



# SULFURIC ACID PLANT PROCESS OPERATOR TRAINING SIMULATOR

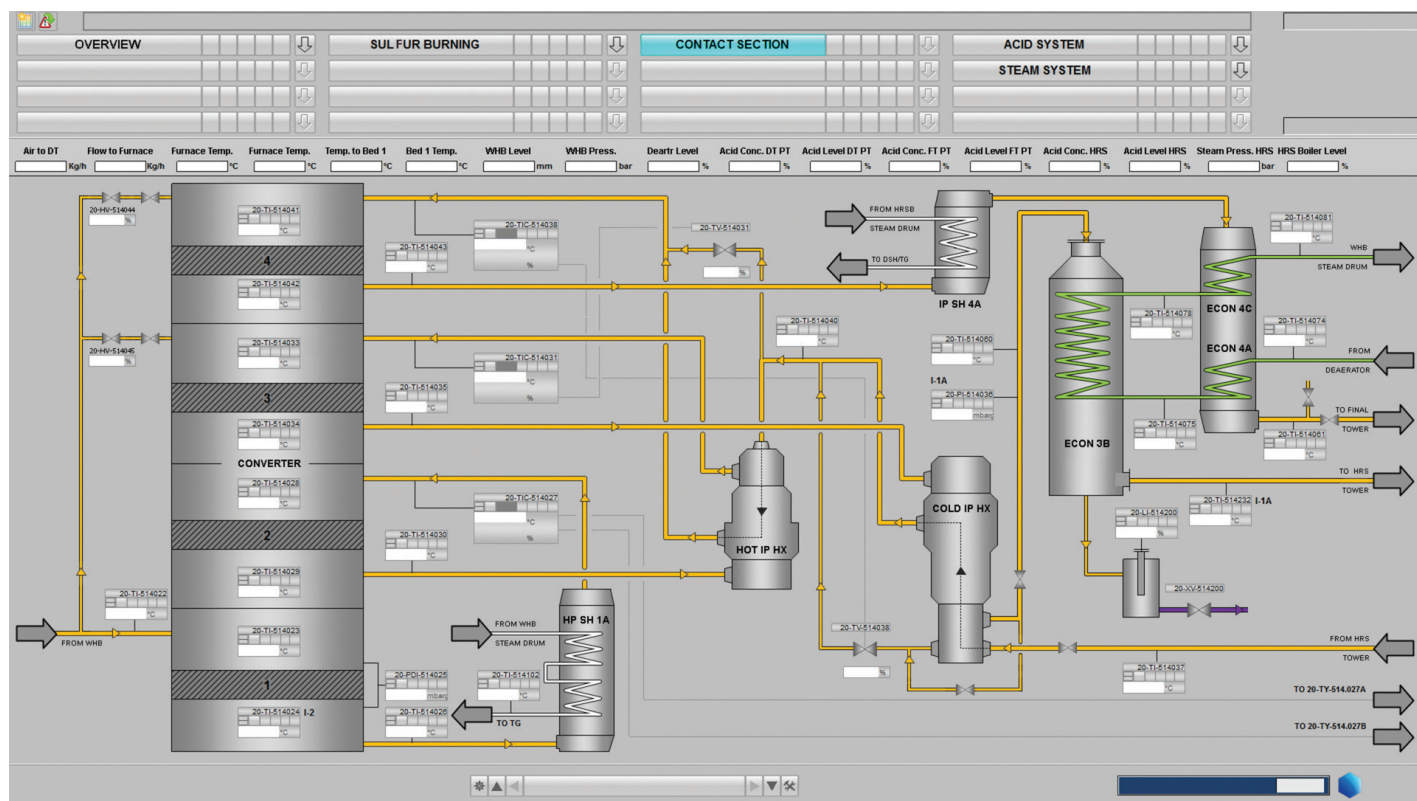
## PROVIDING YOU CONTINUOUS IMPROVEMENT AND A COMPETITIVE EDGE

Today's markets are more competitive than ever, and as companies continue to expand and overhaul their facilities, Elessent has increased the range of products, services and training we offer for sulfuric acid plants and sulfuric acid storage/handling/transfer systems.

World-class process safety performance is a differentiating element for companies aiming to be competitive in today's markets. This level of performance requires an operator training program that drives continuous improvement and protects a company's employees, facilities, profits, its surrounding community and the environment.

