

E. I. du Pont de Nemours & Co.

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SR/H--934

Explosives Department
Classification Canceled/Changed
Wilmington, Delaware

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FROM: R. J. CHRISTL

November 10, 1955.

200 AREA WEEKLY REPORT

SOLVENT EXTRACTIONS PLANTS

Operations Status

221-F - Operations continued at a slightly higher rate of 4.6 batches per day.

221-H - Operations continued at a 6.7 batch rate. Trial use of stronger acid for increasing dissolver capacity has started.

232-F Building

Processing is continuing at a very low rate due to mechanical difficulties and low product concentration in the feed gas to the diffusion column.

221-F - NFE Dissolver

A meeting is to be held at the plant on November 10 in an effort to resolve the remaining uncertainties for firming up the design. Design, Operations, Works Technical, Engineering Assistance, SRL and Wilmington Process will be represented. SRL will present the results of their study on dissolving long fuel elements.

200-F - Solvent Purification

Piping diagrams and preliminary layouts were reviewed with Design. Preliminary prints will be reviewed with the plant next week.

221-F - Increased Throughput

The Part I project papers for increased "F" Area throughput have been prepared and submitted for approval. A material balance flow diagram for the primary canyon processing operations has been submitted by the Engineering Department for formal AED approval. Preliminary review has been completed for five auxiliary process flow diagrams and these have been returned to the Engineering Department prior to their submission for formal approval.

Design of the large tanks, continuous evaporators, and jumbo mixer-
 design is proceeding satisfactorily.

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 2/4/89



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241-F - Additional Waste Storage Tanks

When Engineering made their evaluations for the various waste storage tanks which might be used for the new increment of waste storage required in "F" Area, the specific gravity of the waste to be stored was considered to be 1.25. Since waste volume reduction can produce a waste of 1.8 specific gravity, Design was requested to review their evaluation for the pre-stressed concrete tank to determine the effect on cost of storing 1.8 gravity material.

Their review has indicated the cost increase to be nominal amounting to approximately \$14,000 total for the four tanks being considered.

221-F - Canyon Pumps

Two methods of controlling the output of canyon pumps have been proposed: throttling by means of a control valve in a canyon jumper, and pump speed variation by electrical means. While the latter method is desirable since only a squirrel cage motor will be required in the canyon (no more complex than would be required to run the pumps at constant speed), there is some doubt of the controllability of such an arrangement, and tests are desirable to resolve the doubts. Tests are being planned at TNX covering speed control by means of variable frequency and variable voltage. The former will be tested first because it is considered almost certain of success. If it is successful, the latter will be tested because it offers the advantages of smaller space requirements in 221 Building, and lower maintenance resulting from less complex equipment. The Engineering Department will supply the special electrical components and the control system design. TNX will furnish all other equipment and will run the tests. The pump will be one of those being obtained for the H Area continuous washing systems. This pump is considered to be a prototype of future canyon pumps. It is expected that the test work can be completed by mid 1956, leaving adequate time for delivery of facilities for the scheduled start-up of increased throughput in F Area.

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RJC/blt