Mahed Energy Pars

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About Us

Modern–day Iran is making strong and steady strides towards development and independence. Every day, in various corners of our homeland, self–reliant young people in science and technology emerge, and with the grace and assistance of Almighty God, and under the guidance of the scientific and academic community, the movement towards the frontiers of knowledge is gaining momentum. In this context, the oil, gas, petrochemical, and power plant industries play a major role in strengthening the development of our nation.

One of the limiting factors in the expansion of energy industries could be safety and environmental concerns. The operations of processing units are always accompanied by various risks that can threaten the health of individuals, the environment, and the assets and properties of the organization. The history of incidents in these units and the damages they have caused highlights the need to identify these risks, evaluate the associated activities, and prepare measures to mitigate them, as well as prevent losses.

The senior management of projects and initiatives has always been concerned with this issue, seeking methods to prioritize the necessary costs for implementing control measures by evaluating the risks of potential hazards and to make optimal use of available resources.

Based on this, various methods have been developed for identifying potential hazards in the oil, gas, petrochemical, and chemical industries. «Mahed Energy Pars», through the collective efforts of experts and graduates from leading universities in the country, aims to enhance sustainability in the operations of processing industries and provide innovative, knowledge–based services at a global standard in the field of «Safety and Environmental Studies». The company is registered as a private joint–stock company with the goal of contributing to these efforts.

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The strategic vision of «Mahed Energy Pars» is to address the existing gaps in ensuring safety and environmental sustainability in the countries energy sector, while collaborating with reputable international companies to transfer knowledge and technology, as well as providing services to other countries in the region. Since its establishment in 2011 (1390 in the Iranian calendar), the founders of the company have had the honor of participating in and managing over 35 major projects in the fields of safety and environmental protection.

The activities of this company include conducting impact assessment studies, hazard identification, and risk evaluation, value engineering studies, design of various fire suppression systems and fire fighting systems for process areas and buildings, design of fire and smoke detection systems based on artificial intelligence, hazard zone classification, insurance risk assessment, conducting safety audits, and updating safety and process documents (As Built).

Services – Process Safety and Risk Assessment

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)
- FTA/ETA/FMEA Studies
- Dispersion Modelling
- Consequence Modelling And Analysis
- HAZOP Revalidation
- Building Radiation Impact Assessment

FIRE SAFETY

- Design of Fire Detection System
- Design of Fire Protection System
- Fire Safety Audit
- Fire Water Network Analysis
- Fire Hazard Management
- Fire & Gas Detection Mapping System
- Escape, Evacuation & Rescuen Analysis (EERA)
- Hazardous Area Classification
- Fire Proofing And Passive Fire Protection

PROCESS SAFETY MANAGEMENT

- PSM Audit / PSM Gap Analysis Study
- Psm System Implementation Handholding & Support
- Process Safety Culture Survey
- PSM Training Program
- Safety Culture / Perception Survey
- Gap Analysis & Benchmarking of Safety Management System
- Accident Investigation

FUNCTIONAL SAFETY

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

PROJECT SAFETY SOLUTIONS

- Pre-Commissioning Audit
- Pre-Startup Safety Review & Ready for Startup Study
- Shutdown Safety Management

Software Used

PHAST & SAFETI

The Phast software is employed to model the consequences of incidents resulting from the release of flammable and toxic substances. It is used to analyze the extent and manner of fire spread, as well as the dispersion of flammable vapor clouds and toxic substances. This software has the capability to assess the physical effects arising from the release of flammable and toxic materials, such as modeling various types of fires, vapor cloud explosions, and thermal radiation from combustion. Additionally, the Safeti software can be used to quantitatively assess the risk of various incidents.

DETECT 3D

3D Detect is one of the most accurate and reliable software for the three–dimensional placement analysis of fire and gas detectors. It has the capability to determine the optimal placement of detectors based on minimizing the number of detectors required while maximizing the coverage area. This software utilizes ray casting algorithms to perform spatial obstruction calculations for visual fire and heat detectors, identifying blind spots within process units. Ultimately, the software recommends the most suitable placement and viewing angle for the detectors.»

