American Electric Power
Advanced Coal Technology Development

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New Generation Licensing
American Electric Power

Clean Air Act Advisory Committee
Advanced Coal Technologies Workgroup Meeting
February 8, 2007

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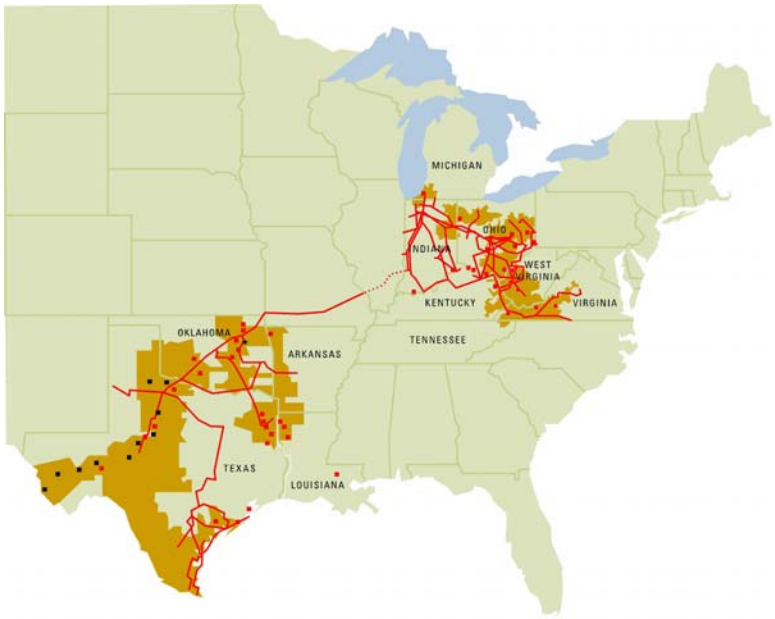

- Customers: ~5 million
- Service Territory: 11 States
- Transmission Lines: ~39,000 miles
- Distribution Lines: ~210,000 miles
- Generating Capacity: ~36,000 MW
- Annual Coal Use: ~75 million tons

The Need for New Generation

- AEP committed to providing reliable, affordable, and sustainable electricity.
- Electricity demand continues to increase across the AEP system.
- AEP has not added baseload capacity since 1991.
- Evaluating new generation options from various energy sources.
- Advanced Coal Technologies are a key component of new baseload capacity.

AEP New Generation Activities

- New Generation program to meet current and future demand.
- Increase System Capacity through acquisition and construction.
- 310 MW of wind generation assets constructed since 2001.
- >2900 MW of existing natural gas generating capacity acquired since 2005.
- >1100 MW of new natural gas generating capacity being developed.
- AEP West: Developing two Ultra-Super Critical units using sub-bituminous coal.
- AEP East: Developing two IGCC units using bituminous coal.

Why Pursue Advanced Coal Technologies?

- 2004 Report to AEP Shareholders: "An Assessment of AEP's Actions to Mitigate the Economic Impacts of Emissions Policies."

- The report evaluates AEP efforts to mitigate the economic impacts of increasing:
  - Regulatory requirements;
  - Competitive pressures;
  - Public expectations to significantly reduce CO_2 and other emissions.

•Central Challenge facing AEP as identified in report:
"…Making large investments in long-lived assets in a setting of uncertain public policy and rapidly evolving technology….."

- The report recommends AEP pursue the following:
  - Forceful advocacy of efficient control programs;
  - Proactive leadership on technology development and implementation;
  - Discipline in capital allocation;
  - Continued transparency of action;
  - Declared commitment to be an industry leader & first-mover in advancing IGCC;

Advantages of Advanced Coal Technologies

- Enhanced Environmental Profiles.
- Increased Process Efficiencies.
- Increased Flexibility for Using Affordable Domestic Fuel Options.
- Polygeneration Opportunities. (electricity, chemicals, hydrogen, etc.)
- Cost-effective options for reducing CO_2 emissions.
- Promises vs. Current Capabilities of Advanced Coal Technologies.

Challenges to Advanced Coal Technology Development

- Cost-effective strategies to manage first of a kind risks.
- Availability of guarantees that reduce technology and performance risks.
- IGCC performance guarantees that support baseload utility operations (high availability, predictable O&M, competitive life-cycle costs, etc.)
- Commercially available and cost-effective IGCC processes for lower rank coals.

AEP IGCC Program

- Working with GE and Bechtel to develop IGCC projects in Ohio and West Virginia.

- Phased approach to manage risks incrementally.
  - Phase I: Feasibility Study
  - Phase II: Front-End Engineering and Design
  - Phase III: Engineering Procurement and Construction
  - Phase IV: Commercial Operations

- Current Configuration:
  - Nominal net output ~ 620 MW
  - High availability factor for baseload operation.
  - Turndown capabilities to support load following operations.
  - Broad fuel specification.
  - Radiant quench gasifier design.
  - Turbine Generators: 2 x 2 x 1 design.
  - Emission Control System:
    AGR system; activated carbon bed; syngas saturation; nitrogen diluent;
  - Space provisions for CO_2 capture and polygeneration opportunities.

AEP IGCC – Regulatory & Permitting Activities

- Ohio Regulatory Activities:
  - Filed with PUCO for IGCC Rate Recovery in 2005.
  - Proposed Three-Phase Recovery Plan.
  - Phase I approved by PUCO in 2006.
  - Phase I decision has been appealed.

- Permitting and Licensing Activities:
  - Certificate of Compatibility & Public Need application filed with OPSB.
  - Certificate of Public Convenience & Necessity filed with WVPSC.
  - Air permit applications filed with OEPA and WVDEP.
  - Corps of Engineers permit application submitted for Ohio project.
  - Transmission interconnection applications filed with PJM.
  - Applications being developed for NPDES and landfill permits.
  - Extensive background site investigations to support permitting activities.

AEP IGCC Permitting & Licensing Challenges

- Recognition of current technology capabilities vs. promises of future performance.
- Development of technical competency. (AEP and Agency)
- Assimilation of existing regulatory programs to IGCC.
- Development of representative data to support permitting.
- Balance the need for timely permits and the availability of design information.
- Performing timely air modeling analyses in context with available agency guidance and resources.

CO_2 Technical & Regulatory Issues

- Technical Issues:
  - Technical standards for sequestration feasibility and design parameters.
  - Technical standards for operation, performance, or monitoring parameters.
  - Commercially acceptable systems applicable to advanced coal technologies.
  - Commercially acceptable combustion turbines for hydrogen based fuels.

- Regulatory Issues:
  - Development of balanced State and/or Federal regulatory program.
  - Undefined risks and liability ownership structure.
  - Undefined monitoring and compliance demonstration structure.
  - Undefined ownership for public education and awareness of CO_2 capture and sequestration activities.

Summary

- Advanced Coal Technologies are a key component of any strategy to provide reliable, affordable, and sustainable new baseload capacity.

- Design of cost-effective solutions is a key to managing risks associated with the development of commercially acceptable advanced coal technologies.

- Incremental implementation of cost-effective design and operation optimizations is a key to achieving the expectations promised by advanced coal technologies.

- Continued education of all parties (utilities, agencies, public, etc.) on the capabilities and promises of advanced coal technologies is a key to permitting within the existing regulatory framework and to the development of future regulations.

- Technical and Regulatory challenges must be resolved before CO_2 capture and sequestration are ready for commercial deployment with advanced coal technologies.