



We assist clients identify, analyze, and manage safety and security risks at both fixed facilities and across various transportation modes. Our services include:

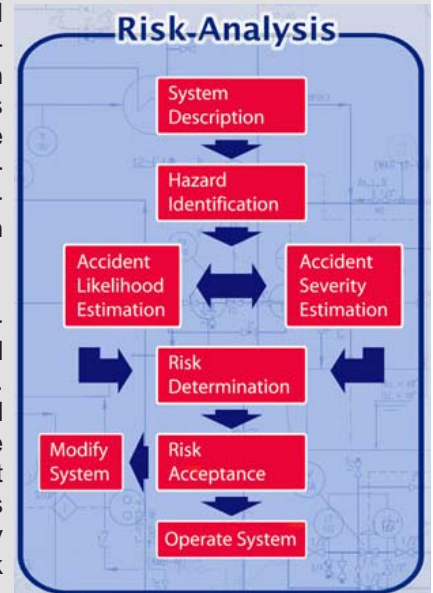
- Process Hazards Analysis (PHA)
- Failure Modes and Effects Analysis (FMEA)
- Layer of Protection Analysis (LOPA)
- Safety Instrumented Systems (SIS)
- Safety Integrity Level (SIL)
- Event Tree and Fault Tree Analysis
- Consequence Modeling of Chemical Releases
- Facility Siting
- Quantitative Risk Analysis (QRA)
- Security Vulnerability Analysis (SVA)

Overview of Risk Assessment Services

AcuTech offers process safety, security, and emergency management services that provide our clients with practical, cost effective solutions for their operational risks. AcuTech has an in-depth knowledge, spanning numerous industries, that allows us to support the private sector, government agencies, and other organizations in the identification, analysis and management of complex safety, security and risk issues.

AcuTech has wide-ranging experience in all aspects of the risk assessment process for both chemical process safety and chemical facility security. The assessment of risk is a process, and AcuTech works in partnership with its clients to identify chemical hazards and security vulnerabilities, facilitate and apply the appropriate risk analysis techniques for the risks identified, and to recommend, prioritize, and review options to manage risk to a level appropriate for each company's specific risk tolerance.

With limited resources, it is not possible for all operations or safety and security risk issues to be evaluated with the most rigorous risk analysis techniques. AcuTech promotes the use of a structured and phased approach to risk analysis that starts with qualitative risk analysis techniques and only elevating the most complex risk issues for full quantitative risk analysis (QRA). This approach enables our clients to efficiently evaluate their operations and apply additional risk analysis resources only when they are justified, or required.



PROJECTS:

Risk Analysis:

- White Paper on *Globally Appropriate Criteria for Individual and Societal Risk and a Methodology for Evaluation* developed for an international chemical company.
- Developed a methodology that is applied to all LNG deepwater port applicants. This transparent method enables the US Coast Guard to analyze risk and justify the final safety and security measures that are required for these projects.

Facility Siting:

- Numerous studies throughout the chemical and petroleum refining industry following API RP 752 evaluating the risk to building occupants from explosion, fire, and toxic release

Consequence Modeling:

- Expertise in modeling chemical releases and impacts in support of QRAs, refinery upsets, LNG carriers and onshore facilities, and other toxic, flammable and explosive hazards.

Quantitative Risk Assessment:

- QRA to evaluate the safety recommendations of an FMEA to address annulus overpressure incidents on the North Slope of Alaska.
- QRAs have been conducted for world wide chemical, petroleum and hazardous material transportation operations. Results have included impacts to people and property, business interruption, and cost benefit analysis of potential mitigation options.

AcuTech Uniquely Qualified to Assist Facilities

We are specialists at hazard analysis and risk assessment, and have considerable experience in assisting companies in understanding and controlling risks. AcuTech's chemical safety and security advantages include:

- Extensive experience leading PHAs including HAZOPs, What-If, What-If/Checklist, LOPAs, SIS, SIL, combined HAZOP & LOPA, combined HAZOP and SIL, as well as FMEA and FTAs. Previous work includes design stage, initial PHA, revalidation, and MOC PHAs.
- Members of our staff are recognized experts in their field and have previously worked for a variety of major chemical and petroleum companies, large engineering/construction companies, and federal, state, and local government.
- Nationally recognized expertise in chemical process security, process safety and risk management with specialization in the petroleum and chemical industries and significant experience in assisting with integrating security, PSM, and RMP implementation for a variety of companies, both large and small.
- Extensive Quantitative Risk Assessment (QRA) experience. Key project leaders have broad based risk assessment experience performing hundreds of assessment projects world wide for chemical facilities, petroleum refineries, petrochemical facilities, storage facilities, and all modes of hazardous material transportation.
- Independent Risk Assessment (IRA) contractor to the US Coast Guard (USCG) for six proposed LNG deepwater port (DWP) projects. In addition to the IRAs, AcuTech has worked with the USCG to develop a second phase risk assessment methodology that permits safety and security risks to be evaluated on a consistent basis. This transparent method enables the US Coast Guard to analyze risk and justify the final safety and security measures that are required for these projects.
- Use of the latest available computer software for conducting process hazard analyses (quantitative and qualitative), preparing Risk Management Plans, consequence modeling, and implementing expert, real-time emergency response
- Broad experience analyzing petroleum and chemical security vulnerability, including SVAs at sites with marine and offshore operations.
- Prime contractor for development of the CCPS® *Guidelines for Analyzing and Managing the Security Vulnerabilities of Fixed Chemical Sites* (08/2002), also developed the ACC SVA methodology for Tier 4 sites.
- Developed API/NPRA SVA methodology and API Security Guidelines for the Petroleum Industry and the 2nd edition of the API Security Guidelines for the Petroleum Industry to include security for pipelines and other transportation modes.
- Strong project management skills and a personalized, responsive style of working closely with our clients. We emphasize on-time, cost-effective performance, and have a successful track record in meeting this goal. AcuTech has gained this reputation through the services we have provided to some of the largest companies in the industry.