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.

April 11, 1961
Vol. 25...No. 5

Dear Sir:

All work in the U.S. to develop nuclear-powered aircraft has been stopped. President Kennedy in his detailed budget proposals for the USAEC noted that $1 billion have already been spent on such development work and $1 billion more would be required to achieve the first experimental flight. This was denied by David F. Shaw, manager of General Electric Co.'s aircraft nuclear propulsion department. Mr. Shaw said GE (one of the two contractors in the program; other is Pratt & Whitney) recently made a proposal to the government to perform this first experimental flight in 1963 for 1/5th this amount. Representative Melvin Price of the Joint Congressional Committee on Atomic Energy and other JCAE members expressed surprise at the Kennedy action. It was their belief the two approaches (GE's direct cycle, and Pratt & Whitney's indirect cycle) were to be continued even though the Eisenhower budget had cut funds available for the program from $70 million to $33 million for fiscal year 1962. The Air Force (handling the program jointly with the USAEC) said the cancellation action would eliminate some 2,755 jobs at five places where ANP work was underway. As a replacement, the USAEC invited contractors to participate in a broad research program in the field of high temperature materials and possibly the construction of a high performance reactor. The USAEC budget has $25 million for the new program. (Other BUDGET NEWS, p.3 this LETTER.)

Chem-Trac Corporation is newly-formed organization which will manufacture radiochemicals. The new organization has been set up by its joint owners: Baird-Atomic, Inc., and Controls for Radiation, Inc., both of Cambridge, Mass. Laboratory, administrative and manufacturing facilities will be at Controls for Radiation's premises, in Cambridge. Plans are for Chem-Trac to produce more than 150 varieties of radiochemicals, educational sources and various reference sources. Baird Atomic, with regional sales offices in large U.S. cities, will be marketing agents. (Baird-Atomic for some time had been sales agent for New England Nuclear Corp., distributing that firm's extensive line of radiochemicals. The arrangement was discontinued some months ago. New England Nuclear is now selling through its own sales force.) (Other MANUFACTURERS' NEWS, p.2 this LETTER.)

Two uranium milling firms have been acquired by Kerr-McGee Oil Industries, Oklahoma City. Made by its subsidiary Kermac Nuclear Fuels Corp., the acquisition was through an exchange of stock of Kermac for all the stock of Lakeview Mining Co., Lakeview, Ore., and Gunnison Mining Co., Gunnison, Colo. Lakeview's principal asset is a uranium extraction mill originally costing $2,600,000 while Gunnison owns a similar mill originally valued at $2,025,000. Lakeview has USAEC milling contract running to November 30, 1963; Gunnison's contract with the USAEC runs until December 31, 1962. Operations of Lakeview will be conducted as the Lakeview division of Gunnison Mining Co. (Other RAW MATERIAL NEWS, p.4 this LETTER.)

NEW PRODUCTS, PROCESSES, INSTRUMENTS...

NEW PRODUCTS: Model E-110 and E-115 scalers are made for use with low voltage halogen quenched G-M detectors. Conventional cold-cathode counting tubes are used to record and display incoming pulses. All associated circuitry is transistorized. --Radiation Equipment and Accessories Corp., Lynbrook, N.Y.

Model ND-305 tape control unit is an accessory to this company's Models ND120 and ND130, 512 channel analyzers. The control unit drives a tape perforator or through a tape reader allows information to be read into the memory from a previously punched tape. --Nuclear Data, Inc., Madison, Wisc.

Advanced type neutron ionization chamber for measuring reactor neutron flux was originally developed by this manufacturer for the Enrico Fermi nuclear plant in Chicago. The new cylindrical monitoring probe is an electrically compensated boron-lined ionization chamber for the detection of thermal neutrons in the presence of a gamma field of 15,000 roentgens per hr maximum. The 2-foot by 3 1/8-in. diameter aluminum chamber is assembled with 30-ft. sections of mineral-insulated solid copper sheathed cable leads. One end of the cables is permanently welded and hermetically sealed to the chamber. The opposite ends are supplied with ceramically sealed terminals welded to the solid copper sheath to provide an air-tight seal.....New portable alpha-beta-gamma meter Model 701, is for laboratory and field survey use in the 0-50 mr/hr range. Two inter-changeable probes are available for the meter. The beta-gamma probe consists of a thin-wall G-M tube; the alpha-beta detector has a mica end window. --Anton Electronic Laboratories, Brooklyn, N.Y.

