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MONSANTO CHEMICAL COMPANY
MOUND LABORATORY

MOUND LABORATORY-MONSANTO
Central File No. 52-7-106

PRODUCTION COST PROCEDURE

PURPOSE

This procedure establishes the principles to be followed by Mound Laboratory in determining unit cost for the production of weapons components which will provide the basis for the transfer of costs from operations office to operations office and from contractor to contractor as the production materials flow through the production channels.

GENERAL

The application of this procedure is limited to the production cost accounting system which, although integrated in certain respects with the general accounting system, operates separately from that system. Separate ledgers are maintained and a supplemental balance sheet is prepared each month reconciling the general accounting books with the production cost books. Production cost reports on each product, and a summary report of all production cost, are prepared monthly. Transfer documents are prepared on each shipment as the material moves through the production chain. Operating reports showing production, transfers, shipments and inventories are furnished by the operations division. The flow of materials, as illustrated by the "Flow Chart," shows the receipts of irradiated bismuth slugs from reactors, the transfer of slugs to production of polonium or to research, the

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transfer of polonium to the production of initiators, to research, to production of sources and shipments to other installations, and the shipments of initiators to Los Alamos. The "Flow Chart" also shows the recycling and returning of materials.

UNIT COST DETERMINATIONS

Unit cost is applied to irradiated bismuth slugs, production of polonium, and production of initiators.

a. Irradiated Bismuth Slugs

Bismuth is purchased by and invoiced to Mound Laboratory. The bismuth inventory is carried on our general accounting books as stores inventory. When the bismuth is shipped to the reactor site to be irradiated, our stores inventory is credited, and the receiver is charged through the regular accounting current account. Mound Laboratory enters the production chain when irradiated bismuth slugs are received from the reactors. Cost Center "0" reflects the transactions occurring in this inventory. Unit cost on irradiated bismuth slugs is applied at Mound Laboratory only so far as to converting the transferred cost which is based on curie content to a slug basis. Accounting for slugs on a cost per slug basis, rather than on the basis of curie content, eliminates the need for periodic cost per curie adjustments which would have to be made in order to give effect to decay losses occurring between the time of receipt and the time of use. Since each slug contains approximately the same curie content and

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pounds of bismuth, it is not considered necessary to compute cost on each slug; therefore, the cost per slug is determined by dividing the total cost transferred by the number of slugs received in each shipment. When the slugs are subsequently charged to production or to research, they will be costed at an average receipt cost based on this allocation, thus eliminating a recalculation of the unit cost of the contained polonium to give effect to the decay factor. This method will apply to each type of slugs received.

b. Production of Polonium

The production of polonium is stated in curies, and transfers are costed at an average production cost. The production is determined by adding the transfers, plus or minus the change in inventory. Cost Centers 1, 2, and 3 have been established for the purpose of internal control of various stages of completion, however, the three centers are considered as a continuous process type of operation. Inventories are expressed as equivalent finished product giving effect to process and decay losses and the per cent of completion. The computation of the equivalent finished product is made by the operations division on the following basis, inventories of Cost Centers 1, 2, and 3 are taken at the end of each month, to these inventories a factor of through-put efficiency (which reflects process and decay losses) of each cost center based on the previous six months actuals is applied, then a factor of completion based on direct

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separation costs of each cost center is applied. The elements of production costs are as follows:

1. Raw Material Costs includes the cost of irradiated bismuth slugs put into process and the charge for recycled and returned material for the report period.
2. Processing Costs includes direct and indirect costs such as salaries, wages, supplies, service department charges, etc., that are applicable to the production of polonium.
3. Depreciation Costs includes direct and indirect depreciation costs that are applicable to the production of polonium.

c. Production of Initiators

The production of initiators is stated in number and transfers are costed at an average production cost. The production is determined by adding the transfers plus or minus the change in inventory. Cost Centers 5 and 6 have been established for the purpose of internal control of different stages of completion, however, the two centers are considered as a continuous process type of operation. Inventories are expressed as equivalent finished product giving effect to the per cent of completion. The computation of the equivalent finished product is made by the operations division on the following basis, inventories are taken at the end of each month and a factor of

completion based on required man hours to complete various stages of work is applied. Toms, Pots, and Cells are the three types of initiators produced at the present time in Cost Centers 5 and 6. The operations division furnishes the Accounting Department with a percentage breakdown of fabrication cost based on estimated man hours spent on each type. Each type is charged with the actual quantity of polonium used. The elements of production costs are as follows:

1. Raw Material Costs includes the cost of polonium transferred for the report period, and credits for recycled material.
2. Processing Costs includes direct and indirect costs such as salaries, wages, supplies, service department charges, etc., that are applicable to the production of initiators.
3. Depreciation Costs includes direct and indirect depreciation costs that are applicable to the production of initiators.

TREATMENT OF DEPRECIATION

Since depreciation is not included in budget estimates or monthly program reports, it is maintained as a separate element of production cost. Depreciation is determined and allocated to each production process on the basis of equipment directly associated with the process and the portion of depreciation

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applicable to each production process for contributing service departments. The depreciation of contributing service departments are allocated to each production process on the same basis as other service department costs.

