



Coal Combustion Product (CCP) Management – Weathering the Storm of Change

Important Changes in CCP Management Certain to Impact
the Power Industry

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Weathering the Storm of Change – Overview

- Background on Ash Management
- Status of Current Regulations
- Status of Beneficial Recycling of CCPs
- Changing Events
- Review of Pending Regulatory Changes
- Recommendations to Prepare for the Change



Before the Storm – Regulations

- All aspects of CCP management performed by the states - No federal programs in place
- **1980 Bevill Amendment** – CCP not hazardous waste!
 - the ‘Bevill exclusion’ excludes CCPs from regulation as hazardous waste under Subtitle C
 - This exclusion held pending completion of reporting to Congress (still pending)
- **1993 report**
 - Subtitle D designation upheld from Bevill Amendment
- **2000 report**
 - Final Rule in which the agency concluded that these materials are non hazardous (maintains exemption); also the report calls for federal guidelines for disposal and reuse
- **2002 report**
 - EPA sponsored beneficial use summits focused on barriers to utilization of CCP’s within the states...Beneficial reuse (or recycling) is now on the rise.

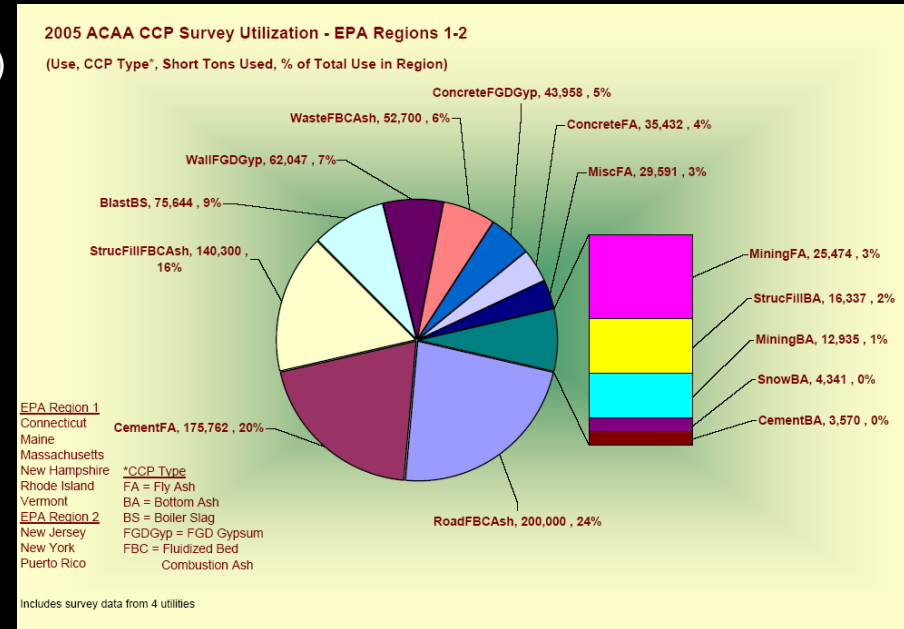


We have seen similar “storms” in the past.

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Before the Storm – Beneficial Recycling

- Types of Beneficial Recycling:
 - Ready-mix concrete (*dependent on quality)
 - Portland cement substitute
 - Additive for high strength concrete mixtures
 - Feedstock for cement kilns
 - Structural fill and waste stabilization
 - Flowable fill
 - Mine reclamation
 - Road construction
 - Agriculture
 - Cosmetics



- Federal Regulations for Beneficial Reuse have been proposed... Nothing formal has been completed
- Several states responded by generating their own regulations

Other Beneficial Reuse projects have resulted in environmental concerns and have clouded the success of the industry.



Approaching Storm - Lightning Strikes

December 22, 2008

- TVA Failure at Kingston

- The largest fly ash release in United States history.
- An ash dike ruptured at an 84-acre solid waste containment area
- 5.4 million cubic yards of fly ash sludge into the Emory River and surrounding land.
- Rains flushed an undetermined amount of ash into the Clinch River and into the Tennessee River portion of Watts Bar Lake.
- Clean up costs expected to exceed \$1 billion.

January 9, 2009

- Widows Creek Fossil Plant Gypsum Pond

- 10,000 gallons of slurry spilled
- Water and gypsum flowed into the settling pond, which filled to capacity and then overflowed after a cap dislodged from a 30-inch standpipe.
- Some material overflowed into Widows Creek, although most of the gypsum remained in the settling pond.





