DISCUSSION

It is apparent that this run should be considered as made up of a period of 100 hours of comparatively steady operation which had approached rather closely to an equilibrium condition, followed by a 24 hour period of very unsettled operation which followed the addition of fresh

catalyst. In the first period, the density of the catalyst in the reactor fell rapidly at first from the initial density of 115 #/cu.ft., and then more slowly and appeared to be reaching an equilibrium value of about 35#/cu.ft. During this period the depth of the catalyst bed increased from about 16 ft. to about 22 ft. and the catalyst inventory dropped from about 500 lbs. to about 270 lbs. The conversion as measured by contraction increased from 60% contraction to 69% contraction in spite of the decrease in catalyst inventory. The steam pressure in the reactor cooling system was maintained at 1100 p.s.i.g. throughout the run and there was no change in bed temperatures, indicating that there was a slight improvement in over-all heat transferred, in spite of the decreased catalyst density.

The failure of the conversion level to go beyond about 70% contraction indicates that a poorly reduced catalyst does not reach the activity level corresponding to a well reduced catalyst even over an extended period of operation. It was also evident during this run that the product contained a very much larger proportion of wax than is produced with a well reduced catalyst. No numerical data are yet available on this point.