



Introducing PlantSim™ by nHance Technologies

Full-Scope Simulation That Fits Your Training Budget

nHance Technologies is pleased to introduce a new capability in plant operator training. PlantSim is a series of PC based, generic operator training simulators that illustrate the performance characteristics of many of today's commercial power plants. These training simulators can be installed on your own PC or a network of PCs to simulate the control room environment. All PlantSim simulators feature a complete Instructor Station for simulator control such as start/stop, freeze, snapshot, backtrack, real-time variable trending, malfunctions, and trainee performance review. The operator interface consists of emulated HMIs for a modern DCS with a variety of hard-panel controls.



Figure 1: Simulator training with PlantSim.

PlantSim offers the flexibility of training anytime, anywhere.

This full-scope, high fidelity training simulator has been designed to match the process dynamics for a specific fossil plant design. There are many operational similarities among the vintage of plants, and a great deal of training value can be achieved without going through the expense of developing a plant-specific simulator.

Each PlantSim model is supplied with a full set of Initial Condition (IC) files, Human Machine Interface (HMI) graphics, and unit startup and shutdown instructions.

PlantSim Unit #2 Model Description

The PlantSim Unit #2 model includes first-principles based models of the following:

- **Tangential fired forced circulation boiler (4 BCW pumps) and 5 coal mills**
- **GE steam turbine (1HP, 1 IP, and 2 LP)**
- **2 Forced draft fans, 2 induced draft fans**



Figure 2: PlantSim2 Turbine Generator Panel

(Continued list)

- 4 Circ water and 2 condensate pumps
- 2 Turbine driven boiler feed pumps
- Electrical system and generator
- Control system with emulated DCS HMI screens
- Extensive hard panel emulations

PlantSim Human Machine Interface (HMI)

The PS2 model contains a fully functional replica of the control room Human Machine Interface (HMI) graphics. Actual graphics with simulated data are displayed below. Operation of plant equipment is accomplished via point and click on the main graphic display or by using the control room hard-panel emulation. The hard-panel emulations contain realistic images of the true hard-panel and contain features such as lock out of hard-panel switches.

The PlantSim Unit #2 HMI graphics contain a graphical menu system to navigate from screen to screen. HMI graphics typically display process values and allow for control features, while the hard-panel is used primarily for start/stop operation of major equipment.

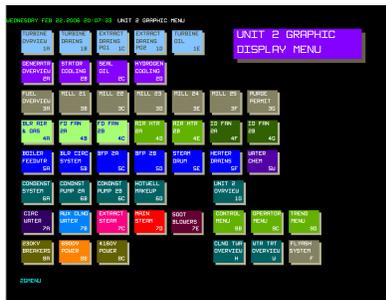


Figure 3: (HMI) PS2 Main Menu

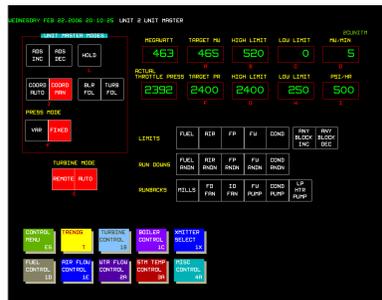


Figure 4: (HMI) PS2 Unit Control

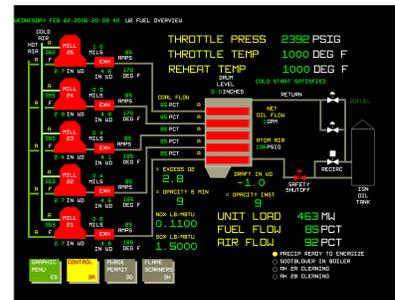


Figure 5: (HMI) PS2 Fuel Overview

Customizable to Your Plant

To increase training value, **the generic simulators can be customized to be more like your own plant.** These options may include modifications to the operational parameters, process model scope (e.g. modify plant component numbers and characteristics), or replace the emulated control graphics with a revised set of DCS HMIs and/or hard-panels. Many other alternatives are available and can be performed by either the end user or nHance.

About nHance Technologies

Since 1978, millions of dollars have been invested to develop and continuously enhance our simulation products to provide industries worldwide with high quality process simulation. nHance Technologies proudly celebrates this history and looks to the future by exploring opportunities to advance our products and services to ensure the continued success of our clients. Please contact us for more details on our products and services.