Weathering the Storm - The First Front

- **Politics pushes EPA**
 - SR 64 - U.S. Senator Barbara Boxer (D-CA)
 - Resolution recognizing the need for EPA to end decades of delay and utilize existing authority under RCRA to comprehensively regulate coal combustion waste, and the need for the TVA to be a national leader in technological innovation, low-cost power, and environmental stewardship
 - HR 493 – February 2009 - Representative Nick Joe Rahall II (D-WV)
 - Direct the Secretary of the Interior to promulgate regulations concerning the storage and disposal of matter referred to as “other wastes” in the Surface Mining Control and Reclamation Act of 1977, and for other purposes
- **EPA pushes politics**
 - EPA responds – begins drafting regulations based on Surface Mining Control and Reclamation Act of 1977 (SMCRA)
 - Congress agrees to wait for EPA action and new programs



Weathering the Storm – The Second Front

- March 9, 2009
 - EPA sends letters to utility companies requesting information about ash impoundments
 - Number of plants = **162**
 - Number of utility companies = **61**
 - 48 additional plants identified (second round of letters) - **total 210**
- Actions moving forward on this program:
 - Compile the data and prioritize sites (determine number of impoundments)
 - Site visits to assess structural stability (using outside source[s])
 - By October 1, 2009 – 38 facility visits and 22 reports published
 - Require modifications or corrective measures
- Led to announcement of the **44** (or **49**) **High Hazard sites**
- EPA released collection of ash pond data for **584 impoundments at 219 plants in 35 states** and final reports for dam inspection site visits (July through September 2009)



Weathering the Storm - Forecasting Change

- Final federal regulations will come? When?? Dec 2009?
- New federal regulations due December 2009; intended to begin a comment period
 - Draft to OMB ~~early September~~ early October (10/16/09)
- Draft regulations are anticipated to address all areas of CCP Management – Design, Permitting, Operation, Construction, Monitoring, Closure, and Post-closure
- Coal Combustion Products becomes...Coal Combustion Residues (CCR)
- Meanwhile, Politics checking in on EPA – Government Accountability Office (GAO) Report issued October 30, 2009
 1. Number of CCR surface impoundments and locations
 2. Identify problems with coal ash storage and how they are being addressed
 3. Define the federal oversight for CCR and issues needing resolution

Weathering the Storm - Forecasting Change

- Current USEPA approach:
 - Revisiting ~~CCP~~ CCR designation
 - (leading option) Subtitle C (hazardous waste)
 - Subtitle D (solid waste)
 - Hybrid Approach #1 (new category)
 - Hybrid Approach #2 (new category)



- Approach will target wet storage, unlined facilities, etc. (*closure, monitoring, etc.*)

Business as usual will no longer be business as usual!

Weathering the Storm - Forecasting Change

- CCP's currently viewed as **Subtitle D** Non-Hazardous Waste
- Many states adopt this as the state minimum
- Unlike other Subtitle D wastes (e.g. MSW), no federal minimum requirements exist for CCPs
- Results in regulations which vary significantly from state to state



Weathering the Storm - Forecasting Change

- CCP's currently viewed as **Subtitle D** Non-Hazardous Waste
- Unlike other Subtitle D wastes (e.g. MSW), no federal minimum requirements exist for CCPs - - results in regulations which vary significantly from state to state
- Resource Conservation and Recovery Act (RCRA) Subtitle C establishes a federal program to manage hazardous wastes from cradle to grave.
- Subtitle C includes an enforcement and tracking component (absent in Subtitle D)
- **RCRA Subtitle C designation is leading option considered for CCPs**

