indirect generation of steam for space heating and other low temperature applications. No. PB-138,972 (Microfilm, $9.30; Photostat, $31.80).....Radiation Hazards of Primary Cosmic Particles. Rudolph A. Hoffman, Air Force Missile Development Center. No. PB-143,682. (Microfilm, $3.00; Photostat, $6.30.).....Late Effects of Total-Body Roentgen Irradiation. Baldwin G. Lamson, Marta S. Billings, Leslie R. Bennett, School of Medicine, University of California, Los Angeles. No. PB-143,381. (Microfilm, $2.40; Photostat, $3.30).....Chemical Protection of the Mouse Against Leukemia Induction by X-Rays. A. C. Upton, D. G. Doherty, G. S. Melville, Oak Ridge National Laboratory. No. PB-143,373. (Microfilm, $1.80; Photostat, $1.80)--Library of Congress, Wash. 25, D.C.

Beryllium Data Manual. E. L. Francis, U. K. AEA research and development branch. Covers physical, mechanical and chemical properties, etc. IG Report 160 (RD/R). (10s 6d).....Plutonium Data Manual. E. L. Francis. Thermal equilibrium diagrams; physical mechanical and chemical properties; etc. IG Report 161 (RD/R). (12s 6d).--H. M. Stationery Office, London, England.

NOTES: New report, "System of Measurement of Environmental Radioactivity in O.E.E.C. Countries, 1959", has been issued by the O.E.E.C.'s European Nuclear Energy Agency, 2 rue Andre-Pascal, Paris 16, France. Prepared under the direction of S. Halter, of Belgium, the report lists permanent radioactivity monitoring stations; methods of measurement used; and frequency of measurements in O.E.E.C. member European countries.

First Annual Report (1959) was issued last fortnight by the USAEC; previous reports had been made semi-annually. Covering work in the U. S. during 1959 in the atomic energy field, the report points out that on September 30, 1959 there were in in the U. S. 18 civilian power reactors under construction or development involving industry and government commitments of more than $717 million, divided about $465 million by industry and $252 million by government. There was also another $300 million similarly involved in commitments on other civilian reactor projects under construction or development. Isotope licenses issued by the USAEC in 1959 increased 16% over 1958, the report notes. The complete report may be obtained from Sup't. of Documents, Wash. 25, D.C., at $1.25.

MEETINGS, COURSES, CONFERENCES...

CONFERENCES: Two day conference on "The Role of Nuclear Propulsion in our Future Merchant Marine" has been scheduled by the Atomic Industrial Forum, New York, in cooperation with the USAEC and the Maritime Administration. To be held in Philadelphia, tentative dates of the conference are April 28 and 29. Details may be obtained from the Forum, New York 22, N.Y.

Pittsburgh section of the American Nuclear Society will sponsor a seminar March 19 on direct conversion of nuclear power into electrical energy. It will be held at Mellon Institute, Pittsburgh.

ATOMIC ENERGY BUSINESS NEWS...

REGROUPING OF ATOMIC OPERATIONS: The atomic products division of General Electric Co. has been reassigned within the corporate structure to its new electric utility group of which Clarence Linder is vice president and group executive. The change was made, the company noted, to bring the atomic group closer to electric utilities which it pointed out are its logical present and future customers. The atomic products division was previously part of the electronic, atomic and defense systems group. There was one exception: The aircraft nuclear propulsion department, formerly within the atomic products division, will continue under the electronic, atomic and defense systems group because of the nature of its operations. With this new grouping, D. R. Shoults was made representative for atomic development. He will serve under the vice-president for engineering services.

EXPANSION URGED IN NUCLEAR SUBMARINE CONSTRUCTION: Construction of six more Polaris-missile-equipped nuclear powered submarines is desired for fiscal year 1961, in addition to the three already called for in the Navy's 1961 fiscal year budget now before Congress, Admiral Arleigh A. Burke, Chief of Naval Operations told the Senate Preparedness Subcommittee last week. Cost of the six additional craft will be $975 million, he said. (One such submarine, the George Washington, is now in operation while eleven more are under construction or have been authorized.

WORLD'S LARGEST NUCLEAR POWER STATION FOR BRITAIN: Construction is expected to start late this Summer on a 650 megawatt net capacity nuclear power station at Sizewell, Suffolk, England. Tenders due in March are being sought by the Central Electricity Generating Board for the plant which is expected to cost between £60 million and £65 million. Its net capacity will make it larger than the 600 megawatt Russian station in Siberia. Sizewell, due for completion in 1965, is the fifth under construction for the C.E.G.B. Others are at Bradwell, Essex (300 mw); Berkeley, Gloucestershire (275 mw); Hinkley Point, Somerset (500 mw); and Trawsfynydd, Merionethshire (500 mw). A sixth 325 mw station is being built at Hunterston, Ayrshire for the South of Scotland Electricity Board. (It is expected that planning permission for the building of a nuclear power station of 1,000 mw capacity will be announced shortly. This station, which will be at Oldbury, Gloucestershire, will be the first commercial installation of the advanced gas cooled reactor. A 28 mw prototype of this reactor is under construction for the U. K. Atomic Energy Authority at Windscale, Cumberland. Slightly enriched uranium will be used.)

TENDERS ASKED FOR FIRST BRITISH NUCLEAR POWERED SURFACE VESSEL: The British Minister of Transport has invited bids on the 65,000 deadweight tons U. K. tanker which will be that country's first nuclear powered surface vessel. Invited to tender are the A.E.I.-John Thompson Nuclear Engineering Co.; Babcock & Wilcox, Hawker Siddeley Nuclear Power; and the Mitchell Engineering-Fairfield Shipbuilding and Engineering Group. The companies are among eight groups which submitted designs for a nuclear powered surface ship to the Admiralty last year at the invitation of its Galbraith Committee. Nuclear reactor to be used will be either an organic moderated, or a boiling water type. (The 65,000 deadweight tons of this new British ship may be compared with the other nuclear powered surface craft in the world: the Russian 16,000 tons displacement icebreaker Lenin, and the U. S. 10,000 tons deadweight Savannah, for cargo and passenger service.)

PEOPLE...

I. V. Kurchatov, physicist, director of the U.S.S.R. Institute of Atomic Energy, died February 7 in Moscow at the age of 57. His Institute had done notable work in the field of thermonuclear research.

Titus G. LeClair has been appointed manager of nuclear power applications for the General Atomic division of General Dynamics Corp., San Diego, Calif. Le Clair will come to General Atomic about March 1st from Chicago where he is presently manager of research and development for Commonwealth Edison Co.

Harry Cartwright has been made Director of Industrial Power of the U. K. Atomic Energy Authority's development and engineering group at Risley. He had been deputy director since 1958.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

February 16, 1960.