



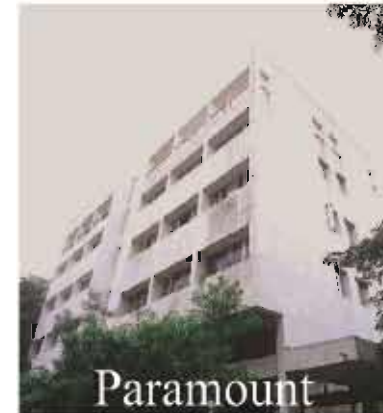
# PARAMOUNT LIMITED

## Process Plants Division

... Excellence in Performance ...

## Paramount Limited

- Offices in Vadodara (HQ), Chennai, Mumbai, New Delhi & Oman
- Started in Feb., 1962
- Over 300 Projects
- ISO 9001 : 2015 Certified Company
- ASME U, S, R & NB Code Authorized Manufacturing Facilities
- 250+ Water Specialists & Engineers with an average experience of 20+ years.
- Professionally Managed Organization
- [www.paramountlimited.com](http://www.paramountlimited.com)



# Paramount Business Areas

## Process Plant Division - Petrochemicals / Chemicals



PARAMOUNT



# Paramount Business Areas

## Process Plant Division - Refinery Services



PARAMOUNT







# Paramount Group's ASME U & S – R & NB (NBBI) Code Stamped Manufacturing Units



PARAMOUNT

## Polcon Equipments



Baroda Total Plant Area: 13000 m<sup>2</sup>

## Paramount Technologies



Baroda Total Plant Area: 9000 m<sup>2</sup>

## Paramount ONEIC



Oman Total Plant Area: 10000 m<sup>2</sup>

# ASME U & S Code Stamp Accreditation



PARAMOUNT

The American Society of Mechanical Engineers



## CERTIFICATE OF AUTHORIZATION

The named company is authorized by The American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the ASME Single Certification Mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with the ASME Single Certification Mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY:

**PARAMOUNT LIMITED**  
Manufacturing Unit-1  
Shed No. 521, GIDC, Makarpura  
Vadodara, Gujarat 390 010  
India

SCOPE:

Manufacture of pressure vessels at the above location and field sites controlled by the above location (This authorization does not cover impregnated graphite)

AUTHORIZED: September 14, 2021  
EXPIRES: September 14, 2024  
CERTIFICATE NUMBER: 36036

Board Chair, Conformity Assessment

Managing Director, Conformity Assessment



## CERTIFICATE OF AUTHORIZATION

The named company is authorized by The American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the ASME Single Certification Mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with the ASME Single Certification Mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY:

**PARAMOUNT LIMITED**  
Manufacturing Unit-1  
Shed No. 521, GIDC, Makarpura  
Vadodara, Gujarat 390 010  
India

SCOPE:

Manufacture and assembly of power boilers at the above location and field sites controlled by the above location

AUTHORIZED: September 14, 2021  
EXPIRES: September 14, 2024  
CERTIFICATE NUMBER: 36035

Board Chair, Conformity Assessment

Managing Director, Conformity Assessment







# ISO 9001 : 2015 Certificate



PARAMOUNT

ZERTIFIKAT ■ CERTIFICATE ■ CERTIFICADO ■ CERTIFICAT ■ 認 證 書



Management Service

## CERTIFICATE

The Certification Body  
of TÜV SÜD Management Service GmbH

certifies that



**Paramount Limited**  
Paramount Complex, Gotri Road, Vadodara - 390 007, Gujarat, INDIA  
has established and applies  
a Quality Management System for

Process Design, Engineering, Procurement and Construction of  
Process Plants and Projects in the Field of Environmental Management  
such as Water and Waste Water Treatment & Recycling, Desalination,  
Air Pollution Control, Solid and Hazardous Waste Management and Operation and  
Maintenance of these plants,  
Sales & Marketing and Design & Engineering of Water & Waste Water Treatment Equipments  
Maintenance of these plants. Sales & Marketing and Design & Engineering of Water & Waste  
Water Treatment Equipments.

