FCC PILOT PLANT UNIT

A schematic diagram of the fully automated FCC pilot plant is shown in figure 1. Preheated gas oil feed flows in the bottom of a riser, where it is mixed with hot regenerated catalyst. In the riser the reactions take place and at the riser exit, the mixture flows into the stripper vessel where the separation of gases from the solid catalysts occurs. The solids flow through the spent catalyst lift line and they return to the reactor bottom following regeneration.



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The reaction products, from the stripper exit, flow through a heat exchanger and then after their temperature is reduced to 20°C in order to condense the heavier products. Then the mixture is led to a stabilizer column for better separation of liquid and gaseous products. The specifications of CPERI pilot plant are shown in the following table.

Pilot plant specifications and operating conditions

Riser id (mm) and height (cm)	7.08 and 165
Regenerator bed id (mm) and height (cm)	77.9 and 72
Stripper id (mm) and height (cm)	26.6 and 150
Lift line id (mm)	9.45
Maximum liquid feed rate, gr/min	25
Catalyst circulation rate, gr/min	35 and 500
Maximum reactor Pressure, atm	3.3

Max riser temperature, deg C	590
Max stripper temperature, deg C	590
Max regenerator temperature, deg C	700
Catalyst inventory, gr	4500



Schematic diagram of FCC pilot plant