HW-13479

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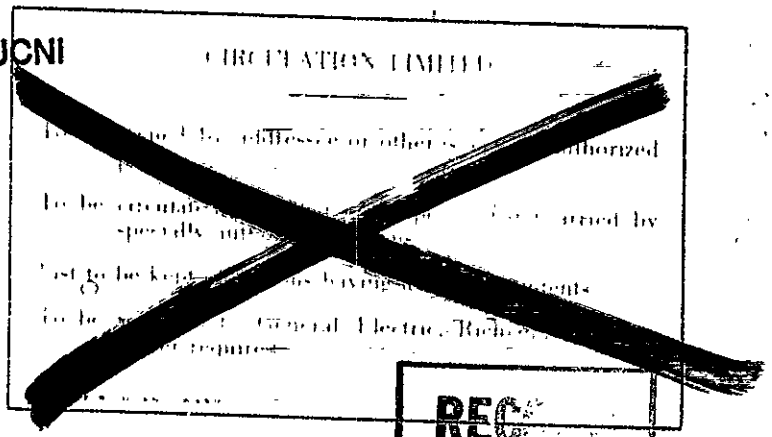
7 300 File
8 700 File
9 Pink
→10 Yellow

May 25, 1949



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Analytical Section
300 Area Analytical

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234-5 PROJECT ANALYTICAL DEVELOPMENT

COPY 1 OF 1, SERIES MA

The initial phases of the 234-5 Analytical Development program appear to have progressed satisfactorily with respect to the analysis of metal samples for light element and metallurgical impurities. An excellent set of analytical data were obtained in connection with the 10 gram production of plutonium from the oxalate process in the 231 Building and the analytical group is to be commended for its fine co-operation in this work. Methods for the analysis of fluorine, boron and 40-8 in the 234-5 Building product also appear to be well in hand.

In the light of recent conversations at Los Alamos it would appear desirable to reconsider the priority assigned to the analysis of carbon in the final product as given in HW-11880, dated December 15, 1948. Considerable concern has been expressed there by the presence of carbon to the extent of as much as 1000 ppm. Although this amount can be tolerated on the basis of its role as a light element impurity, Los Alamos feels that it is highly undesirable to have such high carbon content in the product from metallurgical considerations. Furthermore, such large quantities of a light element - atomic weight, 12 - are very serious when one considers its effect as a diluent. In the case mentioned carbon is present to the extent of almost two atom per cent. For these reasons it is very desirable that

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facilities to determine carbon should be installed in the 234-5 Building at the earliest possible date. It is realized that Mr. Metz at Los Alamos has not completed the revisions of his equipment used for this determination, but it is likely that the preliminary procurement and planning for this equipment here can be completed before his final report is available.

The necessity for analytical data for the 231 Building process solutions has increased with the start of development work on the production of plutonium by the peroxide process. It is very difficult to formulate a meaningful program for this work without adequate analytical assistance. In addition to the elements mentioned in HW-11277, dated October 18, 1948, it is essential that the sulfate content of the various process solutions be determined. This is particularly important since one of the objectives of the program is the elimination of sulfate from the peroxide precipitate. Sulfate determinations of the various process solutions mentioned in HW-11277 will also permit us to understand the chemistry of the present 231 Building process more completely.

The necessity of total sulfur determination in the fluoride obtained from the peroxide has been mentioned to you previously by a memorandum note. Development of analytical data at an early date for this determination will assist us to evaluate the removal of sulfur during the hydrofluorination of the sulfate-complexed plutonium peroxide.

B. Weidenbaum
Process Section

BW/gb

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