

EPA COAL COMBUSTION RESIDUAL MANAGEMENT RULES

CIBO E/E Meeting

Sept. 14-15, 2010

Environmental Protection Agency



- **40 CFR Parts 257, 261, 264 et al.**
- **Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities; Proposed Rule**

Proposals



- Subtitle C
- Subtitle C - Special Waste
- Subtitle D
- Subtitle D - Prime

CERCLA (The Unreferenced Proposal)



- EPA is also proposing to amend Part 302 of its regulations regarding Designation Reportable Quantities, and Notification
- This is not clearly noticed in the Preamble to the rule.
- CCRs from EGUs would be listed as a hazardous substance.
- IF EPA classifies a waste as hazardous, it becomes a reportable substance under CERCLA.

Recommendation



- YES - Subtitle D Concept
- **SUBTITLE D PRIME –
APPROACH- maybe- but
Definitely a D approach**
- **NO!-SUBTITLE C**

Subtitle D Prime Option



- EPA is also considering a potential modification to the subtitle D option, called “D prime” in the following table.
- Under this option, existing surface impoundments would not have to close or install composite liners but could continue to operate for their useful life. In the “D prime” option, the other elements of the subtitle D option would remain the same.

APPLICABILITY



- The Preamble states that the proposed rule is applicable to Coal Combustion Residuals From Electric Utilities
- The Preamble suggests that the proposed rule is not applicable to
 - ▣ Beneficial Use of Coal Combustion Products
 - ▣ Minefilling of Coal Combustion Residuals
 - ▣ Industrial Facilities that are not classified as Electric Utilities

Applicable or Not Applicable



- The language related to the Subtitle C approaches provides for the exclusions identified in the Preamble
- The language related to the Subtitle D approaches does not provide exclusions for beneficial use, minefilling, and industrial facilities.

EPA's Primary "DRIVER"

□ **Federal Enforceability**

- Under a "C" Approach, EPA has enforcement capability
- Under a "D" Approach, EPA claims it has no enforcement capability
 - ▣ Suggests citizens suits to comply compliance
 - ▣ Not stated is that EPA's approach is to identify how the CCRs must be managed and if not managed per the rule, EPA classifies these sites as "open dumps" which represents an unlawful activity.
- Provides Citizens with a very simple case, if they initiate legal action
- However, this gives EPA enforcement capability under RCRA as it relates to unlawful activities
- By not calling out exclusions for beneficial use, minefilling and not being applicable to industrial under Subtitle D, all CCR management activities are susceptible for enforcement as an "Open Dump"

Comparison of C and D

	SUBTITLE C	SUBTITLE D
Effective Date	Timing will vary from state to state, as each state must adopt the rule individually-can take 1 – 2 years or more	Six months after final rule is promulgated for most provision: certain provisions have a longer effective date
Enforcement	State and Federal enforcement	Enforcement through citizen suits; States can act as citizens.
Corrective Action	Monitored by authorized States and EPA	Self-implementing
Financial Assurance	Yes	Considering subsequent rule using CERCLA 108 (b) Authority
Permit Issuance	Federal requirement for permit issuance by States	No
Requirements for Storage, Including Containers, Tanks, and Containment Buildings	Yes	No
Surface Impoundments Built Before Rule is Finalized	Remove solids and meet land disposal restrictions; retrofit with a liner within five years of effective date. Would effectively phase out use of existing surface impoundments	Must remove solids and retrofit with a composite liner or cease receiving CCRs within 5 years of effective date and close the unit
Surface Impoundments Built After Rule is Finalized	Must meet Land Disposal Restrictions and liner requirements. Would effectively phase out use of new surface impoundments.	Must install composite liners. No Land Disposal Restrictions
Landfills Built Before Rule is Finalized	No liner requirements, but require groundwater monitoring	No liner requirements, but require groundwater monitoring
Landfills Built After Rule is Finalized	Liner requirements and groundwater monitoring	Liner requirements and groundwater monitoring
Requirements for Closure and Post-Closure Care	Yes; monitored by States and EPA	Yes; self-implementing

CIBO Member Implications



- CIBO has members that are classified as electric generating facilities and would be covered by the regulations
- CIBO has members that are not classified as electric generating facilities and would not be covered by the regulations based on the **PREAMBLE**

FOR CIBO's Consideration



- Basic Comment is “CCRs need to be regulated under Subtitle D not Subtitle C”
- The rule must be clear regarding the “exclusions or applicability” issues
- For the Industrials, the belief that the rule is not applicable to your facilities is misleading as it is believe that they will be eventually capture by the States or by EPA. Once a decision is made, EPA will not be able to provide an alternative to the Non-EGU Sectors that differs significantly from the rules finally imposed on the Electric Generating Sector