PHA PRO

PHA–Pro software is one of the most advanced tools designed for recording various types of data obtained from process hazard analyses across all industrial sectors, along with the application and implementation of fundamental risk concepts in these studies. Utilizing this software enables organizations to identify and delineate the responsibilities and interrelationships of the activities of each department within an organization in hazard assessment studies, fostering greater coordination.

EXSILENTIA SIL

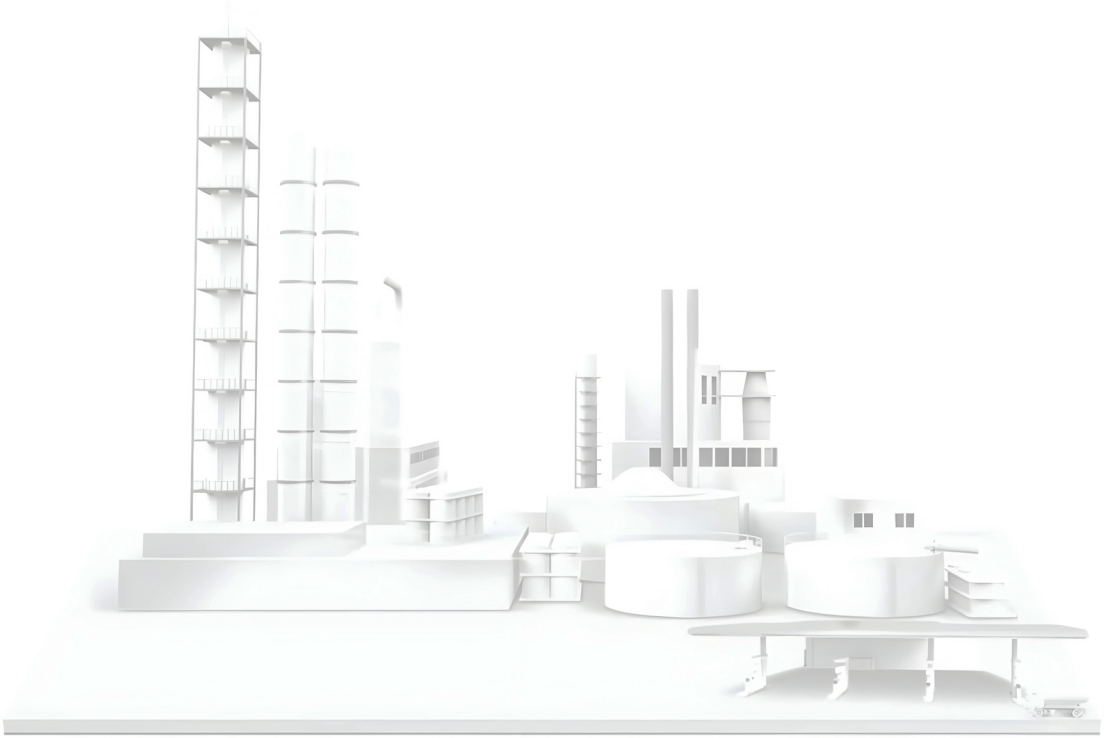
This software serves as a tool for integrating the lifecycle of equipment based on its performance levels without any failures. The concepts employed in this software align with the IEC 61511 standard.

FLARESIM

Flaresim software is utilized for designing flare systems and analyzing the factors influencing the process. This software calculates and assesses parameters such as heat radiation, temperature, noise levels, and the dispersion of flammable gases within the flare system, as well as the flare type and stack height, based on relevant standards. A comprehensive analysis of the optimal flare stack location, considering climatic and weather conditions, can be obtained in a three–dimensional format using this software.

ISO GRAPH

The Reliability Workbench and Availability Workbench versions of this software are powerful tools for conducting reliability, availability, and maintainability calculations and analyses using various techniques such as FTA, FMECA, Markov analysis, and others. The HAZOP version of this software also offers specialized capabilities for hazard identification studies and a variety of risk assessment methods.



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