

Coal fired Power Plants-Data Analytics

Reliability & Thermal Performance Analysis

Coal Fired Power Plants

Coal fired power plants generate more than 40% of global electricity. Real time monitoring of Reliability and Thermal Performance helps maintain health and efficiency of Coal fired plants. Our **ProcDNA** software has the capability to analyze both critical aspects of Coal fired power plants – **Reliability & Thermal Performance**.



Thermal Power Plant

Process Modelling

Real time Data Analytics

Remote Monitoring

Diagnostics

Alerts & Notifications

Offline Simulation

Historian Implementation

Reports & Automation

Reliability

ProcDNA can monitor the health of various critical components of industries in real time. A combination of **Artificial Intelligence, Statistical methods** and **Thermodynamics** are used for this purpose. Some components in Thermal Power plants whose anomalies can be detected at the onset -

- Anomalies in Bearings
 - Steam Turbine
 - Major pumps & fans
- Boilers – Combustion related anomalies
- Feed Water heaters (LP & HP heaters)
- Anomalies in Major Fans, Pumps & Motors
- Anomalies in Generators and Transformers
- Heat Exchangers (lube oil etc.)
- Condenser
- Instrument & service air Compressors
- Cooling Towers
- DM water systems

Thermal Performance

ProcDNA uses [SimTech's IPSEpro](#) thermodynamic engine to analyze thermal performance of Coal fired power plant components in real time. Some components that can be analyzed -

- Boilers
- Turbine sections - HP/IP/LP
- Feed Water heaters
- Condenser
- Cooling Towers
- Major Pumps & Fans
- Heat Exchangers
- Generator

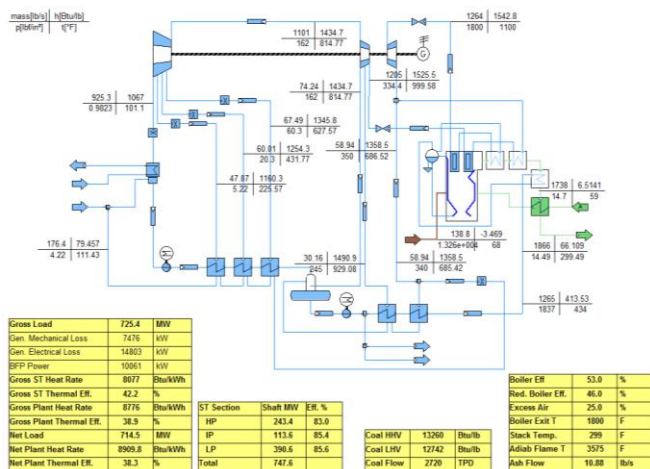


Thermal Performance Analysis

Using SimTech's IPSEpro

Thermal performance model of a 725 MW Coal fired power plant built using [SimTech's IPSEpro](#).

IPSEpro uses an open equation architecture and all engineering calculations are visible to the end users!

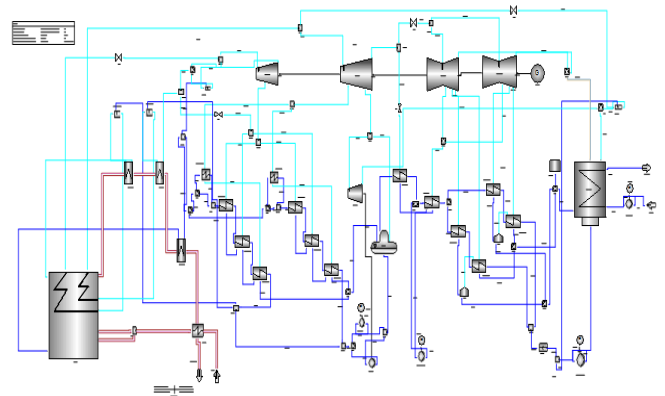


Using GE's GateCycle

For customers using OSI PI and GE's GateCycle software, our ExcelANCE™ software can be used to setup a real time performance analysis solution very quickly.

ExcelANCE software is currently performing real time analysis of 2100+ MW of coal fired units.

Our experience includes modeling subcritical and supercritical units of various capacities.



Coal fired power plants – Thermodynamic Modeling & Analysis

- Mass & Energy balance is maintained
- Very detailed component level performance analysis in real time
- Can perform Design and Off-design calculations of all major equipment
- Models provide detailed analysis of "Current" and "Clean performance" and calculate component level degradation accurately
- Capability to run detailed thermal performance simulation

To know more about our software and solutions, please visit www.patsimo.com or write to us at "info@patsimo.com"

