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Coal Combustion Byproducts

The Regulatory Landscape



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Agenda

- # **Background on CCBs**
- # **Beneficial Use**
- # **How are CCBs Managed Today**
- # **Regulation of CCBs**
- # **Current Litigation**
- # **Current Legislation**



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Coal Combustion Byproducts

Coal combustion byproducts (CCBs) are the materials produced from the combustion of coal for the production of electricity

CCBs primarily include:

- **Fly ash**
- **Bottom ash**
- **Boiler slag**
- **Flue gas desulfurization gypsum**



Coal Still Major Fuel Source

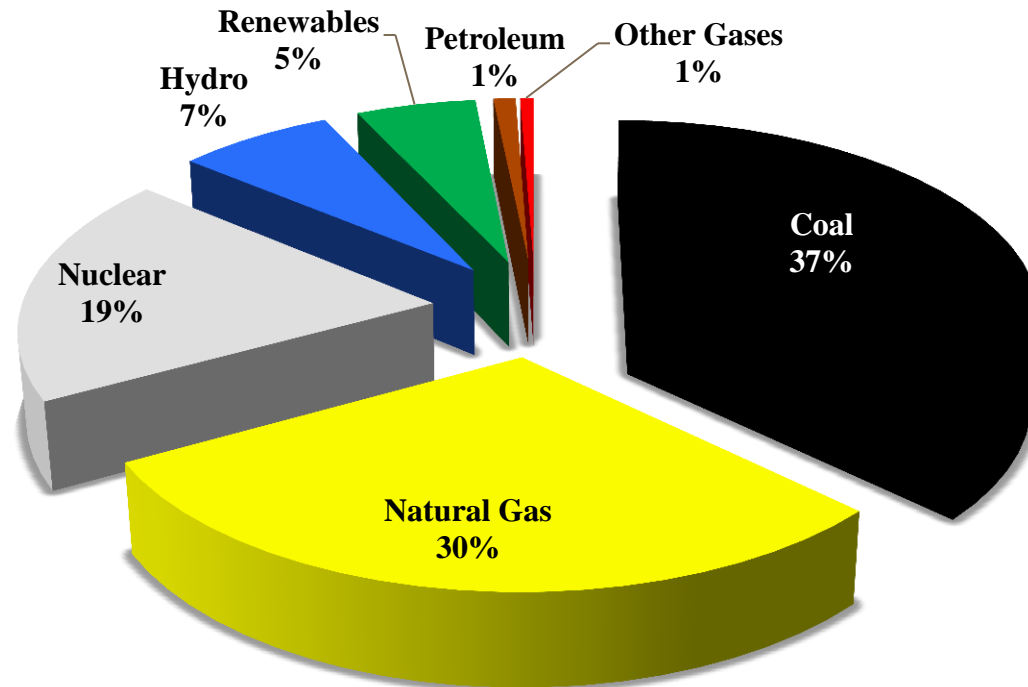
Coal continues to be the predominant fuel source for electricity production in the US

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Source: US Energy Information Administration, Monthly Energy Review, May 9, 2013



