Honeywell’s Partnership with Atlantic Enables Delivery of World Class LNG OTS

“The development of the Operator Training Simulator (OTS) surpassed expectations of the client/vendor relationship. Honeywell’s development engineers were always accessible throughout the lifecycle of the project, which allowed for easy collaboration with our operational and engineering staff.”

– Gaurav Mahabir, Electrical, Instrumentation and Controls Engineer III, Atlantic

Background
Atlantic is one of the world’s largest producers of Liquefied Natural Gas (LNG), produced from natural gas delivered from fields in and around Trinidad and Tobago to the four-train liquefaction facility located in Point Fortin, on the southwest coast of Trinidad.

The facility also includes a port area with two 700-meter jetties, an approach channel used by LNG carriers to berth at the jetty, and a turning basin. Each jetty can accommodate an LNG carrier of approximately 145,000 cubic meters in size.

In addition to LNG, the plant produces natural gas liquids (NGLs), which are delivered to a third party. Atlantic’s business does not include exploration, distribution or shipping. The company’s primary business is the liquefaction of natural gas and is the sixth largest LNG exporter in the world.

Challenge
Over the years the international demand for experienced LNG operators has resulted in a need to train new operators to support the production staff.

Atlantic needed to improve overall understanding of process functionality and to capitalize on existing skills. The benefits of improving operator skills on a large scale complex process convinced Atlantic to invest in a state-of-the-art training facility. As a result, Atlantic initiated an OTS project in 2013 as one of its priority projects inviting vendors to tender on a competitive bid basis.

Solution
Atlantic selected Honeywell to provide the OTS solution. Atlantic was impressed with Honeywell’s 20-year track record of delivery of OTS in the LNG market globally. The project was initiated in August 2013, with OTS delivery to the site by February 2015, taking into account that the development of the OTS was a brownfield project. The simulator provided risk-free and repeatable exercises to train for normal operating scenarios as well as specific disturbances. The platform includes the following elements:

- **Honeywell’s UniSim® Design Dynamic Simulation Engine**, a best-in-class dynamic simulation platform for high fidelity process modeling.
- **Control and ESD Simulation Engine**, which simulates process control, logic and safety system algorithms, allowing operators to perform operations in realistic conditions.
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- Honeywell’s UniSim® Operations Instructor Workstation, a full featured HMI for all aspects of operator training and competency management. Key tasks include basic coursework, problem solving and trainee assessments.

Results
With training now under way, initial feedback from operators is positive. New operators have been using the OTS to accelerate their development by building knowledge and understanding of the LNG process inclusive of DCS competence. Experienced operators are using the OTS for supplemental training and capacity building in areas not previously experienced while on the live plant.

Common feedback from operators who have used the OTS is, “After taking the training course with the simulator, I now feel more confident to address upset conditions and startup and shutdown conditions.”

In the longer term, Atlantic expects to experience benefits common to Honeywell’s OTS installations, which include the ability to:

- Reduce start-up times and sustained safe, optimum production
- Improve operator diagnostic skills
- Improve training efficiency that will minimize training time
- Reduce incidents and improved process safety
- Maintain each operator’s ability to respond to abnormal and emergency situations
- Avoid risk of human error in actual process operations during new operator training

“Honeywell’s development engineers were always accessible during configuration and testing of the model fidelity, transient behavior and training, which allowed for easy collaboration with our operational and engineering staff,” said Gaurav Mahabir, Atlantic Engineer. “This close collaboration resulted in a world-class OTS that was delivered within budget and schedule.”

The Atlantic Operator Training Simulator will improve operator skills needed to monitor and control processes during start-up and shutdown, as well as to train on safe control in normal, abnormal and emergency situations. Atlantic will be able to train periodically on the isolation of safety incidents caused by both external and internal disturbances, including operational disorders, failures, faults and breakdowns of various types of equipment.

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For More Information
To learn more about Honeywell’s UniSim Competency Suite, visit our website www.hwll.co/UltimateOperator or contact your Honeywell account manager.

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October 2015
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