Wärtsilä LNG Bunkering and Fuel Supply System Simulator

The global demand for LNG fuel as a marine fuel increases, alongside with the need for the LNG bunkering vessels. Top-notch crew training is essential to achieve the best operating practices, safety and efficiency.

Wärtsilä LNG Bunkering & Fuel Supply System Simulator ensures safe operations of the LNG fuel supply systems at sea and comes in line with Wärtsilä's Getting to Zero 2030 Coalition and IMO's carbon emissions reduction strategy.

Key features

The Wärtsilä LNG Bunkering & Fuel Supply System Simulator promotes greater safety onboard LNG-fuelled vessels by improving the level of training for operators of LNG systems.

The design of the simulator is based on the well-proven Wärtsilä LNGPac and Gas Valve Unit (GVU) technologies and includes all auxiliary systems used in connection with the fuel supply.

The system complies with the requirements for training seafarers on gas-fuelled ships to standards demanded by the IGF Code.

The LNGPac simulator enables several different configurations tailored to the customer's needs. The simulator is available for subscription or as a one-time purchase.

The simulator is part of the TechSim 5000 product line, which includes various engine room and liquid cargo handling simulators that have been installed in training centres around the world.

Benefits

Reliability

Improved uptime of the equipment for better handling and preventing failures

Predictable costs

A simulator solution will require minimal maintenance compared to the real equipment

Hands-on training

A simulator setup is built with training in mind,
allowing flexibility and constant high-level learning experience

Safety

Being in a controlled environment, the instructor will be able to push the boundaries
of the various simulated scenarios, without compromising the safety of the trainees

Training objectives

Technological simulator of the LNG fuel gas supply system of the ship is intended
for the standard operations and emergency response training.

The simulator can be used in basic and advanced IGF code training and certification,
as well as refresher training and case studies, targeting maritime training institutes,
ship owners and crew management companies.

- Familiarisation with LNG bunkering and fuel gas supply system
- System layout and flow diagrams
- Taking fuel tanks in and out of service
- LNG bunkering procedures
- LNG fuel storage and securing
- LNG fuel delivery to the engines
- Control System, Automation, Alarm and Safety System
- Watchkeeping and Troubleshooting
- Emergency Response

Certification

The model is certified by ClassNK and compliant with the STCW 2010
Manila amendments Code A/ Table A-V/3-1 and A-V/3-2
(Included by the RESOLUTION MSC.397(95)):

- Table A-V/3-1 Specification of a minimum standard of competence
  in basic training for ships subject to the IGF Code

- Table A-V/3-2 Specification of a minimum standard of competence
  of advanced training for ships subject to the IGF Code

Simulation Solution

Standard simulated configuration of the system consists of IMO type C vacuum isolated LNG tank with tank connection space, bunkering station and gas valve unit.

Also includes auxiliary systems:

- Bunkering Station
- Truck to ship
- Stationary tank to ship
- Ship to ship
- Storage tank

- Design pressure 9 bar
- Volume 130m^3
- Pressure build-up evaporator
- Main gas evaporator

- Heating media system
- Nitrogen system
- Ventilation system
- Gas and fire detection systems

- 2×Gas Valve Unit
- Process Control Automation System
- Safety System

Interactive 3D Realistic Visualization

- Interactive visualization with free moving camera
- CCTV Cameras
- Visual effects for normal operation and emergency conditions

E-tutor functionality

LNG Bunkering model supports the "e-Tutor" functionality, which is standard for all TechSim 5000 models.

"e-Tutor", automatic evaluation and assessment system, is designed to support instructor's functions, guide the trainees through the operating and emergency response procedures, automatically assess their performance, and keep records of the results.

The "e-Tutor" functionality of automated training scenarios allows students to practice independently without the close supervision of an instructor. At the same time, an instructor may focus on the main features and avoid routine explanations.