Coal Still Major Fuel Source

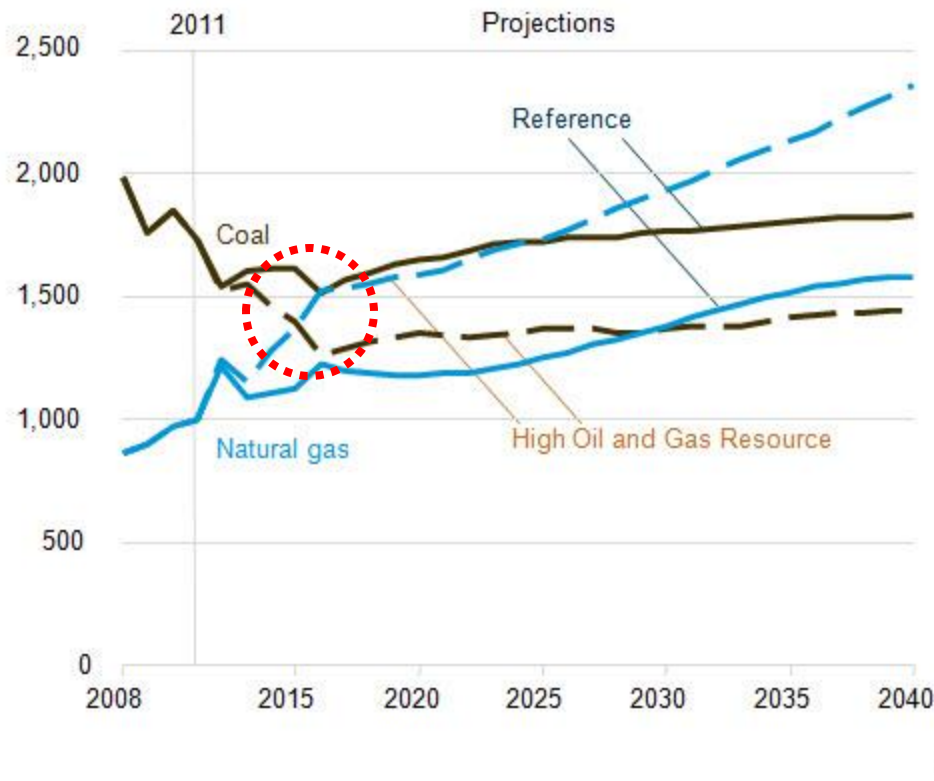
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Electricity from Coal and Natural Gas 2008-2040: Two Scenarios



While coal is expected to remain a prominent fuel, Natural Gas will supplant it as the primary fuel source in the US

- **High supply, low prices for natural gas**
- **Cost of environmental regulations**

