Fall 2023

ioVIEW

Risk Evaluation Issue

Methods, Tools, and Resources

Facility Major Risk Survey

This paper describes a method for identification of major acute risks in existing process facilities that have potential for serious impacts to on-site and off-site populations, and for prioritization of mitigating measures. The approach is based on a comprehensive assessment of the facility, which includes a review of process hazards, fire protection, emergency response, and management systems (administrative controls) using separate assessment protocols. The review involves interviews of key management and operating personnel, review of drawings, procedures and records,

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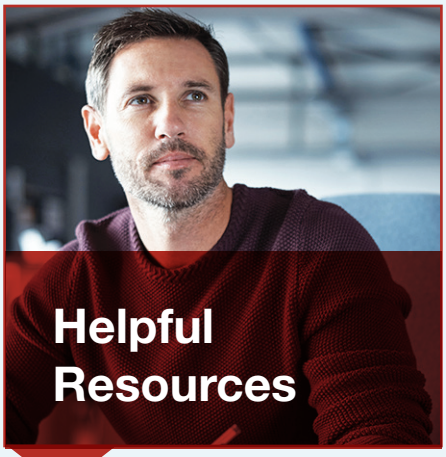

Helpful Resources

Webinar

Simplify Your PHA and DHA with PHAGlobal®

Boost your teams' productivity with PHAGlobal®. Users can customize the risk matrix based on their risk ranking criteria, including the ability to add an unlimited amount of consequence and frequency levels, and includes pre-populated templates for conducting risk analyses using different techniques.

▸ **Watch the Webinar**

White Paper

Risk Ranking For PHA, LOPA, and Facility Siting

Risk-ranking is a common methodology for making risk-based decisions without conducting quantitative risk analysis. The basis for risk ranking is the risk matrix that has both a consequence and frequency axis. The product of consequence and frequency provides a measure of risk. Each consequence / frequency pair on the risk matrix is assigned a risk ranking that includes....

▸ **Download the White Paper**

In the aftermath of major industrial accidents, many managers ponder the question: Could this happen to us?

and inspection of plant facilities. Recommended risk mitigation measures are prioritized using a semi-quantitative risk ranking matrix. This paper presents the key elements of the methodology and provides examples of typical findings.

Introduction

In the aftermath of major industrial accidents, many managers ponder the question: Could this happen to us? Obtaining prompt and reasonable assurance that such accidents are relatively unlikely in existing facilities can require a major effort, particularly if there are many plant locations or manufacturing sites with multiple units such as in chemical complexes or petroleum refineries. Performing a full quantitative risk assessment (QRA) of each plant or process unit can involve a major allocation of company resources and can take considerable time to implement. Moreover, such a detailed study is not always necessary to identify the major areas for risk reduction at the plant level. Given an appropriate framework, experienced technical and safety personnel can locate major hazards and rank them in terms of relative risk.

Risk Assessment Tiers

Because quantitative risk assessment involves a significant commitment of a company's human resources, many companies have adopted a multi-tiered approach to risk assessment of existing facilities. The risk assessment levels presented in Figure 1 are generally consistent with practices we have encountered through various assignments for medium and large chemical and petroleum companies.

Level 1 – Risk Screening

This is a top-down review of worst-case potential hazards/risks, aimed primarily at prioritizing plant sites or areas within a plant, which pose the highest risk.

Click Here To Download the Full White Paper

Source: CSB

FCC Unit Explosion and Asphalt Fire

On April 26, 2018, an explosion and subsequent fire occurred at the Husky Superior Refinery in Superior, WI. The refinery was shutting down its fluid catalytic cracking (FCC) unit when the explosion occurred, injuring 36 people and releasing 39,000 pounds of toxic flammable chemicals.

The CSB incident report noted the refinery's failure to identify, evaluate, and control their process hazards as a key lesson. Process hazard Analysis (PHA) studies should include a review of critical operational procedures to better detect hazards that develop during transient operations.

Because 60% to 75% of significant events between 1970 and 1989 occurred during "non-routine" modes of operation, the CCPS incorporated recommendations explicitly for transient operations to its *Guidelines for Hazard Evaluation Procedures* in 2008.

Download the Incident Report

Upcoming Events

Oct 24-26, 2023

SuperChems™ Training

Master techniques for addressing relief sizing for various scenarios, relief piping system design, flare header modeling and consequence modeling.

▸ View the Agenda

Nov 7, 2023

PHA/HAZOP Leader Course

Gain a thorough understanding of the essentials of leading PHAs using industry methodologies such as HAZOP, FMEA, What If, Checklist, and more.

▸ View the Agenda

Jan 29-30, 2024

18th Annual Global Software Users Group Meeting

Save the date for our complimentary two-day live, virtual conference on process safety.

▸ Watch A Presentation

Layers of Protection

Incidents may happen when all the layers of protection fail. Maintaining proper operations and independent layers of protection is key to mitigating incident-producing risks. Watch this PStv® Safety Moment and learn the vital part your facility's layers of protection play in safety and ways to protect your equipment.

Click Here To Watch