



CAPABILITY IN PROCESS SAFETY

ABOUT US

Cholamandalam MS Risk Services Ltd., is a 50:50 joint venture between the INR 300 billion Murugappa Group and Mitsui Sumitomo Insurance Group, Japan. With over 175 risk engineering experts, we are the largest employer of Environment, Health & Safety specialists in India and offer comprehensive risk management and engineering solutions.

With two decades of experience and over 8000 consulting projects we are able to offer best in class, customized services to organizations to optimize their EHS performance, and set new benchmarks in safety performance.

We are also strengthened by our strategic partnerships with Arcadis, a global EHS consulting company ranked 5th in the world, and our associate status with Inogen, a global corporation providing multi-nationals with consistent and sustainable EHS and safety solutions world wide.

We excel in providing a spectrum of services across the lifecycle of a project - from the conceptualization stage, to design, until decommissioning be it in Environment Management and Sustainability, Process Safety, Electrical Safety, Logistics Risk Consulting and Construction Safety.

Since our inception we've had the experience gathered from across 42 sectors including Automobile, IT/Telecom, Pharmaceuticals, Fertilizers, Chemical, Power Plants, Oil & Gas, Cements, Construction, Textile, Retail etc.

Chola MS Risk Services also offers EHS Training, Competency building and Assessment services through its Safety Academy. Besides offering Classroom based training for Corporates, it extensively uses the power of technology to run virtual classrooms, blended learning and online e-learning courses on a wide variety of subjects in risk engineering and safety.

CORE CONSULTING DOMAINS

Process Safety



Environment Consulting



Electrical Safety



Construction Safety



Insurance Support Services

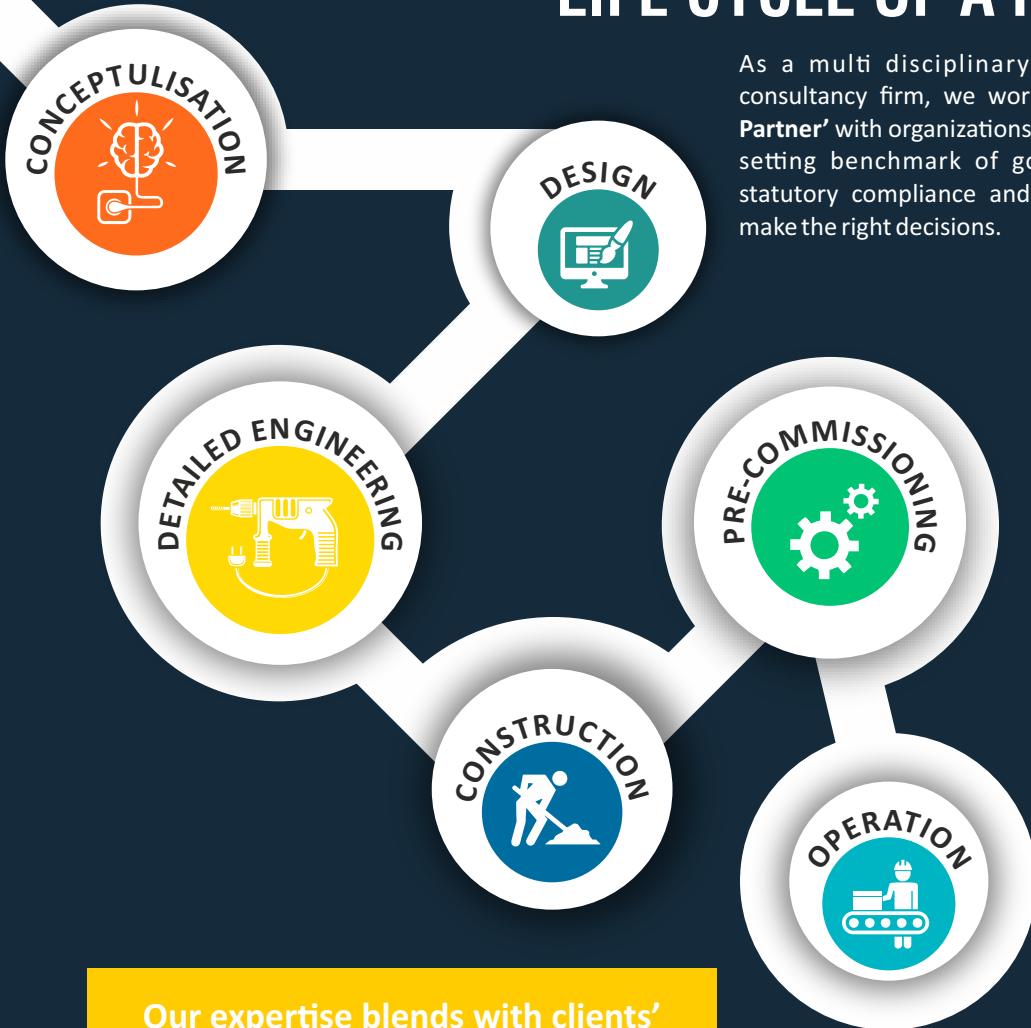


Logistics Safety



SPECTRUM OF SERVICES ACROSS THE LIFE CYCLE OF A PROJECT

As a multi disciplinary risk engineering consultancy firm, we work as a **'Sustainable Partner'** with organizations for a greener world, setting benchmark of going beyond mere statutory compliance and help organisations make the right decisions.