## A PROVEN, WORLD-CLASS EXPERIENCE IN DYNAMIC SIMULATION TRAINING

We believe that well-trained people are a key driver of excellence in all areas of business. Proper training builds confidence, fosters teamwork and promotes continuous improvement in safety, quality, productivity and efficiency. Better trained operators make better decisions, save money, increase safety and reduce environmental incidents.



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## PARTNERING WITH YOU TO IMPROVE OPERATOR TRAINING AND SAFETY

Operator training simulators are the industry standard for training operations personnel in manufacturing facilities around the world, enabling:

- Improved operator response
- Improved profitability
- Improved uptime
- Reduced startup time

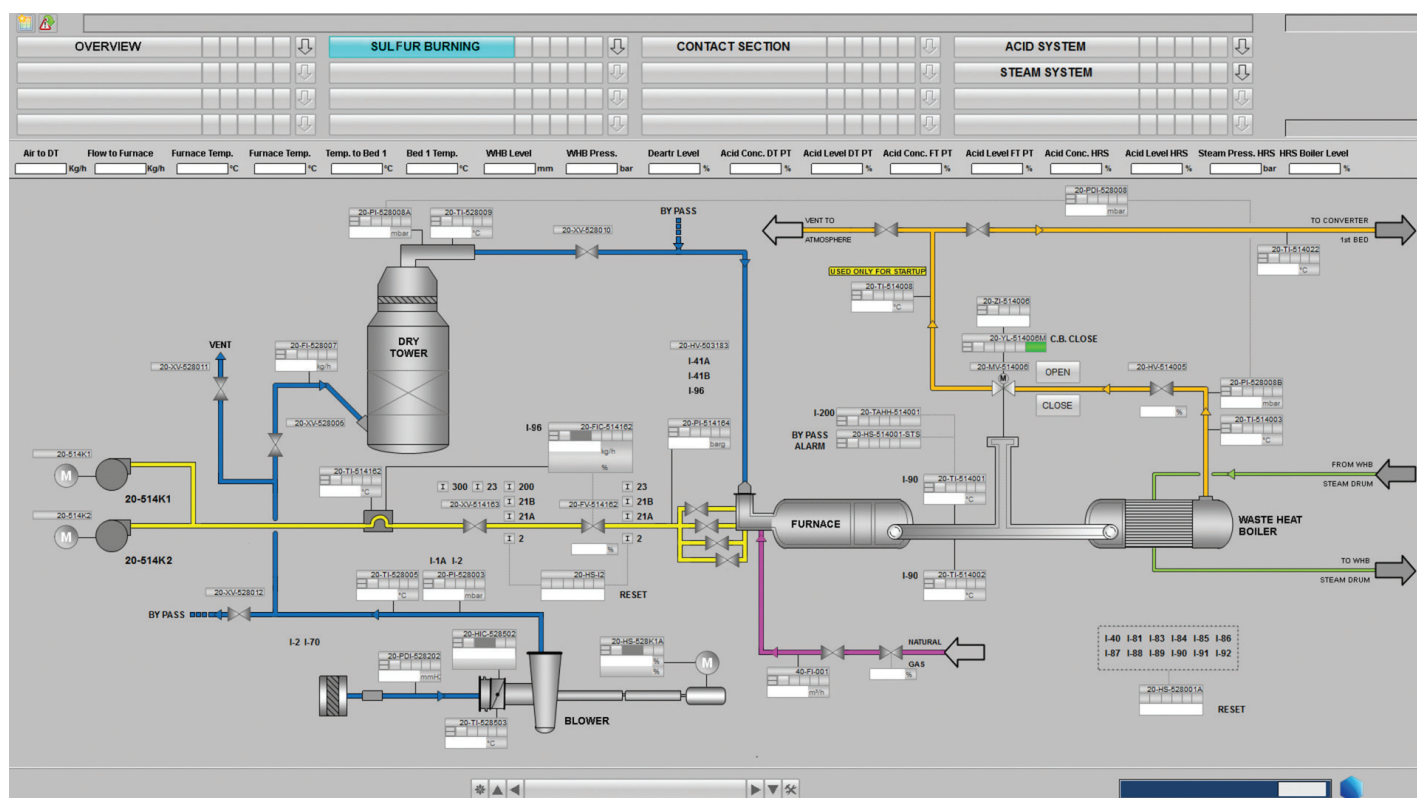
With high-fidelity operator training simulators from Elesent Clean Technologies, operators and engineers become familiar with:

- Proper startup and shutdown procedures
- Graphic layouts
- Correct responses to abnormal conditions
- Operator console functions
- Process dynamics
- Unit performance optimization

