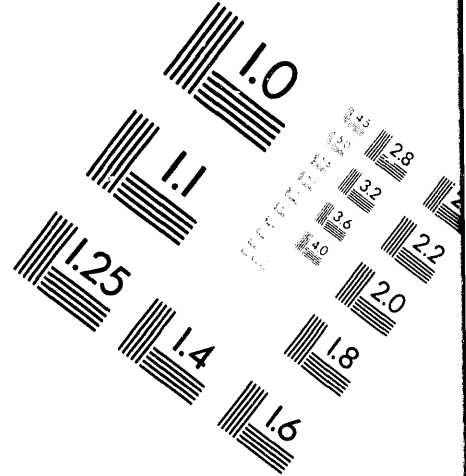
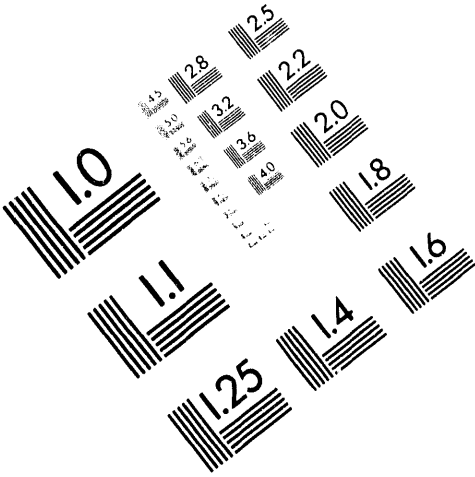




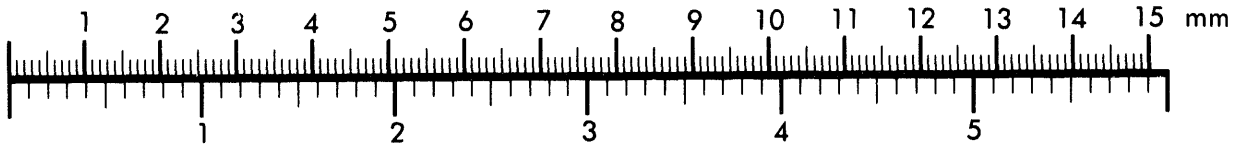
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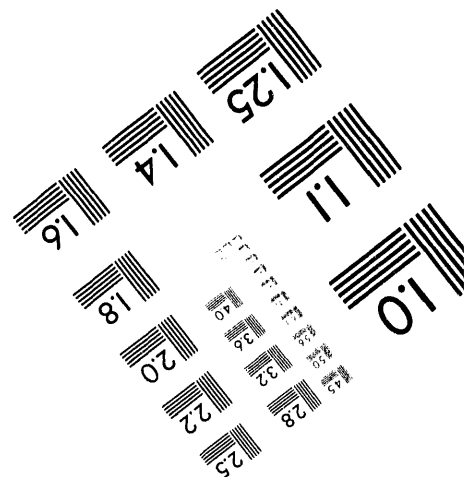
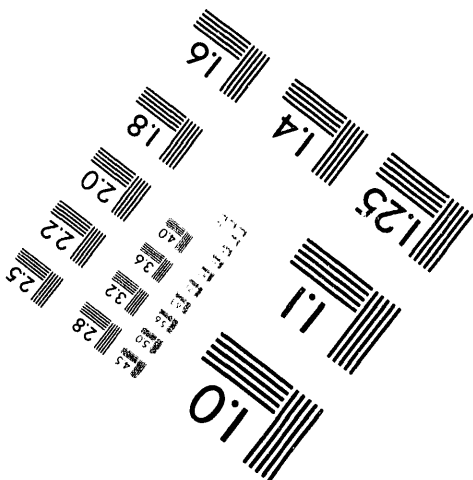
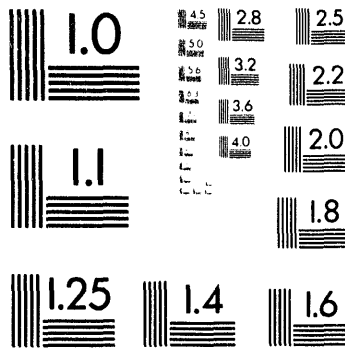
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BCC: R. M. Evans
B. H. Mackey
J. E. Cole
N. J. Howard
D. F. Babcock
V. R. Thayer
J. C. Woodhouse
M. H. Wahl (3)
S. A. McNeight
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May 17, 1955

Mr. Howard L. Kilburn, Director (3)
Technical & Production Division
Savannah River Operations Office
U. S. Atomic Energy Commission
Post Office Box A
Augusta, Georgia

REVIEW BY
S. A. McNEIGHT

Dear Mr. Kilburn:

