

DEPPL

**Darveshi
Engineering
Projects
Private.
Limited.**

Process Optimization for Profit Maximization

***Engineering Research & Development Consultancy
from Concept to Commissioning***

Company Portfolio

- DEPPL (CRISIL SE-3B rating) and ISO 9001 primarily functions as a Basic Engineering Consultant in Chemicals , Petrochemicals , Cross Country Pipeline, Oil and Gas Refinery projects. Registered as a consultant with HPCL,BPCL, IOCL ,BARC etc.
- We offer services in:
 - ***Process Simulation and Optimization. Plant Debottleneck studies.***
 - ***Basic and Detail Engineering Packages.***
 - ***HAZOP, HAZID, SIL ,HAC, QRA , PSM ,HSE Studies.***
 - ***Procurement, Project Monitoring and Control Services***
 - ***Skilled Engineering Manpower provider for Project Management Consultancy Services.***



Portfolio & Services

Process Engineering Services

- | | |
|---|--|
| <ul style="list-style-type: none">• Steady State and Dynamic Simulation services.• Dynamic Simulation.• Heat & Mass Balance.• Hydraulic calculations.• Process Design Basis.• PFD, P&ID, PDS Development & review.• Process Equipment design (Columns ,Heat Exchangers, Vessels, Tanks, Compressors). | <ul style="list-style-type: none">• Evaluate Process Guarantees parameters.• Operating and Control Philosophies (Relief, Drain, Equipment Isolation).• Operating and Control Manuals.• Pre-commissioning, Commissioning manuals.• HAZOP, SIL, QRA , Process Safety Management.• Plant Debottleneck studies. |
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Portfolio & Services

Instrumentation & Control:

- Field Instrumentation design & verification
- Instrumentation Control and System design
- Cause and Effect
- Inspection Services .SIL verification.
- FAT/SAT commissioning
- Control loop design & DCS architecture
- HAZOP/ SIL support
- Tender preparation and Evaluation.
- Commissioning Assistance.

Civil Engineering Services:

- Structural & foundation Design
- Dynamic structural analysis
- Feasibility studies , Structural stability studies.
- Tendering & TBE support
- 2D Drafting & 3D Modeling
- BOQ preparation & validation
- Architectural services. Site Survey.
- Liasoning with Government Authorities.

Portfolio & Services

Mechanical Engineering:

- FEA, CFD Analysis
- Mechanical Design & analysis of Static and Rotary equipments.
- Detailed Engineering of static equipment & preparation of Detailed Fabrication Drawings.
- Package specifications.
- Equipment Inspection services.
- MR , PR , Tender preparation and Evaluation. Vendor drawing approval.

Piping Engineering:

- Detailed study, review, of PMS and P & I D's.
- Isometrics, Stress analysis , as-built drawings.
- Documents Compliance check as per International codes & standards
- Plant & equipment Layout.
- 2D and 3D Modeling, Piping MTO.

Portfolio & Services

Project Management:

- Project Planning, % progress monitoring & Control.
- Project progress weekly and monthly reports for Management Review.
- Vendor Co-ordination & Inspection assistance.
- Co-ordination with external agencies for approvals.
- Contract Management.
- Project Engineering Interface Management.

Technology Consulting:

- Subject Matter Expertise
- Reviewing Engineering Packages
- Optimization studies & consulting for Techno commercial evaluation.
- Coordination & assistance in achieving plant guarantee parameters for new technologies.

Portfolio & Services

Environmental Management:

- DEPPL offers Environmental Management services & Auditing.
- Services include developing Environmental Management systems, as per ISO 14000 series (EMS) & ISO 19011 (General auditing)
 - Environmental Impact assessment study (EIA)
 - Environmental management plan (EMP)
 - Life cycle assessment (LCA)

Process Safety Management Assistance :



List Of Engineering software proficiency:

Process

- ChemCAD
- Pro-II
- DWSIM
- Hysis
- Pipe Flo
- Flarenet
- SPPID
- AFT Impulse
- PIPENET
- Flaresim
- HTRI

Civil

- STAAD Pro V8i
- STAAD(X) tower V8i
- STRAP
- TEKLA 18
- Frame Works
- Microstation
- AutoCAD

