InoChem Simulator

A NEW PERSPECTIVE

Operator Training simulator (OTS) at InoChem provides the most effective ways to train new operators, refresh the skills of experienced ones, and qualify or re-qualify all operators to retain knowledge, help ensure efficient operations, and avert potential disasters. InoChem advanced training simulators for Soda Ash and Calcium Chloride plants allow realistic, hands-on training for normal operations, start-ups, shut-downs, familiarizing people with workflows, and for abnormal or emergency response to situations without compromising the health or safety of operators, the plant, or the surrounding community.

INOCHEM SIMULATOR

A NEW PERSPECTIVE

- ### BACKGROUND

Khair Inorganic Chemical Industries Co. (InoChem) operates a Greenfield of Soda Ash and Calcium Chloride Industrial Complex on 800,000 square meters (sqm) of land in Ras Al-Khair, Saudi Arabia with an annual capacity of 300,000 MT of Soda Ash and 348,000 MT of Calcium Chloride in various grades, densities, shapes, and sizes, utilizing the latest in advanced technologies and equipment.

The plant is the first Soda Ash producer in the GCC, the largest in the Middle East and North Africa (MENA), and the largest Calcium Chloride manufacturer in the world.

Sim Infosystems has developed and implemented the state-of-art simulators for InoChem Soda ash and Calcium Chloride plants during March 2023.

- ### ProSimulator™ 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.

- ### ProSimulator™ OPERATOR STATION

The simulator is provided with emulation for Emerson Delta V 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 FOD graphics on the operator station.

- ### ProSimulator™ PROCESS MODELS

ProSimulator simulation models are based on rigorous application of first principles calculations. It provides a comprehensive Physical Property methods Database, thermodynamic, unit library, instrument/control library and Numerical methods.

✓ Familiarize with various refinery and gas plant configuration and key operating parameters
✓ Practice Normal plant operations
✓ Practice Standard Operating Procedures including Startup & shutdown
✓ Familiarize with the control system
✓ Familiarize with Safety system
✓ Trouble shooting
✓ Ability to respond to Emergencies
✓ Optimize production

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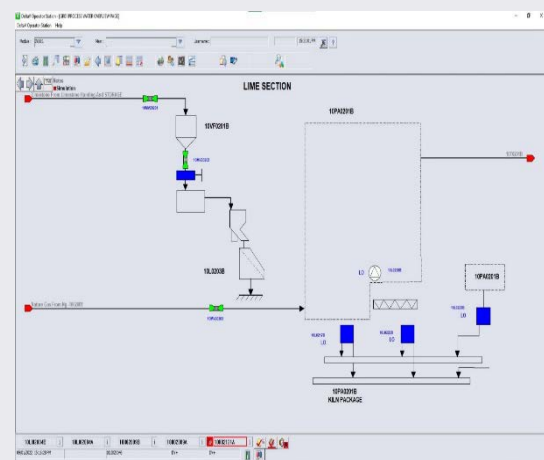The following simulation models are installed in the InoChem Simulator:
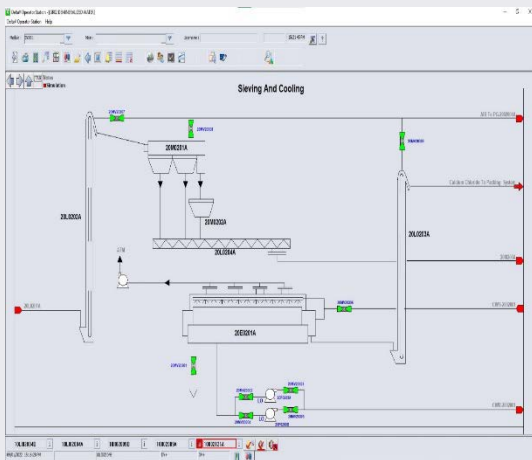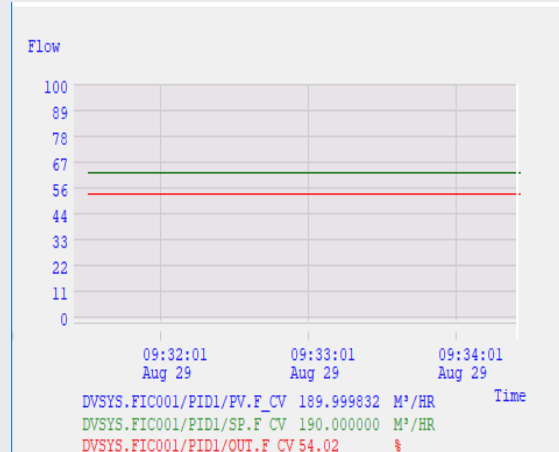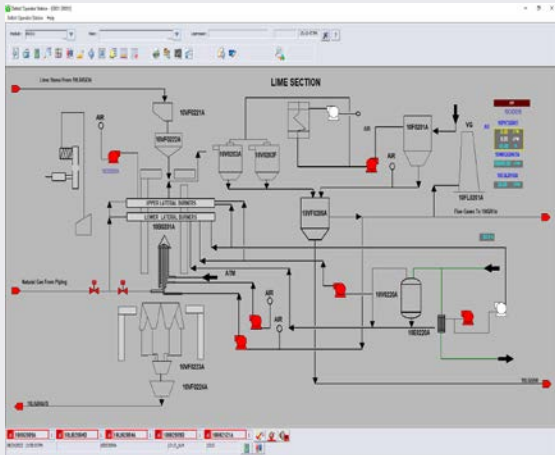
SODA ASH PLANT (300,000 MTPA)

- Lime Kiln Section
- Brine Section
- Absorption & Distillation Section
- Calcination Section
- Carbonation Tower and Filter Section
- CO2 screw compressor
- Waste Liquor Treatment Section

CALCIUM CHLORIDE PLANT (300,000 MTPA)

- Evaporation and Concentration Section
- Granulation section
- Flaking Section

Flow

DVSYS.FIC001/PID1/PV.F_CV 189.999832 M³/HR
DVSYS.FIC001/PID1/SP.F_CV 190.000000 M³/HR
DVSYS.FIC001/PID1/OUT.F_CV 54.02   %

Time

10PIC02003

50.00   0.98
%   Bar A
100.00   4.00

AUT
MAN
AUT

0.98

0.00   0.00

Owned by:
Unit:

Ack   Param   Help

ALM I/O TUN VAR PWM INF

THR

10C0202B

STOP

START

STOPPED

CAS   AUT   AUT

Device State
Confirmed STOPPED

Operation State
Normal

Failure State
Clear

Owned by:
Unit:

Ack   Param   Help
      FAILED

ALM I/O VAR