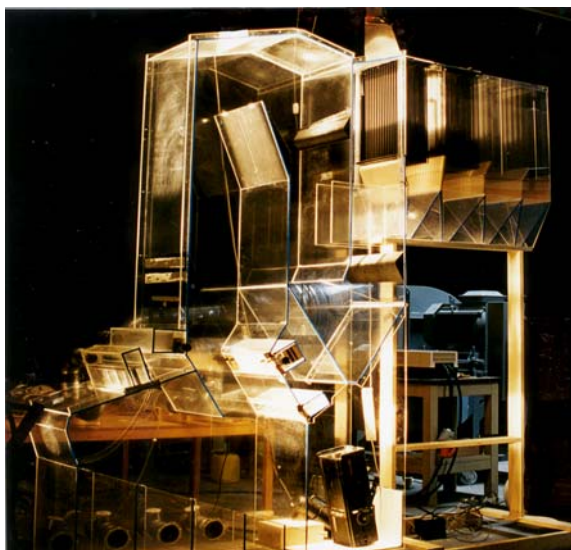


# Improved Boiler Performance

FORCE Technology is offering high technology design, trouble-shooting and retrofit consultancy engineering by means of experimental and numerical techniques.

With emphasis on the flow field characteristics improvements are made resulting in increased efficiency, lower emissions and higher durability of the boiler unit.



Model in laboratory

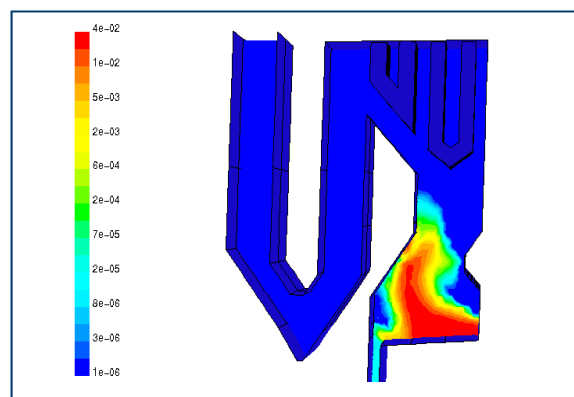
## Advanced Analysis Techniques

To improve boilers the following actions can be taken:

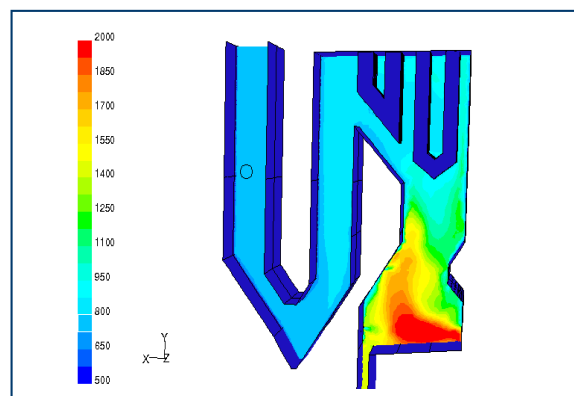
- General study of gas flow in boilers and optimization of boiler design
- Optimization of air injection and mixing
- Flue-gas cleaning equipment evaluation
- Furnace modelling.

The analysis can be elaborated with:

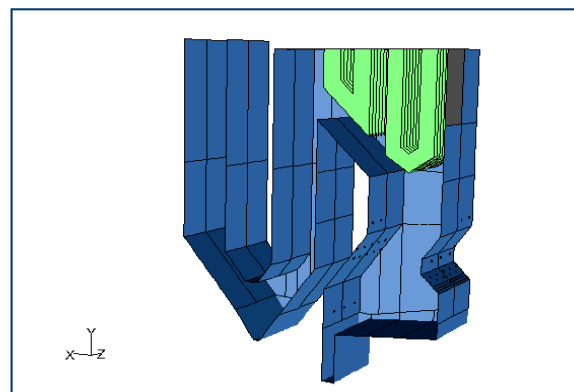
- Evaluation of corrosion risk
- Combustion analysis
- Prediction of slagging and fouling in the boilers.



Predicted co-concentration



Predicted gas temperature



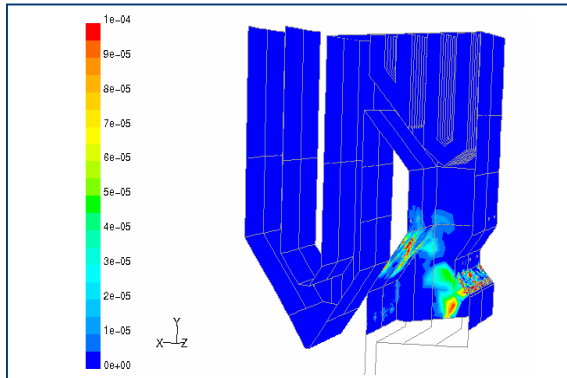
Geometry overview

## Enhanced Optimization of Power Plants

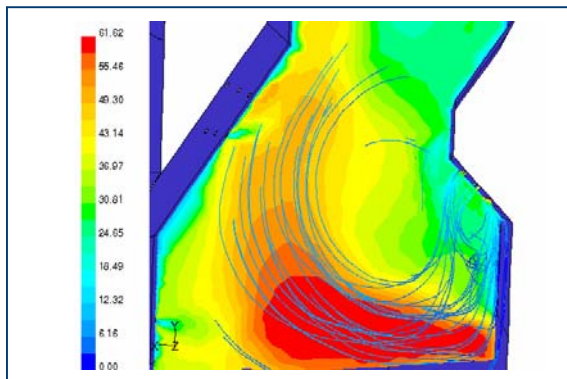
FORCE Technology is offering an outstanding and very unique simulation of the boiler unit by including the dynamic interplay with the steam cycle in the power plant. The model is coupled to a CFD tool calculating the flow pattern, thermal conditions and chemical reactions taking place in the furnace. Ash deposit build-up is included in the CFD calculation. The final tool is a fully integrated model to simulate the transient behaviour of a power plant.

The resulting model enables the designer to produce a time-varying prediction of deposit build-up, emissions and plant efficiency.

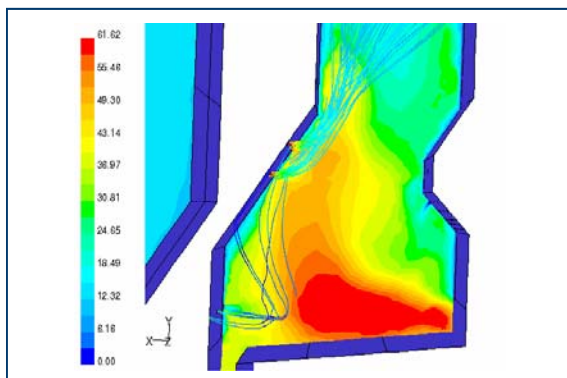
Furthermore, the dynamic model can be applied for evaluation of different control strategies.



*Predicted depositions after one hour run time*



*Path lines of air from secondary nozzles on front side*



*Path lines of air from nozzles on back side of furnace*



*Deposition inside furnace*



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Subject to changes without notice

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