An audit was performed, Order No. 4153531781

Proof has been furnished that the requirements  
according to

**ISO 9001:2015**

are fulfilled.

The certificate is valid from 2021-08-04 until 2024-08-03.

Certificate Registration No.: 12 100 9769 TMS.

*Paul Wenz*

Head of Certification Body  
Munich, 2021-08-05



TÜV SÜD Management Service GmbH • Zertifizierungsstelle • Hubertstraße 65 • 90335 München • Germany  
[www.tuev-sued.de/certification-iso-9001](http://www.tuev-sued.de/certification-iso-9001)

TUV®

# Equipments Manufactured



PARAMOUNT



Aerators



Pressure Filter

- Aerators
- Pressure sand filters
- Tanks & vessels
- Activated Carbon Filters



High Rate Solid Contact Clarifier



Oil-Water Separator (CPI)

- Agitators/Mixers
- Clarifiers/Thickeners
- Oil Separator Mechanism



Clariflocculator



Vacuum Drum Filter

- Sludge Mixers
- Clariflocculators
- Vacuum Drum Filters

# Packaged Plants & Systems



PARAMOUNT



Mix Bed & Dosing Skid (CPU)



Package STP



Condensate Polishing Unit (Krishi)



Multi Effect Evaporator



Dissolved Air Flotation

- **Tilted Plate Interceptors & Separators**
- **Activated Sludge Package Plants**
- **Air Flotation Unit (DAF)**
- **Packaged Sewage Treatment Plants**
- **Incinerators**
- **Mutli Effect Evaporator**



# Packaged Plants & Systems



PARAMOUNT



RO Skid



SO<sub>2</sub> Scrubber

- Membrane Based MF/UF/RO Packaged Systems
- SO<sub>2</sub> Scrubber
- Coiled Pipe Flocculator
- Plastic Media Biotowers
- Flue Gas Desulphurisation (FGD)
- Trickling Filter Arms



Coiled Pipe Flocculator



Trickling Filter Arms



# Our Backbone – R&D Centre – Environment Division



PARAMOUNT



## Recognition by:

- **Dept. of Science & Technology (Govt. of India)**
- **Central Pollution Control Board**
- **State Pollution Control Boards**



- **Design & Engineering Competence with all global standards & codes like Shell DEP, ASME, BS, IS, Merkblatter, DIN EN , JIS, GHOST(R)**
- **Project Management**
  - PRIMAVERA
  - M. S. Project
- **3D Plant Design & Layout Package**
  - PDS<sup>®</sup>: Premier Plant Design and Layout & Piping Package
- **Heat Exchanger Design & Simulation**
  - HTRI<sup>®</sup>: Premier Heat Exchange Design & Analysis Package
  - ASPEN : Process Plant Simulation Package
- **Mechanical Design**
  - PVElite<sup>®</sup>: Columns, pressure vessels & U Code Stamp Vessels
  - E-Tank : Storage Tank Software for API-650, API-620, API-653





