



Performance Modeling and Thermal Analysis

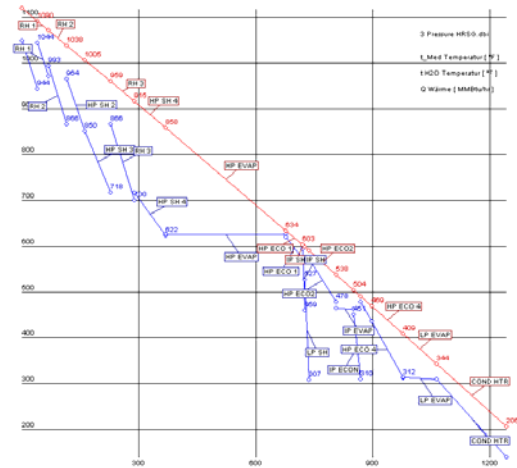
Tetra Engineering provides a full-scope service for modelling and analyzing the operation of nearly any type of natural or forced circulation boiler and HRSG, including supercritical and once-through designs.

We use the **Power Plant Simulator & Designer™ (PPSD)** software package developed by KED Software¹ to model the boiler or HRSG. This sophisticated tool allows accurate simulation of both steady-state and dynamic behaviour with gas and steam/water flow, pressure and temperature profiles calculated to the component level.

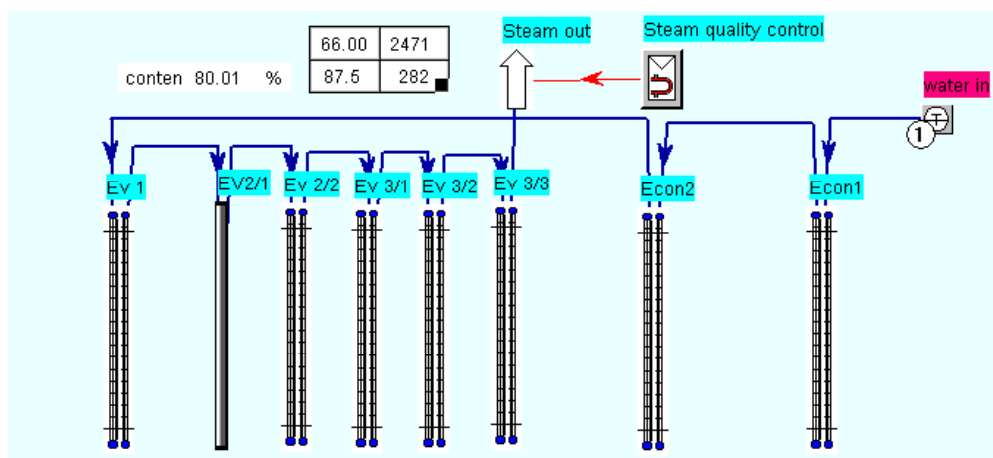
Models can vary in complexity, from a simple model to investigate a particular performance issue in the boiler to a complete plant model.

A broad range of plant characteristics and operational scenarios can be treated as required by the project. Examples include:

- Calculating steam cycle efficiency (heat balance) according to ASME PTC, BS-845 or other thermal performance codes to resolve commissioning issues
- Detecting fouling, high and low temperature corrosion, gas bypass
- Simulating duct burner operation (e.g. calculate fin temperatures, efficiency increase etc.)
- Calculating steaming in economizer
- Determining natural circulation rates to support FAC assessments
- Generating metal temperature profiles for inputs to finite-element stress calculations



The completed PPSD model and software can be installed at the client site for staff training or for operators to test scenarios before implementing them on the actual plant.



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