708062

F-34

METALLURGICAL LABORATORY
P.O. Box 5207
Chicago 80, Illinois

MUC-SKA-450
This document consists of
2 pages and 0 figures.
No. 1 of 15 copies, Series

DECLASSIFIED

January 27, 1944

See page 2

CLASSIFICATION CANCELLED (OR CHANGED TO DECLASSIFIED
(INSERT APPROPRIATE CLASSIFICATION)
BY AUTHORITY OF E. J. Thurber 4-13-50
(PERSON AUTHORIZING CHANGE IN CLASSIFICATION)
(SIGNATURE OF PERSON MAKING THE CHANGE, AND DATE THEREOF)

Dr. Charles Allen Thomas
Central Research Plant
Monsanto Chemical Company
Dayton, Ohio

Dear Dr. Thomas:

I have received a letter from G. D. Graves of the du Pont Company pointing out that they need to know the compound of 49 to be manufactured by them and delivered to Site Y. As co-ordinator of 49 chemistry, it seems to me that this problem is in your hands. I quote the following from Graves' letter.

> "As you know, the actual chemical compound of 49 to be delivered by the Hanford plant has not as yet been specified, the present specifications listing only the gross purity, limits of specific impurities, and the radiation level acceptable in the final compound. It appears to us that the final specification of the actual chemical compound at the earliest date possible is urgently needed.
>
> "Several months ago, the Chemistry Division at Chicago drew up a tentative flow-sheet for the isolation of a 49 peroxide from a dilute lanthanum nitrate - 49 nitrate solution. This information was used as the basis for the design of a building (231) in which the final isolation steps would be conducted. It was realized at that time that this process information was only tentative and would probably bear little resemblance to the process actually to be used, but since, in any event, the operation would be on essentially a laboratory scale, the building design and location could be specified even though the small scale equipment and operating procedure could not be visualized in detail. The 231 building design is now well underway. Further progress toward procurement and layout of equipment is now dependent upon:
>
> (a) agreement upon the chemical composition, purity, and physical form of the 49 compound to be stored at and shipped from Hanford.

DECLASSIFIED

This document contains information affecting the national defense of the United States within the meaning of the

FILE BARCODE
00131325

00131325.001

1044614

LANL

(b) development and demonstration of the process to be used to produce this final compound from the product of the bulk reduction (concentration) building (224).

(c) development of analytical methods for process control and product characterization.

(d) specification of the hazards involved in the operation both as to possible toxicity of the compound and to possible critical mass effects in the operation."

It seems to me that we are actively working on all the problems suggested by Graves, but are not yet in a position to give answers. Presumably the best compound is the one most readily reducible to high purity metal.

We are acutely aware of the possible toxicity of 49 and are sending some to Dr. Hamilton at Berkeley on February 1 to initiate research on this question.

As soon as we can formulate any firm answers to Graves' questions, the du Pont Company should be notified.

Yours sincerely,

Samuel K. Allison

Samuel K. Allison

dj

Copies to:
Compton
Cooper-Chipman
G. D. Graves
Hogness-Seaborg
Oppenheimer-Kennedy-Cyril Smith
Warner
Whitaker-W.C. Johnson

This document contains information affecting the national defense of the United States within the meaning of the Espionage Act, U. S. C. 50; 31 and 32. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.