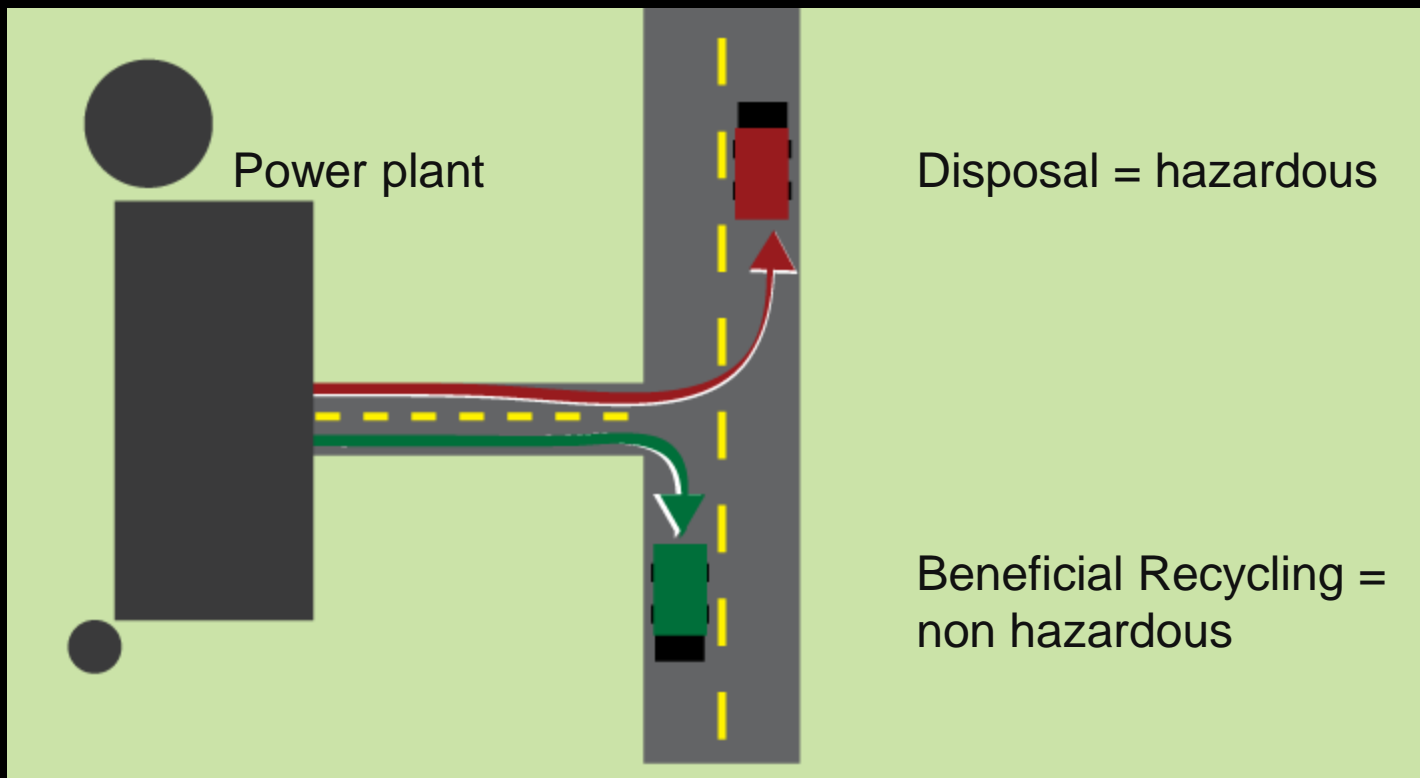


Weathering the Storm - Forecasting Change

- **Hybrid Approach #1** (new category); Contingent Subtitle C

Disposal = hazardous

Beneficial recycling = nonhazardous



Weathering the Storm - Forecasting Change

- Hybrid Approach #2 (new category)



Wet Storage = hazardous



Dry Storage = nonhazardous

Weathering the Storm - Forecasting Change

- CCP's designated as Hazardous Waste?!?
 - CCP Materials do not meet the definition of a hazardous material
 - Beneficial Recycling market would collapse...
 - increase other market costs
 - Increase disposal storage
 - Approx 40% of 130M tons recycled...now headed to disposal
 - Concerns about risk and liability may dictate decisions
 - Utility and Regulatory costs increase
 - Current programs not equipped / funded
 - Schedule delays anticipated





Weathering the Storm - Forecasting Change

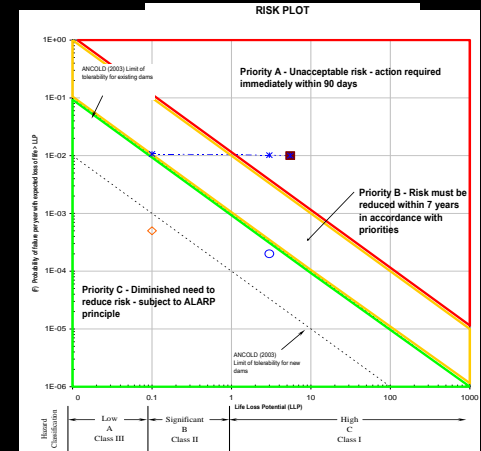
- **Next Actions related to Coal Ash...**
 - Unprecedented lobbying to the OMB by all interested parties!
 - Federal Regulations for CCR Management
 - December 2009 – Draft rules issued for comment
 - 2010 – Comment period
 - ??? – Rules promulgated; ??? Adopted by state program
 - CCR in Beneficial Reuse Minefilling Application Regulations
 - Started earlier, but set aside after December 22, 2008
 - US EPA to revise effluent guidelines, including CCR wastewater discharges (per September 2009 announcement)
 - Proposed regulations expected 2012

