

Applying the Digital Twin to Liquefied Natural Gas (LNG)

Oil & Gas

Dynamic simulation with Mimic Simulation Software provides a high-performance solution for operator training and control system optimization. This Digital Twin technology delivers the complete environment for control system optimization and is an effective tool for teaching process and control engineers the control and operation of liquefied natural gas plants.

LNG Modeling

Solutions for LNG facilities include dynamic models of the following process areas:

- CO2 Removal
- Dehydration
- Fractionation
- Liquefaction
- Storage

Application Capabilities

- Dynamic, real-time mass and energy balances.
- Vapor-liquid equilibrium calculations performed at each pass of the model.
- Multiple two-phase outlet flows.
- Configurable activities and enthalpy correction factors to account for mixture non-idealities.
- Flexible modeling of the pre-cooler and cold box design to match the licensed liquefaction technology and uniqueness of the installation.
- Instructor station controls for feed temperature and composition, cooling water conditions, and other boundary conditions.

Mimic Simulation Software



Train operators on infrequent and dangerous process occurrences



Test control system enhancements



Transfer knowledge from seasoned to inexperienced operators

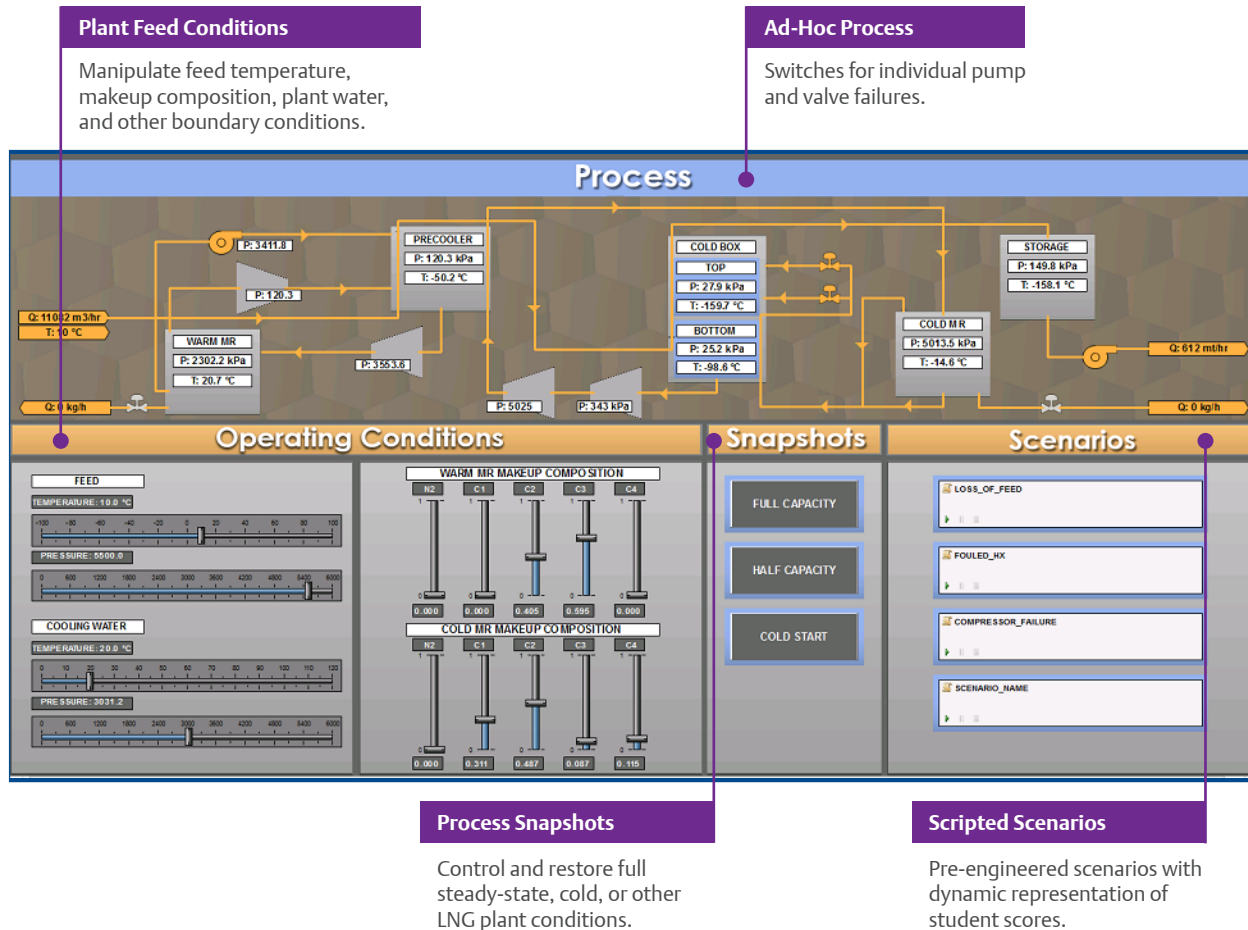


Increase overall plant safety

Instructor Station

Instructor controls in Mimic and instructor screens in Mimic Component Studio allow your training team to prepare for working with the control system and process. Any element in Mimic can be manipulated or controlled, and instructor screens provide

easy access in one location. Typical controls allow instructors to manipulate operating conditions, such as boundary conditions and compositions, introduce ad-hoc device failures, control scripted training scenarios, and restore snapshots to steady-state operations.



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