P Lakshmi Narayana

Pr. Consultant, Safety & Risk

Curriculum Vitae:

Personal Statistics:

(Last revision: 2022-02-16)

Date of Birth : 1983-06-08

Language Capabilities:

Language	Level
Telugu	Native
Tamil	High
English	High
Hindi	high

Academic Qualification:

B Tech in Chemical Engineering (2001 – 2005) **with Distinction**
National Institute of Technology (NIT), Warangal, Andhra Pradesh, India.

Professional Qualification:

TUV Certified **Functional Safety Professional** for Safety Instrumented System (ID # TP13050739)

Summary of Professional Experience:

Have involved in process design, pre-commissioning and commissioning activities and safety studies for Oil & Gas Facility in various stages like Feasibility Stage, FEED Stage and Detail Engineering Stage.

In process design and commissioning, have involved in preparation of design basis, process flow diagram, piping and instrumentation diagram, process equipment / instrumentation datasheet, line schedule, review of engineering documents from different disciplines and Preparation of Technical Bid Evaluation for vendor packages. Also involved in preparation of operating manuals for process units and offsite facilities. Provide assistance during pre-commissioning & commissioning of process units, utilities and offsite facilities at site.

In Process Safety studies for on-shore / off-shore, have involved in execution of Quantitative Risk Analysis (QRA) including Non-Process hazard assessment, Fire and Explosion analysis (FERA), Emergency System and Survivability Analysis (ESSA), TR Impairment study, HSSE Philosophy, Escape, Evacuation and Rescue Analysis (EERA), Reliability, Availability and Maintainability (RAM) study, gas dispersion, study, smoke dispersion study, dropped object study, Fire and Gas detection Mapping study, SIL Verification study and actively participated in HAZID, ENVID, HAZOP, SIL, SIMOPS and HAZCON workshop. Also, I have chaired HAZID, HAZOP and SIL sessions.

- Chaired following HAZID/HAZOP/SIL workshop
  - SIMOPS Assessment for Upcoming CB Drilling Activity, Cairn Oil & Gas, M/s Vedanta Limited, India.
  - HAZOP study for SRU Units, Bharat Oman Refineries Limited (BORL), BINA, India. The SRU block contains, the SRU trains, ARU, TGTU, SWS unit and Flare system.
  - SIL Classification study by LOPA method for HCU-DHT Units, Bharat Oman Refineries Limited (BORL), BINA, India.

P Lakshmi Narayana
Pr. Consultant, Safety & Risk

Curriculum Vitae:

- HAZID and HAZOP study for Development of VLCC Jetty at Mundra for Handling Crude Imports, HOWE ENGINEERING PROJECTS (INDIA) PVT.LTD,
- HAZOP study for LPG Bottling Facility at Namakkal, Tamil Nadu, Total Oil India Pvt. Ltd.
- HAZID and HAZOP study for SALPG Cavern facility. The facility consists of Unloading of propane, butane at jetty head, pipeline from jetty to SALPG terminal, Booster pumps, heaters, blending, LPG cavern, Metering and export pump, and associated utilities. OWNER: South Asia LPG Company Private Limited, Visakhapatnam.
- HAZOP and LOPA study for ZDTP facility, Indian Additives Limited, Manali, Chennai.
- HAZOP study for DCU and CPP facility (pet coke fired and oil-fired system), BORL, BINA, Madhya Pradesh.
- SIL Classification or Determination study for DCU, FCCU, PPU, DHDT and MS Block (consists of NHT, CCR, ISOM and HRU) units for HMEL, Bhatinda. SIL Study is carried out by Layer of Protection Analysis (LOPA) method.
- HAZOP study for DHDT, NHT and CCR unit for HMEL, Bhatinda.
- HAZOP study for LPG plant for TOTAL Oil India Private Ltd, Bangalore
- SIL Classification study for HMPL Pipelines & Stations (Mundra, IPS2, IPS3, IPS4, CRT), HPCL – Mittal Pipelines Limited using LOPA method.
- HAZOP study for Onshore facility of Cambay Blocks (North Balol, Asjol and Palej), Hindustan Oil Exploration Company Limited, India.
- HAZID, HAZOP and SIL classification studies for Mangala Upgradation Project Stage – 2, Cairn India Limited (CIL).
- HAZOP/Bow-Tie/SIL determination studies for RGT 4th Booster Compressor scope, Cairn India Limited (CIL).
- HAZOP Study for Cold Cracking Unit Facility, Cairn India Limited (CIL).
- HAZID/HAZOP/SIL determination studies for Local Separation Facility in Mangala Well Pad Project, Cairn India Limited (CIL).
- HAZOP study for MWP18 HRP operation facility for Cairn India Limited (CIL), Barmer.
- HAZOP study for Suvali Terminal upgradation project for Cairn India Limited (CIL), Surat. Facility includes New slug catcher, 2nd and 3rd stage Separators, Crude storage tanks, Crude oil booster pumps, PW Degasser and associated utilities.
- HAZID and HAZOP studies for Gas Gathering Station – South facility, Great Eastern Energy Corporation Ltd.(GEECL).
- HAZOP study for CGS stations of GGL facilities.
- HAZOP study for all types of CNG stations (Mother CNG station, online CNG station, daughter CNG station and Daughter Booster CNG station). Gujarat Gas Limited (GGL), India.
- HAZOP study for Mother CNG station, Sabarmati Gas Limited, India.