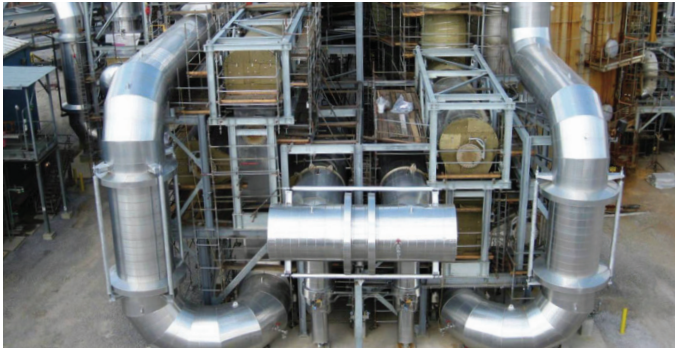
## SULFURIC ACID PLANT PROCESS OPERATOR TRAINING SIMULATOR: STATE-OF-THE-ART FEATURES

The operator training simulator available through Elesent Clean Technologies is a dynamic model of the entire acid plant and includes unique processing capabilities, including simulation of:

- Single or double absorption configuration
- Gas cleaning and drying area
- Conversion and heat exchange areas
- Strong acid absorption areas
- Heat Recovery Systems (HRS™)
- Environmental performance and stack emissions, including tail gas scrubbers
- Suboptimal conditions
- Emergency scenarios



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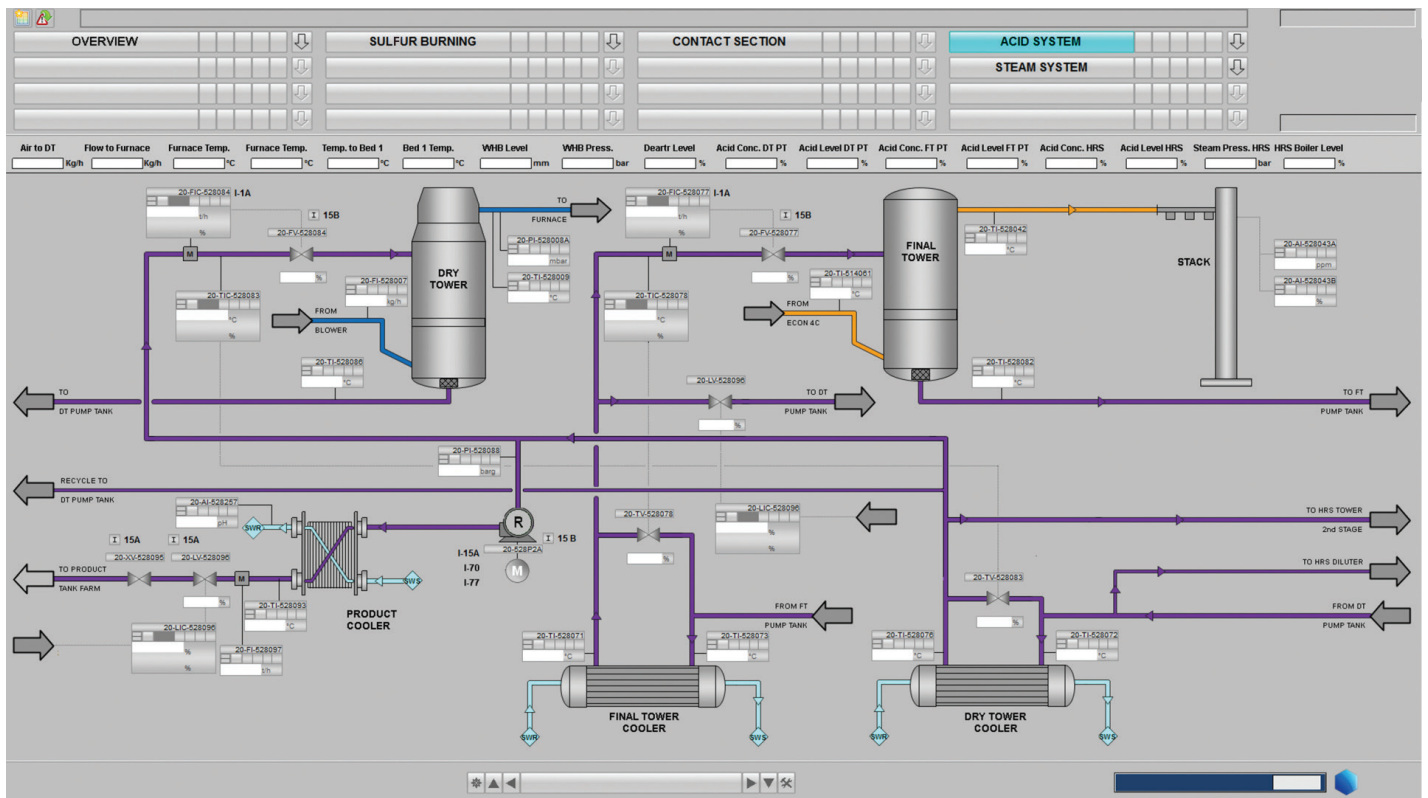
## Configuration highlights:

