E. I. du Pont de Nemours & Co.
Explosives Department
Wilmington 98, Delaware
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Authority of

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January 6, 1955.

FROM: H. W. BELLAS

WEEKLY REPORT - 100 AREAS - JANUARY 6, 1955.

Assembly Area

Q-foil procurement from Alcoa which had temporarily been interrupted by lack of sleeves for bottom fittings has now been resumed with the production of foils with flow splitters.

Reynolds Metals are now establishing the life of extrusion dies to permit them to submit a quotation on unwelded tubes. Their experience to date seems to indicate a life approximately equal to Alcoa's and after experience with three or four new dies over the next month they will probably submit a quotation in February. In the meantime, they will accumulate tubes at the rate of about 80 per week until there is sufficient quantity to make a shipment. At that time our M&E Division will raise the question with us of whether to send an inspector to Phoenix for this and possibly other business in the West or to rely on Reynolds' initial inspection followed by a more careful inspection at SRP. Veith of M&E points out that the inspector serves a dual purpose of performing physical gaging and of picking up the latest information on current performance by the vendor. On the other hand, if some one from AED can conveniently visit Reynolds at about that time, the latter purpose could be fulfilled and the gaging can await arrival of the tubes at SRP. We have told Veith we intend to rely on Reynolds' and SRP inspection within a month or so.

Harvey Machine seems to be making very rapid progress in the 4-1/2 months they have been working on Q-foil extrusions. They shipped the first tubes yesterday to SRP, Attention W. L. Megaro, and although these are admittedly of inferior quality they hope to produce a number of acceptable tubes within the next few weeks, which leads us to believe we will have a quotation from them within the next month.

Anti-cross-flow sleeves (aluminum) to the extent of two reactor charges are being reduced in length at Alcoa and welded into two charges of Q-foils, beginning immediately, for use in R-5 and C-1 loads. The decision to shorten sleeves was based upon inspection of test foils containing long sleeves and production foils containing the former stainless

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Reactor Complex

Hydraulic testing of C reactor is being continued with a high flow test in a short pump system following the recently completed test in a long pump system (No. 4). It is not now planned to remove flow restrictors from all six pump systems owing to the fact that this would result in such a small increase in flow through any one. Furthermore, it is an unlikely method of further operation. The latter is true because at the resulting 16,500 GPM, expected flow from each existing pump, cavitation will be a serious problem as operating temperatures are reached and the available NPSH drops off markedly. The possibility of running all pumps without flow restrictors is however still under discussion and may be carried out yet if C completion schedule should permit.

The annular shield tanks in 105-C are actively under repair. The two staybolts first removed from Tanks 1 and 2 have now been replaced with no difficulties in reassembling and welding. The X-rays taken of each layer of welded metal (one or more passes per layer) in the inner wall showed only a few defects which were chipped out and rewelded as they were found.

Trial of manual removal of the difficult accessible bolts, - four in each of Tanks 1 and 2, - has shown that a carbon arc cutter using an air blast gave a more satisfactory result than the planned Cutrode nickel steel electrode, and the former is now being used. Following the suggestion from John Walker in a meeting on Tuesday, the two top staybolts in each of these tanks being removed are not being replaced since they are not necessary for bracing against hydrostatic pressure and they are subject to higher thermal stress than lower bolts. These top pieces are being left with a short stub of staybolt welded to the collar at the inner wall, spacers welded to the filler plates, and a pipe ring spacer welded to the replacement disc on the outer wall.

Unless the Engineering Department hears to the contrary from us very shortly, they will not inspect or remove any staybolts other than those in Tanks 1 and 2, and the two inspection samples in Tank 3, but upon completion of this work will proceed to close up the concrete again. We understand the expected completion date is still February 20.

Purification

The R isotopic stills have been discussed by D. F. Babcock at the plant this week in regard to tritium attenuation and H₂O enrichment ratios. He suggested SRL look into analytical methods for tritiated water and that SRP consider starting another still system with 95% moderator in order to get bigger differences in H₂O concentrations, reducing the effect of analytical errors.

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