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U. S. Atomic Energy Commission's Isotope Distribution Program

Summary of Progress and Plans

Report to Committee on Nuclear Science, National Research Council

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PRODUCTION

Domestic Program

Demands on production facilities at Oak Ridge, Brookhaven and Argonne National Laboratories were heavier in fiscal year 1952 than in any similar previous period. Total shipments were 10,456, an increase of 18 per cent over 1951. The quantity shipped amounted to about 7,726 curies, an increase of 154 per cent. The major production and sales activity remains in Oak Ridge.

Secondary suppliers (commercial firms) made more than 5,000 shipments. Their role is increasing steadily, particularly in distribution of labeled compounds, sealed sources, and in consultation services. In July 1952, a pharmaceutical concern began operation of its Oak Ridge plant and is now distributing labeled drugs and other compounds. This firm's radioiodine and radiophosphorus are being prepared under effective new drug applications granted by the Federal Food and Drug Administration.

Export Program

Foreign shipments numbered 354 in fiscal year 1952, 18 per cent more than in 1951. In July 1951, the export program was expanded to include

all radioisotopes routinely available domestically and to permit industrial application by foreign users. Shipments to European countries decreased greatly due to operation of reactors in Great Britain and the ready availability of short half-life isotopes from that country. Loss of European markets was compensated for by shipments to Latin American countries and Japan where radioisotope utilization significantly increased.

#### Polonium 210 Alpha and Neutron Sources

On August 1, 1952, the Commission announced the availability in two forms of reactor-produced Polonium 210. It is plated on platinum as an alpha source, and mixed with beryllium as a neutron source.

#### Cobalt 60

Production of Cobalt 60 with specific activity ranging from 30 to 50 curies per gram is in progress. This program will supply material containing about 1,000 curies in a cylinder two centimeters in diameter by one centimeter long. Such sources are intended for teletherapy units to be used in place of two-million-volt X-ray machines. It is hoped that between five and ten sources will be available for distribution when production of this first batch is completed. More of such sources will be produced routinely.

#### Fission Products

Preliminary plans have been made to produce kilocurie quantities of fission products. Primary interest is in Strontium 90, for use in industrial devices, and Cesium 137, for experimental teletherapy units.

### Federal Regulations

Amendment of regulations governing procurement of radioisotopes is contemplated. Provision is made for the required experience and training of applicants for both non-medical and medical uses, conditions to be met to obtain a general authorization, prohibition of administering exempt quantities to human beings. Regulations have also been proposed to govern procurement of stable isotopes.

Regulations to govern manufacture and use of sealed sources of radiomaterials are in preparation, as well as regulations to provide standards for maintenance of health and safety. For the preparation of these standards the Commission will make extensive use of reports issued by the National Committee on Radiation Protection and its subcommittees.

### Cooperation with Other Agencies

The Commission's efforts to maintain health and safety are coordinated with those of state and local health agencies, the U. S. Public Health Service, and the National Committee on Radiation Protection. An Ad Hoc Committee, comprised of representatives of the Atomic Energy Commission, the Federal Food and Drug Administration, and the Laboratory of Biologics Control of the National Institutes of Health has been formed to deal with problems of mutual interest and to recommend to the agency concerned appropriate administrative action on such problems.

PROMOTION

INFORMATION MANUAL, Policies, Procedures, Regulations

An INFORMATION MANUAL has been prepared by the Isotopes Division to supplant, in part, the present Catalog and Price List No. 4 (March 1951). It will contain only a statement of procurement policies, procedures, and regulations governing the distribution of isotopes. Items available will not be listed in the MANUAL. Distribution of the MANUAL to appropriate institutions and departments is contemplated in December or January.

Catalogs

Catalogs of items available will be published separately by Oak Ridge, Brookhaven and Argonne National Laboratories, and by each commercial supplier at his own discretion.

Training Films

Production has progressed on the series of 13 training films entitled "The Radioisotope" (Cf., report to this Committee, 3/28/50). Attached is a copy of a "Guide to the Training Film Series" which outlines the objectives and organization of the series and includes a synopsis of each film.

Production has been completed on Films I, II, III, IV, XII, and XIII. Film V is in production and completion is expected early in 1953. Production on the remainder of the films is delayed because of budgetary problems and other priority work. When production is resumed, priority will be given to Film VII, the scenario of which has been completed.

As the films are completed, they are made available on loan from the Central Film Libraries of the Army Area in which the borrower resides and from the Isotopes Division. They are also made available on sale from United World Films, Inc., 1145 Park Avenue, New York 29, New York. However, since each film has to be cleared through the Department of Defense and the Office of Education prior to being turned over to United World Films, Inc. for reproduction, considerable delay has been encountered in their availability; thus far, only Film IV has become available.

#### Bibliography of Isotope Papers

Bibliographies on isotope references have appeared in the Commission's reports, "Isotopes... A Three-Year Summary of U. S. Distribution" and "Isotopes... A Five-Year Summary of U. S. Distribution". These were prepared by referring to reprint material collected by the Isotopes Division and by soliciting isotope users for references to their own publications.

The Division believes that the preparation and publication of bibliographical listings is of sufficient service to isotope users that it should be continued. A program has been undertaken to search for papers of interest to isotope users in about 250 journals now received by the Technical Information Service for publication of Nuclear Science Abstracts. A file of references will be maintained for publication, from time to time, to supplement the bibliographies mentioned above.