

## Case Study

### FertiNitro Reduces Shutdowns with Honeywell UniSim®



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- Natalia D'ambrosio, FertiNitro, Superintendent

#### Background

**FertiNitro** (*Fertilizantes Nitrogenados de Oriente*) is Venezuela's largest fertilizer company, producing around 1.5m tons of urea per year. FertiNitro is one of the world's main producers of nitrogen fertilizer, with daily production capacity of 3,600 tons of ammonia and 4,400 tons of urea.



#### Challenge

FertiNitro needed a way to train employees specifically to improve their response time and the actions they would take in order to guarantee the operational continuity of the plant. The project involved an ammonia plant, a urea synthesis plant and a urea granulation plant.

“Everything we have installed in our plant, including the whole control system is Honeywell. We selected Honeywell because it is a company that we know and it is the one company that provided us with the development of this type of simulator. This project had not been done anywhere else and Honeywell agreed to take on this challenge with us,” commented Natalia D'ambrosio.

#### Solution

FertiNitro selected Honeywell's UniSim® Operations Suite for their training simulator requirements and dynamic simulation models were built using its UniSim® Design engine.

#### Benefits

UniSim Operations Suite offers the opportunity to make sustained and measurable differences in plant reliability and operations performance, used by both operations and engineering teams. For operations:

- **Accelerate knowledge transfer** using dynamic simulation tools to train operators in a control-room environment
- **Deliver earlier operating profits** with faster startups
- **Protect profits by avoiding incidents** that result in production losses, equipment damage, personnel injury and environmental hazard

By identifying design problems early in the project, UniSim enables engineers to:

- **Improve process design** through rapid evaluation of the most cost-efficient, reliable and safe design
- **Reduce engineering costs** by providing a common environment to manage consistent use of data and models
- **Optimize equipment operation** by monitoring performance and enabling quick evaluation of the consequences of design changes

#### Results

Through the joint effort of FertiNitro and Honeywell, an operator training simulator (OTS) was developed for the ammonia and urea plants.

“The project has provided incredible benefits to us in terms of training operators, improving response time, and the availability of back up employees for any situation that may arise in the plant. And, with the development and the training that the

employees have had, we have reduced the plant shutdown due to operational mistakes,” said D’ambrosio.

“It has changed the way we work because employees are more qualified, better trained, and better prepared. We can work in a more organized way to guarantee the training and the availability of the employees.”

“The return on investment for us has been quite fast. The cost of the project was high, but in a short time we recovered the investment because we had eliminated many shutdowns due to operational errors – we reduced these operational errors to a level of zero. What we stopped losing in lost urea and ammonia production has totally covered the cost of the project,” explained D’ambrosio.

### Summary

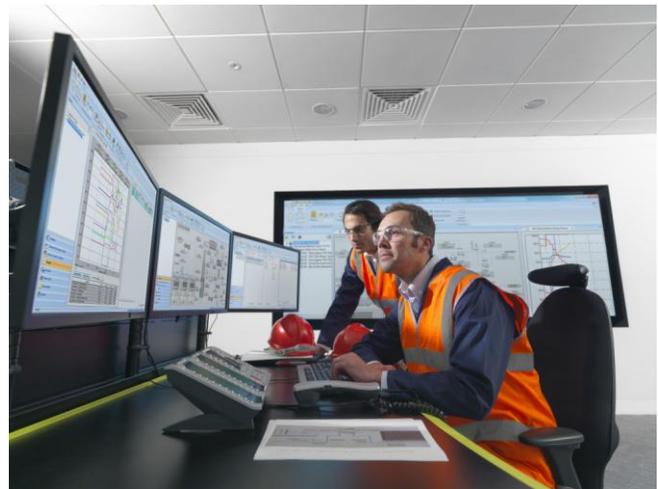
The Honeywell OTS has trained over 80 operators with no risk to the continuous production process at FertiNitro and has allowed the evaluation of engineering improvements in process and control.

“Honeywell’s employees and the service they provide are valuable to us. There is always someone available to help us. Every time we have a doubt or a problem, they are always ready to give us solutions and the support that we need,” said D’ambrosio.

### About Honeywell’s UniSim Operations Suite

UniSim Operations is an integrated suite of dynamic process and control simulators, toolkits and system interfaces used to develop operator competency, OTS, verify control strategy, develop operator procedures and perform “what-if” scenarios. The UniSim solution consists of hardware, software and a process simulation model, as well as controls and logic, on server and workstation Microsoft Windows operating systems. UniSim Operations is a unified simulation platform driven by the UniSim Design dynamics process modeling engine. Included in this suite are:

- UniSim Training Software
- UniSim Process & Control Simulation
- UniSim DCS Interfaces/Toolkits
- UniSim ProcessSync
- UniSim Process Monitor



### For More Information

To learn more about Honeywell’s products and services, visit our website [www.honeywellprocess.com](http://www.honeywellprocess.com) or contact your Honeywell account manager.

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