Source: U.S. Energy Information Administration, Annual Energy Outlook 2013

Basic Coal-Fired Electrical Generation

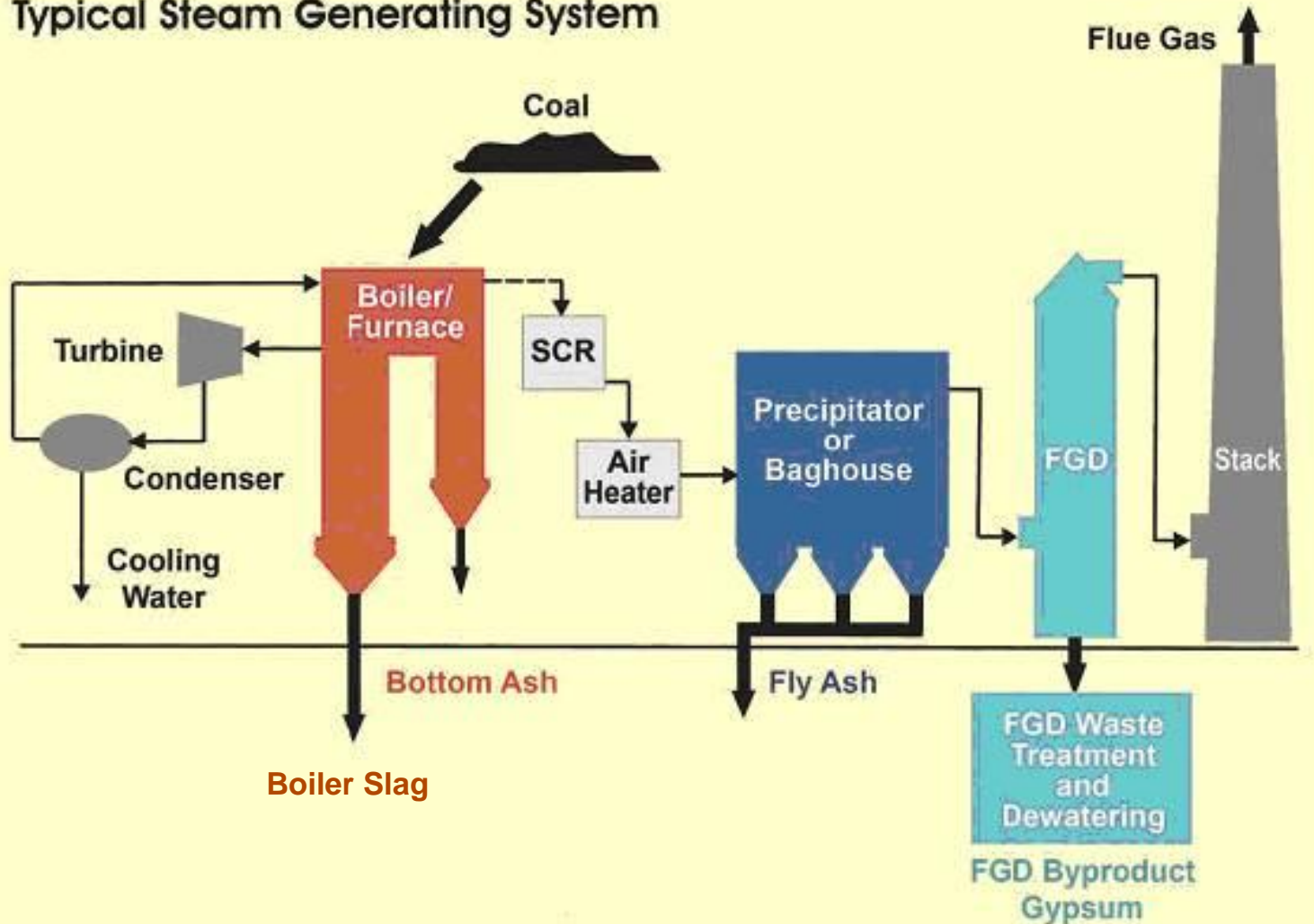
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Typical Steam Generating System



