Furnace Improvements

1600 S Hwy 6., Suite 480, Sugar Land TX 77478
Tel: (281) 980-0325 Fax: (832) 886-1665
Email: agarg@heatflux.com

Computational Fluid Dynamics (CFD) Modeling

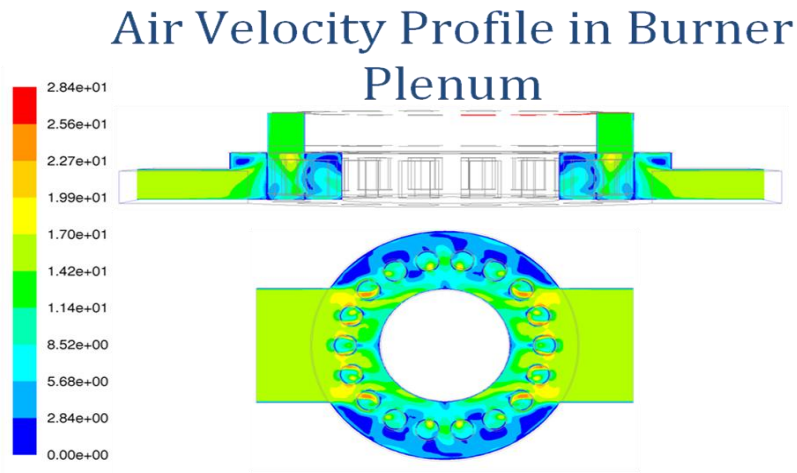
Computational Fluid Dynamics (CFD) involves the solution of mass, momentum and heat transfer equations in a particular domain, which is comprised of the geometry of interest. CFD was developed during the past two decades. Its accuracy in predicting real world problems has improved with the present age computers and better models.

At Furnace Improvements we utilize CFD to study the design and operating conditions of heaters, locate problems and provide solutions.

The following are a few areas of concern where FIS has applied this tool:

1. Flow Maldistribution
2. Mixing (Ammonia Injection Grid & Flue Gas Recirculation Mix Box Design)
3. Combustion (Burner & Heater Design)
4. Tube Failures
5. Heat Transfer

Note: The CFD applications are not limited to the listed items. Furnace Improvements is making every effort to explore its varied applications and use this powerful tool if and when it is required.
CFD gives a competitive edge over other analysis due to its visual presentation of the observations.



FIS has applied the CFD studies in the following cases:

- **ConocoPhillips, Roxana, IL: CO Emission Reduction.**
- **ConocoPhillips, Alliance Refinery: NOx Reduction of Crude Heater.**
- **ConocoPhillips, Borger, TX: U40 Boiler NOx Reduction.**