**Simulation of Kaduna Refining and Petrochemical Company (KRPC) Crude Distillation Unit (CDU I) Using Hysys**

**Abstract**

Optimization of Crude Distillation Unit of Kaduna Refinery and Petrochemical Company was carried out using Hysys Process Simulator. After the simulation, Atmospheric Residue has the highest volumetric flowrates of 313.7m 3 /hr while AGO has the lowest with 10.90m 3 /hr. Naphtha, Kerosene and Diesel has volumetric flowrates of 129.8 m 3 /hr, 42.14 m 3 /hr and 164.5 m 3 /hr respectively. This unit models a crude oil processing facility consisting of a pre-fractionation train used to heat the crude liquids, and an atmospheric crude column to fractionate the crude into its straight run products. Preheat crude (from a preheat train) is fed to the pre-flash drum, where vapors are separated from the crude liquids. The liquids are then heated to 350 o F in the crude furnace. The pre-flash vapors bypass the furnace and are recombined, using a mixer, with the hot crude stream. The combined stream is then fed to the atmospheric crude column for separation. The crude column is a refluxed absorber, equipped with three pump around and three side stripper operations.