

How Mae Moh CAE Team Turns **Simulation** into **Engineering Decisions**

People × Process × Technology



3 KEY PILLARS THAT TRANSFORM DATA INTO SMART ENGINEERING DECISIONS



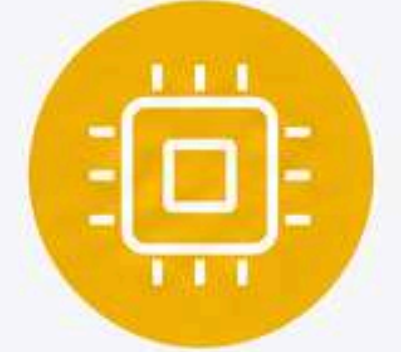
People

Bring together diverse expertise
Collaborate and share knowledge
Continuously learn and grow together



Process

Systematic workflows based on real data
Observe → Measure
→ Simulate → Validate
→ Improve



Technology

CAE Technology
Robust Infrastructure
+ Global Partner to extend capabilities and drive innovation



OUR GOAL :

Enhance reliability, improve efficiency, reduce cost, and deliver sustainable value to EGAT.



Improve Equipment Reliability



Increase Power Generation Efficiency



Reduce Cost and Unplanned Losses



Reduce Emissions and Minimize Environmental Impact



Develop People and Strengthen Organizational Knowledge

Use Case 1



Cold Air Velocity Test and Simulation of Cold Air Flow in MM-T14 Boiler of MaeMoh Power Plant



Challenge

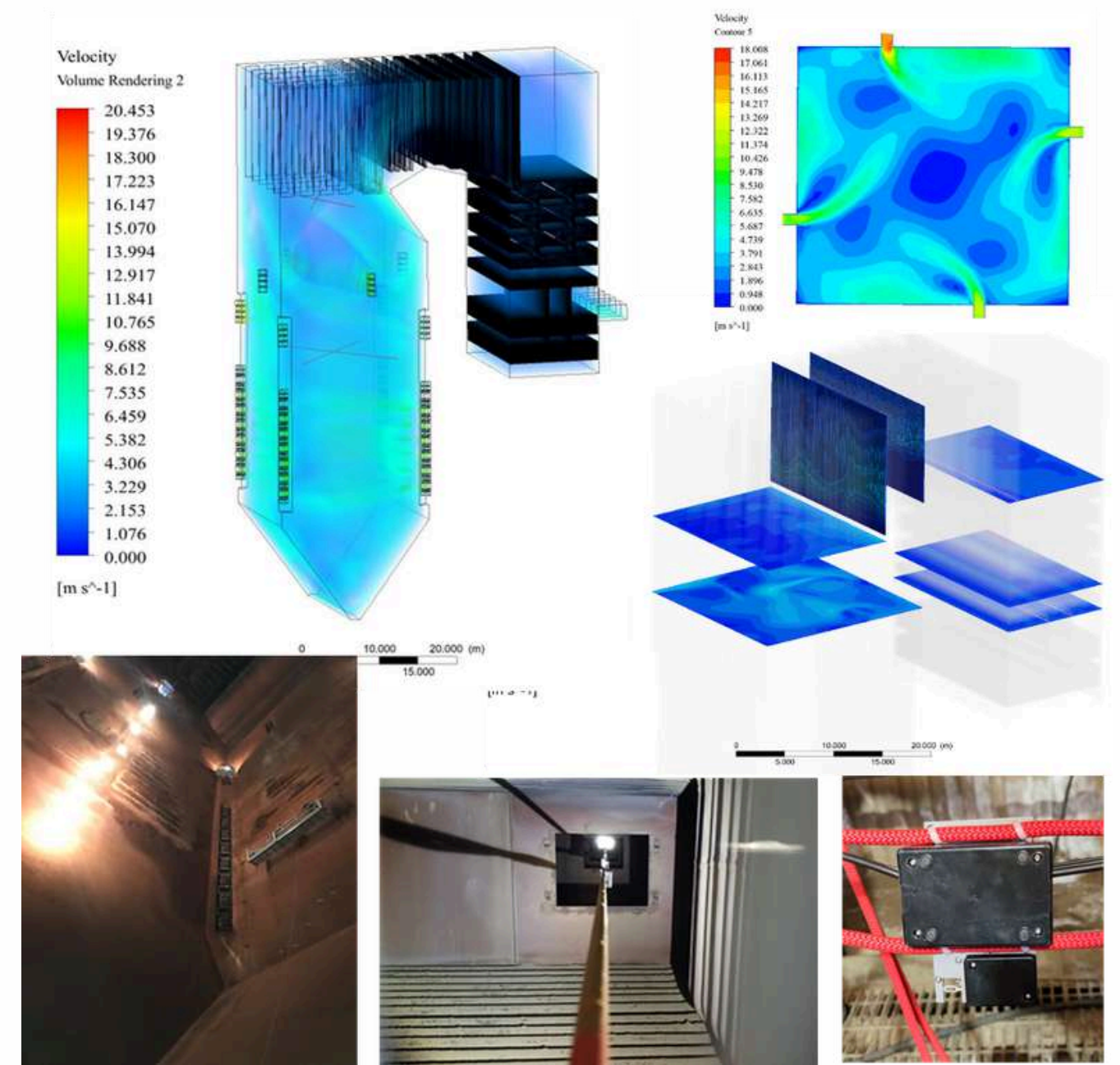
- Understand boiler airflow
- Prevent upper furnace overheating
- Reduce slagging

