

NAPCON SIMULATOR

ENSURES SAFE & COST-EFFICIENT OPERATION

Neste produces a comprehensive range of major petroleum products and is the world's leading supplier of renewable diesel. A major contributor to Neste's traffic fuel production is the Residue Hydro Cracking Unit (RHCU) at their Porvoo refinery.

The RHCU is a challenging unit to operate, because of the complexity and extent of the process and automation. In addition, the use of hydrogen in high pressures and temperatures sets high safety requirements. To ensure safe and cost-efficient operation of this economically important unit, Neste decided to invest in simulator aided operator training.

During the construction of the unit Neste Engineering Solution's Automation technology department developed a dynamic operator training system (OTS) covering the essential parts of the process, the safety instrumented system, automation system and automation system interfaces. The OTS was delivered in 2006, allowing rigorous testing of the process and automation design, as well as training operators well in advance, before the initialization of the actual unit. Due to the OTS, the start-up of the unit ran smoothly, and since its first delivery, the scope of the OTS has expanded to include most utilities and auxiliary equipment. The process models have also been updated and fine-tuned to function seamlessly with the current operation of the unit, ensuring highest quality training.

CLIENT

Neste Oyj, Porvoo, Finland

NESTE ENGINEERING SOLUTIONS DELIVERY INCLUDED:

- NAPCON Simulator software package, training environment, high-fidelity process model, emulated automation and safety instrumented systems, and automation of system user interfaces
- Client training
- Maintenance services

BENEFITS FOR NESTE:

- Test bed for new process and automation designs
- Initial training for new operators, periodical operator training for specific scenarios and independent operator training
- Training for the shift supervisors and engineers

NAPCON SIMULATOR DELIVERY PROJECT HIGHLIGHTS:

- First version of OTS delivered before the plant start-up
- Long term commitment to the development and maintenance of the OTS, starting in 2003
- Use of separate dedicated maintenance and development environment allows updating the OTS without interruptions to training