CCBs: An Increasing Multi-Media Topic

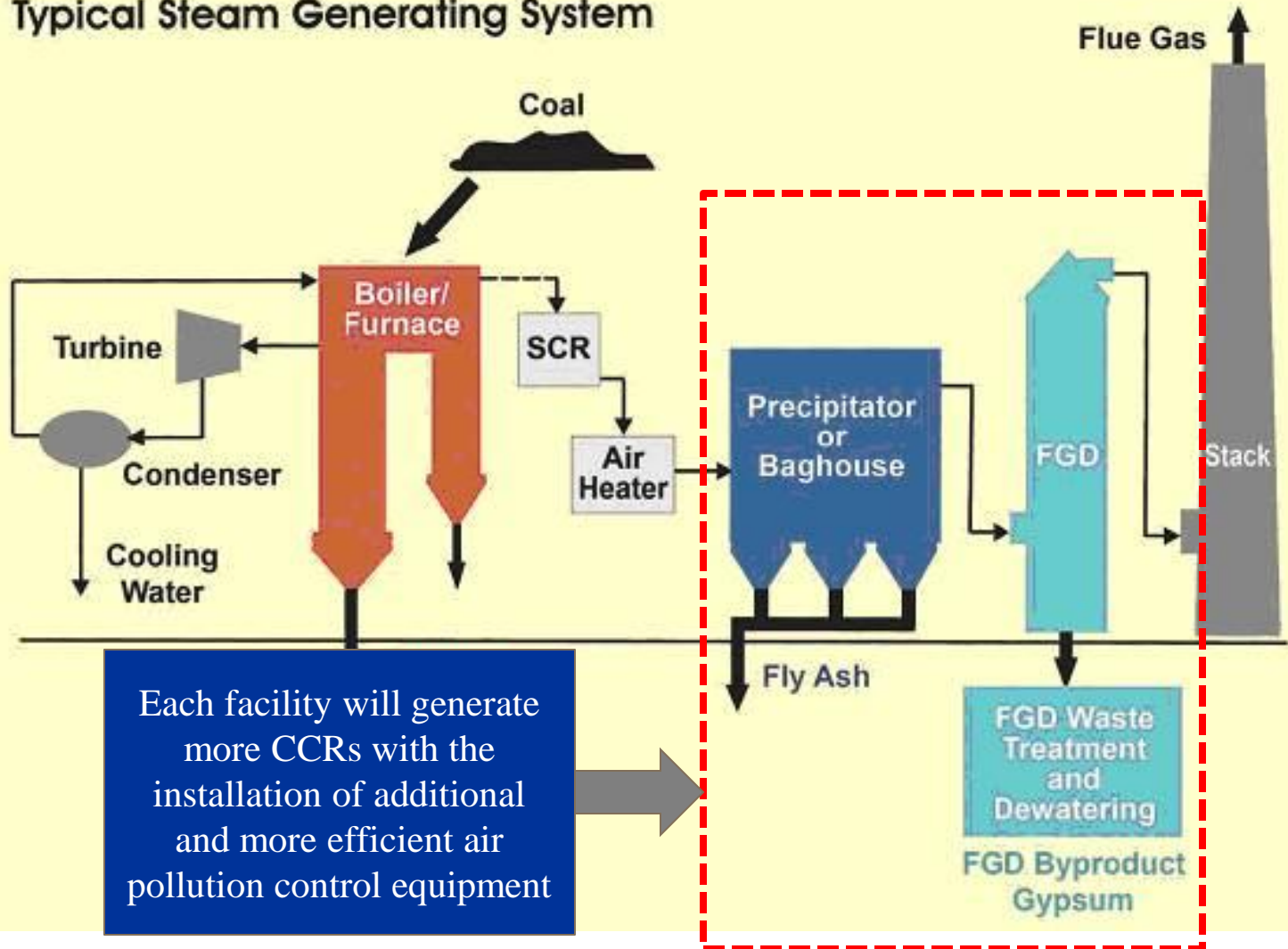
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Typical Steam Generating System





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CCB Generation

The American Coal Ash Association (ACAA) produces an annual survey of coal ash generation and beneficial use.

2011 Survey Highlights

- **130 million tons of CCBs generated**
- **56.6 million tons of CCBs beneficially reused**
- **Beneficial reuse utilization = 43.5%**
- **Survey captured 76.2% of total coal consumed**



CCB Beneficial Use

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WHAT IS BENEFICIAL USE?

Beneficial use refers to use of material that provides a functional benefit — that is, where the use replaces the use of an alternative material or conserves natural resources that would otherwise be obtained through extraction or other processes to obtain virgin materials.

Source: EPA website -

<http://www.epa.gov/wastes/nonhaz/industrial/special/fossil/ccr-rule/ccrfaq.htm#11>

Beneficial Use – How are CCBs Reused?



Concrete and Portland
Cement Replacement



Drywall and Other
Building Materials

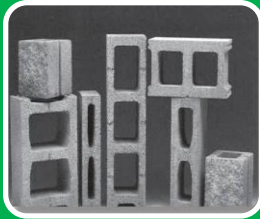


Road Construction



Mine Reclamation

Management of CCBs



Beneficial Reuse – 43%



Landfills – 36%



Surface Impoundments – 21%



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Regulation of CCBs

SOLID WASTE DISPOSAL ACT OF 1980

- Congress passed Section 3001(b)(3)(A)(i-iii), known as the Bevill Amendment, amending the list of RCRA Special Wastes to include fossil fuel combustion wastes (FFCWs)
- The Bevill Amendment exempts FFCWs from regulation under RCRA Subtitle C (hazardous waste) until further study and assessment of risk is performed by EPA
- EPA's initial reports to Congress on FFCWs (1988 and 1999) did not illustrate a change in the risk assessment of FFCWs