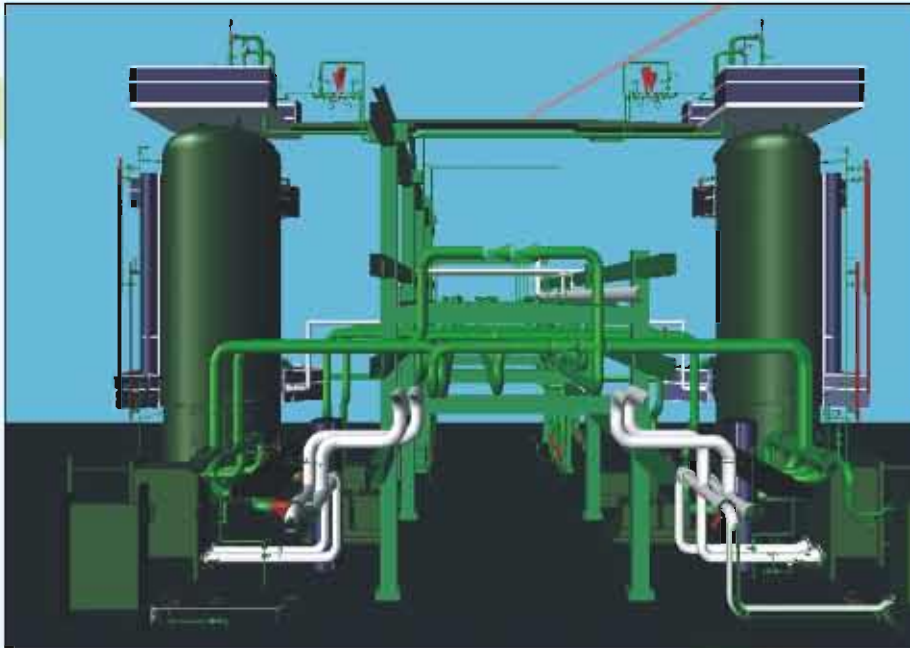
- **Electrical Design**  
ETAP : Enterprise Software Solution for Power Systems
- **Structural / Civil Design:**
- **STAAD-Pro 2006 :**  
(IS + BS + US) - For design of most of Civil/structural units including tanks, buildings, shed etc. with Indian, British & American codes of practice. For design of retaining wall, foundation/ footing in any material - concrete, timber, steel, masonry & foundation Work
- **STAAD Section Wizard/DTO:**  
For working out properties of any shape section
- **PHA Pro 6.0:**



## Stronghold of Paramount - Project Management Consultancy (PMC)



PARAMOUNT



Paramount designs & delivers Moisture Control and De-hazing facilities to remove the haze conditions by removal of water.

The system has following major components.

- Cooler
- Chiller
- Electrostatic Coalescer

De-Hazing / Moisture Control System

at

Kuwait Refinery

**Project Cost : US \$ 20 million (approx.)**





**MAA Refinery (Kuwait): 818 m<sup>3</sup>/hr**

**Waste Water Treatment Plant**

**Kuwait Refinery**

**Project Cost : US \$ 200 million (approx.)**

# Paramount - Concept to Commissioning



PARAMOUNT

In every project phase ...

## Project Development

- Feasibility studies
- Environmental impact studies
- Lab / pilot studies
- Pilot and demonstration plants
- Project Management Consultancy

## Design & Engineering

- Conceptual design
- Process design
- Basic design
- Design review
- Front End engineering
- Detailed engineering
- Special engineering
- Retrofit design

## Manufacturing

- Pressure Vessels
- Heat Exchangers
- Process Equipments
- Process Skids

## Project Execution

### Design & Build

- Turn Key
- EPC

### Construction Management

- Project Management
- Procurement Assistance
- Inspection Supervision
- Supervision & Commissioning

## Operation & Maintenance

- Operation Management
- Optimisation
- Trouble Shooting
- De-bottlenecking
- Operation & Maintenance
- HSE Services
- Operational Support & Technical Services

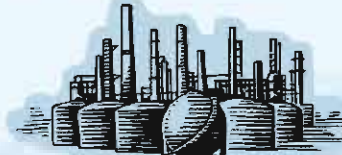
...we are your partners !