PRODUCT NEWS: Pulsed neutron generator recently completed by the Matsuda Research laboratory of the Tokyo Shibaura Co., Ltd., (Toshiba) is to be installed shortly at the Atomic Energy Research Institute of the Japanese government, near Mito City. It will be used in conjunction with a semi-homogeneous critical assembly unit. Applications will include neutron experiments, activation analysis, production of short-lived isotopes, etc. Toshiba previously built a neutron generator for the science department of Tokyo University.

Shipment recently made of 50,000 curies of cobalt-60 by Oak Ridge National Laboratory to National Bureau of Standards, Washington, D.C., was almost double the largest previous single shipment made from the laboratory. A specially designed five ton lead container provided by the Bureau was used to transport the shipment which was made up of 12 capsules each containing several wafers of the cobalt-60. The container was designed with provisions for cooling water to dissipate the heat generated by the neutron sources.

Device designed to reduce by as much as 75% the costly head closure time for nuclear reactor and other types of pressure vessels, trade named Diamond Stud Tensioner, is being marketed by Diamond Power Specialty Corp., Lancaster, Ohio. It is essentially a power hydraulic jack which can engage 2" to 8" stud bolts and apply a precisely accurate and straight tensile load to literally stretch the bolt within its elastic limits. The action applies a like load to compress the head closure flanges. With stud and flanges under load from the tensioner the head closure nut is manually run down to maintain full loading when the tensioner is disengaged.

MANUFACTURERS' NEWS: Radiation safety conditions at Volk Radiochemical Co., 5412 N. Clark St., Chicago, are such that they "constitute a hazard to health and safety of employees and members of the public" the USAEC has charged. A hearing has been scheduled by the Commission for April 18, 1961 at the U.S. district courthouse, Chicago, on proposed modifications of the company's license.

New department to integrate all activities of The Martin Co. at Baltimore and Quehanna, Pa., in the field of nuclear chemistry has been set up by the company. It will be headed by Charles E. Crompton. The new group will provide technical support for other departments which produce auxiliary power systems, reactor power plants, and reactor fuel elements.

Organics Division formed by Olin Mathieson Chemical Corp., New York, consolidates all activities of the company's energy division. On March 10, 1961 the nuclear fuels operations of Olin's energy division became part of the newly-formed United Nuclear Corp. The new organics division is made up of the remaining activities of the energy division plus the organic chemicals operations and the automotive chemicals of the chemicals division.

ATOMIC ENERGY PATENT DIGEST...

PATENTS ISSUED March 28, 1961 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Method and apparatus for measuring the thickness of materials. August T. Wuppermann, inventor. No. 2,977,478 assigned to Exatest A. G., Leverkusen, Germany.

PATENTS ISSUED March 28, 1961 to GOVERNMENTAL ORGANIZATIONS: (1) Ion source. Siegfried Klein, inventor. No. 2,977,495 assigned to Commissariat a l'Energie Atomique, Paris, France. (2) Method of reducing aqueous radioactive nuclear wastes to solid form. John W. Loeding, Albert A. Jonke, inventors. No. 2,977,194 assigned to USAEC. (3) Method of improving corrosion resistance of zirconium. Donald W. Sahnnon, inventor. No. 2,977,204 assigned to USAEC. (4) Process of producing uranium. Thomas K. Wood, inventor. No. 2,977,220 assigned to USAEC. (5) Reactor fuel assembly. Ersel A. Evans, Robert J. Anicetti, William E. Roake, inventors. No. 2,977,297 assigned to USAEC.

