Best Available Control Technology for Greenhouse Gas Emissions Sources

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What I Will Talk About

- Process Leading to the BACT Requirement
- Implementation
- BACT Guidance
- Important Points
  - Follow the Process
  - Document Your Decisions
  - Formally Respond to Comments on the Record

Process Leading to the BACT Requirement

- April 2, 2007 Supreme Court Decision
- December 7, 2009 EPA Endangerment Finding
- March 29, 2010 Johnson Memorandum
- April 1, 2010 LDV Emissions Rule
- June 3, 2010 EPA Tailoring Rule
- All of the Above adds up to Large Emitters of GHGs being subject to PSD and Title V

Implementation

- Despite the Widespread Legal Challenges with a Number of States/Locals on all Sides
- Despite the Congressional Attempts at Limiting EPA Authority
- Despite the Significant Resource Restraints at all Levels of Government
- State and Local Permitting Agencies have Permit Applications before them and are moving forward with PSD and Title V Permits with BACT for GHG Emissions

BACT Guidance

Clean Air Act Advisory Committee
GHG BACT Workgroup

- Makeup of Workgroup
  - 19 Industry
  - 5 Environmental
  - 10 state/local/regional/tribal agencies
- The charge to the Work Group:
  - Discuss and identify the major issues and potential barriers to implementing the PSD Program under the CAA for greenhouse gases.
  - Focus on the BACT requirement, including information and guidance that would be useful for EPA to provide concerning the technical, economic, and environmental performance characteristics of potential BACT options.
  - Identify and discuss approaches to enable state and local permitting authorities to apply the BACT criteria in a consistent, practical and efficient manner.

Workgroup Recommendations and EPA Response

- Workgroup Reports available at: http://www.epa.gov/air/caaac/climatechangewg.html
- EPA GHG Permitting Guidance available at: http://www.epa.gov/nsr/ghgpermitting.html
- EPA Slide Presentation on Guidance at: http://epa.gov/air/oaqps/eog/video/pdfs/GHGPermittingGuidance_Nov18&19Webinars.pdf
- Greenhouse Gas Permit Training, December, 2010 at: http://www.epa.gov/apti/broadcast2010.html#GHGTraining1210

Ongoing EPA Response

- Implementing GHG Permitting - Questions and Answers at: http://www.epa.gov/nsr/ghgqa.html
- EPA Comment Letters on Proposed GHG Permitting Actions at: http://www.epa.gov/nsr/ghgcomment.html

Important Points

- Workgroup Discussions and Report
- The EPA Guidance
- EPA Letters
- First Legal Petitions

Important Points

- Follow the Process
  - Top-Down BACT
  - Numerical Emissions Limits
- Document Your Decisions
  - Consideration of Alternative Processes
  - Consideration of Carbon Capture and Storage
- Formally Respond to Comments on the Record

Five-Step Top-Down BACT Process

- Identify all available control technologies
- Eliminate technically infeasible options
- Rank remaining technologies
- Evaluate most effective controls
  - Economic, Energy, Environmental effects
- Select BACT

Alternate Boilers/Processes or Fuels

- Should be identified and evaluated
- The source choice should be carefully documented, especially when there are cleaner, more efficient alternatives
- Source re-definition is not required (fuel switches are re-definition)
- Efficiency analysis can be on a equipment, process, or facility level

Carbon Capture and Storage

- Should be evaluated for most very large sources, certainly for any new Coal-fired EGU
- Likely can be eliminated from BACT in step 4, considering economics
- Documentation is key

BACT Numerical Limit

- EPA encourages permitting authorities to consider establishing an output-based BACT emissions limit, or a combination of output- and input-based limits, wherever feasible and appropriate to ensure that BACT is complied with at all levels of operation
- Averaging time for limit should be consistent with the compliance assurance method
- CO_2 continuous emission monitors should be considered, but remember the other GHGs
- Address emissions during startup and shutdown

BACT Numerical Limit

- If the permitting authority determines that technical or economic limitations on the application of a measurement methodology would make a numerical emissions standard infeasible, it may establish design, equipment, work practices or operational standards to satisfy the BACT requirement
- If less than the most stringent numerical limit is chosen as BACT, documentation must be provided
  - May be due to criteria pollutant emissions avoided
  - This requirement shows state/local need to see timely permit decisions

Statement of Basis

- Document emissions calculations, including appropriate baseline emissions
- Document clearly the BACT choice, considering
  - Available alternatives
  - Compliance monitoring methods
  - BACT decision for each emissions point
  - Operational assumptions and relation to enforceable conditions

Final Comments

- States and Locals must work within the process
- Energy efficiency appears to be the key to limiting future increases in GHG emissions; this must be translated into a BACT numerical limit
- Documentation of the reasons for decisions on limits is essential