# Consulting Services



PARAMOUNT

- Conceptual Design
- Front-End Engineering Design
- Detail Engineering
- Commissioning Service
- HSE Services
- Operational Support & Technical Services





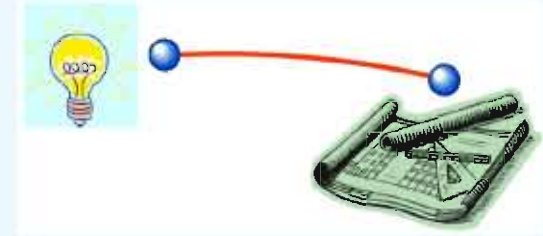
# Conceptual Design



PARAMOUNT

- **Commercial Technology Selection**

- Identification of available technologies
- Techno-commercial analysis
  - Viability for Indian conditions
  - Payback period & Sensitivity analysis



- **Client Technology Development**

- Interact with client R&D department
- Firming of the process scheme

- **Paramount Technology Solutions**

- Ammonia Separation & Recovery
- Solvent Separation & Re-circulation
- LPG Recovery from Natural Gas
- Flue Gas Desulphurisation (Double Alkali Process)
- Incinerator
- Distillation Plant Design
- Absorbers / Scrubbers / Strippers Design

Get the right technology for your needs !



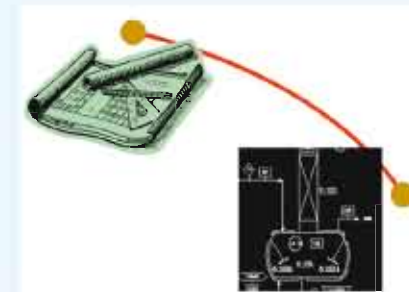
# Front-End Engineering Design (FEED)



PARAMOUNT

## • Complete FEED Package Development

- Process Simulation
- Optimized Heat & Mass Balance
- Process Flow Diagram (PFD)
- Equipment Specifications Sheets
- Piping & Instrumentation Diagram (P&ID)
- Conceptual Equipment Layout
- Instrument Specification
- Equipment and Line List



## • Specialization in

- Complex Distillation and Separation Systems
- Heat Exchanger Design / Rating

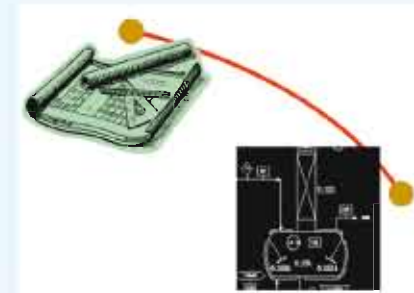
# Front-End Engineering Design (FEED)



PARAMOUNT

- **Feasibility Studies & Cost Estimation**

- Green field project feasibility
- Brown field project feasibility
  - Improved product purity/recovery
  - Change in feed type / feed composition

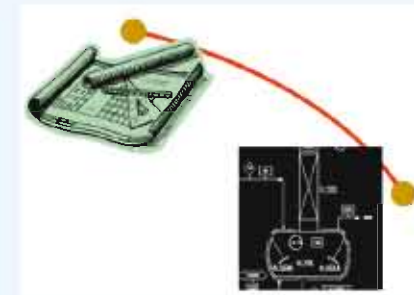


- **Scale up of Lab / Pilot Plant to Commercial Plant**

- Commercial-scale plant design from
  - Pilot plant operations
  - Laboratory scale operation
- Reactor systems, mass and heat transfer equipment

## ● Conversion of Batch Process to Continuous Process

- Unit Operations
  - Reactors, filtration systems, distillation & extraction systems
- Typical benefits
  - Lower downtime & higher throughput
  - Lesser Cost of Production
  - Better operation and quality control



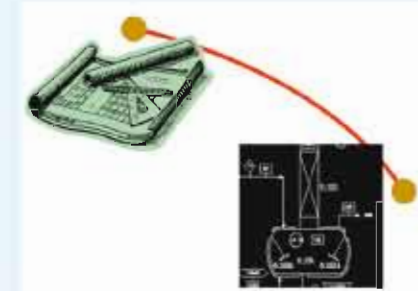
# Front-End Engineering Design (FEED)



