E. I. du Pont de Nemours & Co.
Explosives Department
Classification Canceled/Changed
TO UNCLASSIFIED
By Authority of

✓
DP-1-55-4-35

(SR/H--859)

- #2. R. J. Christl
- #3. H. Worthington - V. R. Thayer
- #4. L. C. Peery - SRP
- #5. L. S. Danser - SRP
- #6. M. H. Wahl - SRL
- #7. R. I. Martens - SRL
- #8. W FILE

1. McKee ADD 1/13/89
Name Title Date
2. CJ Benick AED CO 2/4/89
TO: Nanjo B. TINKER Title Date

FROM: R. J. CHRISTL

200 AREA WEEKLY REPORT

SOLVENT EXTRACTION PLANTS

200 Area Operations Status

The backlog of product in "F" Area awaiting processing through the "B" line forced a short term shutdown of canyon operations the later part of the week. Operations have resumed but the situation is still tight. Main factors influencing the ability of "B" line to maintain the desired processing rate are a shortage of filter boats, peroxide filtration and HF furnace vacuum system difficulties, and poor loading efficiency on ion exchange columns.

In "H" Area canyon operations were shutdown for about 3-1/2 days because of a suckback on the LAW jet out which gave high contamination in the hot gang valve corridor. Extensive decontamination was required before operations could be resumed. It is not yet clear what caused the suckback.

211-F - Control House Shielding

The estimating section of the Engineering Department has been requested to develop costs for the alternative proposals for shielding the 211 control house and adjacent radiation monitoring room. The alternatives being studied are (1) installation of shielding to reduce the radiation field from 20 mr to 1 mr in the control room and 0.1 mr at the monitor station, and (2) installation of shielding to reduce the radiation field from 3 mr to 1 mr in the control room and 0.1 mr at the monitor station. Also being studied are two ways to shield against radiation emanating from the recycle materials sump. In one case shielding from the sump will be supplied by an exterior wall at the building, in the other the cover block on the sump will be increased in thickness to accomplish the same purpose.

241-F - Additional Waste Tank Scheduling

A revised estimate of waste tank fill time has been made assuming continued operation at an average 5 batch per day rate with a 3-month outage in the second quarter of 1957 to convert to higher throughput. This study indicates a September 1957 required completion date for new tankage. The various schemes for waste volume reduction were not considered. A change in waste segregation wherein LAW is stored with coating waste has little effect on the required completion date. Acid recovery of high activity waste started in the first quarter of 1956 would defer the required date about four months.

UNCLASSIFIED CONTROLLED
NUCLEAR INFORMATION

MASTER

Reviewing
Official:

CJ Benick 2/4/89
C. J. Benick AED Class Officer

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

September 1, 1955.
This document consists of 3 pages
No. 1 of 1 of Series 1

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

221-F - Increased Throughput

Design of the large mixer-settlers is progressing. The Engineering Department has been requested to evaluate cylindrical end sections for the bathtub tanks as a means of reducing the internal bracing requirements of the flat sided tank previously proposed. This will reduce tank capacity by about 20%. An alternate design for the large canyon evaporator which has the overhead condenser integral with the top section of the column is being developed to reduce the number of flanges which must be made up remotely and to simplify the support and piping to this unit.

Fifteen of the twenty-one sections of the order of magnitude estimate have been reviewed and comments given to Design.

221-F - "B" Line - Increased Throughput

Various alternatives for increasing capacity of ion exchange and mechanical line facilities in "F" Area have been discussed with personnel from the plant and the Engineering Department. Engineering has been requested to prepare evaluation estimates of the investment required for the following:

Coupling:

- 1 - Install eight new coupling columns, with feed, elution and auxiliary facilities in a third and fourth level addition to Building 221.
- 2 - Remove the mechanical line from Room 306, Building 221, and install the coupling facilities in this room.
- 3 - Modify existing coupling facilities to permit attainment of a throughput rate of 10 canyon batches per day.

Mechanical Line:

- 1 - Install a complete mechanical line in the spare process room in Building 235.
- 2 - Install fluorination and reduction equipment in Building 235, and modify existing precipitation, washing and drying facilities in one of the "F" mechanical lines. Provide facilities for transferring the dry filter cake to Building 235.
- 3 - Install a complete mechanical line in a new building.
- 4 - Provide a new building for fluorination and reduction, with space reserved for addition of precipitation equipment later when production exceeds the capacity of the modified line in Building 221.
- 5 - Alternate to Case 2. Instead of modifying an existing line, install new precipitation equipment in the coupling area.

We favor installation of new coupling facilities in an addition to Building 221, with integrated precipitation, washing and drying equipment. Transfer of dry filter cake in batches of at least 1,600 grams would minimize the

9/1/55

space required for storage of in-process material. Fluorination and reduction equipment can be readily installed in the spare process room in Building 235, without additions or major alterations to this building. It is believed that investment in mechanical line facilities can be justified on the basis of savings in operating and maintenance labor. This justification will be evaluated.

221-F - HAN Acid Recovery

Preliminary design of the insertable can decanter has been initiated and canyon jumper detailing is in progress.

Plant Capacity Manual

Plant comments have not been received to date.

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

RJC/blt