CFD Approach

- CFD validation
- SOFA tilt optimization
- Airflow & eddy analysis

Key Findings

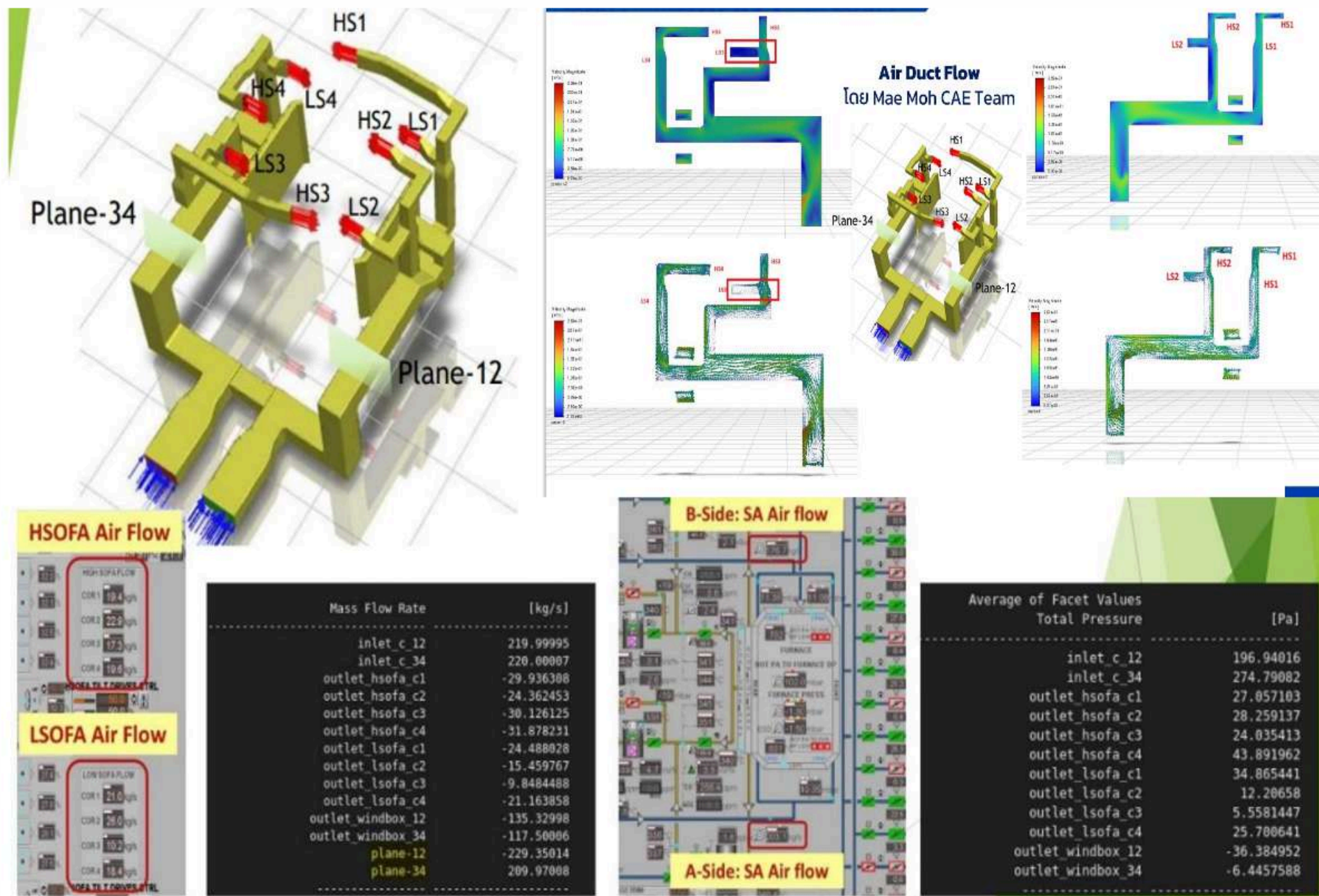
- CFD accurately predicted real airflow
- High SOFA reduced upper hot spots
- Slagging occurred in low-velocity recirculation zones



