The ABB Power Plant Boiler Fingerprint identifies and documents opportunities for boiler performance improvement. Boiler benchmarking establishes current performance level and provides a basis for evaluating and identifying improvement opportunities. The resulting diagnostic report provides improvement recommendations and associated estimated return on investment.

**Benefits**
- Executive report facilitates management decision process by focusing on high impact opportunities for improvement
- Improvement plan provides clear path to quickly close performance gaps
- Provides a solid foundation for continuous improvement based on data analysis methodology

**Features**
- Access to ABB optimization experts
- Boiler performance benchmarking
- Detailed ROI-based improvement plan

The ABB Power Plant Boiler Fingerprint diagnostic service compares existing controls to industry standards, as well as actual operating data to expected capability. It generates both a performance benchmark and an actionable improvement plan.

ABB collects data to identify efficiency opportunities that can be improved during standard operation of the plant, including steps to reduce unplanned outages (trips) and improve availability.

**Boiler audit and testing**
The Fingerprint uses a bottom-up approach to performance improvement. Data is collected to verify that basic instrumentation is working as needed, for good operation and control. Configured signal conditioning options are also examined and verified.

Closed loop control of fuel and air flow, draft, steam temperature, and drum level are examined under steady load conditions, and during load ramps. Disturbance rejection, setpoint tracking, megawatts, throttle pressure, furnace draft and loop interaction are evaluated.

Examination of process control system logic ensures that the improvement capacity is not artificially constrained by the process control system.

Combustion control logic is evaluated and existing process control system controls are compared to current industry standards. Heat rate performance will be determined and evaluated.

**Boiler performance indicators**
The Power Plant Boiler Fingerprint includes comprehensive testing, measurement and analysis of four key performance indicators. The indicators are used to assess performance and improvement potential:
- Instrumentation
- Control system performance
- Capacity
- Combustion control and efficiency
Reporting
At the end of the evaluation period, findings are presented to select members or groups of the site.

An Executive Report and Technical Report are provided to disclose the findings and recommendations of the boiler diagnosis.

- **Technical Report** provides supporting data collected during the boiler diagnosis, trends and calculations.
- **Executive Report** provides benchmark results, summary of findings, financial impact of recommendations and an actionable improvement plan, based on the boiler diagnostic steps.

Improvement plan
The improvement plan provides recommendations for resolving performance issues, and how to move towards optimal performance.

Recommendations may include actuator maintenance, repair/replace/purchase instrumentation, process control system configuration or tuning changes, physical and capital improvements or changes in standard operating procedures.

Options
- Multiple fuels
- Pulverizers
- Scrubbers
- Sootblowing
- Fuel/air calibration curves
- Include Plant Master
- Burner management system
- Turbine efficiency

The ABB Power Plant Boiler Fingerprint is the first step in achieving and sustaining higher boiler performance.

ABB offers the following services to complete the continuous improvement cycle.

<table>
<thead>
<tr>
<th>Delivery Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5 Days Off Site</strong></td>
</tr>
<tr>
<td>Project kick off meeting</td>
</tr>
<tr>
<td>Documentation review</td>
</tr>
<tr>
<td>Review historical data</td>
</tr>
<tr>
<td><strong>10 Days On Site</strong></td>
</tr>
<tr>
<td>Instrumentation inspection</td>
</tr>
<tr>
<td>Process inspection and documentation</td>
</tr>
<tr>
<td>Data collection under forced steady operation</td>
</tr>
<tr>
<td>Data collection during load changes</td>
</tr>
<tr>
<td>Rundown/runback test</td>
</tr>
<tr>
<td>Maximum load test</td>
</tr>
<tr>
<td>Exit meeting, initial findings</td>
</tr>
<tr>
<td><strong>5 Days Off Site</strong></td>
</tr>
<tr>
<td>Data Analysis</td>
</tr>
<tr>
<td>Write executive and technical reports</td>
</tr>
</tbody>
</table>

Other ABB services
**Process Performance Implementation Service**
ABB offers this service to implement the improvement plan outlined in the ABB Power Plant Boiler Fingerprint report. An ABB Reliability Consultant will be assigned to lead the improvement activities.

**Power Plant Boiler Performance Sustaining Service**
Once the process improvements are achieved, the Process Performance Sustaining Service is recommended to monitor the site for deviations from the process improvement. This service offers a plan to monitor performance and provide your personnel with timely recommendations to correct the situation.

**North America Customer Service Center**
29801 Euclid Avenue, 3P6
Wickliffe OH 44092 1832, USA
Tel: 1 800 HELP 365 (1 800 435 7365) option 9
Outside USA/Canada: +1 440 585 7804
Fax: +1 440 585 5087
E-mail: NAservice_info@us.abb.com

© 2010 ABB Inc.
ABB reserves the right to change specifications without notice.