


Coal Combustion Byproducts (CCBs) Beneficial Product, Hazardous Waste, or Both?

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What are CCBs (aka coal ash)?

- Product of coal combustion --
- Fly ash
- Bottom ash
- Boiler slag
- Flue gas desulfurization material
- Increasing in volume with more stringent air emission controls at electric utilities

Governing Statutes

- RCRA -- 42 USC 6901 *et seq.*
 - Comprehensive federal scheme for handling and disposal of solid and hazardous waste
- SMCRA -- 30 USC 1201 *et seq.*
 - Comprehensive federal program regulating the environmental effects of coal mining, and reclamation activities

RCRA Overview

➤ Subtitle C

- Cradle to grave regulation of hazardous waste
- Hazardous waste: categorized by EPA or exhibits hazardous characteristic:
 - ignitability corrosivity
 - reactivity toxicity
- Performance standards and financial assurance

➤ Subtitle D

- Regulation of non-hazardous waste
- Primarily regulated by the states

Regulatory History – RCRA and CCBs

- 1980 -- RCRA amendment requiring study
- 1988 -- EPA findings to Congress
- 1993 -- EPA regulatory determination
- 1999 -- EPA findings to Congress
- 2000 -- EPA regulatory determination
- CCBs should **not** be regulated as Subtitle C (hazardous) waste
- 2005 -- EPA and DOE report -- significant improvement in disposal management practices
- 2007 -- Notice of Data Availability and Request for Comment

Regulatory Backdrop – SMCRA and CCBs

- Regulation of impoundments at mining sites -- MSHA and OSM
 - 30 CFR Parts 77 and Chapter VII
 - 30 CFR Parts 780 and 816
- Define engineering standards and performance criteria
 - stable operating conditions for protection of miners
 - limit potential environmental impacts on surrounding communities

Regulatory Backdrop – SMCRA and CCBs

- Non-impoundment placement of CCBs at coal mine sites
 - Leachate tests, groundwater monitoring, prevent material damage to hydrologic balance
 - 2006 NRC Report
 - placing CCBs in coal mines as part of reclamation is viable management option
 - avoid significant adverse environmental and health impacts
 - include public involvement in regulatory permit process

EPA Endorsement of Beneficial Reuse

- www.epa.gov/epawaste/consERVE/rrr/imr/ccps/index.htm
- Coal Combustion Products Partnership (C2P2)
- www.epa.gov/osw/partnerships/c2p2/index.htm

Reuses include:

raw feed for cement clinker
flowable fill
soil-modification
blasting grit and abrasives
wallboard
agriculture

concrete
structural fill
mineral filler
roofing granules
waste stabilization/ solidification

grout
road base/sub -base
snow and ice traction control
mining applications
soil amendment

- 43% of CCBs in 2006 reused

Current Developments

- Dec. 2008 -- release from TVA impoundment -- 5 million cubic yards of coal fly ash sludge
- Activist call for EPA action to regulate as hazardous waste
- New EPA Administrator Lisa Jackson promises proposed rule by end of 2009
- March 2009 -- CERCLA 104(e) requests to all electric utility impoundments
- Intense pre-proposed rule advocacy efforts
- ASTM letter -- highlighting negative implications of hazardous waste designation
- Proposed rule delayed until mid-February 2010

Implications of Hazardous Waste Designation

- RCRA Subtitle C regulation
 - Groundwater monitoring
 - Performance standards
 - Deed recordation
 - Corrective action
 - Post-closure/post-reclamation care
 - Financial assurance
- Toxic tort implications -- depending on substance of EPA designation