PROCESS DEVELOPMENT REVIEW

As you know, process development programs for FY-1956 will be reviewed at the Savannah River Laboratory on May 25. It has been customary in past program reviews for a small group to meet after the conclusion of the presentations to cover any discussion necessary for reaching mutual understanding on the programs. This will probably not be possible immediately after the current review because of a meeting scheduled in Washington on May 26. If there are any problems that cannot be resolved informally, we shall arrange to discuss them at a later, mutually convenient date. Attached are comments pertinent to the material to be covered in the program review. The schedule for the meeting is as follows:

9:00 A.M. - Reactor and Metallurgical Process Development Programs

1:00 P.M. - Chemical Processing Development Program

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Yours very truly,

ATOMIC ENERGY DIVISION
Hood Worthington, Director
Technical Division

Reviewing
Official: C. J. Banick
C. J. Banick, AED Class Officer

By L. C. Evans

MASTER

Date: 2/4/89
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Attach.

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RLS 9/04/08

R.L. SHANKLE
WSRC ECO

FY-1956 FINANCIAL PLAN

PROCESS DEVELOPMENT

The FY-1956 process development programs to be covered in the yearly review on May 25 are the same as those that will be described in the FY-1956-1957 Budget and Back-up Manual. Neither of these documents are now available in final form. The first edition of the Back-up Manual, DPSP-55-295, dated March 31, 1955, will suffice to describe these programs with the exceptions noted below.

If the interest in tritium production becomes more active than at present, it is probable that the development work required on processes for producing tritium will be conducted at the expense of the efforts currently forecast for thorium and U-233.

Reactor Process Development Program (pages G-2 to G-9 of Document DPSP-55-295).

This program will follow that given in the above reference with the following exceptions:

1. Development efforts on processes for producing U-233 will be secondary to those for plutonium.
2. Efforts on developing a process for producing U-233 by the use of thorium and enriched fuel slugs will be limited to establishing operating conditions for a limited number of partial reactor loadings and to evaluating the performance of these loadings.
3. Engineering and physics work will be aimed at designing, fabricating, irradiating, and evaluating the performance of a limited number of extended surface enriched fuel and thorium target assemblies.

It is estimated that the Reactor Process Development Program will cost \$3,300,000 in FY-1956 and that the efforts under this Program will be divided approximately as follows:

75.5%	- AEC Budget Activity	No. 2723	- Plutonium
0.5%	- " " "	No. 2730	- Tritium
24 %	- " " "	No. 2743	- U-233

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by authority of

R. L. Shankle

By *MS* 1-13-77

Chemical Processing Development Program (pages G-10 to G-20 of Document DPSP-55-295).

This program will follow that given in the above reference with the following exceptions:

1. Development efforts on U-233 and thorium will be secondary to those on plutonium.
2. The development efforts on Thorex are aimed at establishing the necessary design data to permit the conversion of a Purex facility to Thorex. This development work will not include establishing detailed operating procedures.
3. Efforts on the development of a process for separating U-235 from spent fuel will be maintained at a minor level and will consist principally of liaison and of consolidating information already available.
4. Close liaison will be continued on the progress at other sites working on various processes for converting thorium nitrate to thorium metal. When a decision can be made as to which process or parts of a process should be developed further, these will be piloted on a semiworks scale in the building recently provided in the TNX Area.

It is estimated that the Chemical Processing Development Program will cost approximately \$3,750,000 in FY-1956 and that the efforts under this Program will be divided approximately as follows:

28%	-	AEC Budget Activity	No. 2704	-	Thorium Reduction
53%	-	" " "	No. 2724	-	Purex
1%	-	" " "	No. 2730	-	Tritium
15%	-	" " "	No. 2744	-	Thorex
1%	-	" " "	No. 2760	-	Heavy Water
2%	-	" " "	No. 2772	-	U-235 separations

Metallurgical Process Development Program (pages G-21 through G-27 of Document DPSP-55-295).

This program will follow that described in the above reference with the following exceptions:

1. Work on enriched fuel elements and thorium elements will proceed at a priority secondary to that for natural uranium elements.
2. Work on enriched fuel and thorium target elements in the form of slugs will be continued only to the extent necessary to provide suitable elements for a limited number of partial loadings and perhaps one full loading in a production reactor.

3. Work on extended surface enriched fuel elements will be continued with the objective of establishing processes for producing such an element suitable for use in a production reactor. This element will be useful for the production not only of U-233 but also tritium and any other product requiring enriched fuel.

4. Work will continue on the development of processes for producing thorium elements suitable for use with extended surface enriched elements. Both tubular and enlarged slug thorium elements will be developed for this purpose.

It is estimated that the Metallurgical Development Program will cost a total of \$2,750,000 in FY-1956 and that these efforts will be divided approximately as follows:

57.5%	- AEC Budget Activity	No. 2722	- Natural Uranium
0.5%	- " "	No. 2730	- Tritium
20 %	- " "	No. 2742	- Thorium
22 %	- " "	No. 2771	- Enriched Fuel

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