Qatar Petroleum Improves Operator Performance and Training with UniSim

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Soud Jaleel Al-Ruwaili, Assistant Manager, Production Operations, Gas Recycling, Qatar Petroleum

Benefits
Qatar Petroleum chose Honeywell’s UniSim® Operations training simulation software for its advanced operator training solution which allows users to become fully familiar with all aspects of the control system before operating the plant.

Through implementing UniSim at its Dukhan gas recycling plant, Qatar Petroleum has gained a training simulator that provides a true representation of its DCS, and has strongly improved software familiarization. Additional benefits include:

- Comprehensive training program for current and future panel operators
- Reduced job training period with hands-on experience
- Helped overcome skills shortage
- Reduced post-shutdown startup time
- Established a career progression path for additional training modules with increasing complexity
- Allows creation and demonstration of actual plant problems for operator training

Background
Qatar Petroleum started as a small topping plant in 1958 and has grown over the years, successfully making the state of Qatar self-sufficient and export-oriented in refined oil and petroleum products. The main finished products are liquefied petroleum gas (LPG), naptha, gasoline, jet fuel, diesel and fuel oil.

The gas recycling plant in Dukhan was commissioned in 1998 with the objective of recovering condensate and raw natural gas liquids (NGL) from the Arab-D reservoir. The plant was upgraded in 2003 for the recovery of ethane-rich NGL.

Challenge
After its expansion in Dukhan, Qatar Petroleum faced new plant complexities with both process and technological upgrades. The gas recycling plant is a single train with high demands on plant reliability and availability, and the plant has highly advanced plant protection systems, including automated shutdown and blowdown systems.

With a shortage of skilled trainers and the need for trainees to upgrade their skill level, Qatar Petroleum recognized the need for an operator training simulator to train new employees and to aid with resource and skill retention.
Qatar Petroleum chose to implement Honeywell’s UniSim Operations Suite which includes an advanced instructor station, a process/control/logic modeling engine, a direct connect DCS interface and advanced graphics software. It allows training for new and existing operators to ensure continued familiarity with the system. UniSim provides highly efficient training because it is interactive and identical to the actual DCS user interface, provides risk-free and repeatable exercises, and trains operators for normal situations and specific disturbances.

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. The UniSim operator training solution represents the Dukhan plant’s DCS, and provides emulation of the Honeywell DCS and Failsafe Controller, TriStation and Triconex logic systems, and basic emulation of turbine controls.

“The involvement of trained operators and process engineers with the development of the operator training simulator process model from concept to commissioning resulted in a highly effective and realistic training simulator,” said Soud Jaleel Al-Ruwaili, Assistant Manager, Production Operations, Gas Recycling, Qatar Petroleum.

Honeywell and Qatar Petroleum developed a comprehensive training program for current and future panel operators. A competency certification program was initiated and successfully implemented which has identified clear Qatarization plans for new recruits. Qatarization is a program designed to increase the number of Qatari nationals in all joint venture industries and government departments, including the industry and energy sector. A career progression path has been established based on various training modules with increasing complexity.

“The UniSim operator training simulator is a highly effective tool and has become an indispensable part of our training program. The hands-on training experience has dramatically shortened the job training period and helped increase the confidence in our operators and other personnel,” said Soud Al-Ruwaili.

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

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