Case Study

SNC-Lavalin GTS Partners with Honeywell to Optimize Operator Training Simulation

“SNC-Lavalin GTS recognized its synergies with Honeywell to offer an operator training solution to improve plant safety and efficiency. This includes a safe learning environment where new operators can navigate a replica of their plant, giving them the opportunity to practice tasks essential to their job.”

– Jose Alamo, General Manager, SNC-Lavalin GTS

Background

Founded in 1911, SNC-Lavalin is one of the leading engineering and construction groups in the world and a major player in the ownership of infrastructure. From offices in over 50 countries, SNC-Lavalin’s employees are proud to build what matters. Their teams provide EPC and EPCM services to clients in a variety of industry sectors, including oil and gas, mining and metallurgy, infrastructure and power. SNC-Lavalin can also combine these services with its financing and operations and maintenance capabilities to provide complete end-to-end project solutions.

Under an agreement with Honeywell Process Solutions, SNC-Lavalin Global Training and Simulation (GTS), a division of SNC-Lavalin Inc., employs Honeywell’s UniSim® Operations simulation platform as part of its training solutions.

Benefits

For more than 20 years, dynamic simulation has been used around the world as an effective tool for Distributed Control System (DCS) operator training and design verification.

SNC-Lavalin GTS needed an improved training simulation capability to better serve the industrial market. It partnered with Honeywell to deploy a comprehensive training program that included UniSim Operations to prepare new employees to operate their processes safely and efficiently.

UniSim Operations offers advanced capabilities and is field-proven at sites worldwide. The UniSim simulator is the key to a clear understanding of plant behavior under normal and abnormal situations. Benefits extend beyond enhanced operating performance to include improved safety and protection of the environment.

UniSim Operations enables sustained and measurable upgrades in plant reliability and operating performance, and can be used by both operations and engineering teams for a multitude of purposes throughout a plant’s lifecycle. Boosting plant reliability through informed decision-making is critical to success.

Challenges

Process industry plants are faced with finding a balance between contrasting objectives – improving production capacity while maintaining reliability. What good is improving production capacity if pushing equipment harder results in shutdowns, asset damage or personal injury?

The performance and productivity of any industrial facility relies on its personnel and their ability to perform critical jobs safely in a skilled and knowledgeable manner. Today, however, industrial firms require new tools to meet a host of evolving challenges in training key employees such as plant operators.

Solutions that assist an operator’s understanding and control of current plant operating conditions have obvious advantages.
In this case, SNC-Lavalin GTS had a client in the phosphate fertilizer industry in North Africa that was faced with increasing its production capacity, improving productivity, and ensuring flexibility for actual and future projects. These demands made it necessary to adopt a skills improvement strategy for all personnel. The client was also dealing with a significant number of imminent retirements and had to integrate and train 3,000 new employees in operations.

The task entrusted to SNC-Lavalin GTS was to set up an extensive training program to support the client in reaching its key objectives.

Solution

After considering various commercially available simulation technologies, SNC-Lavalin GTS chose Honeywell’s UniSim Operations solution. It is part of the comprehensive UniSim Competency Suite, which helps better train today’s industrial workforce. This solution can be used to replicate and assess the operational readiness of plant assets long before they are applied in real-world production scenarios.

The UniSim Operations solution includes:

- UniSim Training Software
- UniSim Design Dynamic
- UniSim Control Simulation
- UniSim DCS Interfaces/Toolkits
- UniSim Process Monitor

For SNC-Lavalin GTS, the advantages of the UniSim Operations technology included its ability to handle solids and particle size distribution (PSD), an extensive thermodynamic property database, and a flexible design and run environment. The UniSim solution also offered a strong set of training features, such as a robust scoring engine, SCORM compliance and an intuitive instructor interface.

For SNC’s client in North Africa, four processes were simulated to reproduce existing plant conditions, equipment and control systems. These included:

- Sulphuric acid plant
- Phosphoric acid plant (attack/filtration unit and concentration/steam unit)
- DAP granulation plant (two technologies)
- Mine beneficiation plant

The process models accurately represented both chemical plant processes and beneficiation in the mining operation. The models were validated with actual plant data and use simulated replicas of the client’s DCS graphics and controls.

With this approach, trainees can experience the plant and simulated incidents in a realistic manner, leading to better-informed decision-making.

From a service standpoint, SNC-Lavalin GTS developed a world-class technical training program for the phosphate industry. During the first phase, it designed an organizational structure aligned with the client’s strategy for each of its 35 plants. This included redefining roles, responsibilities and competencies of all job positions, determining the number of employees required per job position to meet the productivity targets, and developing competencies and skills sets.

In a second phase, SNC-Lavalin GTS developed the training program for all technical job positions in support of the client’s objective of demonstrating world-class competencies through training and certification.

SNC-Lavalin GTS also developed state-of-the-art learning tools using the most recent developments in adult learning principles, resulting in a catalog of several thousand hours of course material.

Lastly, SNC-Lavalin GTS developed a “train-the-trainer” program focusing on pedagogical and technical skills to train the client’s trainers who, in turn, will instruct thousands of new employees.

For More Information

To learn more about how Honeywell’s UniSim Competency Suite can optimize performance, visit our website www.hwll.co/UltimateOperator or contact your Honeywell account manager.

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