PARAMOUNT

- **Process Simulation Studies**

- Complete Plant Design
- Operations Decision Support
- Plant Troubleshooting



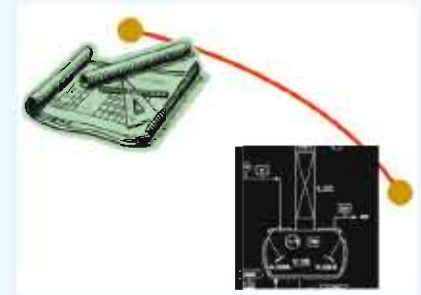
- **Heat Exchanger Design & Analysis**

- Thermal Design
- Vibration Analysis
- Mechanical Design
- Exchanger Train / Network Design & Optimization



- **Relieving Systems and Flare Networks**

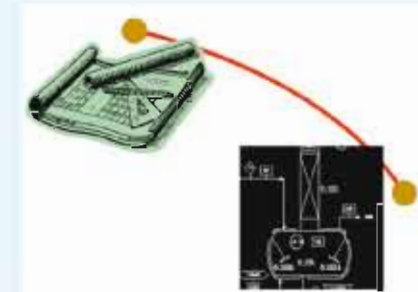
- Design / Validation Studies
- Relief valve – load calculations, backpressure and orifice sizing
- Flare lines, headers, pots, flare stack



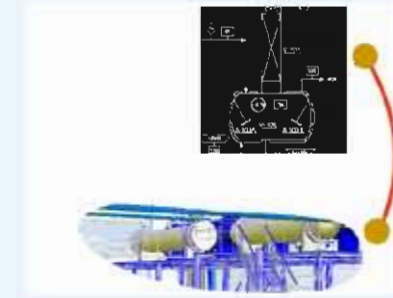
Many modifications require minimal capital expenditures!

- **Equipment Engineering Services**

- Mechanical Design
  - Preparation of mechanical data sheets
  - Generation of fabrication drawings
  - Review of Vendor drawings
- Equipment Types
  - Shell and tube heat exchangers
  - Pressure Vessels
  - Columns
  - Air coolers
  - Flat bottom storage Tanks
  - Others



- **Project Co-ordination & Management**
  - Coordination among engineering disciplines
  - Project progress monitoring & reporting
  - Coordination with Client
- **Technical Assistance for Procurement**
  - Detailed Equipment Specifications
  - Quotes from Vendors
  - Technical review of vendor documents
- **Piping Design**
  - Pipe Stress Analysis
  - Piping Material Specifications
  - Equipment & Piping Layout Plans, Isometrics
  - Bill of Materials





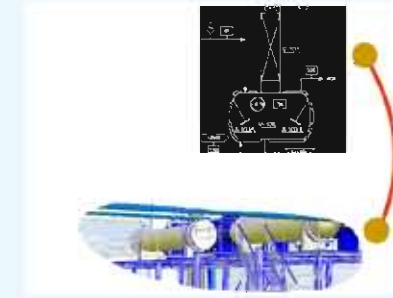
# Detailed Engineering



PARAMOUNT

- **Instrument Engineering**

- Specs for Field Instruments
- Control Panel Specification
- Cable Layouts and Bill of Material



- **Electrical Engineering**

- Single Line Diagrams
- Cable Sizing and Specs for MCC & PCC
- Cable, Lighting, Earthing Layouts and Bill of Materials

- **Civil / Structural Design & Engineering**

- Buildings & Structures, Equipment Foundation & Pipe Racks
- Architectural Design
- Bill of Materials

Resource network of associates

# Commissioning Services



PARAMOUNT

- Punch Listing
- Pre-commissioning / Commissioning
- Plant Startup Procedures / Shutdown Procedures
- Emergency Procedure
- Safety Audits
- Operating & Maintenance Manuals
- Team with Relevant Experience on the Plant



# Expert Technological Services to Hydrocarbon Industry



PARAMOUNT



Technical collaboration with PSC, USA  
for Chemical Cleaning program for Hydrocracker,  
SRU, CCU & CDU Units of BPCL Refinery, Mumbai

- **Client-1 :**

HPCL

- **Project :**

Decontamination of online heat-exchangers.

