



Coromandel International Limited

CIL VIZAKH SIMULATOR

For Operator Efficiency & Safety

Background

Coromandel International Limited (CIL), India's second largest Phosphoric fertilizer player, is in the business segments of fertilizers, specialty Nutrients, crop Protection and retail. The Company manufactures a wide range of fertilizers and has the capacity to manufacture over 3.5 million tons of Phosphoric fertilizers and 1 million tons of single super phosphate, making it a leader in its addressable markets.

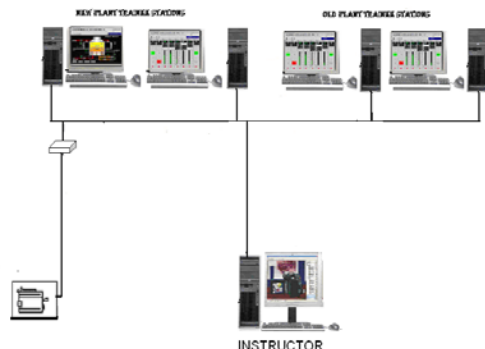
The CIL Vizakh Plant consists of Sulphuric Acid plants, Phosphoric Acid plants, Complex fertilizer plant and effluent treatment plant.

CIL Vizakh plant has a dedicated Learning Center for imparting technical and managerial to its employees. The Center along with Sim Infosystems has implemented the State-of-art Operator Training Simulator for SAP, Old PAP, New PAP & SAP # 3 plants to train new operating personal and re-train experienced operating personal.

SCOPE OF SUPPLY

Sim Infosystems has developed simulator for Sulphuric Acid plant during 2010, Phosphoric Acid plants simulator during 2015, 2019 and Sulphuric Acid plant # 3 during 2023. The simulator was installed and commissioned at the CIL Vizakh training center and consists of the following major components:

- Simulator computers and peripherals
- Instructor Station software
- Operator Station – CS3000/VP emulation
- Custom simulation models for Sulphuric Acid Plant , Old and New Phosphoric Acid plants and Sulphuric Acid plant #3.



The simulation models are developed on the state-of-the-art “ProSimulator” dynamic simulator. ProSimulator is an integrated dynamic simulation environment consists of Instructor station s/w, real-time database, operator station emulation s/w, interface s/w to DCS and dynamic simulation development package.

Simulation modeling platform

The custom simulation models for Sulphuric Acid plants were developed during 2010 and 2023 and consists of:

- **Sulphur melting section**
- **Sulphur Filters**
- **Air Compressor**
- **Sulphur furnace**
- **Steam superheater Waste Heat Boilers**
- **Converters (5 beds)**
- **Inter absorption tower**
- **Economiser**
- **Cold heat exchanger**
- **Hot heat exchanger**
- **Final absorption tower**

The custom simulation models for Old phosphoric Acid and New phosphoric Acid plants was developed during 2015 and 2019 and tuned to meet the actual plant parameters and dynamic performance. The PAP simulation models consists of:

- ✓ **Rock grinding section**
- ✓ **Reaction section**
- ✓ **Filtration section**
- ✓ **Evaporation section**
- ✓ **Fluorine recovery section**
- ✓ **Acid storage section**
- ✓ **Effluent Treatment Plant**

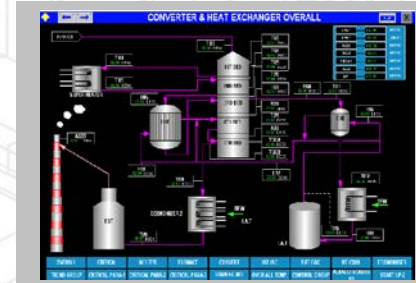
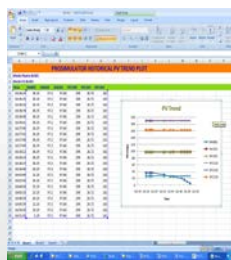
CIL VIZAKH Simulator

INSTRUCTOR STATION

ProSimulator Instructor station enables the instructor to control and direct the training sessions. From the Instructor station, multiple independent training sessions can be invoked by the Instructor and each training sessions can be assigned to work with one or more operator stations. Using this software the Instructor can load a model, invoke malfunctions and monitor the performance of the trainee.

OPERATOR STATION

The simulator is provided with emulation for Yokogawa Centum CS3000 / VP DCS. All functions and features that are essential for training are included in the emulation. The controls and interlock logic are also simulated and provides exact replica of the real plant systems. The field operations are simulated through separate field operation graphics on the operator station.



CS3000 Emulation



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