Mechanical & Piping

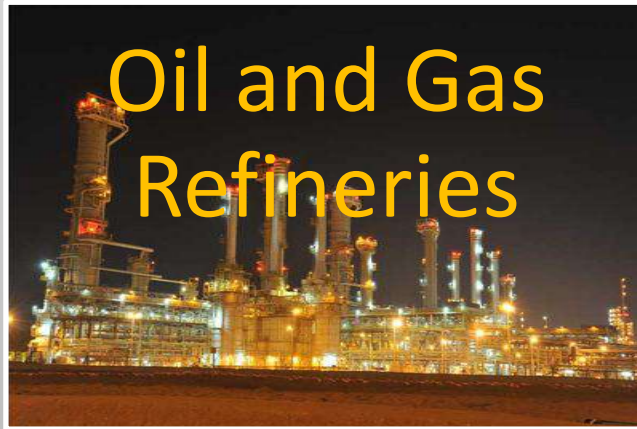
- PV Elite
- Pump Flo
- FREESHP
- Caesar II
- PDS
- PDMS
- SP3D
- Ansys

E&I

- Etab
- IN tools
- Instrucal

Projects Completed in various sectors

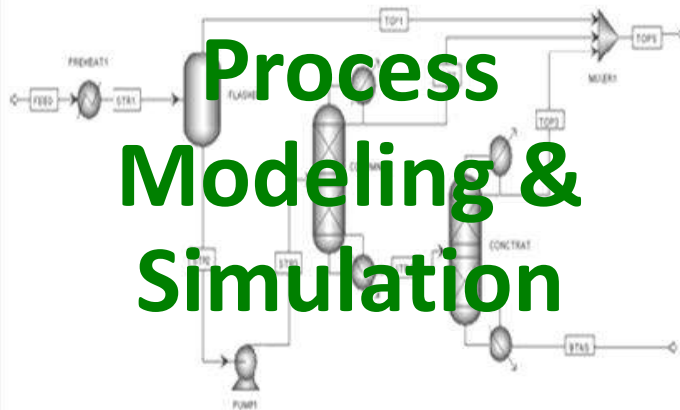
Oil and Gas Refineries



Hydrocarbon Pipelines



Process Modeling & Simulation



LPG/ LNG /CBG Terminals



Cryogenic LPG Import Terminal Augmentation

Basic Engineering

- *Type* : Brownfield/ FEED
- *Client* : BPCL (Uran)
- *ERDC Partner* : Firecon , Kolkata
- *Scope*
 - Revamping and expanding (0.3 MMTPA to 1.1 MMTPA) the LPG importing, and storage facility to propane and Butane importing facility. Replacing the existing LPG sphere storage vessels with MSV's (Mounded bullets).
 - Modifications in Truck and Rail Loading Gantry.
 - Equipment Debottleneck study.
- *Services*
 - Process Engineering expertise to Firecon as Subcontractor.
 - Year 2015 (Project Executed)



LPG Bottling plant Augmentation

- *Type* : Brownfield
- *Client* : BPCL Shikrapur (Pune)
- *Main Contractor* : Firecon Consultants , Kolkatta
- *Scope*
 - Converting the Gantry Unloading bays of tank trucks into Loading bays and complete automation of the system. Related changes in existing storage and transfer system pertaining to instrumentation, control and flow.
 - Additional Corrosion for LPG bottling.
 - Adequacy check of existing Fire Water Network and design new requirements.
- *Services*
 - Basic Engineering Services.
 - Year 2015 -2016 (Project is completed)



Core Design For LPG- NG

- *Type* : Concept/ Basic Engineering
- *Client* : Unilever
- *Partner* : L&T TS
- *Scope*
 - Designing LPG and Natural Gas storage & Handling system by comparing various international codes and standards, which will be standardized and globally referred for all the projects of Unilever.
- *Services*
 - Process and Project management expertise.
 - Year 2014-15 , Project Completed.



FMCG plant design (Home Care, Personal Care, Food)

- *Type* : Concept, FEED, DED
- *Client* : Unilever
- *Partner* : L&T TS
- *Scope*
 - Engineering design of Home Care Powder, Personal care soap, and food product plants as per governing standards and GMP's.
- *Services*
 - Process , Mechanical , Piping and Project management expertise.
 - Year 2014-15, Project Completed.



