CHEMICAL ENGINEERING

UPCOMING FEATURES

JUNE 2013 | AD CLOSE: MAY 8, 2013

THE BEST READ AND ONLY GLOBAL PUBLICATION IN THE CHEMICAL PROCESS INDUSTRIES

FEATURE REPORTS

Automation Standards

Part 1. What is FDI? (By Martin Zeilinski, Siemens)

Summary: With the advent of smart or intelligent field devices, a wealth of digital information has become available. However, what does the Host System do with this data? The field device transmits a bucket of bits to the Host System. How is this data converted into information that a human can interpret? Where is the information displayed? Should the information be stored as persistent data? These questions are answered via a digital integration technology. Using an integration technology, a field device supplier can tell the host the answer to these questions. FDI (Field Device Integration) is intended to be a single integration technology for the Process Automation industry. It combines the best of what are available with today's technologies: Electronic Devices Description Language (EDDL) and FDT Technology.

This month's Feature Report presents a primer on FDI technology to let users know what the new FDI standard means.

Part 2: What to look for in remote I/Os

Summary: Remote input/output (I/O) interfaces are connections between field devices and the process control system. What to consider when specifying a remote I/O, in terms of the latest Namur Recommendation (NE 107) is discussed in this second Feature.

Related equipment and services: Process control systems, field devices (transmitters sensors), fieldbus technology.

Relevant industries: All sectors of the CPI.

Measuring volume

Summary: This article will explore approaches to determining the volume of liquid in a process vessel based on knowledge of vessel configuration and level changes.

Related equipment and services: All types of liquid storage tanks, fermentation tanks, process vessels.

Relevant industries: All sectors of the CPI might use a storage tank of some kind.

NEWSFRONT

Sonochemistry

Summary: Using ultrasound energy can enhance chemical reactions, improve mechanical processes, and sometimes even enable new chemistries to occur. This month's newsfront provides an update on the state-of-the-art in sonochemistry.

Related equipment and services: Ultrasonic transducers, sonicators, sonochemical reactors.

Relevant industries: In many cases, sonochemistry remains a novelty, and finds applications primarily in the pharmaceutical, fine and specialty chemicals sectors. However, it is also finding application in environmental technology as well as in petroleum refining (desulfurization).

Editorial submissions for considerations should be sent to senior editor, Paul Grad (pgrad@che.com).

Air Pollution Control

Summary: This month, an update will be presented on new regulations that will impact the industry, as well as the technology available to meet such regulations. One aspect that will be covered is on mercury from coal-fired power plants.

Related equipment and services: Gas scrubbers, adsorption and absorption technology, electrostatic precipitators, bag houses, and more.

Relevant industries: All sectors of the CPI have to deal with controlling emissions to the environment. Especially relevant to this story is the power industry (coal-fired power plants).

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

FACTS AT YOUR FINGERTIPS

Feeding and conveying

Summary: This one-page reference will provide a discussion about the selection of conveyors. It will discuss natural-frequency styles that incorporate a vertical element versus horizontal styles that do not. It will also offer suggestions as to what things to consider when utilizing one style or the other in a process.

Related equipment and services: Solids handling equipment, conveying equipment, intermediate bulk containers (IBCs), bulk bags, unloading equipment for raw materials.

Relevant industries: This could be useful information for solids processing in many industries, if they handle solids either as raw materials or at some point in their process. Powders in the pharmaceutical industry, pellets in plastics processing, biomass, rocks in the mining sector.

CHEMICAL ENGINEERING

UPCOMING FEATURES

JUNE 2013 | AD CLOSE: MAY 8, 2013

THE BEST READ AND ONLY GLOBAL PUBLICATION IN THE CHEMICAL PROCESS 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.

FOCUS

Explosion Protection

Summary: This month's focus will present the lasts products and services for protecting plants, people and the environment from explosions.

Related equipment and services: Pressure relief valves, rupture discs, supressors, flame arresters.

Relevant industries: Safety is important for all sectors of the CPI, and explosions can happen in any plant working with flammable liquids, gases (petroleum refineries, petrochemical plants and more) as well as solids that can generate dust (chemical and food processing plants).

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

ENGINEERING PRACTICE

From Concept to Commercial Production: Process Development

Summary: The road from concept to commercial-scale production is often long and arduous. One of the greatest production challenges to overcome is budgeting the necessary time and resources to develop and scale a product properly. Within the past decade, there has been much research around bio-based chemicals, which has let to scaleup of these new processes and products. This article discusses four steps that are generally necessary to effectively scale a concept into full production.

Related equipment and services: Laboratory and pilot-scale equipment used for scaleup work; Process simulation and modeling software; engineering firms that scale up processes.

Relevant industries: This article is relevant to any process being scaled up in the CPI. It makes particular mention of bio-based chemicals, as the proliferation of research in this area has led to an increased interest in scaleup.

TECHNOLOGY PROFILE

Ethylene via ethanol dehydration

Summary: This one-page capsule will describe the process for producing ethylene by dehydrating ethanol.

Related equipment and services: Most common CPI equipment, including pumps, valves, piping, etc. would be used in the process.

Relevant industries: Bioethanol industry, ethane cracking industry, polyolefins manufacturing.

LOOK FOR THESE ARTICLES COMING IN THE JULY ISSUE:

CAPITAL COST ESTIMATION

PLANT SECURITY

PIPING