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Regulation of CCBs

TVA KINGSTON ASH DIKE RELEASE

- On December 22, 2008, 5.4 million cubic yards of coal ash were released into the Emory and Clinch Rivers from the TVA Kingston Fossil Plant surface impoundment failure.
- This release prompted EPA to perform structural integrity assessments of all CCB surface impoundments.
 - ❑ Over the last three years, EPA contractors have performed assessments of over 500 impoundments
 - ❑ Not one impoundment was identified as “unsatisfactory” or posing an immediate safety threat



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Regulation of CCRs

DISPOSAL OF COAL COMBUSTION RESIDUALS (CCRs) FROM ELECTRIC UTILITIES

- On June 2010, EPA published a proposed rule under RCRA to regulate CCRs under one of two primary options
 1. Subtitle C hazardous waste
 2. Subtitle D non-hazardous waste
- Subtitle C Option
 - ❑ State adopted and administered hazardous waste permit program
 - ❑ Impoundments must retrofit or close within 5 years
 - ❑ Wastes must meet Land Disposal Restrictions to be disposed in surface impoundments
 - ❑ Design & performance standards for landfills and impoundments



Regulation of CCRs

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DISPOSAL OF CCRs FROM ELECTRIC UTILITIES

➤ Subtitle D Option

- ❑ Self-implementing rule with no permits
- ❑ Enforcement through citizen suits; States can act as citizen
- ❑ Impoundments must retrofit or close within 5 years
- ❑ Design and performance standards for landfills and impoundments

➤ Option 3 – Subtitle D Prime

- ❑ Identical to Subtitle D proposal except no mandatory impoundment retrofit or close requirement
- ❑ Impoundment allowed to operate for its useful life based upon groundwater monitoring



Issues with a Hazardous Waste Designation of CCRs

➤ Legal

- ❑ Does the Bevill Amendment allow for a hazardous waste designation of CCRs?
- ❑ Is there a substantive change in the risk assessment to make a hazardous waste determination?
- ❑ In light of new information, EPA has indicated an updated risk assessment may likely not justify a hazardous waste designation

➤ Regulatory Compliance

- ❑ How do you manage the large volumes of material as a hazardous waste? How is it stored, transported, disposed?
- ❑ How do you address hazardous waste releases due to wind and water-borne incidental migration?
- ❑ How is beneficial use affected?

It is the Electric Industry position that CCRs are not hazardous wastes and do not warrant a hazardous waste designation

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Practical Challenge with Proposed EPA Regulations

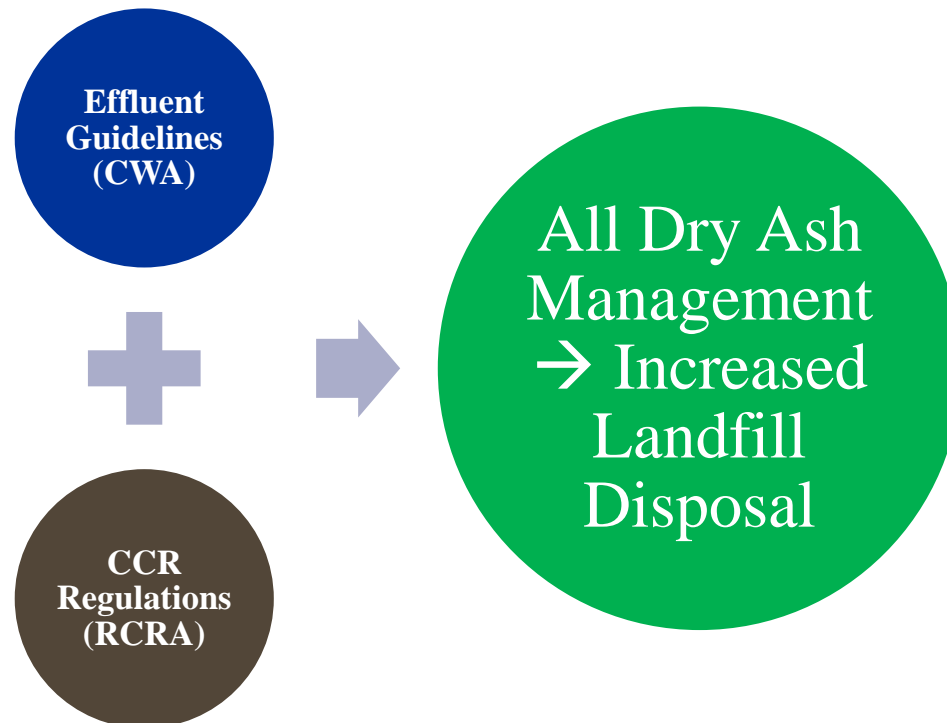
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REQUIREMENTS FOR DRY ASH CONVERSION WILL LEAD TO INCREASED DEMAND FOR PROPERLY DESIGNED LANDFILL CAPACITY





