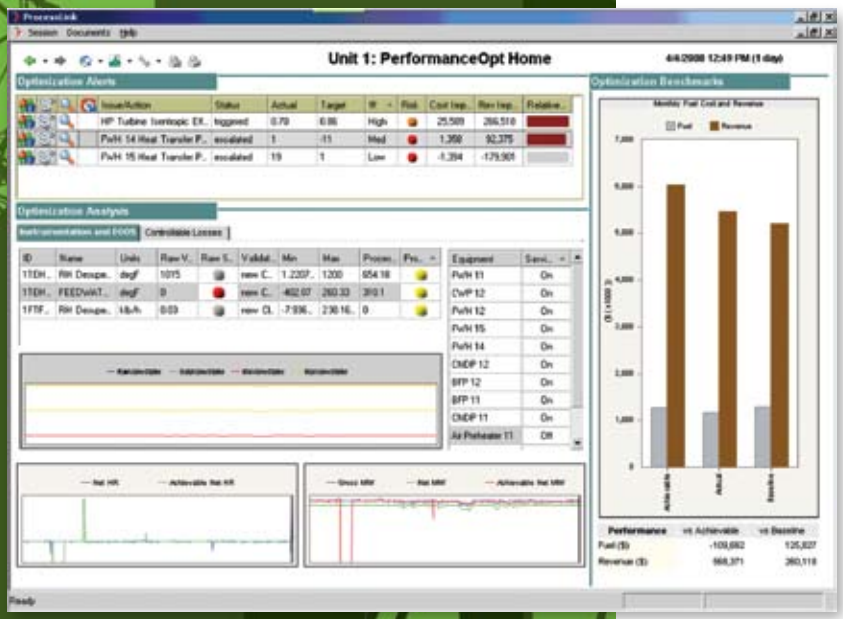
ProcessLink®

PerformanceOpt®

Proactive Unit-Wide Performance Management

PerformanceOpt Benefits

- Improves unit heat rate & capacity
- Reduces greenhouse gas (GHG) emissions
- Enhances process health
- Shortens the issue detection-through-resolution life cycle
- Strengthens other Optimizer benefits
- Supports multiple user profiles: high-level snapshots to deep drills



PerformanceOpt continuously monitors unit- and equipment-level performance and alerts users to specific performance gaps that are impacting unit efficiency and capacity.

Why PerformanceOpt?

Volatile fuel costs; CO_2 pressures; Shrinking margins — Maximizing the efficiency with which fuel is converted into electricity has never been more important to the electric power industry. Performance monitoring systems have, for decades, applied thermodynamics to calculate how efficiently power and steam flow across a generating unit and to look for efficiency losses. However, these systems require users to search and sort through a lot of data to identify and resolve problems.

PerformanceOpt is the industry's only real-time proactive performance management system. It continuously monitors thermal performance, alerts users to unit efficiency and capacity degradation and provides the contextual data to efficiently diagnose unit-wide performance issues.

A Comprehensive Performance Snapshot

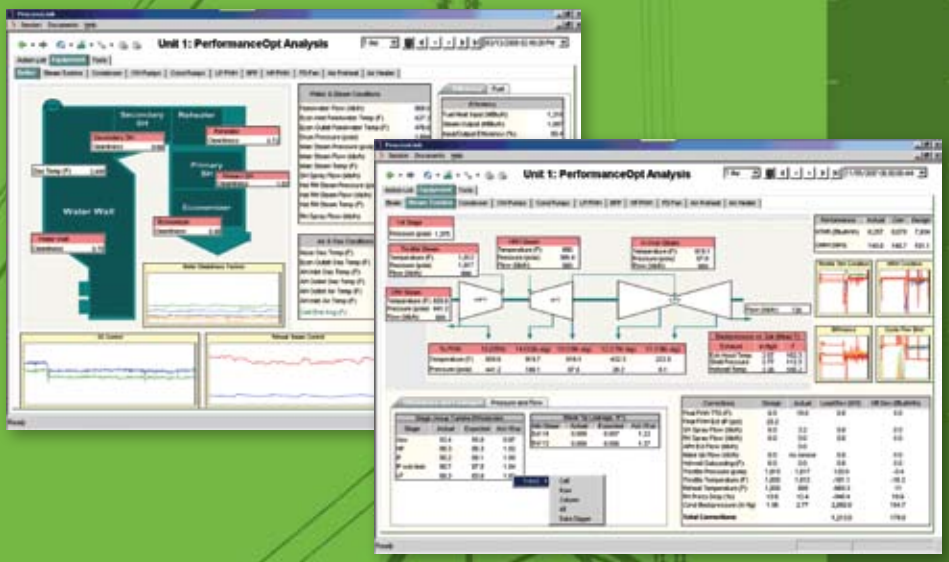
The cornerstone of PerformanceOpt is a robust, first-principles-based thermodynamic model of the entire boiler and steam cycle. This online model leverages proven equations and more than twenty years of Black & Veatch domain experience. With information from thousands of actual and virtual sensors, the Optimizer provides an in-depth understanding of how generating unit subsystems are performing and where efficiency and capacity bottlenecks are occurring. With its unit-wide perspective it tracks the health of the entire generation process.