Potential CIBO's Concerns

- The State will implement the final EPA rules on CCRs no matter what Sector generates them
- Since CCRs are generating by burning coal, how does EPA provide one set of regulations for one sector (EGUs) and potentially a different set of regulations for another sector (Industrials).
- It is believed that EPA has excluded Industrial from its the Regulatory Impact Analysis including its Economic Analysis. If the proposed Regulations were applied to the Industrial Sector, it would demonstrate a significant impact on those Sectors.
- By circumventing this analysis, EPA has clearly chosen a means to regulate CCRs for the non-EGU Sectors through default. (This occurs by the fact that the States have regulated CCRs from all sources and will continue to do so based on EPA's final rules (not the applicability of the rule).)
- Prior to and after its May 2000 Regulatory Determination on managing Coal Combustion Residuals, EPA was analyzing the impacts on the Industrial Sector. At that time, EPA recognized that any rules developed to regulate the management of CCRs would have a significant impact on the Industrial Sector.

CCB Leaching



- The States have used leaching test to determine the potential impact of CCBs
- In addition, the leaching results establishes a blueprint on how the CCBs can be managed.

Comments Related to Leaching

Tests

- CCP leachates do not exhibit hazardous waste characteristics
 - ▣ CCPs do not exceed EPA hazardous waste test limits (TCLP)
 - ▣ CCP leachate is similar to non-hazardous inorganic wastes
 - ▣ CCP leachate risks several orders of magnitude less than municipal solid waste leachate
- Other Risk Considerations
 - ▣ Identified damage cases typically pre-1980, unlined; only 3 off-site exceedances of a Maximum Contaminant Level
 - ▣ Mercury in fly ash is not readily released; radioactivity levels are similar to rocks and other building materials

CCB Leaching Analysis



- The CCBs are leached to determine the potential impact and to be compared with different standards as to how the CCBs are managed.
- The three basic regulatory standards that the leaching analysis are compared to are:
 - Hazardous Waste
 - Residual Waste
 - Beneficial Use Criteria

General Statements



- CCRs classification should be tied to utilizing EPA methodologies (leaching test protocols) and standards for determining if a waste/byproduct should be classified as hazardous or as a residual waste.
- Using this criteria, there has been no evidence to support a Subtitle C Classification.

A Comparison of Numbers

Parameter	Hazardous	DEP	75 th Percentile		
	TCLP	SPLP	PC	A-FB	B-FB
Arsenic	5.0	0.25	0.10	0.05	0.05
Barium	100	50	0.25	0.26	0.27
Cadmium	1.0	0.125	0.005	0.02	0.02
Chromium	5.0	2.5	0.08	0.10	0.08
Lead	5.0	0.375	0.05	0.1	0.1
Mercury	0.2	0.05	0.0002	0.0004	0.001
Selenium	1.0	0.5	0.08	0.05	0.06
Silver	5.0	2.5	not enough data yet		

*DEP SPLP Standards are for Beneficial Use of CCBs Units are mg/L TCLP is Toxicity Characteristic Leaching Procedure. SPLP is Synthetic Precipitation Leaching Procedure. PC is pulverized coal ash. A-FB is anthracite fluidized bed combustion ash. B-FB is bituminous fluidized bed combustion ash. 75th Percentile is the value where 75% of the data is less than or equal to this value. For example, 75% of measured SPLP results are less than 0.08 mg/L chromium. Because so many values are below detection, even the 75th percentile is often influenced by detection limits.

Performance Standards



- EPA has described the performance standards under Subtitle C and Subtitle D to be the same.
- The basic standards are the same or similar as it relates to Landfills and Impoundments, including the use of liners, monitoring, air quality limits for fugitive dust, runoff controls, monitoring programs (including assessments, remediation planning and remediation).

Summary of Subtitle C

- “These CCRs **would be regulated from the point of their generation to the point of their final disposition, including during and after closure of any disposal unit.**”
- KEY ISSUE --- **POINT OF GENERATION**
 - The Combustor portion of the facility would be the point of generation
 - All portions of the facility, including the combustor, that are in contact CCRS would be subject to regulation as a hazardous waste generating unit.
 - The management of these portions of the facilities, including maintenance, disposal of waste (CCRs and equipment from these portions of the facility.)
 - Potential OSHA issues dealing with maintenance personnel operating in these areas.
 - HazMat Training
 - Self Contain Breathing Apparatuses
 - Limit hours to work in these area
 - Higher hourly rates and insurance
 - Contractors need to meet requirements
 - Transportation (including tracking) as well as the permitting of the disposal site.
 - Waste resulting from maintenance may have to be disposed at a Subtitle C landfill.
- RIA does not include an analysis of this aspect of the proposed rule.
- **AS SUCH THE PERFORMANACE STANDARDS AND IMPACTS RELATED TO A SUBTITLE C APPROACH HAS NOT BEEN FULLY ANALYZED NOR PROPERLY REFERENCED IN THE RULE TO OTHER APPLICABLE SECTIONS UNDER SUBTITLE C THAT WILL APPLY IF “C” IS THE END RESULT.**

