Oman Refineries and Petrochemicals Company LLC

ORPC

Processes at Mina Al Fahal Refinery

Crude Distillation Unit (CDU)

The Crude Distillation Unit is a pre-flash column to pull off Naphtha fraction. The main crude tower has four pump-around with side draw-offs for Kerosene and Light/Heavy gas oil and bottom end. Light and Heavy Gas Oil draw-offs are routed to their respective stripper and dryer columns before they are routed as a single combined gas oil stream. The Crude Unit was revamped to process 106,000 bpd in 2007.

Naphtha Hydrotreating Unit (NHTU)

The Naphtha Hydrotreating Unit removes all contaminants such as Sulphur, Nitrogen and Oxygen from the Naphtha feed. The treated products after splitting to light and heavy fractions pass into other units for further processing to be upgraded and made into Gasoline and other products.

Platformer Unit

This Unit takes Heavy treated Naphtha feed from NHTU and upgrades it to high-octane platformate by passing it through a series of four reactors containing Platinum impregnated Alumina based catalysts.

Kerosene Merox Unit

The Unit sweetens the straight run Kerosene. The feed is treated by the Merox process to meet Jet Fuel specifications.

Diesel Hydro Desulphurization Unit (DHDS)

Designed to produce diesel products with a maximum Sulphur content of 50 wt ppm. The Sulphur species in Gas Oil are converted to Hydrogen Sulphide in the presence of a catalyst and Hydrogen at elevated temperatures and pressures in the diesel reactor.

Gas Tail Unit (GTU)

This unit takes two streams of very light Hydrocarbon material, essentially Ethane, Propane and Butane, from the NHTU and the Platformer to separate and sweeten them in order to provide Liquefied Petroleum Gas (LPG) which is used as domestic cooking gas. The Gas Tail Unit has a total feed capacity of 3,200 bpd.

Amine Treating Unit (ATU)

This Unit treats the entire Refinery off gases and H2S rich streams from the DHDS Unit. The objective of the ATU is to produce a Fuel Gas (Sweet Gas) with less than 25 Vol ppm of H2S. This ensures that Sox emissions from the Refinery are as low as possible.

Sulphur Recovery Unit (SRU)

The Sulphur Recovery Unit is designed to recover Sulphur from the sour vapors originated from the Amine Treatment Unit and the Sour Water Stripper Unit. It consists of a thermal stage, in which H2S is partially burnt with air, followed by three catalytic Claus stages.

Isomerization Unit

Isomerization unit is designed to take 10,000 bpd light treated Naphtha from NHTU and condensate from OLNG .The feed upgrades to 84 octane Isomerate product through series of reactions in two reactors containing platinum catalyst.

The Isomerization unit is designed to handle additional feed other than Naphtha and a solution for limitation of Benzene precursors in motor gasoline.

Sour Water Striper Unit

This Unit receives all sour water of the operation unit and reduces the amount of Hydrogen Sulphide and Ammonia from the feed to an acceptable level before discharging to the other unit or effluent system.

Utilities

The Refinery steam is generated by two dual fired boilers (each rated for 720 tons per day of 20 Barg steam), five gas turbine driven generators with waste heat boilers and two Process fired heaters equipped with waste heat boilers. Two desalination units each generate fresh water rated at 1,500 tons per day of desalinated water. Primary cooling is achieved through overhead air coolers.