



EERC

Energy & Environmental Research Center

EERC Technology – Putting Research into Practice

Mercury Control Technologies for Coal-Fired Utilities

Development Issues

Mike Holmes

Energy & Environmental Research Center

DOE Mercury Panel Presentation



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Perspective – Mercury Control

- Many different control approaches in development, with field testing under way or planned on a few.
- **No commercially proven technology** that can be **applied broadly** among all coal and boiler types.
- Difficulty in removing mercury from different coal types is recognized by the proposed EPA regulations.
- Some technology options show promise for plants firing Eastern coals, i.e. sorbent injection, scrubbers, and SCR with scrubbers.
- **Limited control options** for subbituminous- and lignite-fired plants.
- **More field testing is needed** to demonstrate promising technologies that can achieve low-to-moderate levels (50%–70%) of mercury control.
- **It is critical that basic research continue** in order to better understand mercury interactions in energy conversion systems and the environment and to design advanced technologies that will be capable of achieving high levels (90%) of mercury control, cost effectively.

Center for Air Toxic Metals[®] ***(CATM) Program***

- Program Area 1: Air Toxic Metals Transformation Mechanisms
- Program Area 2: Sampling and Analytical Methods Development
- Program Area 3: Control Technologies
- Program Area 4: Health Effects
- Program Area 5: Commercialization, Publication, and Education



Large-Scale DOE Projects



Mercury Control Issues - Utilities

- Percentage versus emission limits – challenge with low concentrations.
- Limited data – not always transferable between coals, operation, and configurations.
- Need willingness of technology vendors to provide guarantees.
- Byproduct Impacts.
- Measurement Issues.
- Complete economic analyses.
- Balance of plant issues need to be evaluated over an extended period
 - Corrosion
 - Ash resistivity, or
 - Baghouse pressure drop
 - Fouling and slagging
 - System performance

Development of a one-year demonstration is underway