Use Case 2



MM-T14 Boiler Air Duct Flow Simulation



Challenge

- HSOFA/LSOFA airflow imbalance
- Excessive HSOFA airflow

Key Findings

- Guide Vanes improved HSOFA balance
- Airflow tuning optimized LSOFA distribution
- Main Burner airflow remained unaffected

CFD Approach

- Guide Vane simulation
- Damper optimization
- Main Burner airflow evaluation



Use Case 3



Boiler Combustion Optimization MaeMoh Power Plant MM-T14



Challenge

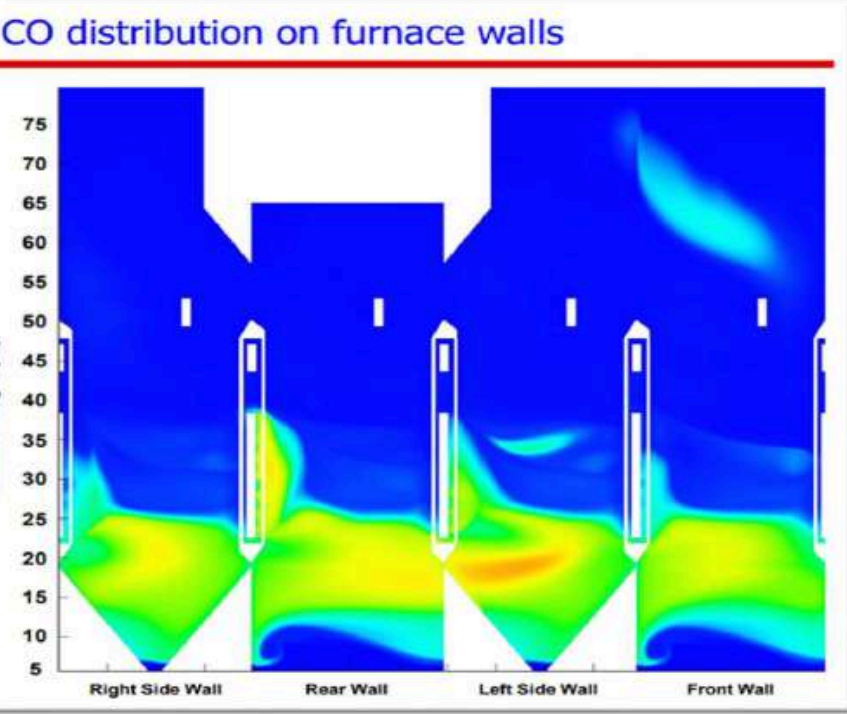
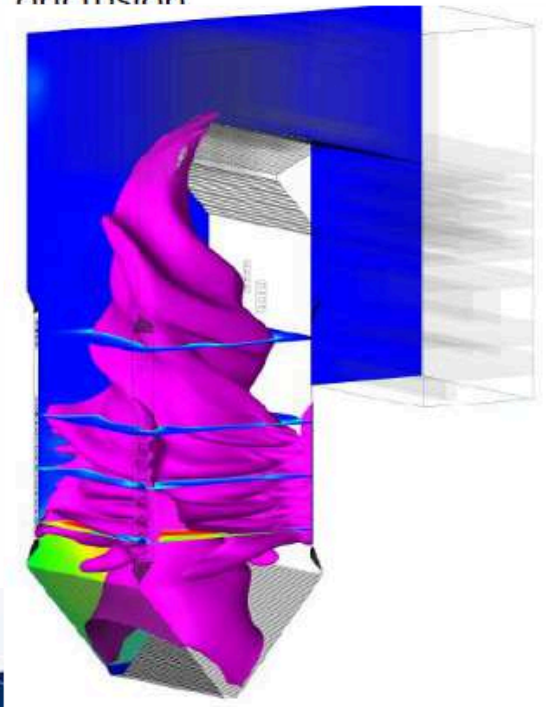
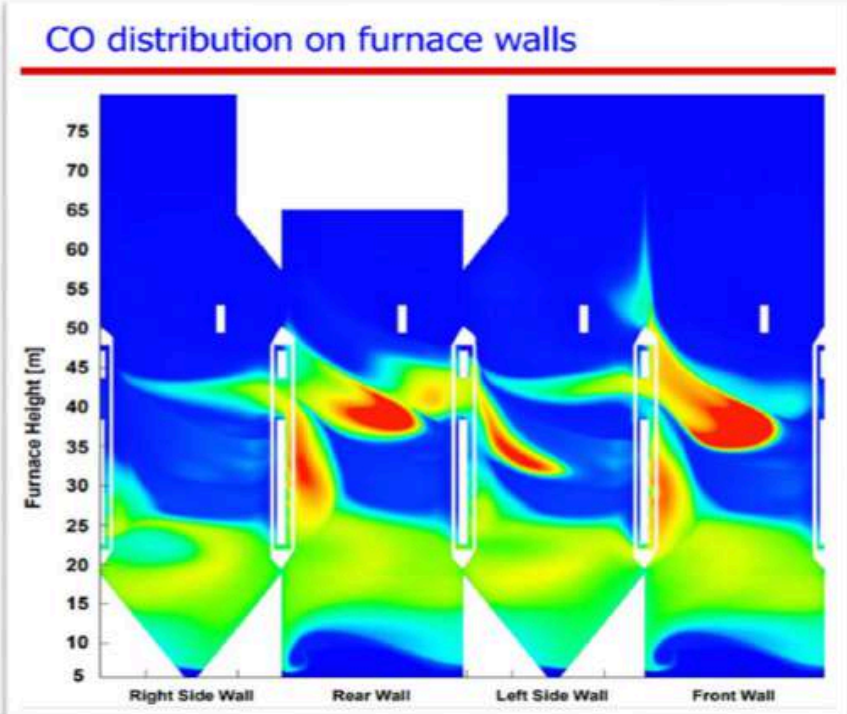
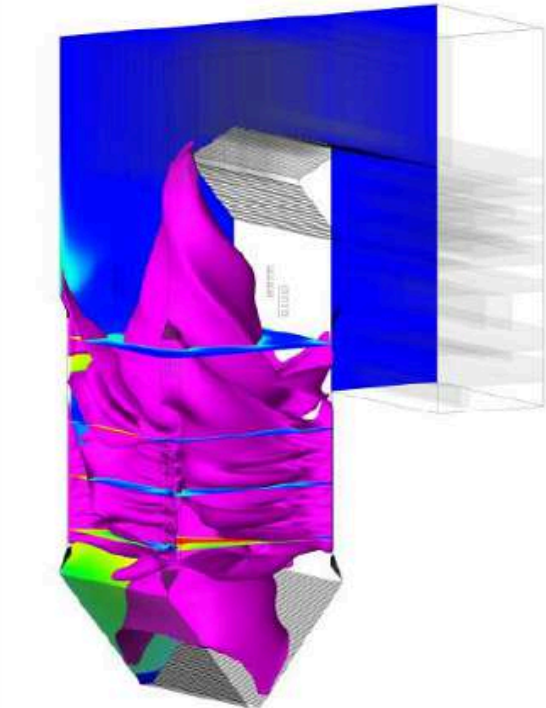
- High CO caused wall tube corrosion.
- CO impingement at F & G elevations.
- Partial-load operation increased CO accumulation.