Our expertise blends with clients' technical requirements, resulting in a spectrum of services across the lifecycle of a project – from the Conceptualizing stage till Decommissioning



GREAT VISION. GREAT TEAM.

An agile organization with a team of over 175 dedicated and highly specialized engineers. Our Leadership team has specialist work experience of 15 - 25 years, with an eminent reputation for sheer technical excellence.

Our HR philosophy and mission is to create a positive work environment. We take pride in the culture of innovation and commitment to customer delight.

- ▶ 175 strong
- ▶ 65 team members with over 10 years of work experience
- ▶ From the best colleges in India
- ▶ OSHAS 18001/ISO 14001 certified lead auditors
- ▶ Accreditation from NABET
- ▶ IEC Ex certified professionals
- ▶ Safety auditors certified by DGFASLI
- ▶ 5 FAE consultants
- ▶ Certified Level I & Level II Professional Thermographers
- ▶ Certified Functional Safety Experts
- ▶ Certified EIA coordinators
- ▶ BEE certified energy auditors



AICHe®



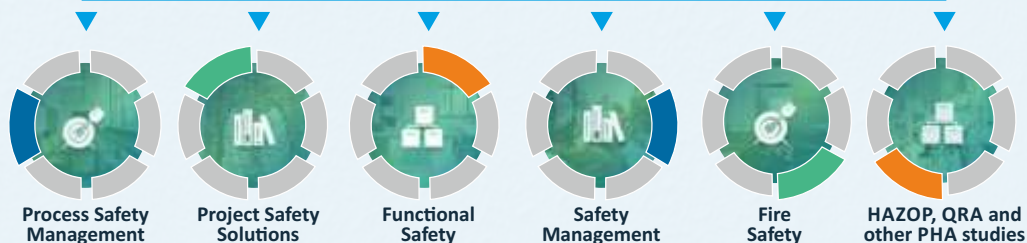
TÜVRheinland®
Precisely Right.

PROCESS SAFETY CAPABILITY CHOLA MS RISK SERVICES





PROCESS SAFETY PORTFOLIO OF SERVICES



Process Safety Management (PSM)

- PSM Audit/PSM Gap Analysis Study
- Process Safety Culture Survey
- PSM System Implementation – Handholding & Support
- PSM Training Program

Safety Management

- Comprehensive Safety Audit
- Hazard Identification and Risk Assessment
- Development of EHS Systems and Manual
- Safety Culture / Perception Survey
- Gap Analysis & Benchmarking of Safety Management System
- Safety Case Development
- Behaviour Based Safety (BBS)
- E2s-Emotion & Engineering Driven Safety
- Developing emergency Response & Disaster Management Planning(ERDMP)
- Machinery Risk Assessment
- Building Safety Audit
- Job Safety Analysis
- Accident Investigation
- Process safety Training Programmes

Project Safety Solutions

- Project, Health, safety & Environment Review (PHSER)
- Project Quantitative Risk Analysis (PQRA)
- Pre-Commissioning Audit
- Pre-Start Up Safety Review & Ready For Start Up study
- Pre-Occupancy Audit
- Shutdown Safety Management Services

Fire Safety

- Design of Fire Detection System
- Design of Fire Protection System
- Fire & Gas Detection Mapping System
- Fire Water Network Analysis
- Fire Hazard Management
- Fire Safety Audit
- Support & Monitoring of Fire Protection Execution and Commissioning

Functional Safety

- Safety Integrity Level (SIL) Identification
- Safety Requirement Specification
- SIL Assessment
- SIL Verification & Validation
- Layer of Protection Analysis(LOPA)

HAZOP, QRA and other PHA Studies

- Hazard & Operability Study(HAZOP)
- Quantitative Risk Assessments (QRA)
- Hazard Identification Studies(HAZID)
- Bow-Tie Analysis
- What-if Analysis
- Reliability, Availability& Maintainability(RAM)
- Fire & Explosion Risk Assessment Study (FERA)
- Escape, Evacuation, & Rescue Analysis (EERA)
- Emergency Planning Zoning Study(EPZ)
- FTA/ETA/FMEA studies
- Dispersion modelling
- HAZOP Revalidation
- Building Radiation Impact Assessment

MOVING TOWARDS EXCELLENCE

It does not matter at stage you are in the maturity model , we can step in and work alongside you to bring in the right interventions to ensure you see the right benefits.

