UOP Training Simulators

SKILL DEVELOPMENT IN A SAFE,
REALISTIC AND REPEATABLE ENVIRONMENT

Go straight to the source to build skills, improve performance and drive profitability

UOP

A Honeywell Company

UOP Training Simulators, developed by the experts who designed the process, provide hands-on experience to improve operator and process engineer skills

Operator effectiveness can offer distinct benefits to your operations. Improved safety and reliability maximize the availability of your plant, help meet quality objectives and can reduce costs for energy, utility and material consumption.

A well trained team can enable faster start-ups and help you to maintain efficiency and reliability in your day-to-day operations.

UOP Training Simulators leverage the experience of UOP process designers to transfer knowledge to your operators and process engineers. Using a unique combination of the Honeywell UniSim™ simulation technology and almost a century of process technology expertise from UOP, training simulators provide the hands-on experience and skill building that can drive improved refinery safety, improved operations and reduced downtime. The Honeywell UniSim Operations Suite uses a simulated environment to challenge the trainee with exercises, operator graphics, dynamic trends and alarm displays.

The simulators will teach your operators and process engineers best practices and strategies for addressing the areas most critical to your operations.

General process operation

Operators will better understand how to meet production objectives and optimize the unit to achieve maximum profitability.

Control strategies

Variables such as reactor temperature, pressure and hydrogen to hydrocarbon (H_2/HC) mole ratio can be manipulated to influence product quality and product yield. Learning and practicing proper operation minimizes utility consumption, maximizes product yield and optimizes utilization.
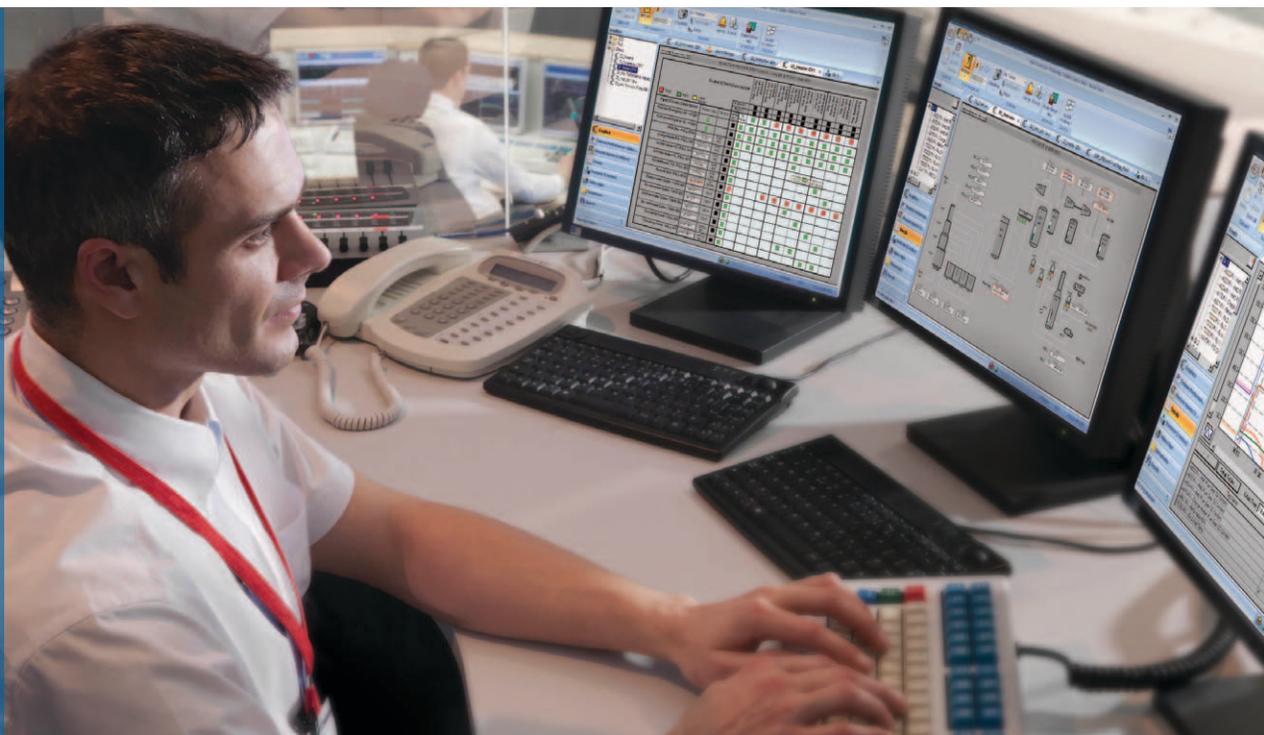
Normal operating procedures

In-depth understanding and experience in day-to-day operations will help operators more quickly and effectively generate the operating revenues and profits required from the unit.

Incident avoidance and recovery

Skill in handling incidents is critical to protect plant reliability, profit generation and operating safety. Trainees are taught to recognize and respond to subtle process upsets before conditions exceed operational limits. Recovery is also important as this affects how soon the plant can return to profitable production.

UOP Training Simulators help to develop and practice the skills of your operators and process engineers in a safe, realistic and repeatable environment.

