Demonstration Projects

Phase 1 - Testing the draft procedure
Phase 2 - Develop information on the performance of fan-filter units
Fan-filter Units

- **Project support**
  - Calif. Energy Commission and PG&E
  - Industrial Technology Research Institute (ITRI)
  - Suppliers, designers, and users
  - Institute of Environmental Sciences and Technology (IEST)
Fan-filter Units

• Purpose
  • Refine the procedure and improve the robustness and cost-effectiveness of the method
  • Produce comparable performance information and identifies most efficient and functional FFUs
  • Stimulate design and applications of energy efficient FFUs
Fan-filter Units

- Demonstration tests completed at PG&E and ITRI facilities
- Conceptual device layout
Key Updates

• **Demonstration Phase I**
  – Test the draft method at PG&E and ITRI facility using an identical FFU

• **Demonstration Phase II**
  – Test rig design and set up at LBNL
  – Fine-tuning the method and further R&D
  – Develop information on units’ performance
  – Possible future IEST RP integration
Issues and Challenges

- Airflow rate measurements
- Pressure measurements
- Power suppliers and measurements
- Device calibration and uncertainties
- Size of testing rig
- Integrity of the testing system, e.g., leak
- Robustness of the methods/rig
- Additional parameters, e.g., material cost
Test Rig Pictures
Layout
Layout
Layout
Turning
Assisting fan
Inside the duct
Inside the duct
Flow Nozzle
Power meter
Pitot tube
Traverse
Data acquisition
Data acquisition