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Explosives Department
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DPN-55-4-40

SR/H--85

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October 6, 1955.

FROM: R. J. CHRISTL

200 AREA WEEKLY REPORT

SOLVENT EXTRACTION PLANTS

Operations Status

The instantaneous rate through first cycle in 221-H has been increased from 5.5 to 6. batches per day. The cooling time on slugs charged to H Area is now down to 100 days. In 221-F the rate was decreased from 4.5 to 4.0. It appears that TBP concentration had been higher than desired resulting in poor LBP decontamination and "hot" 2BP in F Area. One batch of 2BP has been recycled to head end. Similar trouble was experienced in "H" but 2BP activity apparently has not been affected. "F" Area "B" Line reported various problems in the reduction step but inventories ahead of reduction were still in good shape as a result of recycling "hot" 2BP to head end. Reduction yields continue at better than 90%.

232-F dummy runs are continuing with a target date of October 17 for "hot" start-up.

200-F&H - Solvent Purification

Engineering was requested to study and prepare an "S" project for distillation facilities to recover degraded solvent that cannot be sufficiently purified for process use in the regular solvent recovery system. Vacuum distillation at 10 mm Hg. absolute pressure has been recommended by the Technical Division. Commercial features will be incorporated in the design wherever it is practical. Initially, these distillation facilities will be installed in "F" Area only with a second installation in "H" Area being contingent upon the solvent transfer problems involved. Requested start-up for the "F" facility is June, 1956.

The most probable location for the new equipment is in 211 Area. Solvent washing facilities may be required to reduce activity levels to minimize handling problems with moderate shielding.

211-F&H - Control House Shielding

Design studies and comparative costs for four schemes to provide control house shielding have been reviewed. The difference in cost between acceptable schemes is small and the scheme selected which will cause the least disruption of the area involved. Shielding will be provided through the erection of concrete walls to the north and west of the control house proper and to the north of the radiation monitoring check station. A lead cover will also be installed on the floor of the check station over the recycle materials sump.

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J. B. Finker 2/4/89

221-H - Continuous Hot Solvent Recovery

Pumps for the continuous hot solvent washing system have been ordered. Delivery is scheduled in 16 to 18 weeks. To assure that the ball bearings used in the pumps are properly selected for maximum life, it is planned to contact the bearing vendor to assure a thorough understanding of the problem and to obtain a recommendation for a bearing offering the least probability of trouble.

221-F - Increased Canyon Throughput - Pumps

Practical devices to control the output of canyon pumps have been narrowed down to diaphragm motor type control valves and pump motor speed controls. Estimates are to be made of the installed cost of a typical control valve installation and a variable frequency type motor speed control to determine if there is a decided cost advantage in favor of either one. It is known that variable frequency motor speed control will work. A paper study is being made of another type of control for motor speed to determine if it is worth testing. It consists of a variable voltage supply to a high slip motor. This control system offers reduced installation cost and lower maintenance cost as a result of simplicity.

241-F - Waste Reduction

A scope of work covering the waste reduction facility for 241-F has been completed, and turned over to the estimating group.

241-F - Additional Waste Storage

Cost estimates for the various proposed alternate waste tank designs were recently presented. These ranged from 28 - 54 cents per gallon of storage with 28 cents being the cost of the HAPD design installed at SRP. The comparisons made omitted cost items common to all designs and therefore these costs are not representative of complete installation costs. Most project distributives were included.

Tentative agreement has been reached to proceed on the preliminary design of a modified HAPD tank for the storage of low activity waste. Consideration is being given to the feasibility of transferring low activity waste from existing tankage to the new tankage when it becomes available. Existing high cost tankage then would be released for storage of high activity waste.

Jumper Fabrication

Since use of the Hanford type mock-up jig fits into all proposed schemes for jumper fabrication facilities, Engineering has been requested to obtain an excess jig prior to agreement on the extent of ultimate facilities to be provided.

High Activity Waste Acid Recovery

All working drawings except electrical have been issued. The electrical information will be forwarded no later than October 14.

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