CFD Approach

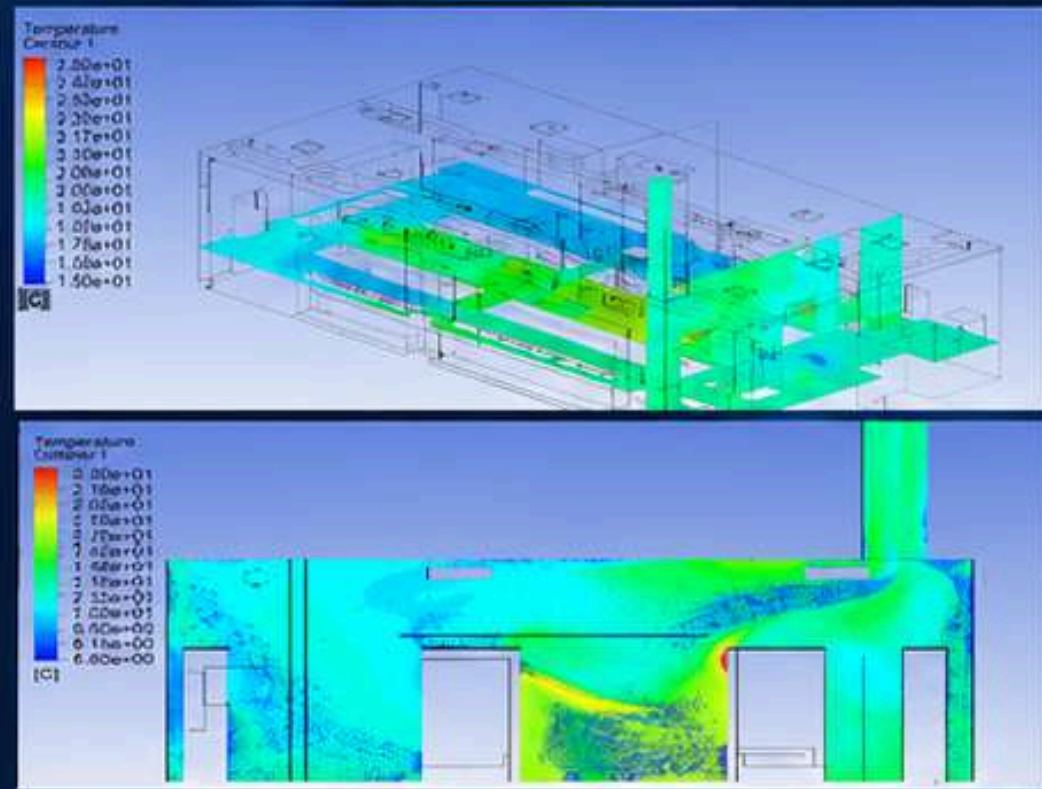
- Optimize CCOFA (+3) airflow direction.
- Increase local air stoichiometry.
- Install MBZ CO monitoring port.