Weathering the Storm – Preparing for Change

- Review all current CCP Management Practices

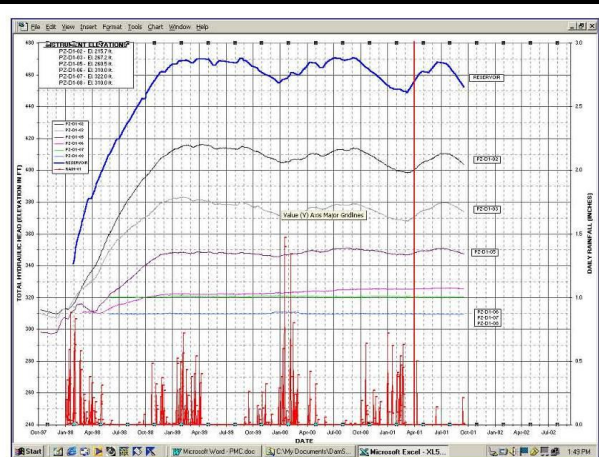
- Disposal
- Beneficial Recycling
- Operations
- Inspections
- CCP Response Plan
- Sampling Data

- Corporate standards
- Controlling documents



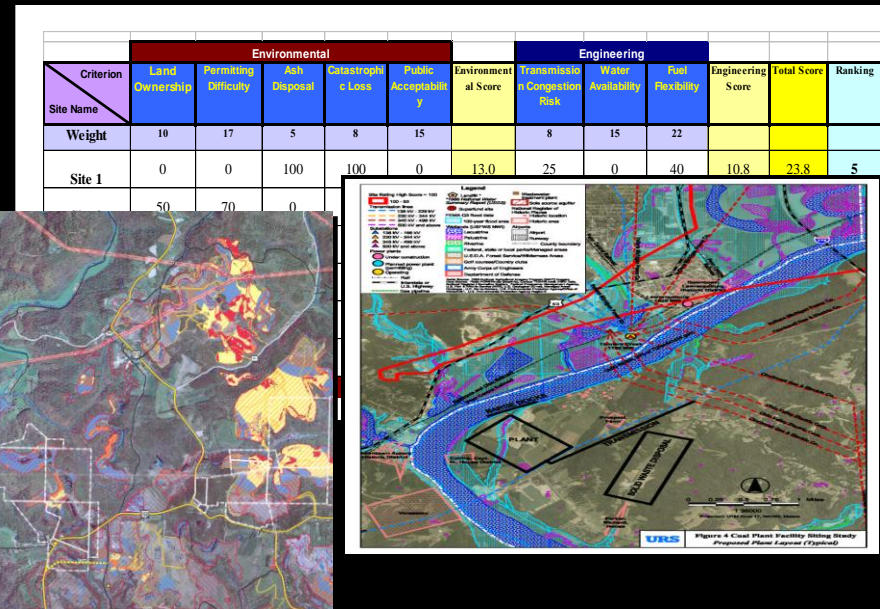
- Gather and review all records

- Permits and supporting permits (and where there are none)
- Existing facility designs
- Documentation previously gathered during inspections
- Contracts with contractors (operations and sub-consultants)
- Facility classifications
- Identify outstanding compliance issues...and resolve
- Review Inspection Reports



Weathering the Storm – Preparing for Change

- Review status of existing CCP facilities and plan for the future (continued)
 - Review remaining life in existing facilities
 - Initiate first steps of developing new facilities (siting, property acquisitions, investigations, permitting, etc.)
 - Close existing ash impoundments
 - Pursue beneficial recycling markets but cautiously and with potential alternatives
 - Shift plant technology/systems from wet generation to dry generation....wet storage to dry disposal





Weathering the Storm – Preparing for Change

- CCP management during this time of unknown change
 - Be proactive
 - Plan and prepare
 - Be thorough
 - Remain informed
 - Get involved



QUESTIONS ???



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