

Paraffin Deposition Progress Report January through March 2001

Since our last update to TUPDP participants, the Moyno pump for the Multiphase Deposition Flow Loop was repaired and returned to us by Robbins. Unfortunately, an undersized rotor had been installed and we had to return the pump for installation of a tri-phase rotor and stator. The pump is now working satisfactorily. After installation, we back-flushed the piping and filtered the South Pelto oil for several days to minimize the possibility of elastomer contamination from the stator that partially disintegrated. The pipes that were removed between the pump and the heat exchanger for cleaning purposes were reinstalled and also had to be re-heat traced and insulated. The flow loop was inoperable for almost three months as a result of the pump stator failure.

The multiphase flow heat transfer tests (over 100 tests) and 20 repeats were completed on March 7. This data will be presented at the Advisory Board meeting in May. A series of shakedown deposition tests using the South Pelto oil were started on March 9 to train new operators, to verify that the modified system is working properly, and to test a two-phase ultrasonic sensor from Norway that has been mounted in the removable spool piece. Upon completion of the shake down tests, we will clean the two-phase loop and fill the tanks with Garden Banks condensate. The test matrix for this fluid was discussed in a committee meeting at the last Advisory Board meeting. We are also installing a new 4-stage compressor to boost city gas from 15 psig to 800 psig. This will allow us to conduct long term tests without interruption of gas supply. We can then terminate the lease of the bottled gas trailer, resulting in a reduction in operating costs.

Work is also progressing on the single-phase deposition flow loop. The equipment changes discussed at the Advisory Board meeting have been completed. Instrumentation is currently being calibrated. An Intellution data acquisition and control system was installed and its operation will be very similar to the system used in the two-phase deposition flow loop. Work on the new spool piece to permit using removable coupon samples is progressing. Our plans for this loop are to run tests using the Garden Banks condensate currently in the flow loop to shake down the system. After that, tests will be conducted using this fluid to quantify depletion. This fluid has a wax content of 0.5 wt % compared to 5-wt % for the South Pelto oil. Upon completion, the loop will be cleaned and South Pelto oil will again be loaded into the tanks for three months of testing.

We have been working with several companies (Chevron, Petrobras, and BG International) in an attempt to identify a third fluid. We are modifying three of our transportation tanks and anticipate sampling a possible third fluid in April.

As you know, DOE has agreed to provide funds for the project. We have been working on the paperwork the last few months and anticipate finalizing their funding by the first of April. We will be issuing a quarterly report in April for the period January through March to be on a report cycle that coincides with the DOE funding.