Curriculum Vitae:

- HAZOP study for Pipeline between GCP to GGSI with temporary pig launchers & receivers, Sales Gas Filter Separator, Gas Custody Transfer Meter – M1 and Gas Custody Transfer Meter – M2 & M3.
- SIL Study for LPG bottling plant, HPCL, Visakhapatnam, India
- HAZOP Study for ETP & WIP of Assam Renewal Project, ONGC, India
- HAZOP Study for LPG bottling plant, HPCL, Visakhapatnam, India
- HAZOP Study for LPG terminal, TOTAL OIL Indian Private Limited, Mangalore
- HAZOP Study for Hydrogen Generation Unit (HGU) - I, IOCL, Mathura, India
- HAZOP Study for Deen Dayal west-PLQP, GSPC, India

- Involved as co-chair for following workshop
  - HAZOP study for Cargo tanks and vendor packages, and SIL Classification study for FSO (P) and FSO (S) of Block 5 – Al Shaheen Field Development, North Oil Company (NOC). TUFF Offshore engineering services private limited is FEED contractor.
  - HAZID and HAZOP studies for New Crude oil storage facilities, Cauvery asset (Kovilakallapal site, Nannilam site, Narimanam site), ONGC. Unitech Machines Ltd. Is engineering contractor for this project.
  - HAZOP study for HOJ-1 Jetty to handle LNG at Haldia, West Bengal, Essar Bulk Terminal Limited.
  - HAZOP study for High Density Polyethylene Plant (HDPE) – I, Linear Low Density Polyethylene – I plant, Butene – I Plant and IOP&S facilities in GAIL, Pata, India
  - SIL assessment study for LPG Bottling plant, HPCL- Yediyur, Bangalore
  - HAZOP study for No.1 Hydrocracker Unit, BAPCO, Bahrain
  - HAZOP study for No.2 Hydrogen Plant, BAPCO, Bahrain
  - HAZOP study for Offsite facilities and Utilities of MRPL phase-III refinery project, MRPL-Mangalore, India
- Actively participated in the following workshops
  - HAZID study for MB platform and Pipeline project
  - HAZOP study for MB Platform and Pipeline Project
  - SIL study for MB Platform and Pipeline project
  - HAZOP study for DHDT unit, MRPL phase-III refinery project, MRPL-Mangalore, India
  - HAZOP study for HGU unit, MRPL phase-III refinery project, MRPL-Mangalore, India

Software Skills

SOQRATES software for off-shore QRA and FERA study
PHAST and PHASTRISK software for on-shore QRA study
Detect3D software for F&G Mapping study

P Lakshmi Narayana
Pr. Consultant, Safety & Risk

Curriculum Vitae:

MAROS software for RAM Study
LEAK software for frequency analysis
PHA Pro and PHA Works for HAZOP study
ORBIT SIL for SIL verification
exSILentia for SIL Classification and Verification study
CadnaA for Noise Modeling
SOUNDPLAN for Noise Modelling
Basics of KFX (Kameleon FireEx) for gas dispersion and fire simulator and explosion (CFD based software)
Basics of HYSIS and PRO II for process design

Detailed Professional Experience:

DNV-GL ***2013, present***

Lead engineer for preparation and review of various safety studies such as, QRA, EERA, ESSA, TR impairment study, RAM study, Gas dispersion analysis study, smoke dispersion analysis study, dropped object study, SIL Verification, etc.