- **Volume handled:**

**CCU** : 150 m<sup>3</sup>

- **Client-2 :**

Bharat Petroleum Corporation Ltd, Mumbai.

- **Project :**

Decontamination, KMno<sub>4</sub> & Passivation of CCU and  
CDU-1 Complex.

- **Volume handled:**

**CCU** : 2057 m<sup>3</sup>

**CDU-I** : 3283 m<sup>3</sup>

**FPU** : 653 m<sup>3</sup>

- **Client-3 :**

Bharat Petroleum Corporation Ltd, Mumbai.

- **Project :**

Decontamination, KMno<sub>4</sub> & Passivation of HCU and  
SRU Complex.

- **Volume handled:**

**HCU** : 2063 m<sup>3</sup>

**SRU** : 1858 m<sup>3</sup>





Commissioning Assistance at  
Bharat Oman Refineries Limited

## Commissioning:

- **Client:**  
Bharat Oman Refineries Limited.
- **Project:**  
Commissioning of various units at Bharat Oman Refinery like Hydro cracker unit, Crude Distillation Unit, Vacuum Distillation Unit, Delayed coker unit.
- **Volume handled:**  
**CPU-VDU** : 6.0 MMTPA  
**HCU** : 1.95 MMTPA  
**CDU** : 1.36 MMTPA

# Specific Projects - Hydrocarbon Industry



PARAMOUNT



EPC Execution of Gas Gathering Station for ONGC



- **Client :**  
Oil & Natural Gas Corporation Ltd., Becharaji Mehsana
- **Project :**  
Design, engineering and turnkey project services, Including commissioning of (GGS) Group Gathering Station, Becharaji.

# Specific Projects - Hydrocarbon Industry



PARAMOUNT

**FLARE STACK  
AT GGS (ONGC)**





# Specific Projects - Fertilizer Industry



PARAMOUNT

Ammonia Steam Stripper



- **Client:**  
National Fertilizers Ltd., Guna,  
Vijaipur (MP)
- **Project:**  
Design, engineering and turnkey  
project services, for effluent  
treatment plant
- **Capacity:** 7200 m<sup>3</sup>/d



