III. CONCLUSIONS

1. The operation of Montebello Reactor No. 3 was considered superior to that of Reactor No. 1 which had relatively greater cooling surface.

2. Both the addition of reduced catalyst to the reactor and the circulation of hot hydrogen through the catalyst bed resulted in temporary increases in yields of C_{3+}.

3. There was a tendency for the yields of oil to decrease with time.

4. During operation with only reduced mill scale catalyst charged to the reactor, (a) the yields of the C_{3+} product increased with increasing catalyst bed height and catalyst inventory, and (b) the density of the C_{3+} product remained constant with changes in the catalyst inventory.

5. After some unreduced mill scale catalyst (one-fourth of the total in the reactor) had been added, and despite the subsequent addition of reduced catalyst, (a) the yields of the total C_{3+} product increased with increasing bed height and catalyst inventory but the yield levels were relatively lower than before the addition of unreduced catalyst, and (b) the density of the C_{3+} product increased with increasing catalyst inventory. This was traceable to a decline in the yield of the C_3-C_6 fraction.