FMCG plant design (3MMTPA Powder Plant)

- *Type* : Concept, FEED, DED
- *Client* : Unilever
- *Scope*
 - Mechanical Integrity , Design Review , Vendor's drawing checking and approval. Quality Inspection at vendor's workshop, Expediting , Site Execution support.
 - Plant survey and Plant Safety Audit .
 - Process Safety Management implementation assistance.
 - Critical review of P & I D's , cause and effect diagram, Safety Equipment , Safety Calculations, operating and Control philosophy.
 - Quantitative and Qualitative Risk Assessment, ERDMP , Safety Manual.



Structural Analysis

- *Type* : *Dynamic* Simulation for Structural Analysis
- *Client* : Cumberland Electrochemical Ltd., UK
- *Scope*
 - Structural Stability Design Calculations using STAAD.Pro™ design software for Eight number various skid mounted structures. Dynamic Analysis and Anchor Bolt design.
- *Services*
 - Civil and Mechanical engineering design & simulation .
 - Drawings approval.



Crude oil Manifold Installation Project



- *Type* : Brownfield
- *Client* : Eni-Iraq (ZFOD) / Zubair Oil Field Development Project.
- *ERDC partner* : Jayathe Petochem Engineering and Construction, Kochi.
- *Scope*
 - Detailed engineering for (6+4) (ANSI 900# rating) Crude oil manifold installation & inter connecting piping with existing Intermediate Processing Facilities.
- *Services*
 - Process and Piping engineering expertise.
 - Year 2013-14, Project Completed.



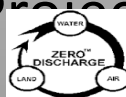
Takreer refinery Spent Caustic Treatment Plant

- *Type:* Removal of Sulphides from Spent Caustic stream using Merichem (USA) technology.
- *Scope:* Project and Engineering Management Services for Project cost \$27 millions USD.
- *Client:* TAKREER Refinery ADNOC group of Company.
- EPC Contractor : Essar Projects , India
- Year 2013-14 : Project Completed.



Central Processing Facility

- *Type:* Brownfield
- *Client:* Greater Nile Petroleum Operating Company (Sudan)
- *ERDC Partner:*
Jayathe Petrotech (Kochi)
- *Scope:*
 - Conversion of existing Crude Field Processing Facilities to Central Processing Facilities.
- *Services:*
 - Basic & Detailed Engineering
 - Year 2013-14 , Project Completed.



DFR for Bitumen Pipeline from Jetty to Tank farm



- *Type:* Detail Feasibility Report for Cross Country Pipeline
- *Client:* Hindustan Petroleum
- *Contract Holder:* Global Archer
- *DEPPL's Scope:*
 - Hydraulic Calculations , Heat Loss calculations, Pipeline Specifications, Instrumentation and Valves Specifications, Surge Analysis, Pumps specifications, Piping GA, River and Road crossing drawings, Hazop study.
- *Status:* Basic & Detailed Engineering completed.
 - Year 2018-19

Flare System Design

- *Type:* Brownfield
- *Client:* SABIC , Saudi Arabia
- *PMC Contractor :* Tata Consultancy Services
- *Scope:*
 - Site Survey , Analysis of why Flare is putting off during process plant upset conditions and suggest changes. Study Flare Load summery . Simulate worst case scenario using Flarenet software and suggest changes.
- *Services:*
 - Simulation and Basic Engineering for Flare System adequacy.
 - Year 2017-18 . Project Completed.



Effluent Treatment Plant

- *Type:* Brownfield. ETP Capacity 415 m³/hr
- *Client:* ONGC , Uran
- *PMC Contractor :* RP Engineers
- *EPC Contractor :* Newton Engineering
- *Scope:*
 - Support LSTK Contractor for Process Engineering deliverables for modifications in existing ETP plant.
 - Prepare PFD , P & I D's, PDS,H & M Balance ,Hydraulic Calculations, Equipment sizing and Specifications.
- *Status : Project is abandoned midway after Process Engineering is completed because of LSTK contractors problem.*



Fire Water Sprinkler system and Deluge System.

- *Type:* Brownfield. Basic Engineering.
- *Client:* ONGC , Uran
- *PMC Contractor :* Saga Global Consultant
- *Scope:*
 - Study existing Fire water network and provide sprinkler system to LPG columns and Compressors. Develop PFD , P & I D and Specifications as per OISD norms.
- *Status : Project Completed. Yr. 2015-2016.*



Debottleneck Fire Water Network of Refinery and Petrochemical Complex.