PATENTS ISSUED April 4, 1961 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Gamma ray polymerization of styrene with unsaturated esters. William C. Hollyday, Jr., James F. Black, inventors. No. 2,978,395 assigned to Esso Research & Engineering Co. (2) Radiation induced ethylene polymerization. James E. Shewmaker, Joseph F. Nelson, inventors. No. 2,978,396 assigned to Esso Research & Engineering Co. (3) Homogeneous reactor fuel composition. Louis Silverman, Robert A. Sallach, Rachel L. Seitz, inventors. No. 2,978,399 assigned to North American Aviation, Inc. (4) Device for determining the absorption curve of radioactive isotopes. Madeleine Forro, inventor. No. 2,978,587 issued to inventor of record.

PATENTS ISSUED April 4, 1961 TO GOVERNMENTAL ORGANIZATIONS: (1) Atomic burst indicators. Joseph D. Loconti, John M. Davies, Archibald S. Hunter, Harold W. Coles, Mario R. Altamura, inventors. No. 2,978,584 assigned to Secretary of the Army. (2) Two speed device. Glenn S. Brunson, Jr., inventor. No. 2,977,814 assigned to USAEC. (3) Manipulator for slave robot. Raymond C. Goertz, John H. Grimson, Frank A. Kohut, inventors. No. 2,978,118 assigned to USAEC. (4) Solvent extraction process for protactinium. Earl K. Hyde, Leonard I. Katzin, Michael J. Wolf, inventors. No. 2,978,294 assigned to USAEC. (5) Recovery of plutonium by carrier precipitation. Robert H. Goeckermann, inventor. No. 2,978,295 assigned to USAEC. (6) Method of obtaining uniform coatings on graphite. Ivor E. Campbell, inventor. No. 2,978,358 assigned to USAEC. (7) Neutronic reactor. Herbert E. Metcalf, Henry W. Johnson, inventors. No. 2,978,398 assigned to USAEC.

ATOMIC ENERGY BUSINESS NEWS...

USAEC BUDGET PRESENTED: Some $2,628,150,000 was asked by President Kennedy as an appropriation for the USAEC for fiscal year 1962. It is some $30.1 million more than President Eisenhower had estimated in January, resulting from an increase of $93.8 million for construction and a reduction of $63.7 million for operating expenses. Increases in construction spending include $26 million to begin construction of Stanford's new $114 million linear accelerator; $60 million for installing electrical generating capacity of 650 electrical mw in the new Hanford plutonium production reactor; $5 million additional for the nuclear rocket propulsion program (ROVER), making a total of $29.9 million; $6 million for additional facilities for the experimental gas cooled reactor at Oak Ridge; $7 million for nuclear power plant at Navy's Byrd station in Antarctica similar to one under construction at McMurdo Sound; and $8 million for development of the experimental maritime gas cooled reactor on which General Atomic is working. The increases, which totaled $112 million were partially offset by reduction of $18.2 million resulting from cancellation of the aircraft nuclear propulsion program. The reduction of $63.7 million comprised cuts of $16 million for purchase of uranium concentrates from a stretchout of expected deliveries; $32 million for the production of special nuclear materials and weapons; $35 million from cancellation of the aircraft nuclear program; and $26.7 million representing carryover funds and adjustments. Offsetting these decreases were increases of $38.27 million in other areas of reactor development, such as naval propulsion reactors, earth satellite power sources, nuclear rocket propulsion, and $7.73 million additional for research in the physical and life sciences.

INDEMNITY FOR URANIUM PROCESSORS UNDER STUDY: Industry and insurance underwriters were asked to submit views to the USAEC within 60 days on the question of extending the Price-Anderson nuclear hazards indemnity law to processors of unirradiated enriched uranium. The Commission has had the question under study for some time. The two nuclear energy liability insurance pools (NELA and MAELU) oppose extension of the indemnity to every licensed processor.

ATOMIC ENERGY FINANCIAL NEWS...

