Hitachi Zosen
INOVA

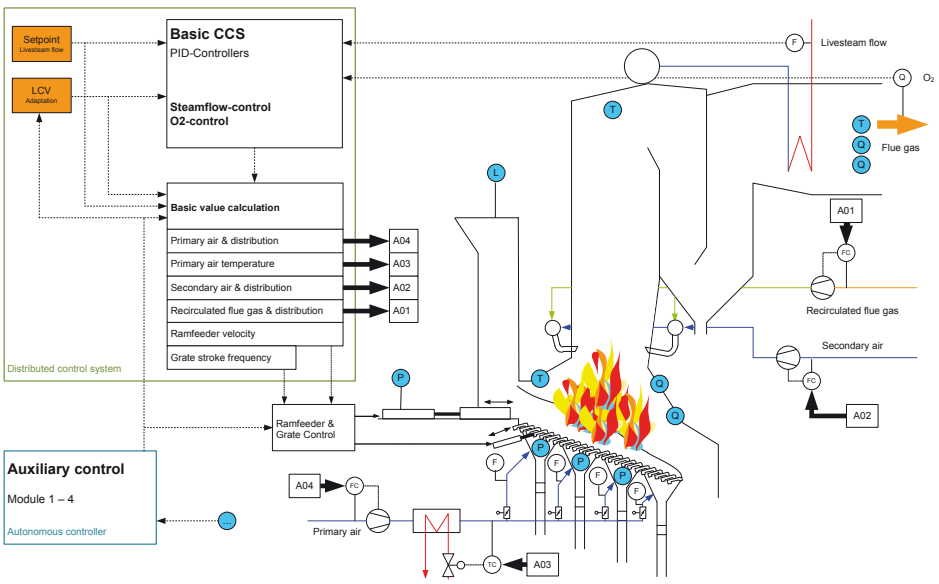
Modular combustion control system

Tighter control – extensive automation – greater efficiency

More steam for your plant

The new combustion control system (CCS) developed by Hitachi Zosen Inova provides increased control quality for all important process parameters. The advantage for your plant: controlled and uniform combustion, stable steam generation, reduced component stress, and less fouling of the combustion chamber.

Combustion is the heart of every waste incineration plant. The behaviour of related processes such as flue gas treatment and the water-steam-cycle depends heavily on the stability of the combustion process.



Customised thanks to modules

Additional modules allow you to further increase the level of automation and better fulfil the ever stricter requirements imposed on modern waste incineration plants:

Detection and stabilisation of the fire position on the grate by adjusting local variables; Module 1:

Improvement of fuel feed consistency by determining throughput behaviour based on waste properties (density and compressibility) and assessment of the resistance coefficient of the waste on the grate; Module 2:

Analysis of combustion process, waste quality, and development over time by combining information from Modules 1 and 2. The causes of load fluctuations are identified automatically and systematic countermeasures are initiated; Module 3:

Online computation of calorific value of primary combustion gas and the moisture content of the waste fuel based on flue gas analysis; Module 4:

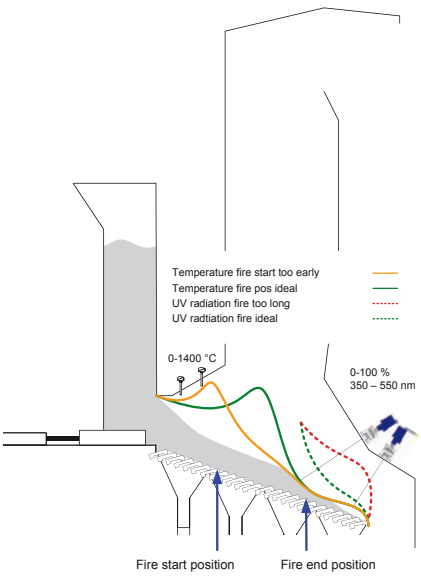
The above modules can be combined and configured to your needs.

Automatic, reliable, constant

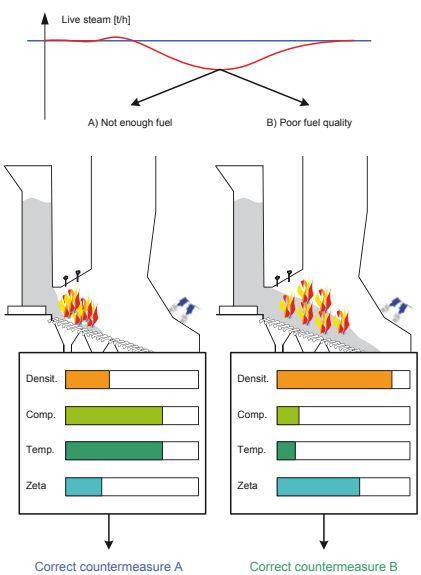
The new CCS lets you make the most of your plant because it enables reliable and largely automatic operation at the required load point. Even while fuel characteristics change, control interventions proactively prevent steep drops in steam generation, and at the same time assure sufficiently high combustion chamber temperatures as well as complete gas and slag burnout. A major advantage is the concept of the volumetrically constant combustion air supply and thus volumetrically constant flue gas flow rate. This benefit should not be underestimated, especially for flue gas treatment with dry adsorption.

Intuitive operation

The desired load point can easily be set by means of the live steam set point. When fuel properties change, you can change all key parameters by adjusting the heat value correction to assure an optimised combustion process.
Additionally, the new CCS offers intuitive intervention options regarding waste bed thickness, the position of the fire on the grate, and the moisture content of the waste to further optimise the incineration process.



Module 1



Module 3

Primary control objectives

- To maintain a constant steam flow rate, as defined by the operator
- To keep the volumetric combustion air flow rate constant
- To assure complete gas burnout by stabilising the oxygen concentration in the flue gas and by efficiently mixing the reactants in the post combustion chamber
- To run the plant as closely as possible to the optimal operating point under consideration of process limits

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