

CSIR-INDIAN INSTITUTE OF PETROLEUM, DEHRADUN
(Training)
 e-ITEC Training Program on “Fundamentals Petroleum Refining Technology”
IST 1400HRS – 1700HRS

Program Contents

TOPICS
1. Introduction
2. Petroleum Refining Industry in India and Future Trends
3.0 Basics of Crude Oils
3.1 Chemistry of Crude Oil: Composition and Classification
3.2 General Refinery Configuration (Fuel and Lubes)
3.3 Crude Oil - Pretreatment and Desalting
3.4 Evaluation of Crude Oils for Fuels and Feed stocks
3.5 Lab Distillation, their Inter Conversion and Significance
3.6 Product Characterization (Fuels)
4.0 Petroleum Products: Composition, Properties, Specifications and Significance
4.1 Motor Gasoline & Diesel Fuels
4.2 Naphtha-Spec For Different End Users, Kerosene and ATF
4.3 Fuel oil, LSHS, HPS
4.4 Alternative Fuel (Biodiesel, DME, Bio ethanol etc
4.5 Gaseous Fuels (LPG, CNG, Hydrogen etc)
4.6 Petroleum Coke Overview (RPC/CPC / Needle Coke)
5.0 Refining Technology
(a) <u>Separation processes & Conversion processes</u>
5.1 Atmospheric and Vacuum Distillation
5.2 Basics of Simulation
5.3 Column internals – Design of Trays etc
5.4 Lubricating Oil Base Stocks: Various Grades & Refining Schemes (NMP & Furfural Extraction)
5.5 Hydrocracking (Distillate and Resid
5.6 DHDT/DHDS
5.7 Catalytic cracking (Fundamentals and advances)
5.8 Reforming (Fundamentals and advances)
5.9 Isomerization & Alkylation
5.10 Sweetening Processes
5.11 Upgradation of Residues
5.12 Hydrogen Production and Management
5.13 Process Integration (Pinch Analysis)
5.14 Sulfur Management in Petroleum Refineries
5.15 Gas to Liquid Process
6.0 Refinery Support Processes
6.1 Refinery and Petrochemical Integration
6.2 Role of Catalyst in Petroleum Refineries
6.3 Refinery Furnace and Heaters design & operation".
6.4 Process Safety (Management of Change/HAZOP/Risk Analysis)
7. Lab and pilot plant visit
8. Concluding Session / Valedictory