Specific & Actionable Knowledge

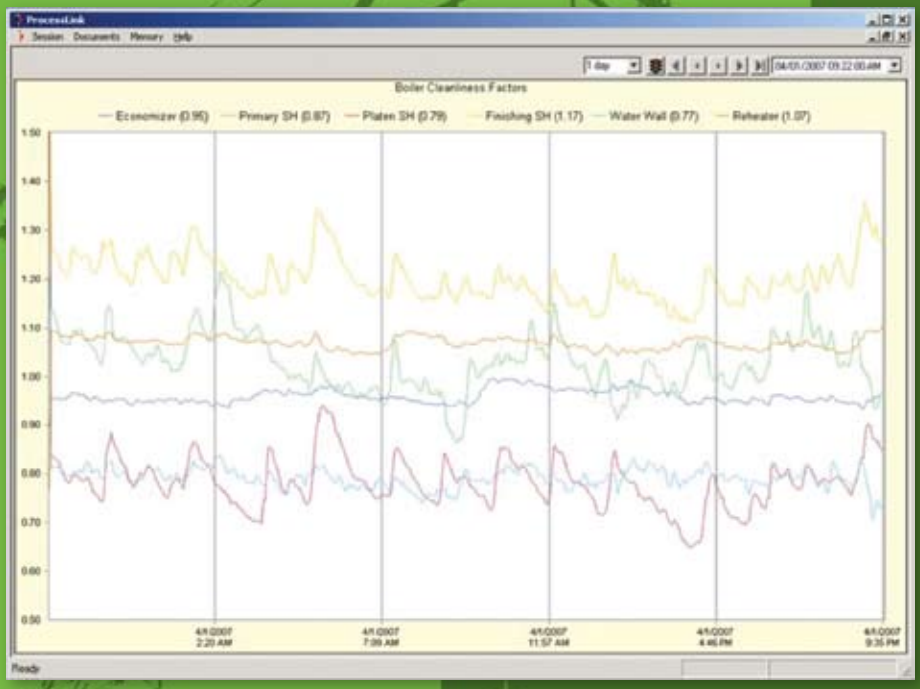
PerformanceOpt continually searches for deviations between actual and expected performance across all unit subsystems. Rather than requiring the user to continually sift through data screens to look for issues, PerformanceOpt notifies the user when it finds potential opportunities to improve efficiency or capacity or when there are significant changes in the way the unit is performing. The user can click on an alert to see contextual information and other alerts associated with that particular subsystem in order to rapidly assess and diagnose the issue.

Data Validation & Model Reliability

PerformanceOpt uses a variety of advanced data validation and substitution algorithms and automatically accounts for



PerformanceOpt's equipment views provide detailed, real-time information about the actual and achievable performance of unit equipment.



PerformanceOpt provides real-time visibility into soot blowing performance through its calculated boiler cleanliness factors shown on the boiler equipment view.

equipment out-of-service and cycle interdependencies. In conjunction with its industrial-strength solver, these capabilities enable high reliability and accuracy in model results under varied operating conditions.

PerformanceOpt & the ProcessLink® Suite

On its own, PerformanceOpt is the most powerful online performance management tool available. When integrated with other Optimizers in the ProcessLink Suite, users are able to reap even greater benefits. For example, PerformanceOpt can provide real-time coal quality and heat rate information to CombustionOpt® for optimizing emissions goals; boiler cleanliness targets to SootOpt® for optimal soot blowing decisions; and fine-grained thermal performance knowledge to MaintenanceOpt® for problem diagnosis and prioritization. By managing trade-offs between interdependent processes, the ProcessLink Suite works in a concerted effort to achieve unit, plant and fleet goals.

NeuCo
The Optimization Standard™

33 Union Street, 4th Floor
Boston, MA 02108-2414
617-587-3100
www.neuco.net