- Development of F&G Mapping study report for FA and FB Platforms modification based on the requirements of North Oil Company (NOC, or “COMPANY”) utilising the Detect3D software.
- Development of F&G Mapping study report for the Gallaf Batch 3 – JA & KA Wellhead Platform (WHP) based on the requirements of North Oil Company (NOC, or “COMPANY”) utilising the Detect3D software.
- Development of Gas Mapping study and QRA study for C4 Hydrogenation Unit, ONGC Petro addition Ltd. (a joint venture Company of Oil and Natural Gas Corporation Limited (ONGC), Gujarat State Petroleum Corporation Ltd (GSPCL) and GAIL India Limited), at Dahej Special Economic Zone (SEZ), Gujarat state, India.
- Development of F&G Mapping study report for Once-thru Hydrocracker Unit (OHCU) for IOCL as part of the Barauni Refinery Expansion Project (BR-9) in Barauni, India using the Detect3D software.
- Development of QRA and RRA study reports for Development of VLCC Jetty at Mundra for Handling Crude Imports, HOWE ENGINEERING PROJECTS (INDIA) PVT.LTD,
- Development of Fire and Gas (F&G) Mapping study for N-Butanol Unit, Indian Oil Corporation Limited (IOCL), Gujarat Refinery – *Under progress*
- Development of QRA models files and Escape, Egress, Evacuation and Rescue Assessment (EERA) study report for Zakum West Super Complex (ZWSC), ADNOC Offshore.
- Trainer in delivering the HAZOP study and Safety Integrity Level (SIL) study for 2 days for HPCL. This training was developed and customized to meet the customer requirement - *Under progress*.
- Development of 3D F&G Mapping study for Residue Up-Gradation Facility (RUF) (EPCC Package – 3) for HPCL, Visakh Refinery. L&T Hydrocarbon Engineering Limited is EPCC

Curriculum Vitae:

Contractor. Target gas cloud size is estimated utilising the KFX software (CFD tool) and Detector coverage is performed utilising the Detect3D software.

- Development of Quantitative Risk Assessment (QRA) study for SALPG Cavern facility. The facility consists of Unloading of propane, butane at jetty head, pipeline from jetty to SALPG terminal, Booster pumps, heaters, blending, LPG cavern, Metering and export pump, and associated utilities. OWNER: South Asia LPG Company Private Limited, Visakhapatnam.
- Development of SIL Verification or Calculation study report for DCU, FCCU, VGO-HDT and MS Block, HMEL, Bhatinda.
- Review of F&G Detection system optimisation study across Mangala well pads, Bhaghyam Well pads, Aishwarya Well pads and Mangala Processing Terminal (MPT), Vedanta Limited, Cairn Oil & Gas, Barmer, Rajasthan.
- Updating the RAM study report with respect changes in PFD for FPSO in The Gato Do Mato field, offshore Brazil, SAIPEM.
- Development of Reliability, Availability and Maintainability (RAM) study for Wet Gas Compressor (WGC) with steam turbine driven and WGC with electrical motor driven associated with VFD, RFCC Unit, IOCL Barauni refinery in the state of Bihar, India.
- Development of Escape, Egress, Evacuation and Rescue Assessment (EERA) for Umm Shaif Super Complex (USSC), ADNOC Offshore.
- Technical lead for safety studies for FSO in Block – 5 – AI SHAHEEN FIELD Development project. Safety studies include ship collision study and dispersion study.
- Review the Fire and Explosion Risk Assessment (FERA) study report for new Berth (2nd Jetty), pipelines from new berth to terminal manifold area for Gujarat Chemical Port Terminal Company Limited (GCPTCL).
- Technical lead and Project Manager for safety studies for FPSO in The Gato Do Mato field, offshore Brazil. Safety studies includes, HAZID, Human Factor Engineering and Implementation (HFE) Plan, Ship Collision Premise, Emergency Response Plan (ERP), Escape, Evacuation and Rescue Assessment (EERA) Study, RAM Philosophy and RAM study. I have involved in review of Ship collision premise and ERP study. Involved in development of EERA, RAM philosophy and RAM study for project scope. Participated in HAZID study. TUFF Offshore / Saipem is FEED Contractor.
- Review of QRA Study report for LNG Storage and Regassification Terminal Project – Kukrahati, East Medinipur District, West Bengal, Bengal Concessions Private Limited (BCPL), a subsidiary of HE Terminals Private Limited (HETPL). Engineering design is by AMEC Foster Wheeler Pvt. Ltd.