Key Findings

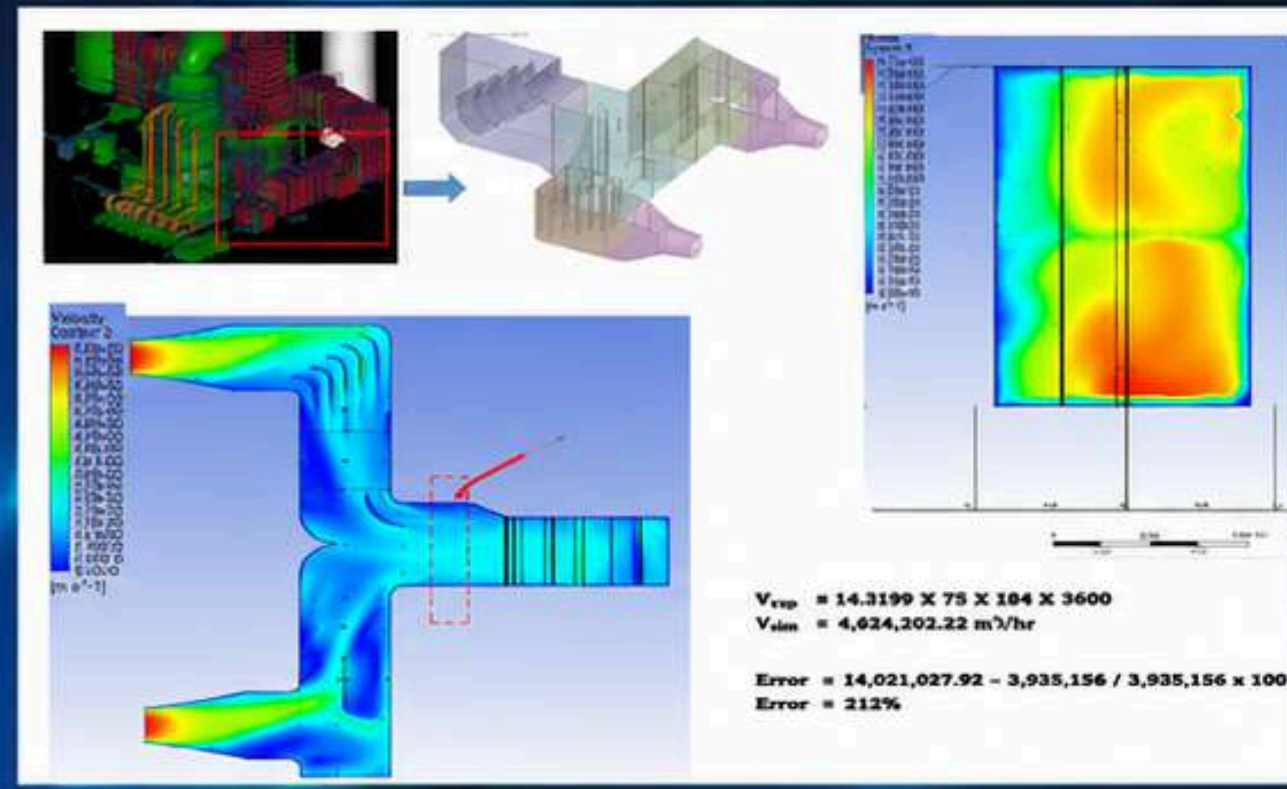
- Reduced CO near furnace walls.
- Fireball stabilized at furnace center.
- Safe and reliable full-load operation.



