“Honeywell’s UniSim operator training simulator (OTS) has provided a competency-based training facility for our plant operating technicians, enabling us to generate standard procedures, shorten our job training time, increasing our knowledge base and allowing us to explore unusual plant operating scenarios at our LNG facility.”

Bill Goad, Instructor/Terminal Engineer, National Grid Grain LNG Limited

Benefits
National Grid operates an LNG importation and storage facility at the Isle of Grain in the UK, which is one of the largest LNG facilities in the world. This facility is the first LNG importation facility currently flowing into the UK and has the capacity to export around 12 percent of UK demand. As the facility continues to expand, part of the phased approach to implementing next-generation technology included new control and safety systems from Honeywell.

With new control and safety systems came a need to alter the design models in order to train employees on the new system. National Grid used its operational knowledge and Honeywell’s analysis to help develop new models that matched the actual plant. Having used Honeywell’s Experion® control systems, it was a natural extension to use Honeywell’s UniSim® Operations training simulation software for its advanced operator training solution for the Isle of Grain LNG receiving and regasification plants.

With the combination of Honeywell’s UniSim, Experion Process Knowledge System (PKS) and safety systems, National Grid has gained an advanced training simulator that provides a realistic view of its facility. In addition to saving time and money, benefits from the UniSim training simulation solution include:

- Comprehensive training for operational personnel
- Increased understanding and on-the-job training in dealing with plant trips and failures
- Helped generate standard procedures for plant operations and dealing with emergency scenarios
- Revised design that truly represents new LNG facility with safety and simulation models incorporated

Background
National Grid is an international electricity and gas company and one of the largest investor-owned energy companies in the world. It plays a vital role in providing energy to millions of customers across Great Britain and the northeastern U.S.

National Grid owns the high-voltage electricity transmission network in England and Wales and operates the system across Great Britain. It also owns and operates the high pressure gas transmission system in Britain. Its distribution business delivers gas to 11 million homes and businesses.

In the U.S., National Grid distributes electricity to nearly five million customers in Massachusetts, New Hampshire, New York and Rhode Island. It is also the largest distributor of natural gas in the northeastern U.S., delivering gas to 3.4 million customers.
Challenge
At the commissioning of its new LNG facility at the Isle of Grain in the UK, National Grid became the operator of one of the largest LNG facilities in the world. National Grid incorporated an advanced control and safety system from Honeywell but needed to revamp its training process that was based on outdated plant models.

“We needed to alter the design models and find a way to efficiently and quickly train our operators so that they are comfortable with the new system in a way that didn’t affect our plant performance," said Bill Goad, instructor/engineer, National Grid. The company also realized the need to train new employees and keep operators up-to-date with comprehensive training to deal with any circumstance that may arise.

Solution
National Grid implemented Honeywell’s UniSim Operations software including an advanced instructor station, a process/control/logic modeling engine, a direct connect DCS interface to Experion and advanced graphics software. The UniSim solution provides highly efficient training because it is interactive and identical to the actual Experion interface, provides risk-free and repeatable exercises, and trains for normal operating situations as well as specific disturbances.

Honeywell provided an OTS for both Isle of Grain Phase I and Phase II LNG receiving and regasification plants. The OTS uses a UniSim Design process model directly connected to an Experion DCS and an FSC shutdown system. Trainee facilities consist of four Flex stations and a mimic central hard panel along with an instructor station all housed in a mockup of the real control room in the site’s training center.

“The operational realism enables our operators to become familiar with all aspects of the facility before operating the plant and having to deal with unplanned circumstances. The ease-of-use and familiar displays provides the confidence they need in operating the system and controlling any issues,” said Goad.

The UniSim solution models routine operational scenarios, including startup operations (cold start), normal shutdown operations, normal steady-state operations and emergency operations. In addition, the system is capable of simulating operations dictated by process disturbances and equipment failures introduced by the instructor. Unlike other simulation vendors, Honeywell provides rigorous modeling, evaluating and enhancing performance of plant assets prior to initial operations and throughout a customer’s plant lifecycle.

Concluded Goad, “We look forward to the long-term payback we expect from this advanced simulation solution and it is a pleasure to work with the efficient, dedicated employees of Honeywell.”

More Information
For more information about UniSim, visit www.honeywell.com/ps or contact your Honeywell account manager.

Automation & Control Solutions
Process Solutions
Honeywell
1860 W. Rose Garden Lane
Phoenix, AZ 85027
Tel: 800-822-7673
www.honeywell.com/ps

Honeywell
Experion® and UniSim® are registered trademarks of Honeywell International Inc.