P Lakshmi Narayana
Pr. Consultant, Safety & Risk

Curriculum Vitae:

- Technical lead for QRA, FERA and BRA studies for BR-9 Expansion Project at IOCL Barauni Refinery, IOCL
- Trainer in delivering the Quantitative Safety Study (QRA) and Safety Integrity Level (SIL) study for 2 days for Vedanta Cairn Oil & Gas. This training was developed and customized to meet the customer requirement.
- Technical lead for quantitative risk assessment study for Umm Shaif Gas Cap Condensate Development Project Phase-1, ADNOC offshore, Mcdermott is FEED contractor. Involved in development of QRA, FESA, EERA, ALARP workshop and CBA studies. also involved in development of template and support in F&G SIL study.
- Actively participated in HAZID and HAZOP studies EPCIC for the Integrated Requirement of SPS and SURF for “First Gas” Block KGDWN 98/2 (R3507-ONGC-98-2 SURF) project. PNGC, India.
- Project manager and Lead for technical safety studies (HAZID, HAZOP, SIL Classification and verification, QRA, FRA and Ship Collision study) for FSO (P) and FSO (S) of Block 5 – Al Shaheen Field Development, North Oil Company (NOC). TUFF Offshore engineering services private limited is FEED contractor.
- Development of Fire and Gas (F&G) mapping study using Detect3D software for Rageswari Gas Terminal (RGT) and Wellpad areas, Cairn India Limited, India.
- Trainer in delivering the process safety management training for 3 days and 2 batches. This training was developed and customized to meet customer expectations on OSHA 1910.119, CCPS RBS 20 elements and industry best practices.
- Review of QRA/FERA/BRA studies for Dangote Refinery & Petrochemical Project, Dangote Oil Refining Company, Dangote Industries Free Zone Lekki, Lagos, Nigeria.
- Development of QRA study for cross country pipelines (C2C3 pipeline, Lean Gas pipeline and C3 pipelines) at RIL-NMD (Reliance Industries Limited – Nagothane Manufacturing Division), RIL, India.
- Development of QRA study for Paradip Refinery compliant to produce 100% BS-VI MS and HSD Products, Paradip Refinery, Indian Oil Corporation Limited (IOCL), India.
- Development of Evacuation Escape and Rescue Analysis (EERA) for BERRI Development – Expand Abu Ali Crude Processing Facilities, Saudi Aramco.
- Development of Evacuation Escape and Rescue Analysis (EERA) for BERRI Development – KGP Gas Facilities Expansion, Saudi Aramco.
- Review of Rapid QRA study for proposed FSRU at NMPT Jetty, Managalore, Hiranandani Energy Private Limited (HEPL).
- Development of Noise Study report for Bu Haseer Full Field Development (FFD) Project, The Al Yasat Petroleum Operations Company Ltd, a joint venture between Abu Dhabi National Oil

Curriculum Vitae:

Company (ADNOC) and China National Petroleum Corporation International - Hong Kong (CNPCI).