Subtitle C “Stigma”



- EPA has dismissed that a Subtitle C will result in a stigma on beneficial use of CCRs.
- EPA believes that a Subtitle C classification will increase beneficial use of CCRs

EPA's Subtitle C "Stigma" Defense



- EPA points to the following as a demonstration that a "Subtitle C" approach will not create a stigma:
 - K061 Dust
 - Electroplating wastewater sludge
 - Hardrock Mine Superfund where the source of the contamination was used in highway construction

K061 Dust

- **EPA:** “Slag from the smelting of K061 is in high demand for use in road construction.”
 - According to the most recently available data, in 2008 *Horsehead* produced about 300,000 tons per year of an Iron-Rich Material (IRM) as a byproduct of its dust recycling process, and in 2009 *Inmetco* produced close to 20,000 tons per year. PADEP asserts that these plants cannot meet the demands for use of the slag by PennDOT.
- **Response:**
 - This is comparing apples to oranges. The K061 is a source of raw material processed by Horsehead to reclaim specific metals (Zinc). The K061 material is a source of Zinc and in higher concentrations than other sources of Zinc.
 - The **slag** resulting from the smelting operations has potential use as a construction material with different chemical and physical characteristics than K061. The quality of the slag produced meets PaDOT specifications for use in highway construction projects. (The K061 would not meet the physical requirements let alone the chemical requirements.

Electroplating Wastes

- **EPA:** “Electroplating wastewater sludge is a listed hazardous waste (F006) that is recycled for its copper, zinc, and nickel content for use in the commercial market.”
- **Response:**
 - The electroplating wastewater sludge is being recycled as a valuable source of copper, zinc, and nickel that can readily be extracted for the metal market. In this case, the extraction of the copper, zinc, and nickel metal produces both a chemical and physical change in the residual wastes. The key is marketable product that is extracted and sold. The recovery of these metals is profitable. If not for a metal market and cost effective methods for recovering these metals, the material would not be recycled.

Hardrock Mine Tailings

- **EPA:** “A Superfund mining cleanup waste with lead, cadmium and zinc contamination, is used in road construction in Oklahoma and the surrounding states. EPA states that in this case, the very waste that has triggered an expensive Superfund cleanup is successfully offered in the marketplace as a raw material in road building. The alternative costs of disposal in this case are a significant driver in the beneficial use of this material, and the Superfund origin of the material has not served as a barrier to its use.”
- **Response:**
 - This is extremely misleading statement. The problem was a superfund site comprised of mine tailings with high concentrations of lead and zinc associated with the Galena left in the tailings. To address the clean up of the site, it was determined that by processing the tailings that galena could be recovered and used as a source of lead and zinc.
 - The process was comprised of a jig that separated the material based on size fractions. The galena was removed and the remaining material was primarily “chert”. This product was called “Chat”.
 - In this case, the mine tailings are processed to recover the lead and zinc (using a jig). (The galena is recovered and is generally in the size range of 5/8 to 200 mesh material.) The resulting byproduct is an angular material most likely greater than 5/8 inch size and it was used as an aggregate in asphalt for highway construction.
 - The by product is a chert material (a type of quartz, very hard and durable), which is called “chat” and is used in asphalt highway construction.
 - Metal recovery and a construction material which had value in the market. This would reduce the cost of the superfund clean-up.

USED OIL

- **EPA:** “Used oil is regulated under RCRA subtitle C standards. While used oil that is recycled is subject to a separate set of standards under subtitle C (and is not identified as a hazardous waste), “stigma” does not prevent home do-it yourselfers from collecting used oil, or automotive shops from accepting it and sending it on for recovery. Collected used oil may be re-refined, reused, or used as fuel in boilers, often at the site where it is collected.”

