

FEATURE REPORTS

Piping design for potentially lethal chemicals

Summary: The integrity and reliability of equipment and piping is of paramount importance when working with potentially deadly chemicals. This article examines definitions and regulations on health and safety from various government and professional entities as well as the requirements of the ASME Process Piping Code. The article also outlines design considerations for piping systems carrying hazardous chemicals.

Related equipment and services: Pipes, fittings, joints and other components of piping systems, especially those designed for safety. Also, process equipment attached to piping, such as valves, gages, and so on.

Relevant industries: Piping considerations would be relevant to the entire CPI, and potential health-hazard chemicals can be found in various sectors, including organic chemicals, hydrocarbon processing, inorganic chemicals and others.

Distillation — Troubleshooting a Sour Water Stripper Problem

Summary: Equipment that malfunctions or limps along limits production and does not permit good energy and equipment utilization. This, in turn, leads to higher environmental degradation, not to mention plant downtime and lost production costs. Good troubleshooting and adequate repair of malfunctioning units is central for efficiently utilizing our resources.

This Feature Report presents an experience with a Sour Water Stripper that initially failed to achieve its design goal due to start-up damage. The problem was correctly identified in a short, systematic and effective investigation that combined field measurements and testing with good hydraulic analysis. The unit was subsequently successfully fixed. This article presents the experience and the lessons learned.

Related equipment and services: Distillation columns and internals (trays, packing and so on), simulation software.

Relevant industries: Distillation is widely used in most sectors of the CPI, especially in the petroleum-refining, petrochemicals and the beverage industries.

FRACTIONATION COLUMN

Summary: This monthly column in *CE* is written by the technical director at Fractionation Research Inc., a consortium of end-users, engineering companies and distillation equipment providers that pool budgets on distillation research.

Related equipment and services: Distillation towers; trays and packings; tower-scanning equipment and services.

Relevant industries: This column addresses segments across the entire CPI, and is relevant in the currently booming markets of downstream oil-and-gas processing.

NEWSFRONT

The Kirkpatrick Chemical Engineering Achievement Award

Summary: This month's Newsfront will present the process technology and commercial implications of the five companies that were honored this year.

Related equipment and services: Catalysts, process technology (engineering & construction), biotechnology.

Relevant industries: The process technology for all five companies covered the CPI spectrum, including petroleum refining, biotechnology and consumer products.

Heat exchangers

Summary: Heat exchangers are widely used throughout the CPI. And because energy conservation, plant reliability and cost reductions are on everyone's agenda, new designs for heat exchangers are continuously being developed. This month's equipment Newsfront will present some of these developments.

Related equipment and services: All types of heat exchangers (plate-and-frame, shell-and tube, spiral-wound, compact, and so on), heat exchanger fluids, and so on.

Relevant industries: Heat exchangers are used in all segments of the CPI for everything from heating and air conditioning in office and production buildings to heating and cooling in actual production activities.

Send editorial material for consideration to Joy LePree, contributing editor: jlepree@che.com.

Advertise in the *CE* FOCUS e-newsletter**November 14, 2013**

This month's topic will cover Refining and Petrochemicals. Don't miss this exclusive opportunity to introduce your products and services with a banner ad, white paper, or text ad.

FACTS AT YOUR FINGERTIPS

Calculating solids volumes

Summary: This one-page reference will discuss calculation of the volume of solids contained in a silo when the solid forms a heap after being deposited through a nozzle.

Related equipment and services: Bins, hoppers and silos for solids and powders, as well as related equipment for handling and storage of solids.

Relevant industries: Storage of bulk materials is common throughout the CPI.

FOCUS

Analyzers

Summary: This month's equipment focus will present a variety of recently introduced equipment intended to analyze process parameters.

Related equipment and services: A wide range of analysis systems for pH, alkalinity, gas and ion concentration, particle size, total dissolved solids, chemical oxygen demand, and others.

Relevant industries: All sectors of the CPI require analytical equipment for maintaining continuous process performance.

Editorial submissions for considerations should be sent to assistant editor, Mary Page Bailey (m.bailey@che.com)

ENVIRONMENTAL MANAGER

Frequently Asked Questions About Head Injuries

Summary: Protecting employees from potential head injuries is a key element of safety programs in the chemical process industries (CPI), and in virtually all industries. This article answers frequently asked questions about hard hats, such as when their use is required, what types of standards they meet, how to clean them, when they need to be replaced and more.

Related equipment and services: Hard hats; other personal protection equipment, such as eye and face shields, respirators, hearing protection, gloves and safety shoes; consultants and software that aid in personnel safety compliance.

Relevant industries: This article is relevant to all industries where there is a danger of objects falling onto a worker's head, potential to bump a head into a fixed object or accidental head contact with electrical hazards. This includes virtually all CPI sectors.

SOLIDS PROCESSING

Selecting the correct mill for your application

Summary: This article will explore the various types of milling approaches and why it is important to match the milling technique with the requirements of the application. It also will describe various common particle breakage mechanisms.

Related equipment and services: All types of grinding mills that aim to reduce and control particle size of solid materials, including hammer mills, jet mills, cone mills. Also, related equipment for handling solids and powders.

Relevant industries: Paints, coatings, inks, pharmaceuticals, specialty chemicals, cosmetics, and any process that uses a solid raw material or produces a solid product.

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DECEMBER ISSUE:

FILTERS AND FILTRATION TIPS
IMPROVEMENTS IN GASIFICATION TECHNOLOGIES
DEVELOPMENTS IN FLOW MEASUREMENT & CONTROL

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