- Development of QRA and FSS study for Sterlite Shendre Speciality Gases Plant, Praxair India Private Limited.
- Development of Fire Risk Assessment for LNG Terminal and Port, Hazira LNG Private Limited.
- Fire Safety Assessment (FSA) study report for tank farms in RLTP facility, Qatargas Operating Company Limited.
- Development of Fire and Explosion Analysis (FERA) study for Bhogat Oil Terminal to evaluate the potential impact on proposed plantation in C11 area due to loss of containment in the storage and transfer facilities in the terminal, Cairn Oil & Gas, Vedanta Limited.
- Development of Pre-Incident Planning and Assessment (PIPA) study for the Send out pipeline from Hazira LNG terminal to Mora Distribution terminal, Hazira LNG Private Limited.
- Carryout vent dispersion study to assess the potential hydrocarbon gas dispersion cloud distances from the vent installed on the Produced Fluid Collection vessels, Cairn Oil & Gas, Vedanta Limited.
- Perform SO_2 dispersion study for the vent stack located at LP flare boom of B193 process platform and identify the SO_2 concentration levels at the identified sensitive receptors.
- Development of Passive Fire Protection schedule and drawing for Heavy Oil Production facility at UMM NIQA oil fields location in North Kuwait, Kuwait Oil Company (KOC).
- Development of Passive Fire Protection schedule and drawing for Sabriya JPF-1 (Jurassic Production Facility) North Kuwait, Kuwait Oil Company (KOC).
- Review of QRA study report for LNG terminal, Haldia, West Bengal, ESSAR Bulk Terminal Ltd.
- Review of QRA study for Gujarat Gas Ltd. (GGL) pipeline installations across the states of Gujarat and Maharashtra.
- RAM study report for FEED for New MP Boiler, New DM Water Plant and Associated Facilities at QP Refinery, PENSPEN International Ltd.
- Carryout Noise study for Indmax IGHDS IOCL Bongaigaon Refinery, India.
- Noise Modelling study report – Stage 1 (Phase 1 & 2) study for ZADCO UZ750 West Island EPC-3 Project.
- Involved in Risk Assessment Report – RGD Wells without SCSSV, Cairn India Ltd.
- Flare dispersion and radiation study for Development of Mangla field in Barmer, Rajasthan, Cairn Oil & Gas, Vedanta Limited.
- Dispersion study for filter skid vent to check the location of porta cabin, Cairn Oil & Gas, Vedanta Limited.

P Lakshmi Narayana
Pr. Consultant, Safety & Risk

Curriculum Vitae:

- Perform Human Factor Engineering Study for New Bulk LPG Terminal for DG terminal Ltd., Moheshkhali, Bangladesh.
- Review of Thermal Radiation Analysis Study for New Bulk LPG Terminal for DG terminal Ltd., Moheshkhali, Bangladesh.
- QRA study for Oil Handling facility at APM Terminal Pipavav.
- Safety studies for Ghana OCTP Development project, OCTP Onshore – Onshore Receiving facility (ORF). It includes, QRA, FERA, Vent Dispersion and Radiation study, Noise Study, RAM study and Blast Resistance Analysis study.
- SIL Verification study for RLTO-CLPG facilities, Qatargas Operating Company Limited.
- SIL Verification study for QG1 Offshore facilities, Qatargas Operating Company Limited.
- Passive Fire Protection Schedule and Drawing for Heavy Oil Production Facility at Umm Niqa, Schlumberger Kuwait.
- QRA study report for FSRU facility at Jaigarh port, H-Energy gateway private ltd.
- Review of Flare flameout and Radiation study for CLNG asset, LR asset, QG1 asset, RLTO asset and QG2,3 & 4 assets, Qatargas Operating Company Limited.
- Safety studies for DNEPL-EWPL spur pipeline project. It involves, QRA study, vent dispersion study and RAM study. Reliance Industries Limited, India.
- QRA study report for LNG Import facility in Jaigarh, JSW Jaigarh Port Ltd. India.
- Safety Studies for Tatweer Project (NAG LTFD Phase 1 Project to install 500 MMSCFD GDU). It involves HAZOP, SIL Classification, SIL verification, FEA, QRA and Air Quality Dispersion Modelling for Vents & Combustion sources. Tatweer Pertoleum, Bahrain.
- SIL verification for BPCL, HPCL and IOCL terminals, Honeywell, India
- Involved in Process Hazard Review (PHR Review) Study, BG, India
- Quantitative Risk Assessment (QRA) and Gas Dispersion Study (GDS) for the East West Gas Pipeline (EWPL) and Compressor stations
- QRA Study for BS-IV Revamp Project - Phase 1 at IOCL Gujarat Refinery.
- QRA Study for Jurassic Gas Facility 1 Project including Fire and Explosion Risk Assessment (FERA), Kuwait Oil Company (KOC).
- SIL Verification Study for HPCL tanks located at 26 terminals, GE Advanced Systek Private Limited.
- RAM Study for DNEPL Project (Liquid Ethane Cross-country Pipeline), Reliance Industries Limited, India.
- SIL Verification Study for DNEPL Project (Liquid Ethane Cross-country Pipeline), Reliance Industries Limited, India.
- Coarse QRA study report for C26 Cluster Pipeline Project, ONGC.