- **Response:**
 - First, the home owner does not fully recognize the potential liability.
 - Second, the quantities are small. For the automotive shops, if you are doing oil changes, you need to recover and properly dispose of the waste. (DOES EPA REALLY THINK THAT THE AUTOMOTIVE SHOPS ARE ACCEPTING THE WASTE OIL OUT OF THE GOODNESS OF THEIR HEART?)
 - The Automotive Shops want to remain in business of doing car repairs and servicing this is a critical aspect of that industry. The Industry has insurance obligations as well as contracting with reputable companies to manage the waste oil collected from oil changes (i.e., Safety Kleen). Once again there is a different issue involved.

CCRs



- One can just see the homeowner recycling CCRs. OOOPPS!!! They do. They have taken the CCRs from their coal furnaces or coal stoves and placed them in their gardens!!!!lawns or filling in depressions on their property or on the roads and driveways.
- Note-we have homes that still use coal for heating and use coal for space heating in fireplaces!!!! This is the “Used Oil” argument!!!!

Stigma

- **May 2000 Regulatory Determination, EPA makes the following statements:**
 - We also see a potential downside to pursuing a subtitle C approach. Section 8002(n)(8) directs us to consider, among other factors, “the current and potential utilization of such materials.”
 - We do not wish to place any unnecessary barriers on the beneficial uses of these wastes, because they conserve natural resources, reduce disposal costs and reduce the total amount of waste destined for disposal. States and industry have also expressed concern that regulation under subtitle C could cause a halt in the use of coal combustion wastes to reclaim abandoned and active mine sites. We recognize that when done properly, minefilling can lead to substantial environmental benefits.
 - EPA believes the contingent management scheme we discussed should diminish any stigma that might be associated with the subtitle C link. Nonetheless, we acknowledge the possibility that the approach could have unintended consequences. We would be particularly concerned about any adverse effect on the beneficial re-use market for these wastes because more than 23 percent (approximately 28 million tons) of the total coal combustion waste generated each year is beneficially reused and an additional eight percent (nine million tons) is used for minefilling.
 - However, given our conclusion that the subtitle D approach here should be fully effective in protecting human health and the environment, and given the large and salutary role that beneficial reuse plays for this waste, concern over stigma is a factor supporting our decision today that subtitle C regulation is unwarranted in light of our decision to pursue a subtitle D approach.
- **ISN'T IT AMAZING THAT EPA NEVER FULLY GAVE A SUBTITLE D APPROACH A CHANCE PROMULGATING REGULATIONS BUT NOW “THEY TOTALLY DISMISSES IT AND STATE C IS THE ONLY WAY TO GO!!!!**

STIGMA –Comment from OSM

- OSM response to OMB regarding EPA initial draft of the CCR rule:
 - *“The RIA only minimally considers the hazardous waste stigma” based on what would happen in the future. The RIA does not consider the impact of “hazardous waste stigma” on past or existing sites and situations where CCRs have been placed or used (e.g., mines, roads, and other forms of construction material). The RIA appears to dismiss the impact of this stigma on continued beneficial use without any real basis to do so.*
 - *The issues raised above will likely result in increased use of CCRs at some coal mining sites to avoid hazardous waste disposal requirements, making the need for SMCRA regulation even greater. During the review by OSM, the question arose as to whether EPA’s proposed rule, as submitted to OMB, would prohibit OSM from allowing the use at CCRs at minesites?*
 - *EPA’s proposed action would not directly affect OSM’s legal authorities; however, if EPA lists CCRs as a hazardous waste under Subtitle C of RCRA, it will become more difficult to for OSM to allow the placement of CCRs on minesites because doing so could be construed as an arbitrary and capricious action subject to legal action.*
 - *EPA’s proposed rule, even though it exempts CCR placement in minesites from regulation under Subtitle C at this time, casts doubts on whether OSM could allow CCR placement in coal minesite. Primarily, what level of proof would OSM need to demonstrate to withstand a challenge that such regulations are arbitrary and capricious if OSM allows an otherwise hazardous waste to be placed on minesites? Thus, the listing of CCRs as a Subtitle C hazardous wastes makes it unlikely that OSM regulations permitting CCR placement in minesites would withstand judicial scrutiny.”*
- **Summarized: The “stigma of such a classification” will most likely result in any regulatory program being subject to legal challenge as being an arbitrary and capricious action and as a result OSM believes any regulations it attempt to develop and implement would most likely not withstand judicial scrutiny.**

THE REAL STIGMA – EPA’S FAILURE



- ❑ EPA’S FAILURE TO DEVELOP AND PROMULGATE A SUBTITLE D RULE
- ❑ THIS WOULD HAVE SUPPORTED THE STATES
- ❑ DEVELOP A COMPREHENSIVE FRAMEWORK FOR MANAGING CCBs
- ❑ FURTHER, EPA COULD HAVE DEALT WITH ALL THE ISSUES DEALING WITH IMPOUNMENTS INCLUDING THE DAM SAFETY ASPECTS.
- ❑ THE STATES AND EPA’S WATER PROGRAMS RECOGNIZED THESE POINTS