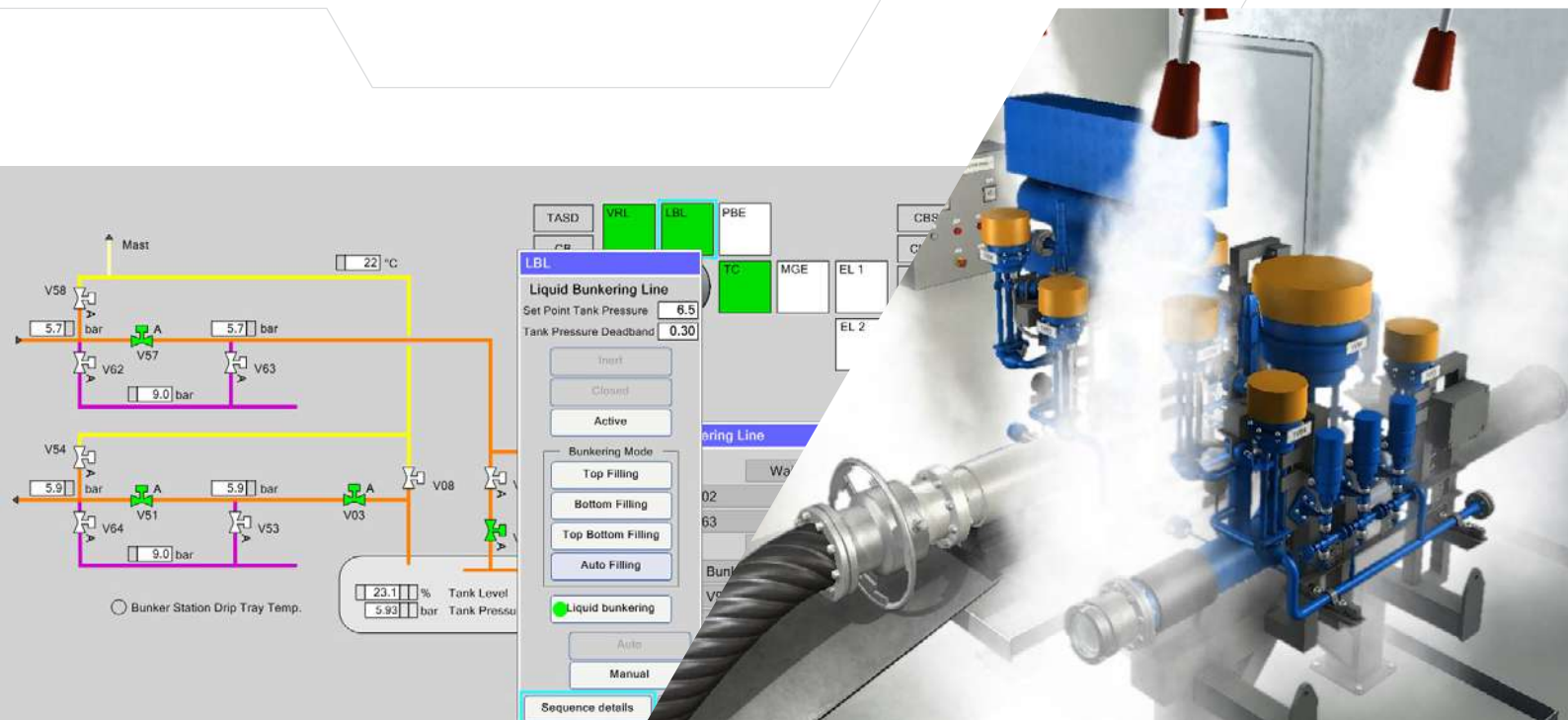Over 20 scenarios cover operations of the following groups:

- General Operations
- Bunkering Operations
- LNG Tank Operations
- Gas Supply Operations
- Inerting Operations
- Maintenance
- Malfunctions

TechSim 5000 LNGPac model is based on the same platform as LCHS 5000 and ERS 5000 simulators and available as:

- Standalone simulation solution for ship owners and/or ship management companies
- New TechSim 5000 classroom
- Addition to the existing TechSim 5000 classroom

Purchase options

- Wärtsilä LNG Bunkering & Fuel Supply System Simulator is available on an annual subscription or as a one-off purchase.
- E-Tutor Exercises can be purchased separately as an add-on.

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