P Lakshmi Narayana
Pr. Consultant, Safety & Risk

Curriculum Vitae:

- Detailed QRA for Daman Development Project including Fire and Explosion Risk Assessment (FERA), EERA and ESSA Study, ONGC, India
- QRA study report for HMEL refinery and HMPL facilities, Bhatinda
- Coarse QRA study report for Daman Development Project, ONGC, India
- SIL verification study for HPCL white oil terminal, Bhatinda
- SSIV (Sub-Surface Isolation Valve) Location Determination QRA study for C26 Cluster Pipeline Project, ONGC.
- SSIV (Sub-Surface Isolation Valve) Location Determination QRA study for Daman Development Project, ONGC.
- QRA study for TOIPL, LPG plant, Hyderabad
- Review of SIL calculations for RASGAS onshore flow assurance project
- QRA and HAZOP study for Visakh LPG terminal, HPCL
- QRA study for Kuzey Marmara Fixed Offshore Platforms and Pipelines project, Turkish Petroleum Corporation
- QRA study for Ras Issa Oil Storage Terminal Project including Fire and Explosion Risk Analysis (FERA), Chemie-Tech L.L.C Projects Limited.
- QRA study for MGC Revamp project
- Quantitative Risk analysis (QRA) study for Dahej Nagothane Ethane Pipeline Project, Reliance
- QRA study for Rewari Kanpur pumping station, HPCL
- QRA study for LPG terminal, TOTAL OIL India Private Limited, Mangalore
- HAZOP study for LPG terminal, TOTAL OIL Indian Private Limited, Mangalore
- SIL verification study for LPG Bottling plant, HPCL- Yediyur, Bangalore
- Preparation and review of various safety studies in MB Platform and Pipeline Project, BGEPIL (L&T-EPC Contractor)
  - ✓ HSSE Philosophy
  - ✓ HAZID, HAZOP and SIL study report
  - ✓ Quantitative Risk Assessment (QRA) study
  - ✓ Fire and Explosion Analysis (FERA) study
  - ✓ Emergency System and Survivability Analysis (ESSA) study
  - ✓ Escape, Muster and Rescue Analysis (EMERA) study
  - ✓ Gas Dispersion Analysis
  - ✓ Smoke Dispersion analysis
  - ✓ Dropped Object study
  - ✓ TR Impairment Study
  - ✓ Reliability, Maintainability and Availability (RAM) study
  - ✓ SIL Verification study
- Quantitative Risk analysis study for Cross Country Pipeline Extension (Jetty No. 12 to Jetty No. 13), Total Oil India Pvt. Limited

P Lakshmi Narayana
Pr. Consultant, Safety & Risk

Curriculum Vitae:

- Quantitative Risk analysis study for Dammam Field Development Project, Aramco Overseas Company
- Quantitative Risk analysis study for White oil terminal and black oil terminal, HPCL, Vizag
- Quantitative Risk Assessment for Tapti phase-II Compression – Series operation, BGEPIL, India
- Safety Critical Elements and Performance Standards (SCEPS) for Tapti phase-II Compression – Series operation, BGEPIL, India. It involves Identifying major accident, Determination of causes, Determination of potential consequences, Safety critical elements and their risk reduction strategy i.e. Elimination/minimization of hazards by design (inherently safer design), prevention/reduction of exposure (likelihood) to the hazard, detection and control to prevent escalation. The development of performance standards recognized the asset integrity program and inspection/maintenance practices of BGEPIL in conjunction with best industry practices to maintain the functionality of each identified SCE.
- SIMOPS and HAZCON study report for Tapti phase-II Compression-Series operation, BGEPIL, India
- Quantitative Risk analysis study for GAIL Vijaipur facilities, Vijaipur, India
- Fire and Explosion Risk Assessment study and Escape, Evacuation and Rescue analysis study report for Mangala Processing Terminal, Cairn Energy India Pvt. Ltd.

ENGINEERS INDIA LIMITED, NEW DELHI 2005-2013

Lead engineer for preparation of QRA study report for IOCL Panipat refinery, IOCL Gujarat refinery, BPCL Mumbai refinery, etc. and preparation of engineering design package for offsite storage and transfer facilities of MRPL Phase-III refinery expansion project and CPCL EURO-IV project.

