

# Safety Studies

## A Holistic Approach to Manage Technical Risks



Accidents can result in significant financial, environmental, personal and reputational damage. Identifying and reducing technical risk is vital in order to protect employees and other stakeholders, minimize losses and safeguard competitive advantage.

Making informed decisions around risk avoidance and process safety investments requires organizations to consider not only technical expertise but also sound, risk-based information.

TUV India helps its clients manage a broad spectrum of risks, from preventing catastrophic incidents to transforming safety culture across an organization. We work collaboratively with our clients to provide insights around potential technical risks throughout the lifecycle of a project - from early stage feasibility studies and concept design through to full-scale operation and eventual decommissioning. We provide analyses and guidance to help organizations ensure that their facilities are designed, operated and maintained in such a way that process safety and major accident risks are at a level that is As Low As Reasonably Practicable (ALARP).

### TUV India offers a comprehensive range of Safety Studies including:

our experts to check the changes in the design and performance of a ride including review breakdown and maintenance history. During the inspection, the unusual wear, damages and irregularities will be checked.

- Technical review workshops & desktop studies
  - Hazard and Operability (HAZOP)
  - Hazard Identification and Risk Assessment (HIRA)
  - BOWTIE
  - Safety Integrity Level (SIL Assessments)
  - Layers of Protection Analysis (LOPA)
  - Failure Modes Effects and Criticality Analysis (FMECA)
- Quantitative Risk Assessments (QRA) (including accidental release consequence modeling analysis)
- Fire and Explosion Risk Assessment (FERA)
- Building Risk Assessment (BRA)
- 2D/ 3D Fire and Gas Mapping Study
- Vent & Flare Dispersion and Radiation Study .
- Noise Mapping Study
- Reliability, Availability and Maintainability (RAM) study
- Simultaneous Operations (SIMOPS) study
- Hazardous Area Classification (HAC) study
- Bow tie risk assessments
- Process Safety Management program development and implementation (including audits)
- Emergency Response and Disaster Management Planning (ERDMP)



- Process safety, design, and operations reviews
- Safety Integrity Level (SIL) - Assessment, Verification and Validation; and
- Performance standards for safety critical elements/ activities

Safeguarding people, assets and environment builds competitive advantage by partnering with TUV India, our clients shall gain access to the information they need to make clear decisions around investments to ensure process safety.

With risk levels managed to ALARP, organizations can safeguard their reputation and enhance stakeholder relations, which helps to boost competitive advantage. TUV India's Safety Studies are substantiated by grounded technical assessments, which enable companies to protect people, assets, and the environment while also optimizing business performance.

We help organizations in developing a better understanding of how different hazards and scenarios could affect the economics of a project or the organization as a whole.

## About Us:

TUV India Pvt. Ltd. (TÜV NORD GROUP) is a customer-focused, innovative, and independent, technical, quality & safety services organization, dedicated to

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providing future-proof solutions through technological excellence for the success of its customers with the highest level of integrity. With a presence at over 40 strategic locations in India; a branch office in Sri Lanka and Bangladesh; state-of-the-art laboratories at Pune, Bengaluru, Noida and Jamnagar; 100 important countries worldwide and through digital means, we are always connected to you, our esteemed customer, anywhere, anytime.

We are proud to provide increasing levels of services to the best known, largest global and national companies as well as medium and small industries in diverse sectors like Oil & Gas, Petro-chemical, Nuclear, Renewables, Infrastructure, Food, Power, Manufacturing, Chemicals, Pharma, Paper, Automobiles, Railways, Aerospace, Defence, IT, Health, Hospitality, Retail, etc.

Over 1400 competent and experienced TUV India experts spread across India and over 14000 TÜV NORD experts all over the world, enthusiastically support our clients by providing value-added services in Industry Inspection, European / International Approvals, Management System & IT Certification, Sustainability, Energy Audit, Water Audit, Carbon Services, Building Infrastructure & PMC, Renewable Energy, Food & Packaging Testing, Food Certification & Inspection; Testing of restricted and banned chemicals in Automotive and Electrical & Electronics components and other regulated industries, Product Testing – Electricals, Electronics and Industrial Machinery; Product Certification; Petroleum, Chemicals & Gas Cargo Inspection; Petroleum, Chemicals & Gas Testing; Railway Technology; Engineering, Safety Studies, and knowledge enhancing training programs under TUV India Training Academy.

