



Improve Steam Temperature for Faster Ramp Rates

SMARTPROCESS™ OPTIMIZATION TECHNOLOGY

Application

Using an intelligent modeling tool, the SmartProcess Steam Temperature Optimization solution develops a boiler steam process model that accurately reflects the numerous interrelationships of various process issues. The Steam Temperature Optimization solution provides the most stable and accurate model for power generation. This plant model permits faster ramp rates, improved turbine life, and reduced stress on boiler pressure parts.

Strategy

Process Optimization

The Steam Temperature Optimization solution has the ability to dynamically optimize the process at all times, even while the plant is moving through load ranges. This feature produces significant advantages over steady-state packages that are executable only when the boiler load is stable. The Steam Temperature Optimization solution also coordinates SH and RH attemperation, pass dampers, and tilt controls.

Online or Advisory Mode

As optimal plant settings, bias signals, and setpoint adjustments are generated by the Steam Temperature Optimization solution, they can be used in advisory mode, or they can be transferred directly to the distributed control system for automatic online process optimization.

Turbine Blade Fatigue

The Steam Temperature Optimization solution reduces turbine blade fatigue, which provides maintenance cost savings and reduced outage requirements.

Results

- Improves ramp rates up to 1% of MCR (maximum continuous rating) per minute
- Minimizes temperature variations by up to 75%
- Controls spray valves to balance side-to-side steam temperature
- Determines the most efficient control of superheaters and reheaters to maintain steam temperature

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