# View of SO<sub>2</sub> Scrubbers at a Copper Smelter



PARAMOUNT



Horizontal SO<sub>2</sub> Scrubber

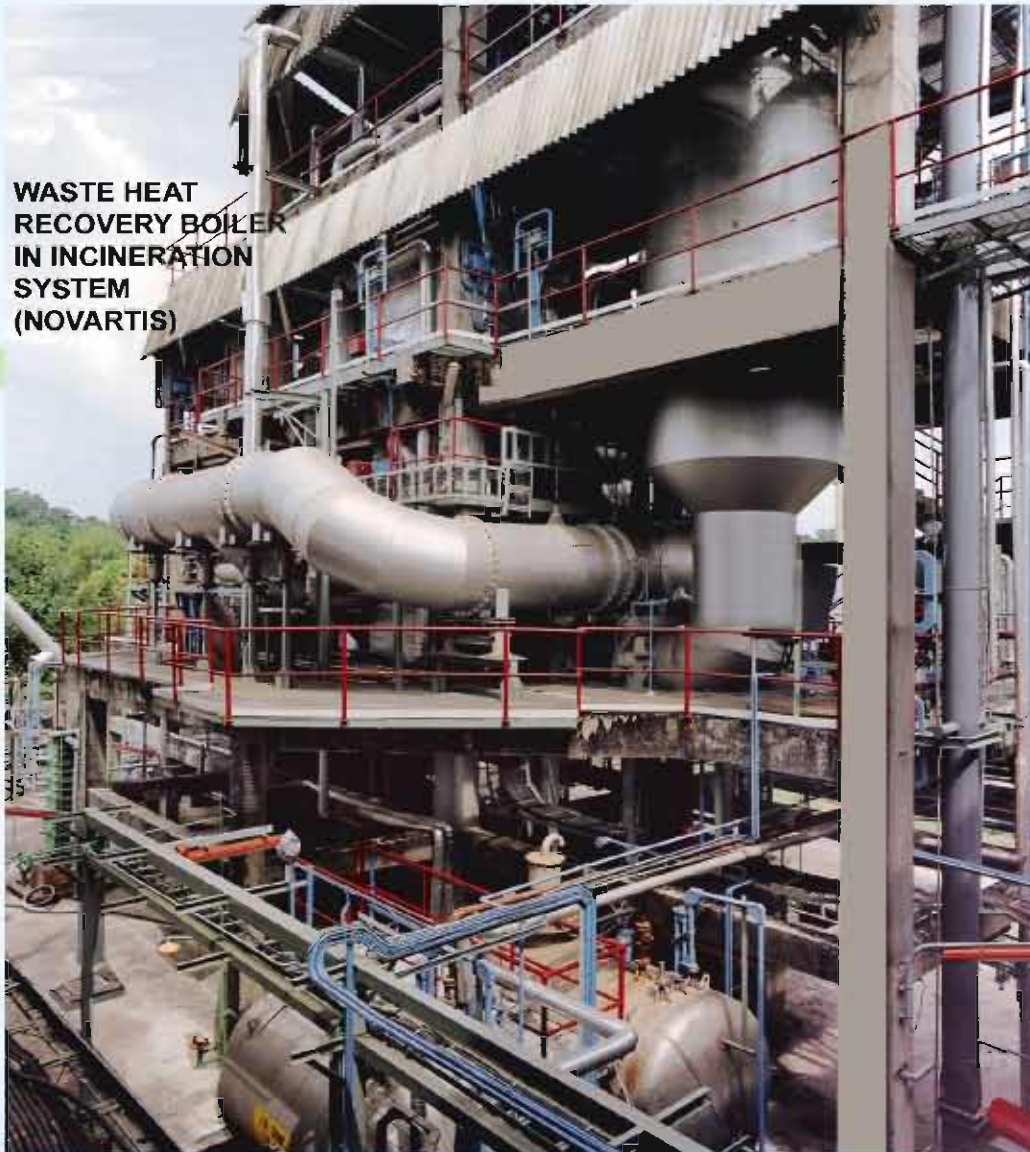
- **Client :**  
Hindustan Copper Ltd., Khetri
- **Project :**  
Tail Gas Scrubbing System
- **No of Stream** : 2 Nos.
- **Gas Flow** : 85100 AM<sup>3</sup>/hr  
54200 AM<sup>3</sup>/hr
- **Double Alkali  
Regeneration** : 35 TPD

# Waste Heat Recovery Boiler



PARAMOUNT

**WASTE HEAT  
RECOVERY BOILER  
IN INCINERATION  
SYSTEM  
(NOVARTIS)**





# Hazardous Waste Incineration



PARAMOUNT



Insert of DCS Control System  
for Incinerator Plant



View of Waste Heat  
Recovery Boiler

**Incineration of Solid / Semi-Solid  
& Liquid hazardous waste**

**For IPCL, Baroda  
Capacity : 2000 T/year**



PARAMOUNT

**Central Waste Incinerator  
for Petrochemical Complex**





- **Conducting / Leading Safety Studies**

- HAZOP / PHA

- HAZard & OPerability Study
- Process Hazards Analysis

- HAZID

- HAZard IDentification Study

- Safety Layout Reviews

- Review of Equipment Layout from Safety Perspective

- Safety Audits

- Studies for operating facilities

- PSSR

- Pre Startup Safety Review



## ● General

- Plant / Process Trouble Shooting
- Process Optimisation
- Energy Optimisation Via Simulation Studies
- Pinch Studies
- Utilities Optimisation
- Energy Audit
- Process Integration of Energy
- Reduction of Excess / Waste Utilisation



