TECHNICAL SERVICES

Introduction

IndianOil R&D has developed in-depth process insight and knowledge base/ expertise for offering value added technical services to refineries.

Fluid Catalytic Cracking (FCC/RFCC/ INDMAX)

- De-bottlenecking & revamp
- Process design of Reactor-Regenerator section including internals
- Performance scanning & improvement
- Troubleshooting including review of performance of internals
- Unit optimization through change of process parameters & catalyst
- Light olefins maximization
- Evaluation/selection of catalyst/ additive
- Health monitoring of equilibrium catalyst

Hydroprocessing (DHDS/DHDT/OHCU/ HCU/HGU)

- Optimization & Troubleshooting
- De-bottlenecking & revamp
- Grassroot Unit Design capability for Hydrotreating
- New Catalyst Selection
- Remaining Life Assessment of Catalyst System
- Experience of Pre-Commissioning & Commissioning

Catalytic Reforming (CRU / CCRU)

- Catalyst health monitoring
- Selection of fresh catalyst & remaining life assessment using proprietary method.

Delayed Coking

- De-bottlenecking & revamp
- Troubleshooting & optimization

Visbreaking

- FO reduction through optimization of unit conversion without affecting stability
- Yield optimization by integration with other secondary conversion processes.

Material Failure Analysis

- Root cause failure analysis (RCFA) providing customer with techno-economic Recommendations for failure avoidance.
- Equipped with the state of the art Material characterisation facilities

Fitness For Service (FFS) & Remaining Life Assessment (RLA)

- Fitness for service assessment as per API - 579 guidelines using FFS signal, ECA^{Pv} etc. software.
- RLA of high temperature components with Creep / carburisation damage mechanisms.
- Library of proprietary data base of material properties developed on service exposed materials through advanced testing facilities such as Accelerated Stress Rupture Test (ASRT) Instrumented impact tester, / Universal Testing Machine (UTM) etc.

Corrosion studies

Feasibility assessment of opportunity crudes processing with respect to corrosion, it's monitoring and mitigation through Predict Crude software developed under consortium research programme with Honeywell, USA.

Advanced Non-Destructive Testing

- Estimation of mechanical properties of materials through testing of miniature samples obtained non destructively from in service components
- Non destructive testing and evaluation through ultrasonic Time Of Flight Diffraction (TOFD), Phased Array etc. for metallurgical health assessment of critical facilities during shutdown
- Gamma scanning of process columns for trouble shooting and optimisation of process parameters

Rheology & Pipeline transportation

- Rheological evaluation of Crude oil blends
- Simulation studies of pipeline terrains for flow rate / delivery pressure using Pipeline studio software
- Identification of pumping feasibility & constraints of transportation of heavy / viscous / waxy crude blends

General

- Refinery configuration study
- Profitability improvement study
- Providing training in the areas of FCC / RFCC / INDMAX, Delayed Coking, Visbreaking, Reforming, Isomerization.