ORGANIZATION MATURITY

Time: 3 to 4 years

Stage 03

Enlightenment

- PHA Studies; Safety Perception Survey; Specialized designs
- Benchmarking of Safety Management System; PHSER

Stage 04

Wisdom

- Process Safety Management; Functional Safety • Process Safety Culture Survey

Stage 02

Awakening (Cosmetic)

- Safety audits; Hazard Identification studies • Safety Management system Audits; Development of EHS System
- Safety Training; Adequacy checks of Fire Protection System • Risk Assessment Studies

Stage 05

Certainty

Emotion & Engineering driven safety

Stage 01

Crisis Management

Accident Investigations

Sustainability

LOW

HIGH

TECHNOLOGY ENABLED STUDIES

We use some of the best in class software in our studies to give you the most reliable and accurate outcomes possible.

Phast Risk

This software is used for consequence analysis studies involving flammable and toxic hazards where deterministic characteristics of flame, flammable gas, and toxic cloud are also to be identified. It enables the user to assess the physical effects of accidental releases of toxic or flammable chemicals. It contains a series of up to date models that allow detailed modeling and quantitative assessment of release rate pool evaporation, atmospheric dispersion, vapor cloud explosion, combustion, heat radiation effects from fires etc.

exSILentia SIL

This is an Integrated safety Lifecycle Tool. The software allows users to follow the entire IEC 61511 functional safety lifecycle. exSILentia streamlines the Process Safety Management work. It ensures compliance to current standards and embeds industry best practices.

Detect 3D

Detect3D is one of the most accurate and trusted 3D fire and gas mapping tool for the design and assessment of detector layouts. Using the integrated design environment, line-of-sight flame detectors, and point and open-path gas detectors can be interactively positioned and oriented within any geometry. It uses powerful ray-casting algorithms to accurately determine the obstructed field of view of flame detectors. The software can be used to highlight zero-visibility zones and interactively adjust the position or orientation of the detectors.

IHS PHA-Pro Software

IHS PHA-Pro is specifically designed for documenting all kinds of Process Hazard Analyses (PHA) performed in wide variety of industrial settings, assisting organizations with the implementation of risk studies easily and thoroughly. PHA-Pro is designed to help your organization put corporate-wide risk policies and programs into place and aid in the adoption of standards and regulations

TRANSFORM YOUR SAFETY TRAINING INTO AN EXTRA ORDINARY EXPERIENCE

At the Chola MS Safety Academy we have the experience gained from over 8000 consulting assignments in Risk Engineering & Safety, spanning two decades from across the world. We also have a team of passionate trainers who are certified Safety Auditors (DGFSALI), Certified Functional Safety Experts, QCI approved environment experts, ROSPA certified trainers, Certified Level II thermographers etc. The cumulative experience of our domain experts and up-to-date knowledge about status, regulations, standards, global and local policies form the basis of our program. We have the experience of having delivered 5000 training hours. Some of our popular programs include the following.

- Quantitative Risk Assessment (QRA)
- Safety in Pre commissioning
- Confined Space Entry
- Hazard and Operability Study (HAZOP & CHAZOP)
- Safety Integrity Level (SIL) Assessment & Verification
- Layer of Protection Analysis (LOPA)
- Lab Safety, LPG Safety, Chlorine Safety
- Industry Safety Management
- Functional Safety
- Hazard Identification and Risk Analysis (HIRA)
- PSM
- Incident / Accident Investigation Techniques
- HazMat
- Behaviour Based Safety
- Safety Culture Transformation

A FEW CREDENTIALS

- » First Asian company to be accredited by Kuwait Oil Company (KOC) to carry out specialized Process Safety Studies under 31 S category
- » OHSAS 18001 / ISO 14001 certified Lead Auditors in the team
- » Certified Safety Auditors by DGFASLI (Directorate General, Factories Advice Service & Labor Institutes, Govt. of India)
- » Certified Functional Safety Expert from Exida & Functional Safety Engineer certified from TUV Rhineland
- » Closely working with CCPS for PSM initiatives in India & Organized the 8th CCPS Asia Pacific Regional Meeting in association with CCPS in Chennai
- » Part of a functional committee of Industry experts constituted to frame the Oil Industry Safety Directorate (OISD) 'Guidelines for Carrying out Quantitative Risk Assessment of Oil & Gas Installations' in India
- » Closely working with EXIDA on Functional Safety
- » Recognized by the Pharma Supply Chain Initiative (PSCI), London as a professional Independent third-party audit firm
- » Presented paper at the CCPS 1st Asia Pacific Conference on Process Safety at China "Implementing PSM in India"
- » Wide expertise in process safety studies including executing HAZOP, QRA, SIL Assessments, Gap Analysis Studies & Safety Audits for major Oil & Gas companies in India and Overseas.



300 + QRA STUDIES

100 + SIL STUDIES



500 + HAZOP STUDIES



100 + PHSER STUDIES

75 + FIRE SAFETY & DESIGN PROJECTS







Cholamandalam MS Risk Services Ltd,

Dare House, 4th Floor, No.2 NSC Bose Road, Chennai 600 001

Ph: +91 (44) 3044 5620-30 | Fax: + 91 (44) 3044 5550

W:www.cholarisk.com | <http://training.cholarisk.com> |

E: inquiry@cholams.murugappa.com