## ● Refinery / Petro Chemicals / Chemicals

- Crude Distillation Fouling & Corrosion
- FCC Optimisation Yield Improvement
- Coker Cycle Run Length Improvement
- Aromatics Octane Improvement
- Hydrotreating Catalyst Run Length Improvement
- Energy & Loss Study
- Water Optimisation
- Hydrogen Optimisation
- Profit Improvement Studies
- Yield & Reliability Improvement Studies

## Typical Project Review Process



# Strengths and Capabilities



PARAMOUNT

- **Data & Document Confidentiality**
  - Confidentiality taken seriously
  - Blanket confidentiality agreement with employees
  - Work only with data pertinent to their project
  - Management sets the tone

We never allow confidentiality of documents to become an issue!



# Select List of Projects



PARAMOUNT

- **Over 80 projects completed since inception**
- **Conceptual Design**
  - Anhydrous Alcohol Technology: Bayer, Baroda
  - Ammonia Recovery Technology: UPL, Ankleshwar
  - Condensate & LPG Recovery System: Canoro, Assam
- **Front-End Engineering Design**
  - Naphtha Stabilization Unit: IOCL, Barauni
  - Relief Valves & Flare System: Shell, Hazira
  - Lube Oil Re-refining Plant: Chemie Tech, Dubai
  - FCCU & DCU FEED Package P&ID Development: Essar, Jamnagar
  - Specialty Pigments Plant (4 nos.): Heubach Colour, Ankleshwar

Several repeat projects from many customers

# Select List of Projects



PARAMOUNT

- **Detail Engineering**

- Moisture Control & Dehazing Facility, MAB Refinery, KNPC
- Gasoline Blending System: Yokogawa / IOCL, Gujarat
- Validation of Oil and Gas Separation Facility, HOEC

- **Safety Studies**

- Pramoda Oil Field & North Balol Gas Collection System, HOEC, Chennai
- CDU / VDU / SGU, Essar Oil Limited, Jamnagar
- Propylene Technology, Udhe, Mumbai

- **Design, Engineering, Procurement, Construction Mgmt**

- MPP Plant: India Malt (Lubrizol), Baroda

- **Heat Exchanger Design Projects**

- Fabricators: TEMA India Limited & Grasim Industries Limited
- EPC / EPCM Companies: Punj Lloyd, EIL, Stone & Webster Rolta

# Select List of Customers



PARAMOUNT





# List of International Customers



PARAMOUNT

## • Europe

- Total (France)
- Linde (Germany)
- Bayer (Germany)
- Heubach (Germany)
- Transpek Silox (Belgium)

## • Middle –East

- KNPC
- Total (Yemen)

## • North America

- Shell (USA)
- Stone & Webster (USA)
- Inox/Air Products (USA)
- Lubrizol (USA)
- TEMA India (USA)
- Rhine Engineering (USA)
- Wink Inc (USA)
- Tartan Engr (Canada)
- Equinox Engr (Canada)
- Sunoco (USA)



# Summary



PARAMOUNT

- Skilled, knowledgeable & Professional Team
- Industry-leading Software Tools
- Extensive Process Engineering & Operational knowhow
- Reduce the burden on your team
- Remain assured about the Confidentiality of data
- Uniquely positioned for Global Market

# Path Forward



PARAMOUNT

# Thank You



## **PARAMOUNT LIMITED**

### **Process Plant Division**

(Formerly Paramount Pollution Control Limited)

(An ISO 9001 Company)

#### **Corporate Office:**

Paramount Complex, Gotri Road, Race Course, Vadodara - 390 007 INDIA

Tel. : +91-265-2397111 (7 Lines) Fax : +91-265-2398251

E-mail : [sales@paramountlimited.com](mailto:sales@paramountlimited.com)

Web : [www.paramountlimited.com](http://www.paramountlimited.com)