- *Type:* Brownfield. Conceptual Study.
- *Client:* LyondellBasel
- *Scope:*
 - Hydraulic modeling of Fire Water Network using AFT impulse.
 - Identify design and operational constraints of entire refinery and petrochemical complex fire water network.
 - Generate various possible scenarios and suggest modifications to mitigate the Risk.
- *Status : Project Completed. Yr. 2018*



Basic and Detail Engineering for National Aerosol Facilities.

- *Type:* Green Field.
- *Client:* BARC
- *Scope:*
 - Design plant from the concept note provided by BARC.
 - Basic and Detail Engineering , Tender preparation for LSTK contractor. System Design consist of Plasma Torch , Mixing vessels (Reactors), Test Section, Air Compressors, HEPA Filters, Boilers, Gas Scrubbers, Air Cooled Heat Exchangers , Metal Powder handling , Coolers , Chillers , HSD handling and Storage system , High Pressure and Temperature Aerosol generation, PLC based control system.
- *Status : Project Completed. Yr. 2016-17*



Rate Contract for Civil and Architectural Consultancy for BPCL Mumbai Refinery .

- *Type:* Green Field. / Brown Field
- *Client:* BPCL Mumbai Refinery
- *Scope:*
 - Refinery Main Gate Design Review.
 - Watch Towers and Boundary wall design for upcoming Petrochemical complex at Rasayani.
 - Project Office , Admin Building and Health Center interior design support.
 - Lightening Protection design review for Hydrocarbon storage tanks.
 - Oil Skimmer design review.
 - Cooling Tower installation design review
 - Blast Resistance DHDS Control room extension design.
- *Status : Running Contract 2019-2022.*



24x7 , 365 Days Jetty Pump House Operations and Maintenance Contract for BPCL Mumbai Refinery .

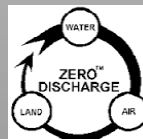


- *Type:* Critical Services operations 24 x 7 x 365 Days
- *Client:* BPCL Mumbai Refinery
- *Scope:*
 - Jetty Pump House is very critical for BPCL's refinery. *It supplies Process and Cooling water to refinery operations.*
 - *Downtime for JPH needs to be Zero under all the circumstances.*
 - *DEPPL is being awarded contract to Operate and Maintain Jetty pump house.*
 - *Duration : Running Contract since 2021.*



Rate Contract for Civil and Architectural Consultancy for HPCL Vizag Refinery .

- *Type:* Green Field. / Brown Field
- *Client:* HPCL Vizagi Refinery
- *Scope:*
 - Waltair Park Main Gate Design Review and Modifications.
 - Foot Over bridge design
 - Auditorium , Dinning Hall (G+2) design
 - Complex Drainage System design
 - Leakage and Seepage problem identification and suggest solutions and repair methodology.
 - Suggest Garden beautification and landscaping.
 - Parking lot design modifications.
- *Status : Running Contract 2019-2020.*



Risk Analysis, HAZOP, SIL, Process Validation, Process Safety Management , S5 studies, Value Engineering Studies



- Hazop study for Food Processing Plant , Home Care Liquid and Solids product , Soap Manufacturing facilities.
- Hazop study for PSV Modifications project in Crude handling facilities
- Hazop for Hazel Chemical Terminal Process Facilities , Distillation facilities.
- Hazop and SIL study for Jetty Unloading and Multi product cross country pipeline and storage terminal.
- Hazop study and Process validation of Cryogenic Ammonia unloading ,storage, vaporization, Waste Heat Recovery system for Power Plant.
- QRA study and dispersion analysis for hazardous chemicals unloading , storage and dispatch.
- Hazop study for Bitumen unloading from jetty / loading pipeline , storage and dispatch terminal.
- Hazop Study for LPG terminal.
- Hazop study and Process validation of Sea Water Intake system.
- Hazop study for Ceat Tyres manufacturing facilities.
- Plant debottleneck study for Alcohol storage tanks.
- Safety Studies for 98% H₂SO₄ , 50 % H₂O₂ Hazardous Chemical Handling.
- Process Safety Management implementation assistance.



Thank You!



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