

Applying the Digital Twin to Crushing Circuits

Mining



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 the crushing circuit.

Crushing Circuit Modeling

Solutions for crushing circuit units include dynamic models of the following process areas:

- Feed Hopper
- Belt Feeders
- Conveyors
- Jaw Crusher
- Secondary Cone Crusher
- Tertiary Cone Crushers
- Vibrating Screens

Application Capabilities

- Dynamic, real-time material balance and particle size tracking of each component
- Comminution determined via breakage matrices that vary with ore hardness, crusher level, and speed
- Power requirement modeled using Bond, Kick or Rittinger energy calculations
- Jaw or cone type crushers
- Real-time display of P30, P50, P80 Marks with Mimic PSD View

Mimic Simulation Software



Train operators on infrequent and dangerous process occurrences



Test control system enhancements



Transfer knowledge from seasoned to inexperienced operators

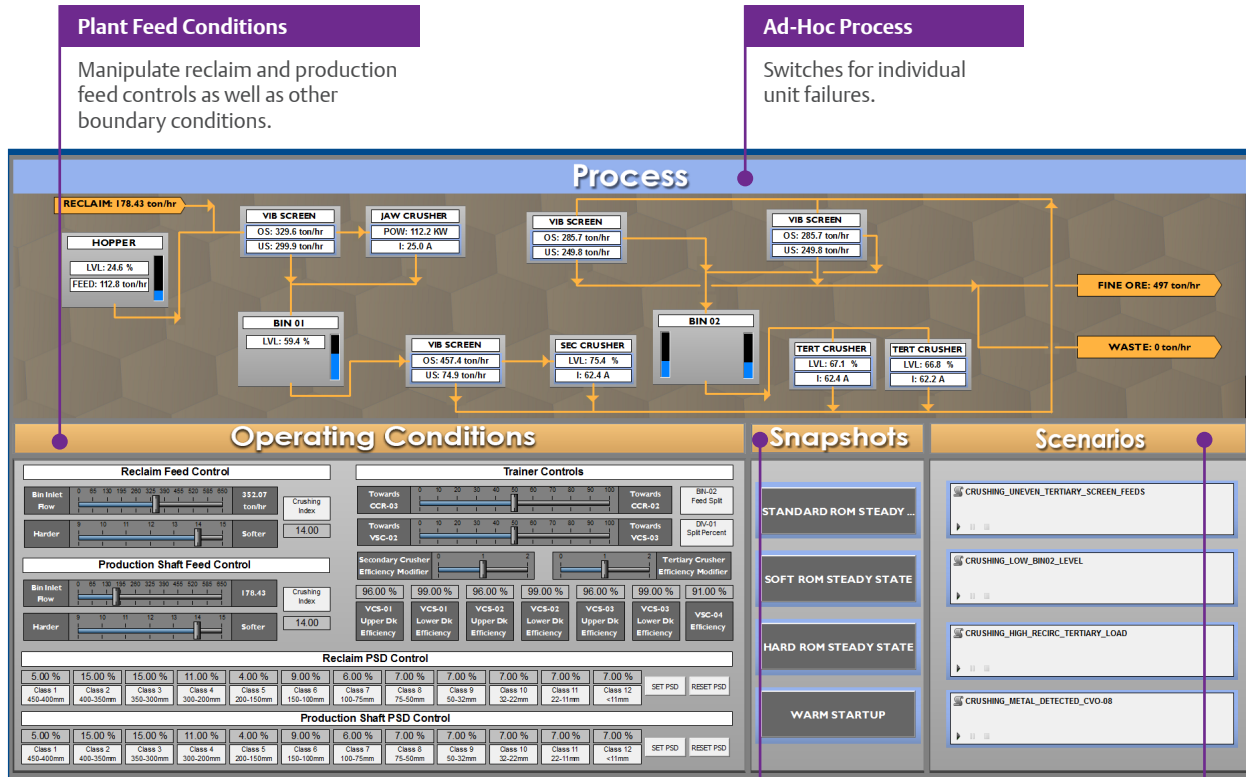


Increase overall plant safety

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.



Plant Feed Conditions
Manipulate reclaim and production feed controls as well as other boundary conditions.

Ad-Hoc Process
Switches for individual unit failures.

Process Snapshots

Control and restore full steady-state, cold, or other plant conditions.

Scripted Scenarios

Pre-engineered scenarios with dynamic representation of student scores.

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