Training scenarios based on real-life experience

UOP Training Simulators are based upon UOP's proprietary process design package and represent a typical flowscheme and control system for the technology. This includes engineering specifications for the process streams, equipment, reactors, control schemes and operating procedures to provide a realistic representation of your process unit.

Each simulator includes more than 20 preconfigured training scenarios designed to challenge your employees and develop their troubleshooting skills. These exercises mimic potential alarm situations in a safe environment to provide operators with real-life experience in maintaining units, troubleshooting and managing issues. The operator will acquire expertise in investigating root causes of changes or malfunctions in the process unit and experience in implementing corrective actions to maintain unit operation. The exercises also include operator assessments to establish a basis and then track improvements in operator competency.

Take training classes to the next level

Whether you have new operators and engineers, or you are in need of a refresher to further refine the skill level of your employees, UOP Training Simulators are an excellent complement to classroom and online training courses.

Today UOP offers a number of process training courses that have been enhanced with training simulator work. Please visit www.UOPtraining.com to see our complete course schedule and register for courses.

UOP currently offers training simulators for several key technologies:

- UOP CCR Platforming™ Process
- UOP FCC Process
- UOP Unionfining™ Process
- UOP Unicracking™ Process

Decide the package that's right for your business

UOP training simulators are offered in different packages so you can determine the level of instruction that's needed for your staff.

Fundamentals package

Your UOP training simulator includes the Fundamentals Package, which will help operators develop the basic knowledge needed to safely operate a unit. The included workbook:

- Provides technology familiarization to better understand how to meet production objectives
- Provides a detailed orientation of how to use the simulator and manipulate variables
- Includes normal start-up and shutdown procedures, and normal operation exercises

Operations packages

If more in-depth instruction is required, you can upgrade your UOP training simulator to include one of our detailed operations packages, which will enable the operator to become effective at maximizing operating revenue and profits from the unit.

Each package includes a combination of workbook exercises and pre-configured simulator scenarios. The workbook exercises are focused on teaching normal operations and process variable manipulations.

Operations Package 1 and Operations Package 2:

- Focus on incident avoidance and recovery to protect plant reliability, profit generation and operating safety
- Teach trainees to recognize and respond to subtle process upsets before conditions exceed operational limits
- Teach recovery techniques to help ensure the plant can resume operation quickly
- Include built-in assessment tools created by UOP technical experts to judge operator competency
- Contain 10-15 scenarios based on typical process unit upsets

Operations Package 1: **Basic Operation**
This set of scenarios focus on teaching the operator how to react to sudden equipment failure. The scenarios don't require a deep knowledge of the process technology to perform, but are essential for safe operation of the unit. Example scenarios include:

- Loss of an operating pump, such as boiler feed water supply
- Loss of steam to a distillation column

Operations Package 2: **Advanced Operation**
The advanced operation scenarios will develop deeper process technology knowledge and help the operator understand operational and economic implications of a unit upset. Example scenarios include:

- Fouling of key equipment and how to respond
- Shutting the unit down properly in an emergency situation
- Partial loss of make-up hydrogen

Customized simulators improve profitability by aiding in procedure development and control scheme assessment before you start-up

While UOP Training Simulators are based on typical flowschemes and are available as an off the shelf product, UOP can provide customized simulators for UOP process technologies. The customized simulators are also embedded with the UOP proprietary process technology, and are enhanced to replicate the exact flowscheme, naming and control system of your specific unit.

In addition to the obvious benefits of training your operators on an identical, risk-free operating system, customized UOP training simulators can provide valuable operational planning and assessment prior to start-up.

Procedure development and assessment

With a customized UOP simulator, your facility can be operated many times in a safe, simulated environment to capture and optimize procedures under both normal and abnormal situations, months before the actual unit start-up. This simulation gives your team the confidence that operating procedures have been validated against the dynamic behavior of your individual process and controls.

Once your facility is commissioned, these customized simulators can be utilized to address chronic incidents and avoid subsequent occurrences, allowing operators to learn from the mistakes of others.

Control strategy assessment

The first time you operate your process control systems does not have to be during start-up. Using customized UOP simulators, your team can tune controllers, confirm interlocks and safety systems, optimize alarm configuration, and stabilize control implementation long before the unit is commissioned. This validation allows you to address issues before the process is operational rather than doing risky instrumentation work online or waiting until your next turnaround.

Two powerful tools working for your business

The combination of UOP process technology expertise and the power of the UniSim Operations Suite gives your operators and process engineers the knowledge, skills and confidence to safely operate your unit. These tools can become an indispensable part of your plant's infrastructure, enabling safe, efficient and reliable operations and improved financial returns.

Benefit	Description
Time-to Market	Using a simulation system reduces commissioning and validation time of automation system application software
Product Quality	Extensive testing of application software reduces off spec product
Operating Costs	Training plant operations staff with simulation reduces operations-induced unscheduled downtime
Mitigate Risks	Simulation systems identify and reduce dormant errors in automation systems

Find out more

If you are interested in learning more about UOP Training Simulators or any of our training courses and tools, please contact your UOP representative or visit us online at www.UOPtraining.com.

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