Damage Cases – A Stigma of its own

- EPA claims there are a total of 140 alleged damage cases
- 6 of the cases are related to minefills and 134 to non-minefills
- Of the 134, 62 has no data or minimal data to make a determination
- Of the 72 remaining, 27 are classified as damages cases (of which 14 were identified in the original determination)
- Of the 27 damages cases, 11 are surface water and 16 are ground water
- The 16 ground water cases, 4 were unlined landfills, 5 were unlined impoundments and 7 sand and gravel operations (landfill/impoundment)
- Of the 8 surface water cases, 3 are tied to dam (impoundment failures) and 5 are related to discharges to surface water
- There are 40 potential damage cases.

The STIGMA being described



- EPA and the Environmental Community are pointing to the “Failure of the States to Adequately Enforce”
- Interestingly, EPA had the potential to enforce by using
 - ▣ Federal Clean Water Act
 - NPDES PERMITS
 - IMPOUNDMENT DESIGNS
 - ▣ Safe Drinking Water Act
 - ▣ Solid Waste Disposal Act (RCRA)
 - ▣ Worked with FEMA on Dams

Performance Standards



- CCR Landfill and Existing CCR Landfills
 - Siting (Land Stability)
 - Composite Liner
 - Surface Water Management
 - Air Quality (0.35 ug/m³ fugitive dust)
 - Ground and Surface Water Monitoring

Performance Standards



- Impoundments
 - Siting
 - Dam Safety Classification
 - Dam Safety Design Specification
 - Surface Water Management
 - Air Quality Fugitive Dust
 - Ground and Surface Water Monitoring

Performance Standards

- As part of the Ground and Surface Water Monitoring, based on the results of testing, you may trigger
 - ▣ An Assessment
 - ▣ Remediation Plan
 - ▣ Remediation Plan Implementation

Note-The Ground Water Monitoring requirements have a tendency to be designed to determine if a liner is leaking. If the site has no liner, the chances of a “change” is greatly increased. Need to understand how the “triggers” (increase over background)are determined.

Monitoring Implications



- A determination that the CCR management activity impacted the ground or surface water quality, the implications are:
 - Need to remediate the problem
 - This may require going to liners and even developing new sites to resolve the issue.

Performance Standards



- Closure-Post Closure
 - ▣ Increased time for monitoring
 - ▣ Increased financial responsibility (including Bonds)

Comments on the Rule



- EPA has stated that they will look at “ALL COMMENTS” implying that if they receive the same comment (language et al) it will be treated a single comment.
- The Environmental Groups have organized mass mailing and emailing of the same letters/postcards.
- EPA treats this an individual comment.
- It has been implied that over 30,000 comments of this nature have been received by EPA.

Other Actions

- **Similar websites has been set up for supporting a Subtitle D approach**

- **TAKE ACTION NOW!**

- Act Now. EPA's Coal Ash Comment Deadline Is Approaching Quickly!**

- Your help is needed to send a message to EPA Administrator Jackson that the electric utility industry supports the implementation of federally enforceable, non-hazardous waste regulations for coal ash that address both environmental protection and impoundment safety. Regulating coal ash right will protect the environment, jobs, and electricity consumers. Visit www.RegulateCoalAshRight.org for more information and to send your message today.

Regulate Coal Ash Right

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Written Comments



- Need to prepare comments from
 - Organizations
 - Companies
 - Employees
 - Suppliers
 - Transportation Sector

At a minimum make sure that employees, suppliers, and transportation sector support a Subtitle D Approach

Other actions



- Contact your legislators (State and Federal to gain support)
- Possible Federal Amendment to the Federal Solid Waste Disposal Act (aka RCRA)

Recent Report



- Congressional Research Office
- Suggesting amendment to Subtitle D to allow for EPA to enforce regulations regarding coal ash
- Proposed creating a new Subtitle “K” to address the regulations of coal ash out from under Subtitle C

Legislation



- CCB Coalition was exploring the possibility of amending RCRA to allow for EPA enforcement capability under Subtitle D for Coal Combustion Residuals
- The language being suggested would be in 3-parts
 - ▣ CCRs disposal would be regulated by EPA under Subtitle D
 - ▣ Use of CCBs in coal minefills would be regulated by OSM
 - ▣ Reuse and recycling of CCBs would not be regulated but encouraged