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CCR Litigation

- **In April 2012, several environmental groups joined together in a lawsuit against EPA to force the Agency into a Court-defined timeline for rulemaking completion**
- **The US District Court, DC Circuit ruled in the *Appalachian Voices, et al v. EPA* on September 30th**
 - ❑ **The Court agreed to one claim, that EPA had not met its statutory obligation to review RCRA in a timely fashion.**
 - ❑ **The Court is holding a conference on November 7th where the parties will present to the Court their position on a rulemaking schedule**



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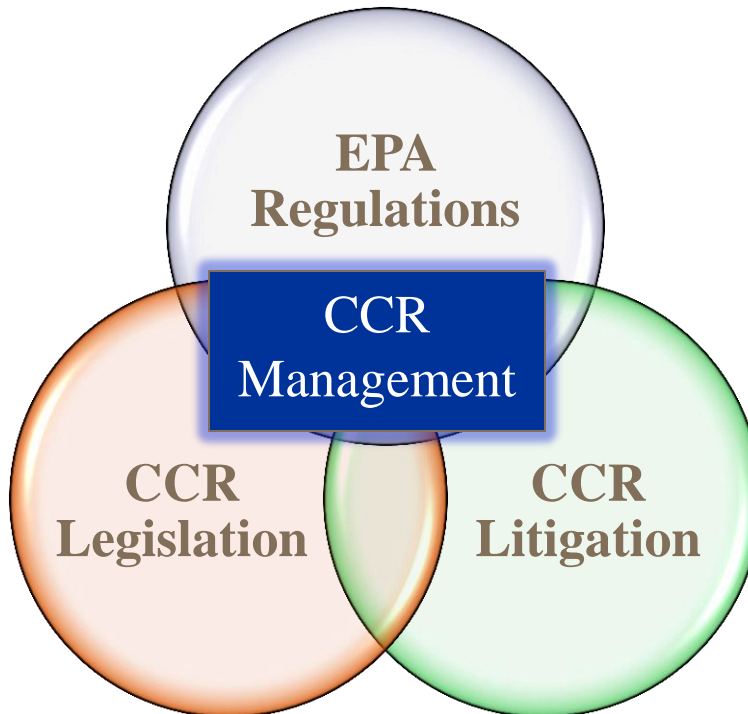
CCR Legislation

- **In July 2013, the House of Representatives passed HR 2218, the Coal Residuals and Management Act of 2013**
 - ❑ Establish state-administered permit programs analogous to the municipal solid waste program
 - ❑ Design and location criteria for landfills and impoundments
 - ❑ Corrective action or closure required of non-performing units 10 years after effective date of Act
 - ❑ Prohibits EPA from regulating CCRs

- **The Senate passed a similar bill in 2012. Sponsors plan to reissue bill modeled after HR 2218**

CCR Activity

Unique situation where there are three distinct, but highly integrated activities on-going concurrently to manage a single topic





Questions?

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