PROCESS SAFETY STUDIES

Risk Analysis study:

- Quantitative Risk analysis study for BPCL Mumbai Refinery, Mumbai, India
- Quantitative Risk analysis study for IOCL Panipat Refinery, IOCL, Panipat, Haryana, India
- Quantitative Risk analysis study for IOCL marketing terminal, Northern Region Pipeline Limited, BPCL marketing terminal, Panipat, Haryana, India
- Integrated Quantitative risk analysis study (QRA) of C2/C3 plant of ONGC and PLL facility, Dahej, Gujarat, India
- Fire Safety and Dispersion Analysis for Qusahwira Full Field Development Project, ADCO
- Quantitative Risk analysis study (QRA) for Gujarat Refinery, IOCL, Vadodara, India
- Quantitative Risk analysis study (QRA) for Aromatic Complex Project, KPPC, Kuwait.
- Risk analysis for petrochemical complex-II project at GAIL Vijaipur and Pata, India

Curriculum Vitae:

- Risk analysis for crude oil terminal at Mundra, Mundra-Bathinda pipeline and associated intermediate pigging station, Mundra-Bathinda pipeline projects, HPCL-Mittal Pipelines Limited, India
- Risk analysis study for Integrated up-gradation facility of MRPL, Mangalore, India
- Risk analysis study for Paradip Refinery Project, IOCL, Paradip, Orissa, India

Hazard and Operability (HAZOP) study:

- HAZOP study for Hydrogen Generation Unit (HGU) - I, IOCL, Mathura, India
- HAZOP study for No.1 Hydrocracker Unit, BAPCO, Bahrain
- HAZOP study for No.2 Hydrogen Plant, BAPCO, Bahrain
- HAZOP study for Offsite facilities and Utilities of MRPL phase-III refinery project, MRPL-Mangalore, India
- HAZOP study for Deen Dayal west-PLQP, GSPC, India
- HAZOP study for DHDT unit, MRPL phase-III refinery project, MRPL-Mangalore, India

PROCESS DESIGN

Have involved in Basis Design of Off-site storage and transfer facilities for refineries and petrochemical complexes. Process design activity includes, preparation of process design basis, process flow diagram (PFD) preparation, piping and instrumentation diagram (P&ID) preparation, pump calculation, piping hydraulics, storage tank venting requirement calculation, PSV load calculation, preparation of equipment / instrument datasheets, preparation of line list and utility summary and review of engineering documents from other disciplines.

The assignment includes:

- MRPL Phase-III Refinery Project, Mangalore Refinery and Petrochemical Limited, Mangalore, India
- CPCL EURO-IV Project, Chennai Petroleum Corporation Limited, Chennai, India
- Offsite storage and associated facilities of Adaptation project, Sonatrach Spa., Algeria

PLANT OPERATION SERVICES

Experience in preparation of operating manual, providing Pre-commissioning and Commissioning services for projects in various fields.

- Preparation of operating manual for FCC-NHT unit, SWSU and off-site facilities of Vizag refinery clean fuel project (VRCFP), HPCL, Vizag
- Preparation of operating manual for DHDT unit of CPCL E-IV project, CPCL, Chennai
- Preparation of operating manual for FCCU of NFCCU project, HPCL, Mumbai
- Assistance in Pre-commissioning and Commissioning activities for the following units in VRCFP project, HPCL, Vizag

Curriculum Vitae:

- ✓ Naphtha Hydro-treating unit (NHT) – UOP licenser
- ✓ Continuous Catalytic Cracking unit (CCR) – UOP licenser
- ✓ Isomerization unit (ISOM) - Axens
- ✓ FCC-NHT unit – Axens
- ✓ Sour Water Stripper Unit (SWSU)
- ✓ Amine Regeneration unit (ARU)
- ✓ LPG CFC unit

- Assistance in Pre-commissioning activities for FCC unit including gas concentration unit (GCU) , HPCL, Mumbai

Training:

- OPITO approved Basic Safety Induction & Emergency Training (BOSIET-5700)
- Training on PHAST/PHASTRISK
- Basics of KFX (Kameleon FireEx) for gas dispersion and fire simulator and explosion (CFD based software)