Liao-Yang petrochemical complex

Publication de 19xx ETHLYLENE - TECHNIP - KTI - TECHNIPETROL

Buyer: China National Technical Import Corporation, CNTIC.

Location: Liao-Yang Liaoning area North East of Peking. People's Republic of China.

Type: grass roots petrochemical complex including a nylon chain and a polyester chain with, in all, 21 different units. Completion: 1978/1979

Capacities: 80,000 t/yr ethylene, 87,000 t/yr polyester and 46,000 t/yr of nylon using a petroleum feedstock.

Contract: Technip associated with Speichim. Both partner provide:

- complete design and engineering services
- equipment : 45,000 tons. 4400 equipment items.
- assistance to construction and start-up.
- training of 230 Chinese technicians on a worldwide basis.

A 2 BILLION FRANCS CONTRACT

The contract witch Technip in partnership with Speichin, signed with the China National Technical Import Corporation, C N T I C, is the biggest ever conclude between France and the People's Republic of China. It covers studies and equipments for a grass roots complex planned to produce 87,000 tons/year of polyester and 46,000 tons/years of nylon from petroleum products. It also provides for technical assistance from both French companies in the construction and start-up of the facilities;

A key feature is the complete integration of the production chain from the base products to the finished products. The throughtput fixed for the finished products determines the throughtput of all the upstream units.

For this reason, the capacity of the upstream units (petroleum units) and the intermediate storage is relatively small. Inlet and outlet streams of the intermediate products are reduced as much as possible and the majority of the byproduct are used in the complex.

Main sections : Process and Technologies

Catalytic reforming IFP

Hydrogen production Technip
Steam cracker IFP / FW Furnaces

(ethylene production)

Gasoline Hydrogenation IFP

Ethylene oxide production Chemische Werkes

Hüls

Ethylene glycol production Chemische Werkes Hüls

Aromatic extraction IFP

Polyester chain:

Paraxylene production Atlantic Richfied

Engelhard

SUCRP

Dimethylteraphatalate Dynamit Nobel
Polyester production Rhône Poulenc Textiles

Nylon Chain:

Nylon crystallization

Nitric Acid Rhône Progil
Cylohexane IFP
Cylohexanone SUCRP

Adipic Acid SUCRP
Adioponitril SUCRP
Hexamethylenediamine SUCRP

The size of the project, 21 different units, is the outcome of this integration. A wide range of technologies have been utilized: French Petroleum Institute and Technip for the petroleum units, Rhône-Poulenc processes for the nylon and polyester chains, Atlantic Richfield Engelhard process for paraxylene, Dynamite Nobel process for ethylene oxide and glycol. Anti-pollution measures adopted match the strictest applied in any other industrial country.

The project represented 2 million man-hours of engineering (including 900,000 drafting man-hours) not including field supervision and start-up assistance. A total of 70,000 Chinese workers have participated in the construction.





