

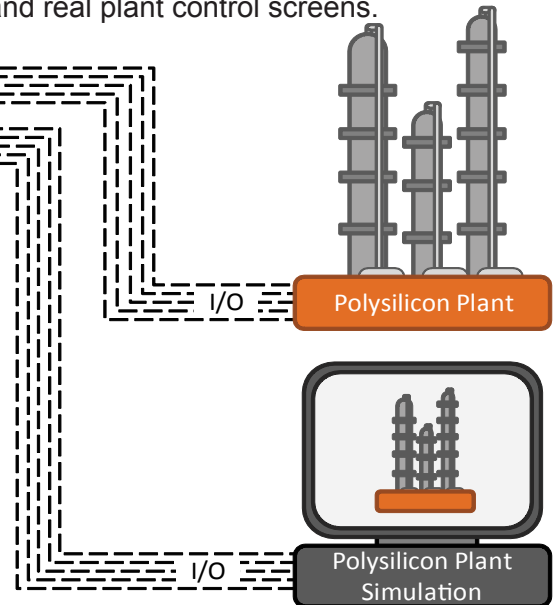
Operator Training Systems

Silicon Chemical Corporation's (SCC) Operator Training Systems (OTS) use computer simulations to provide operator instruction and testing in a safe environment. SCC's Operator Training System gives the operator a realistic view of plant operations in a low-risk environment by incorporating a custom dynamic model of the polysilicon plant, actual plant distributed control system (DCS) control logic, and real plant control screens.

Advantages:

- State-of-the art plant simulation to accurately reproduce plant operation in real-time
- Integration of actual DCS control logic to provide an accurate feel for day-to-day and emergency plant operations
- Custom control environment that can be adapted to future installations
- Operators trained on simulation systems make safer and more responsible choices when running an actual plant

Control System & Human-Machine Interface



Control Room Environment:

- Utilizes custom control screens developed for actual polysilicon plant operation
- Offers repeatable operating and emergency scenarios to train, test, and grade new and current plant operators

DCS System Emulation:

- Uses DCS control logic rigorously developed by SCC to operate polysilicon plants
- Provides operating modes, interlocks, alarms, and shutdown procedures for individual unit process areas

Polysilicon Plant Model:

- Simulates process in real-time and high-fidelity
- Uses industry standard approaches to model dynamic unit operations and fluid flow processes
- Includes columns, heat exchangers, tanks, pumps, compressors, motors, control valves, and utility systems
- Utilizes a custom chemical property database for simulation of process separations and reactions