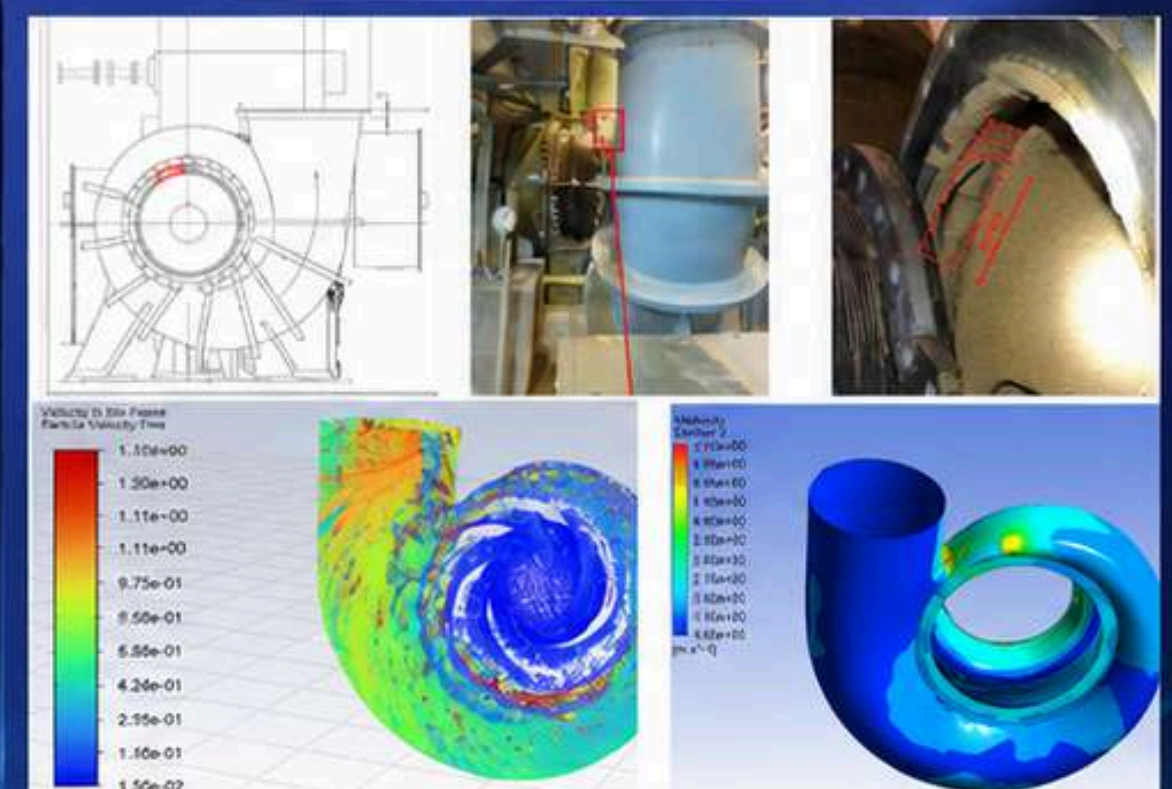
AIR DISTRIBUTION IN DCS ROOM



FLUE GAS DISTRIBUTION - FGD INLET DUCT



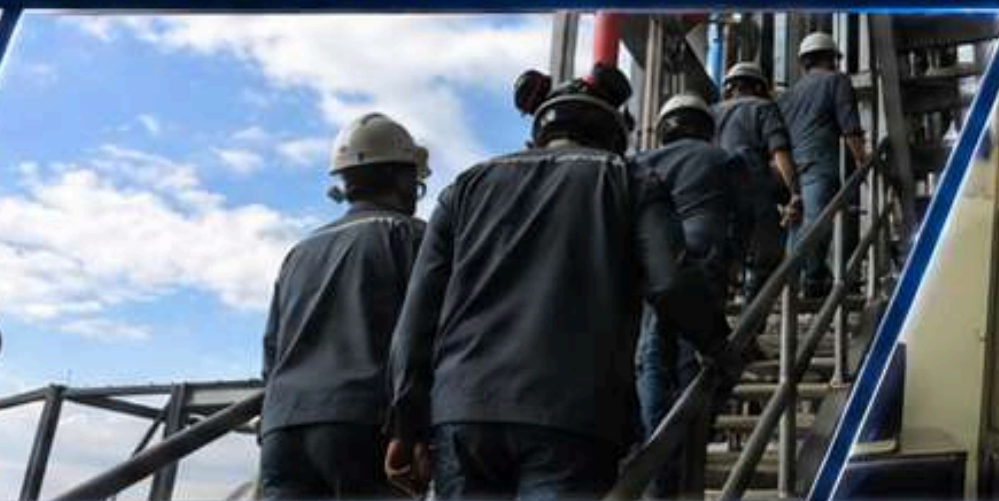
FLUID VELOCITY IN PUMP



Simulation is not just about creating **beautiful contour plots,**

but it is a

powerful tool that helps us **communicate and make better decisions effectively.**



UNDERSTAND COMPLEXITY

Reveal what we can't see.



COMMUNICATE INSIGHTS

Make data easy to understand.



MAKE BETTER DECISIONS

Based on evidence and confidence.



ACHIEVE RELIABLE OPERATION

Safe, efficient and sustainable.