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August 21, 1956

Mallinckrodt's
FINE CHEMICALS
Standard Since 1867

AIR MAIL

Mr. Lyall Johnson
Chief, Licensing Division
U. S. Atomic Energy Commission
1901 Constitution Avenue
Washington 25, D. C.

Dear Mr. Johnson:

During our discussions in Washington on August 17, 1956, we reviewed some of the questions and answers included in our letter to you of August 9, 1956. In connection with our answer to question 1, you ask for additional information relating to our method of measuring the ammonium hydroxide used in precipitating uranium from the hydrolysis solution. Our process follows:

The ammonium-hydroxide solution which is to be used in the hydrolysis of fully enriched UF₆, is received at our St. Louis plant in tank cars. A sample is taken from the tank car and assayed for NH₃. The NH₃ content must be in the range of 28-30% NH₃ in order to be accepted for our use. Following acceptance of a shipment, the ammonium hydroxide solution is subdivided into 55 or 100 gallon drums and shipped to Hematite for use in our enriched facility.

In the process itself, the ammonium hydroxide solution is lifted by hand pump from the drum to a 3" diameter glass reservoir calibrated to hold the quantity required for one batch. This reservoir is equipped with an overflow line to prevent filling beyond the required volume. Once the reservoir has been filled with the required amount of solution, the inlet valve is closed and air pressure is applied to the reservoir to move the ammonium hydroxide to the hydrolysis tank. Ammonium hydroxide solution is metered into the hydrolysis tank through a rotometer and the reservoir is emptied for each batch. There is, thus, a double check on the quantity of ammonia added since it is not only measured out as a batch in the reservoir, but is metered from the reservoir to the hydrolysis tank from the reservoir.

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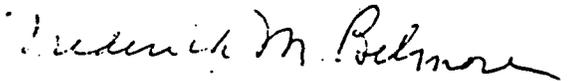
Mr. Lyall Johnson

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August 21, 1956

We also discussed a change which we propose in our room monitor and record system for excessive gamma activity in our Hematite facility. As we stated in our application letter of May 15, 1956, it was our original intention to use a gamma monitor and chart record in the processing area. We have since determined that this is an unnecessarily expensive way of handling a job which can be effectively taken care of by the location of film strips in all processing areas. Film strips would be developed biweekly and made into a permanent record. In conversations with Dr. A. D. Callihan in Oak Ridge on July 24, 1956, the monitoring problem was discussed. It was Dr. Callihan's opinion that film strips offered a better solution to our monitoring problem than our proposed strip chart and gamma counter. In view of the above, we request that item 7, page 9 of our May 15, 1956, application be deleted.

Very truly yours,

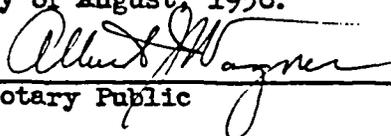


Frederick M. Belmore
Special Asst. to the President

FMB/ck

City of St. Louis
State of Missouri

Subscribed and sworn to before me this 21st day of August, 1956.


Notary Public

My commission expires 6-24-59