HW-13100

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April 20, 1949

100 AREAS TECHNICAL ACTIVITIES REPORT - P-10 PROJECT

MARCH, 1949

Extraction of 217 fluoride slugs with pile exposures of from 5-20 days gave 198 units of product with an average purity of 33 per cent. This yield is about one-third that obtained for alloy slugs at compareble exposures. High gas pressure was observed for many of the slugs and in almost all of the slugs the lithium fluoride pellets had disintegrated into a fine powder.

Developments on the alloy program continued to be more favorable than expectations. The number of slugs in the piles was increased from 555 to 937 with the prospect that the total can be increased to approximately 1100 during the next few months. Argonne has reported that the yield is linear at 7 to 8 units per slug per month for exposures to 3-1/2 months. A gas density determination indicated a product purity of 91%. Examination of slugs discharged after 4 months' exposure showed that no measurable change in dimensions had occurred.

These results and other data collected during the month have provided the information necessary to proceed with the completion of facilities for the handling and extraction of alloy slugs.

The extraction facilities now being used to process fluoride slugs on lines 1 and 2 will be duplicated on lines 3 and 4 except that a furnace for melting alloy slugs will be substituted for the one now used to heat fluoride pellets. The slugs will be melted in a stainless steel tube which will be used only once. Five slugs will be extracted in each run. Radiation measurements on irradiated alloy slugs indicate that the furnace will require shielding equivalent to about one inch of lead and that shielding will be required to transport alloy slugs from the can opener to the furnace.

PILE TECHNOLOGY DIVISION

RLO-CG-5-Rev1 EO-UPDATE