NUCLEAR FIRMS IN MERGER: Nuclear Chicago Corp. will acquire through an exchange of stock Texas Nuclear Corp., Austin, Texas. The acquisition will be on the basis of one share of Nuclear-Chicago common stock for 3½-shares of Texas Nuclear. This will require some 28,571 Nuclear-Chicago common shares with current market value of about $1,256,000. The Texas firm will be operated as a wholly-owned subsidiary of the Chicago organization. Texas Nuclear makes neutron generators and holds industrial and government research contracts for work underway. Nuclear Chicago manufactures instrumentation for detection and control of radiation and radioisotopes. (It recently reported net earnings of $224,485 for the first six months of its fiscal year ended Feb. 28, 1961, compared with $156,491 earned in the like period a year earlier. The improvement of some 44% in net profit was result of 25% increase in new orders and shipments and improvement in cost and expense ratio, according to James M. Phelan, board chairman.)

IMPROVED SALES & EARNINGS FOR EASTERN NUCLEAR INSTRUMENT FIRM: Tracerlab, Inc., Waltham, Mass., booked during March, 1961, the largest volume of orders in the company's history, S. S. Auchincloss, president told the company's annual meeting last week. He noted that the firm had ended 1960 with a net profit of $204,413, the largest the company has ever achieved. (Authorized capital stock of Tracerlab, consisting of 1 million shares of common stock is to be increased by some 300,000 shares.)

NUCLEAR INSTRUMENT FIRMS IN STOCK OFFERINGS: Now underway is Beckman Instruments, Inc.'s 69,933-share subscription offering to its shareholders. The Fullerton, Calif., manufacturer of industrial, medical and nuclear instruments is offering the additional stock on the basis of one new share for each 20 shares of common stock held March 28, 1961, at a price of $114.00 a share. Total offering is $7,972,362. Beckman said it will use $3,500,000 of the proceeds to retire short term debt incurred 1960 for plant expansion. The balance will be used for general corporate purposes.

Some 350,000 shares of common stock of Victoreen Instrument Co., Cleveland, Ohio are to be offered publicly at the current market price of outstanding shares, the firm has advised the SEC in a registration statement. It now has outstanding 1,661,067 common shares. Net proceeds of the stock sale will be used for new equipment and facilities ($900,000); for increased inventories and accounts receivable ($850,000); for modernizing present equipment and acquisition of new equipment of a subsidiary, John E. Fast & Co. ($600,000); for expanding present equipment and opening a West Coast office of another subsidiary, Kolus Corp. ($450,000); and balance of funds for various corporate purposes. The company manufactures electronic and nuclear instruments and devices, and other products through its subsidiaries.

URANIUM SHARES STRONG ON CANADIAN EXCHANGE: Following disclosure in the Canadian parliament that additional uranium contracts are forthcoming, uranium shares showed gains on the Canadian exchange. Bicroft, Denison, Preston and Stanrock reached 2-year highs. New highs for 1961 were recorded by Gunnar Mines and Rio Algon Mines.

NEW BOOKS & OTHER PUBLICATIONS...

Russian-English & English-Russian Nuclear Dictionary. D. I. Voskoboinik, M. H. Zimmerman, editors. In two volumes of 334 and 400 pages respectively. Each volume contains approximately 20,000 terms of various branches of nuclear science and engineering. Supplements list accepted Soviet, U.S., and English abbreviations. Published in Moscow, 1960. --Collets Bookshops, 45 Museum St., London W. C. 1, England. (£2 the set.)

Radiation Preservation of Selected Fruits and Vegetables. An evaluation by the USAEC of radiation pasteurization of fruits and vegetables. No. SRIA-30. ($3.00) .....Radioactive Waste Disposal. Report prepared for the USAEC by McLain Rodger Associates. 169 pages. No. ANL-6233. ($2.75)...A Thermal Problem Associated With Underground Storage of Radioactive Wastes. Study by Oak Ridge National Laboratory. 72 pages. No. ORNL-3002. ($2.00).....Radioactive Waste Processing and Disposal. Literature search by USAEC staff. 92 pages. No. TID-3555. ($2.25). --Office of Technical Services, Wash. 25, D.C.

