

FEATURE REPORTS

Classification under Hazcom, the Globally Harmonized System (GHS)

Summary: Due to the Occupational Safety and Health Administration's (OSHA) revision of the U.S. Hazard Communication Law (Ref: US 29 CFR 1910.1200) in May of 2012, virtually every manufacturing and service industry in the U.S. will be involved in adapting their existing hazard communication system to the new Globally Harmonized System or "GHS" based system for the classification and communication of chemical hazards. This article highlights some of the guidelines related to this system.

Related equipment and services: Suppliers of materials related to hazardous chemicals, such as labels, material safety data sheets and related software; Service providers who aid in regulatory compliance, such as by providing training courses

Relevant industries: This article is relevant to all industries where hazardous materials are used.

Revamps and Turnarounds — The high cost of quick turnarounds and erroneous procedures

With proper planning and reliable procedures in place, last minute time crunches and failures can be prevented. When haste combines with faulty methods, costly problems result. This article presents two case studies of plant turnarounds that were not properly planned or carried out, and the lessons to be learned from them.

CPI Sectors: Petrochemicals, petroleum refining

Products and services: Engineering contracting and consulting firms

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December 19, 2013

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ENGINEERING PRACTICE

Making Sense of Calculations in Process Engineering

Summary: The need to carry out process engineering calculations is an essential aspect of most process engineering activities, to support such efforts as carrying out heat and material balances, sizing process equipment, conducting technical or economical evaluations, and much more. This article discusses four key aspects of conducting process engineering calculations and provides illustrative examples to help engineers understand and optimize the process of carrying out key calculations.

Related equipment: All equipment categories have requirements related to process calculations

Relevant industries: The need to carry out process engineering calculations is essential for all industry segments within the chemical process industries (CPI)

Understanding Gear Units in CPI Plants

Summary: Gear units are widely used in pumps, turbines, compressors, mixers and a variety of other types of driven equipment trains within the chemical process industries (CPI). Too often, gear units are overlooked, yet they play an essential role in the overall functionality of these machinery systems. This article discusses the importance of such issues as gear-teeth details, loading on the gears and shaft, gear-unit analysis, material selection, heat treatment, fabrication, assembly, lubrication, testing and commissioning.

Related equipment: Gears and gear systems, Shafts and couplings, Pumps, Mixers, Turbines, Compressors, Lubricants, Vibration analysis

Relevant industries: Gear units are an integral part of process equipment used in all sectors of the CPI

Optimization of Steam Networks Involving Turbines

Steam turbines are frequently used as power drivers for rotating equipment in the CPI. This article presents an optimized analytical model for maximizing the power generated by a steam network in a petroleum refinery.

Relevant Industries: Steam systems are used throughout the CPI, with steam considered to be a crucial utility.

Related Equipment and Services: Steam systems, turbines, heat-exchange equipment, piping



NEWSFRONT

Employment Outlook

Summary: This news article will offer some perspective on the current employment outlook for engineers in the chemical process industries, including an analysis of key workforce issues in the CPI and the results of recent salary surveys

Related equipment: Software and services for recruiting and retaining workers, safety systems designed for a leaner workforce; products and services for knowledge retention and worker training

Relevant industries: The article is designed to be relevant to all CPI sectors

Gasification technologies

Summary: This month's equipment newsfront article will focus on new developments in gasification technology for a variety of feedstocks, including biomass, municipal solid waste, natural gas and others.

Related equipment: fluidized-bed gasifiers, entrained-bed gasifiers, plasma-arc gasifiers, ancillary equipment for gasification processes

Relevant industries: Gas-to-liquid fuels (GTL), biofuels and bio-based chemicals, power generation

Editorial material for consideration should be sent to Joy LePree, contributing editor (jlepree@che.com)

FOCUS

Flow Measurement and Control

Along with temperature, pressure and level, flow is one of the key process control variables. This month's focus will present the latest new products in flow meters, transmitters and controllers.

CPI Sectors: All sectors of the CPI use flow meters

Products and Services: All types of flow meters, flow sensors, controllers, transmitters

Editorial material for consideration should be sent to Gerald Ondrey, senior editor (gondrey@che.com)

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.

FACTS AT YOUR FINGERTIPS

Filters

Summary: This one-page reference will discuss combination filtration, focusing on applications in which various types of filtration are combined to condition slurries before separation

Related equipment: all types of filters and other liquid-solid separation technologies

Relevant industries: Filtration is a common separation technique used throughout the CPI

SHOW PREVIEW: CHEM SHOW 2013

This show preview will feature short descriptions of the products and services scheduled to be displayed on the exhibit floor at the 2013 Chem Show, which is taking place December 10-12 in New York City.

Relevant Industries: All sectors of the CPI will be represented at Chem Show 2013.

Related Equipment and Services: All equipment used in the various sectors of the CPI will be represented at Chem Show 2013.

Bonus Distribution

ChemShow, New York, December 10-12