PHA Services

Process Hazards Analysis

KENEXIS

Failure to identify process hazards is a contributing factor to many serious process accidents. The first step in adequately controlling risk is identifying risk scenarios that could adversely impact people, property or the environment. This *risk identification* task usually takes the form of a thorough Process Hazards Analysis (PHA) study. Kenexis helps identify hazards using a variety of PHA study techniques, which - in turn - establishes a solid design basis for Engineered Safeguards.

- ✓ Hazard and Operability (HAZOP) Studies
- ✓ What if? Studies
- ✓ What if? / Checklist
- ✓ Preliminary Hazards Assessment
- ✓ Failure Modes and Effects Analysis (FMEA)
- ✓ Chemical Compatibility/ Reactivity Studies
- ✓ Standard Equipment Design Checks
- ✓ Codes and Standards Compliance Checks
- ✓ Pressure Relief System Surveys

PHA is a systematic, analytical task using one or more techniques to aid in identifying and evaluating the significance of process hazards, such as fires, explosions, uncontrolled chemical reactions, and toxic gas releases. There are a variety of techniques to choose from based on a range of factors. Kenexis can help you identify the most appropriate PHA techniques, and even facilitate the PHA study.

The *Kenexis Process Hazards Analysis Solution*™ helps match the complexity and hazards of the process with key regulatory requirements and safety-system design requirements

- ✓ **Select the Right Equipment Design Basis**

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When specifying the design basis for Engineered Safeguards, the most important factor is an adequate understanding of the hazard (s) being prevented by that safeguard. We often encounter existing PHA studies that did not identify or evaluate the key hazards that are safeguarded by industry-standard safety systems on such equipment as fired heaters, or gas compressors. We are often called upon to re-evaluate those systems in order to establish a design basis for the engineered safeguards. In many situations, safeguards could have been more cost-effectively designed if hazard information was apparent to the designers.

✓ Expert Study Leaders

Kenexis will provide you with a PHA study leader (and study support engineer (scribe), if necessary) who is knowledgeable in a variety of PHA study techniques. Moreover, our leaders have evaluated dozens of processes in the oil & gas, refining, petrochemical, specialty chemical, pharmaceutical, and power generation industries. Our consultants work with your site PHA team to methodically analyze potential risks and identify hazard scenarios that require further risk reduction – either using administrative or engineered safeguards.

✓ Regulatory Compliance and Best Practice

PHA has been a regulatory requirement in many facilities for many years. Consensus industry standards are increasingly referring to PHA study results as the basis for safety equipment design. Best practices are emerging in terms of techniques to identify special hazards, such as uncontrolled chemical reactions, or streamlined techniques such as checklists for standardized systems such as boilers, fired heaters, or gas compressors. Kenexis can help you meet minimum requirements established by OSHA and EPA as well as stay up-to-date with industry best-practices for PHA.

About Kenexis

Kenexis is an independent engineering consulting firm headquartered in Columbus, Ohio, with offices in Houston, Singapore, and Dubai. Kenexis was established in 2004, and is a privately held. Kenexis clients span the globe in many industries. Kenexis has performed engineering services for over 500 different major process industry customers in locations spanning over 20 countries.