- Available as a stand-alone PC work station or integrated into the DCS system, where DCS integration provides an excellent tool for debugging control system logic prior to unit startup or later as part of MOC
- Can be configured to allow for separate student and trainer workstations in which the trainer can initiate scenarios or make process changes to test student responses

## Additional features:

- Built-in analytical tools that allow the instructor to measure and report student performance relative to key training goals, such as competency, change in knowledge and retention over time
- Simulation speeds up to 10x in real time
- Interactive interface tailored to resemble each plant's board operator DCS screens (in custom OTS)
- Easy-to-navigate graphical user interface allows operators to view and adjust controllers, switches, set points and alarms just as they would on a conventional DCS
- Trend lines that allow operators to track moving process variables quickly and easily over time
- Large library of scenarios that teach operators how to identify situations and respond quickly, efficiently and safely

*Additional scenarios are available upon request.*



Essent operator training simulators can be fully customized, allowing you to create a training environment that is as close to your real unit as possible; customization may include tag names, DCS screens, process configuration, control logic and equipment sizes.



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## REAL BENEFITS FOR REAL RESULTS

The sulfuric acid plant process operator training simulator offers you proven, state-of-the-art, realistic training that can improve operator and unit performance when it counts most. By working with our simulator, your organization can:

### Improve safety and reliability:

- Practice upset or failure scenarios BEFORE they occur in an operating plant, increasing the probability of a correct response
- Test emergency response procedures for pump failures, compressor trip, power failure, etc.
- Ensure all operators have the same response to a situation

### Optimize unit performance:

- Practice and master essential unit principles and skills
- Adopt industry best practices
- Learn to recognize suboptimal operating conditions
- Standardize operator responses to reduce “battle of the shifts” that result in unwanted process swings

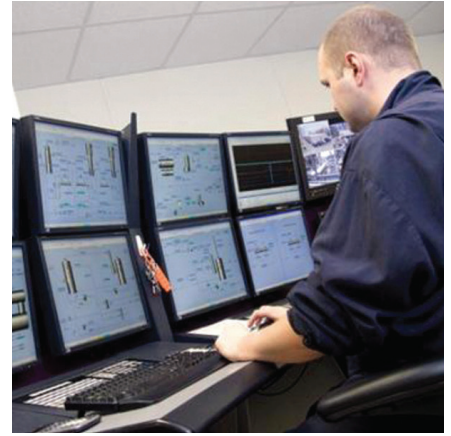
### Increase training effectiveness:

- Learn critical operations concepts from world-class subject matter experts with practical, hands-on experience
- Deliver a content-rich, hands-on training experience that results in greater student engagement and knowledge retention
- Train using real-life scenarios in a safe environment, and provide immediate feedback on performance for proper skill development

### In recognition of this need, technical service agreements with Elesent Clean Technologies are available with a variety of training opportunities:

- Traditional classroom operator training
- Emergency response training
- Startup/shutdown training

*We offer generic and custom OTS solutions tailored to your specific plant. Contact  
Elesent Clean Technologies for more information on how our experts can help your  
organization transform itself to become safer, more efficient and more  
environmentally sustainable.*



## GLOBAL OFFICES

### NORTH AMERICA

**Global Headquarters**  
**Saint Louis, Missouri, USA**

ContactUs-NA@ElesentCT.com

### LATIN AMERICA

ContactUs-LA@ElesentCT.com

### EUROPE | MIDDLE EAST AFRICA | INDIA

**EMEA Headquarters**  
**Hoeilaart, Belgium**

ContactUs-EMEA@ElesentCT.com

### ASIA PACIFIC

**AP Headquarters**  
**Shanghai, China**

ContactUs-AP@ElesentCT.com

**Jakarta, Indonesia**

ContactUs-INDO@ElesentCT.com

**Elesent Clean Technologies**  
**MECS® Technologies**  
MECS.ElesentCT.com

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