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Division

MAY 7, 1946

TO: FILE

FROM: C. P. KIDDER

100-310 AREA PROGRAM MEETING OF
May 7, 1946
May

The meeting was attended by C. H. Gross, W. C. Kay, R. M. Evans, D. A. Miller, W. R. Smith, C. H. J. Rende, and C. P. Kidder.

The present status of the Metallurgical Laboratory's special requests may be summarized as follows: Six special irradiations have been completed and shipped (Nos. 1-Hp²³⁷, 2-Th, 4-C¹⁴ Slugs, 6-Hp²³⁷, 8-Hp²³⁸, and 13-Hp²³⁷); two have been partially completed and shipped (15-Hf, 17-Graphite); three complete sets are now in the piles (6-H²³⁵, 7-Hp²³⁷, and 15-Hp²³⁷); five partial sets are now in the piles (3-Th, 9-BeO, 10-Hg, 12-Hg²³⁰, and 13-Hg²³¹); three sets have not been received (11-Ha, 14-Al-H, and 20-Hg²³²). Requests Nos. 19, 20, 21, 22, and 23 have not been allocated. Several trial Clinton slugs for Request No. 24 have been welded successfully using the Clinton design. Therefore, it appears desirable to proceed with the extrusion and machining of the 40 tons of metal that will be required for this order before the cans are received.

The status of graphite monitoring studies was reviewed. No results have been obtained from the Metallurgical Laboratory on graphite samples submitted on and after January 30, 1946. X-ray data, especially on graphite samples of 834 and 836 Hf/Cr, which were shipped February 12, are of particular interest in connection with estimates of future pile behavior. Information on this general subject is being requested by letter from Wilmington.

The slug corrosion monitoring program is to be continued at D and F as in the past. At B a recent inspection of aluminum ducts showed no excessive corrosion since the pile was shut down. Further monitoring will involve the inspection of slugs from one tube two months after shutdown and weighing of slugs from one tube 4 months after shutdown. One aluminum tube and flange will be inspected for corrosion every 12 weeks at D and F.

Fifteen tubes of cast slugs were charged into F and 11 into D on April 2; 9 are to be charged into F on May 2 and 4.5 into D in the near future. It is proposed to discharge one tube for inspection at D and F after 2 months exposure and develop a future discharge program from the preliminary inspection data.

Approximately 4, 00 light weight canned U²³⁵ slugs have been accumulated at the 300 Area. Due to the slight effect these will have on excess reactivity in the piles, it was decided that they should be retained for

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May 7, 1946

Chip fires in the centrifuge have been excessive when briquetting scrap from "Y". This is due undoubtedly to large amounts of foreign material in "Y" chips. The Engineer Corps is to be advised that this type of material will be unsuitable for re-use at H.K.W. and briquetting will be discontinued for the present. With reference to occasional centrifuge fires that occur when processing normal chips, it is intended to conduct trial runs using the centrifuge for only 10-30 seconds to remove the bulk of the water and complete the drying by blowing hot air through the chips. This has been tried successfully on a limited scale.

The modified CO₂ purge equipment for horizontal rods at F was tested recently and it was found that the CO₂, due to its increased density, flows out at the bottom of the rods and this action draws air in at the top of the rods. It is intended to install leather seals on the rods to overcome the introduction of air.

Recent tensile strength tests on the type of canvas that is to be used for the installation of a "soft-spot" in the F downcomer failed at 80 to 120 lbs. per lineal inch. This tensile value appears suitable and material has been ordered to permit the proposed installation.

No. 2 horizontal rod at F bound during the May 2 shutdown and it is proposed to bore-scope this trouble on May 9 to determine the cause.

The River Temperature Survey program was reviewed and it was agreed that the recent surveys at D and F should afford sufficient data to complete this study.

A Production Test is to be prepared covering the preparation of a set of radioactive sources for use in the calibration of health instruments.

River water temperatures have approached 10°C and as a result refrigeration was started at F and D on May 6 and 7, respectively. An attempt will be made to maintain inlet water to the piles as near 10°C as possible.

Neoprene for replacement seals on the piles will be available about May 15. The E pile will be repaired first, then the D seal.

Attempts will be made to obtain samples of aluminum from a process tube for physical property determinations.

C. P. WILSON, JR., CHIEF ENGINEER
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