PREPARATION OF TRANSFER DOCUMENTS

Transfer documents are prepared on A.E.C. Form No. 325 for each shipment of material and contains a reference to A.E.C. shipping document number. The transfer documents show weapons operations costs exclusive of depreciation (which is indicated on the documents by the letter "B"), and depreciation costs applicable to the weapons program (which is indicated on the documents by the letter "C") separately. These transfer documents are not used for the transfer of cost in general accounting procedures. Copies of journal entries which reflect only weapons operations cost, exclusive of depreciation, will pass through the regular accounting current accounts.

RECYCLED AND RETURNED MATERIAL

Recycled material from the initiator production centers and returned material from research centers and source preparation centers are considered the same value per curie as irradiated bismuth slugs. Production inventories of polonium are charged and production inventories of initiators, research centers, and source preparation are credited. It is presently

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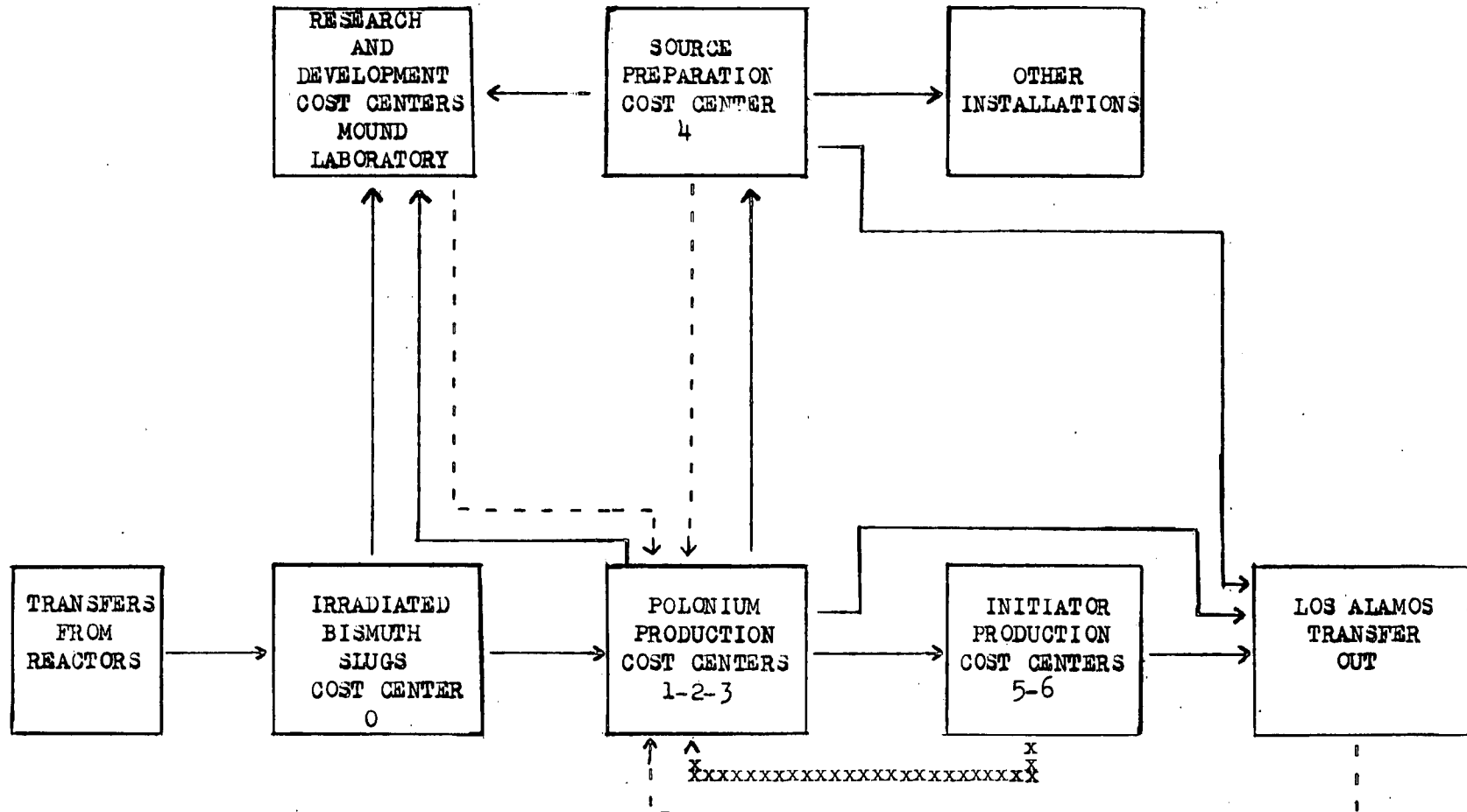
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estimated that it costs considerably more to recover a curie of polonium from initiators returned as compared with the normal cost of separation; therefore, no credit is passed on to Los Alamos. The recovery cost is, at the present, being reflected in production cost of initiators for the month. The recovery of polonium from this source does not appear economical.

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PRODUCTION FLOW CHART

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————— Transfers
 xxxxxxxxxxxx Recycle
 - - - - - Returned