

Interoffice Communication

To : Distribution

From : Douglas Michels

Date : November 24, 1975

Subject : Batch Large Reactor Steam Stripping Tests

*W/O D-400 range change
Test T or Fri
Bags
Steam strip valve manuel*

Batch Large Reactor Steam Stripping Tests will be conducted at Aberdeen as soon as possible. This letter describes the test format and relates areas of responsibilities for the tests.

The purpose of the batch tests is to answer two questions.

1. Can batch steam stripping achieve low residual VCM content resin at severe stripping conditions?
2. What, if any, is the degree of product degradation at the severe conditions?

The tests will be "results oriented" in terms of VCM residuals and product quality. No attempt will be made to obtain extensive system performance data. Only vital factors influencing test results will be monitored.

Various aspects of the stripping tests are discussed below.

Charge Conditions

The reactor batch is to be charged at a water to monomer ratio of 1.5 to 1.0. F-50 type methocel and 5385 type I conditions will be used. Jim Barton is to work with R & D to develop the charge formula for this condition. Catalyst concentration will be held at the current production level.

Recovery Conditions

The reactor will be recovered, after operating isothermally, at 95 psig. The batch will be killed with 2.0 gallons of AMS containing 0.03 phm of Irganox. — *Handling properties*

Recovery Procedure

Except as noted under test conditions, the present reactor recovery-stripping procedure will be used.

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Test Conditions

The following batch stripping conditions will be employed.

1. One batch will be recovered and stripped at 185°F and 30 minutes using the existing plant procedure. This will provide a base line quality for the subsequent tests.
2. Two batches will be stripped at 212°F for 30 minutes. The procedure used will be described under Stripping and Reactor Sampling.
3. Two batches will be peaked to 220°F. Unless mechanical problems arise the normal plant stripping procedure will be used for this test except that the batch will be fully recovered to 185°F before the peaking is initiated.

Stripping and Reactor Sampling

A steam stripping rate of 0.1 lb./hr. steam per lb. of slurry will be maintained for the test at 212°F. This will be maintained by opening the reactor manhead after the batch is recovered to 212°F. The evacuation ejector will be used to maintain a continuous sweep across the top of the reactor. Potential use of condenser cooling water to maintain steam rate will be considered.

Approximately five gallons of slurry will be obtained from the reactor at 175°F, at 212°F and at 10 minute intervals during stripping.

Three slurry samples will be taken during dump.

Subsequent Resin Samples

Wet Cake Samples will be obtained at least three times during slurry drying. Dryer outlet resin samples will also be obtained each hour. Samples will be obtained from the resin bagger at one-half hour intervals.

Resin Quality Evaluation

All resin produced during the severe stripping tests will be isolated through a blend tank and dryer and sent to bagging. The disposal of this material will await plant and R & D quality evaluations.

The aforementioned samples will all be analyzed for residual VCM content.

In addition resin samples will be evaluated for the full range of quality determinations. Samples will also be sent to Ponca City for extrusion tests.

If plant results indicate seriously degraded resin at the severe conditions the test will either be discontinued or operating conditions will be altered.



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Downstream Air Stripping

The plant will be prepared to initiate blend tank air stripping tests if results indicate this could be of value. 3

Reactor Changes and Schedule

One reactor, preferably ~~D-500~~ ^{D-400}, will be adjusted for temperature control between 125 and 225°F. John Edwards is asked to determine how this is to be accomplished.

One test will be conducted per day. This will permit the results to be available prior to the next test.

Anticipated Test Duration

A minimum of five batches will be required. Additional batches will be produced if the results of the tests indicate this is advisable.



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Chief Process Engineer

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c: RAD, RWS (3), LHB, DJF, KWC, ELK, JWH, FJS, JVU, DHS, RAF, WRS, DVP,
GRJ, WFR