



FEATURE REPORTS

Capital cost estimation

Summary: Capital equipment costs often become the primary focus of a project, but over the life of process, equipment costs may account for just 5% to 10% of the total when considering installation, operation (including electrical and other utilities), maintenance and decommissioning costs. Many processes turn out to be unjustifiable because the long-term costs were not fully considered. The purpose of this paper is to examine the cost of the process equipment and the implications it has on other costs involved in the life of the process.

Related equipment and services: Software related to capital cost estimation. Models/software that help estimate life-cycle costs. Any capital equipment or assets that make claims about having the lowest lifetime costs.

Relevant industries: All sectors of the CPI would be interested in cost estimating.

SCADA security

Summary: Industrial control systems (ICS), such as SCADA (supervisory control and data acquisition) systems, are vulnerable to cybersecurity threats. Conventional IT (information technology) security solutions are not necessarily applicable to these safety- and reliability-critical control systems. This article explores the threats, and focuses on emerging trends that are being used to address these threats to SCADA vulnerabilities.

Related equipment and services: Software and hardware used to secure industrial control systems; industrial security services and consultants; devices used to secure the physical plant are pertinent as well.

Relevant industries: This article is relevant to any facility that has an industrial control system (ICS), which includes most CPI facilities.

NEWSFRONT

AchemAsia

Summary: Held every three years in Beijing, the AchemAsia conference and exhibition is a leading international event for the chemical process industries (CPI). This month, highlights from the fair will be presented, along with some of the new products and process technologies unveiled at the show.

Related equipment and services: All types of equipment, from laboratory through engineering & construction.

Relevant industries: All sectors are represented, with an emphasis on energy, water and environmental technology.

Cooling towers

Summary: Because temperature control is important in any process, a water-cooling system is a common component of chemical processing plants. This month's Newsfront will present the latest in cooling tower technology, along with process chemicals available to keep cooling towers running trouble-free while preventing possible health problems associated with bacterial growth.

Related equipment and services: Cooling towers and components (heat exchangers, condensers, fans and blowers), water treatment chemicals (biocides, corrosion inhibitors and so on).

Relevant industries: Cooling towers are used throughout the CPI.

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

FACTS AT YOUR FINGERTIPS

Piping

Summary: This one-page reference will outline the advantages and limitations of using polymeric materials for piping in the CPI.

Related equipment and services: Manufacturers of plastic piping, including polyvinyl chloride (PVC), acrylonitrile butadiene styrene (ABS), post-chlorinated PVC, polypropylene, polyethylene, polyvinylidene fluoride and others. Also, equipment for fastening and joining plastic pipes.

Relevant industries: Almost all sectors of the CPI might consider using plastic pipes for some part of their process. Industrial and municipal water supply are examples.

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

Level Measurement

Summary: This month's equipment focus will present the latest products and services for level measurement and control.

Related equipment and services: Level indicators, tank gages, level transmitters and so on.

Relevant industries: Level measurement is important for all sectors of the CPI.

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

ENGINEERING PRACTICE

Making the most of data sheets

Summary: Data sheets are an essential part of project design, specification and procurement activities, and will help to streamline and support operations and maintenance activities. Sound data sheets can also provide critical information for debottlenecking and retrofitting projects on existing plants. This article discusses competing methodologies for creating data sheets and provides useful guidance for gathering and organizing the most critical information to make it most useful. Specific examples are provided for several types of widely used process equipment.

Related equipment and services: Centrifugal pumps, pumps, heat exchangers, centrifugal compressors, steam turbines, rotary pumps, reciprocating pumps.

Relevant industries: The needs for strong data sheets and proper planning is essential for mechanical operations, instrumentation and control efforts, piping design and construction, electrical activities and other types of design, construction, operation and maintenance activities.

SOLIDS PROCESSING

Rotary valves in pneumatic conveying systems

Summary: Rotary valves are almost universally used in pneumatic conveying systems. They serve three functions: To provide a pressure-seal (airlock) between two adjacent processes, to provide solids metering (feeding), and to provide a combination product metering and a pressure-seal for feeding solids into a pneumatic conveying system. They are typically used at the ends of pneumatic conveying systems, such as points at which the conveyed solids are discharged from a receiving vessel into a storage hopper, bin or silo. These valves also work as feeders when they are used to discharge fixed or variable volumetric flowrates of solids from upstream to downstream processes. This article discusses how rotary valves are designed and used.

Related equipment and services: Pneumatic conveying systems, rotary valves (drop-through types, side-entry types, blow-through types), bins, silos and storage vessels, airlocks, rotors.

Relevant industries: Rotary valves are relevant for all industries that handle and convey powders and bulk solids using pneumatic conveying systems.

TECHNOLOGY PROFILE

Making propylene from methanol

Summary: This one-page capsule will describe the major process steps in the production of propylene from methanol, including some of the economic considerations.

Related equipment and services: All basic processing equipment could be related.

Relevant industries: Methanol, propylene and polypropylene.

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