

## Recommendations

The following recommendations are made:

1. After Beacon, Montebello and others involved have reviewed this report we should get together and agree upon a single concerted position and be ready to work toward a common goal.
2. Perhaps we should consult with experts on Fischer-Tropsch mechanism and catalysts such as Craxford and Herrington.
3. Once having agreed upon a goal a series of experiments should be layed out for Beacon, Montebello and Brownsville to:
  - A. Confirm these conclusions.
  - B. Learn how to manufacture a good catalyst.
  - C. Learn how to keep it active by in situ reactivation.

The program of experimentation should be layed out in conference but the following are a few suggestions for consideration.

1. Beacon should learn to operate its reactor with diluted catalyst or at higher space velocities so that it can deliberately produce a lower level of conversion where differences in catalysts should show up.
2. Montebello should continue working, first with Mill Scale and then with spent CM&S catalyst and should try to develop a procedure to periodically reactivate the catalyst. Montebello should also set up fused catalyst manufacturing conditions and with Beacon's small unit assistance learn how to manufacture a good stable catalyst commercially.
3. Montebello should try poisoning its gas with salt water, acid water and highly chlorinated drinking water washes as at Brownsville to see if these, and which of them are really responsible for permanent poisons if any.

In the meantime Brownsville should also be conducting a series of experiments, to confirm the conclusions reached here, as follows:

1. A small reactor should be set up at once to operate in parallel with the commercial unit. Runs should be made first with their catalyst, fresh feed and recycle gas. The results of this run should be compared with another made with the same catalyst but with synthesis gas from the small hydrogen generator (K-303) which has been washed with only fresh water. Runs should also be made with fresh & spent Brownsville catalysts, methods of in situ reactivation should be tried etc.
2. It is also suggested that Brownsville try running once thru (no recycling) with a fresh catalyst to see by difference if the acid water used in the effluent gas scrubber (recycle) is responsible for poisons.
3. They should also make a similar test run (test run meaning changing only one thing at a time) using once the operation with a closed water cooling system on the synthesis gas wash tower.