NOTES: Motion picture "Industrial Applications Radioisotopes" is a 16mm semi-technical color film of 57-minutes running time surveying use of radioisotopes in industry. It is available on free loan from the USAEC's 10 domestic film libraries.

ATOMIC ENERGY CONTRACT NEWS...

PROPOSALS MADE: Some twenty industrial firms have expressed interest in operating under contract to New York State the proposed State-owned nuclear by-product and waste storage facility. The concerns include Alco Products; AMF Atomics; Bell Aerosystems; The Budd Co.; Columbus McKinnon Corp.; Controls for Radiation, Inc.; Davison Chemical; General Electric Co.; Knapp Mills, Inc.; McLain Rodger Assoc.; National Lead; Nuclear Development; Nuclear Engineering; Nuclear Materials; Olin Mathieson; Rochester Smelting; Spencer Chemical; Tracerlab; Union Carbide Nuclear; and Westinghouse Electric. Proposals were in response to an invitation issued Feb. 13, 1961 by the State's Office of Atomic Development. The Legislature has appropriated some $300,000 for site acquisition and development.

CONTRACTS AWARDED: Contract has been awarded Mallinckrodt Chemical Works to furnish approximately 25,000 pounds of enriched uranium dioxide pellets for use in the actual core loading of the Pathfinder atomic power plant. The plant is now being constructed near Sioux Falls, S. Dakota, by Allis-Chalmers Mfg. Co., Inc., Milwaukee, as prime contractor for Northern States Power Co., owner and operator of the power plant. Mallinckrodt Nuclear Corp. will ship the uranium pellets to Metals & Controls, Inc., Attleboro, Mass., where they will be fabricated into fuel elements and subsequently delivered to the plant for installation.

Three contracts have recently been received by Nuclear Corp. of America's instrument and control division. The first of these is to supply Komline-Sanderson Engineering Co., Peapack, N.J., with density controls which measure the percentage of solids in sludge. Komline-Sanderson will have exclusive sales and distribution rights within the sewage industry and will incorporate the Nucor device as part of its standard waste disposal system. Second contract was received from the Navy to manufacture and ship instruments for the detection and measurement of fast neutrons. The third contract, also from the Navy, is for research and development. (Nuclear Corp. of America, Denville, N.J., is at present composed of three divisions which supply nuclear detection and control instruments, specialized high-power tubes, and rare earth materials research.)

Tracerlab, Inc., Waltham, Mass., has received recent contract in amount of $80,000 from the Goddard Space Flight Center, Green Belt, Md., to perform research and development on means of detecting atomic gases in outer space. The work embraces the design and construction of laboratory systems for the productiou of free radicals, particularly atomic oxygen, hydrogen and nitrogen and to perform studies on these gases when reacted with Tracerlab-developed radiochemical exchange devices. End purpose of the contract will be the development of gas analyzers.....Development of instrumentation to detect toxic gases at so-called exotic fuel fabrication sites will be handled by Tracerlab under $20,000 contract the company has received from Wright Patterson Air Force Base's Air Development Division. In a six-month study program, Tracerlab staff will investigate the feasibility of detecting and analyzing the toxic gases by application of clathrate and radiometric exchange techniques. Laboratory type instrumentation will be constructed to prove the feasibility of these techniques and a portable sensitive field unit will subsequently be constructed .....Under a $334,384 contract awarded by the Navy's Bureau of Ships, Tracerlab's Richmond, Calif., plant will manufacture fifty-eight air particle monitors. The air particle monitors, or radiacmeters, are for installation aboard nuclear powered vessles to indicate concentration of airborne radioactive particles. With the awarding of this contract, the company has on hand contracts for ninety-one of its air particle monitors totaling approximately $557,000.

One year contract in amount of $129,173 has been awarded by National Aeronautics and Space Administration to the Rand Corp., Santa Monica, Calif., to define the role of nuclear rockets in the space program. Important approach to be studied under the contract will be a cost analysis of nuclear versus chemical rockets.

Sincerely,

The Staff
ATOMIC ENERGY NEWSLETTER