Historic Coal Ash Disposal Regulations Finally Proposed by EPA

After months of anticipation, the United States Environmental Protection Agency ("EPA") released its 563-page proposal for regulating the disposal and management of coal combustion byproducts ("CCBs") from coal-fired power plants. Instead of offering a single approach, EPA requested comments on two options for regulating CCBs. The first would regulate CCBs as a new "special waste" subject to many of the requirements for hazardous waste, while the second would regulate CCBs in a manner similar to typical solid waste, subject to far fewer and less stringent environmental requirements. EPA would lead the first approach, the various States the second. Either of EPA's proposed options represents a seismic shift toward more comprehensive and expensive requirements for CCBs disposal and management. And for certain utilities, EPA's regulatory proposal effectively signals the end of ash pond disposal for CCBs.

The Regulatory Question: How Should CCBs Be Regulated Under the Resource Conservation and Recovery Act?

Considering the widely divergent state regulatory programs applicable to CCBs, for EPA the ultimate question was whether CCBs should be regulated as either (1) a "hazardous waste" under the Resource Conservation and Recovery Act ("RCRA"), the federal solid and hazardous waste management act, or (2) regulated under the same requirements as solid waste landfills. EPA's proposed two options attempt to answer this question. A summary of these two options is provided in **Table 1.**

The "Subtitle C" Option: CCBs as "Special Wastes" Subject to Hazardous Waste Regulations

EPA's first proposed option is to regulate CCBs as a "special waste" under "Subtitle C" of RCRA, the regulatory section addressing "hazardous" wastes. Under this approach, CCBs would be heavily regulated from the point of generation through the point of final disposition, including during and after closure of a disposal unit.

Why Call it "Special Waste"?

Instead of simply defining CCBs as "hazardous" wastes subject to Subtitle C, EPA proposes to create a new category called "special wastes" that would be subject to many, but not all, of the hazardous waste requirements. As defined in the proposed rules, the term "special wastes" includes only CCBs intended for disposal, not CCBs intended for beneficial use.

EPA states that the decision to list CCBs as a "special waste" under Subtitle C, rather than a "hazardous waste," was made largely to address potential issues associated with the stigma of CCBs being classified as a "hazardous waste." If CCBs were defined as "hazardous wastes," EPA feared that might reduce the beneficial use of CCBs. For the Agency, this was reason enough to create the new category of waste under RCRA.

The general regulatory requirements under Subtitle C are complex, comprehensive, and costly in nature. They establish, among other things, location restrictions; standards for liners; leachate collection and removal systems; groundwater monitoring for land disposal units; fugitive dust control; closure and post-closure care requirements; storage requirements; corrective action; financial assurance; waste characterization, and permitting requirements.

New CCB Requirements Under Subtitle C

As drafted, EPA's proposed rule would not subject CCBs to all of the stringent Subtitle C requirements, but would add several provisions to Subtitle C applicable solely to CCBs. Instead of requiring a double liner, for example, EPA proposes to permit a "composite" liner, which may reduce the costs of having to comply with the full "hazardous waste" regulations. Under this option, relatively inexpensive clay liners would not be permitted under any circumstances. The proposed regulations also impose requirements on generators and transporters of CCBs destined for disposal, including the use of manifests if the CCBs are sent off-site for disposal.

In addition, EPA has proposed design and inspection requirements for surface impoundments containing CCBs, similar to those used by the Mine Safety and Health Administration for slurry impoundments. The proposed Subtitle C additions also would require inspections every seven days by a person qualified to recognize specific signs of structural instability.

Liners and Land Disposal Restrictions

In one of the more stringent requirements under this option, EPA proposed that all existing surface impoundments which have not been closed by the effective date set in the rules would be subject to all new Subtitle C requirements, including the need to obtain a new Subtitle C permit, a Herculean undertaking in itself. Effectively, this requirement would force the closure of most surface impoundments accepting wet placement of CCBs, according to the Agency. As explained in the preamble to the proposed rules, EPA believes owners of facilities where CCBs are managed in existing surface impoundments being regulated under Subtitle C will choose not to comply, or would not be able to comply, with the retrofit or clean closure requirements, given the size of the units and the volume of CCBs involved.

EPA also has proposed standards for wastewater applicable to CCBs under Subpart C. Under this proposal, if CCBs contain more water than solids, they will be classified as a wastewater, which means the effluent would be subject to the RCRA land disposal restrictions ("LDR") treatment standards. Accordingly, before wastewater could be pumped to a surface impoundment, all solids would have to be removed under the RCRA LDR standards, yet another costly process for utilities. Taken together, these changes effectively eliminate the disposal of wet-handled CCBs in surface impoundments. Stated differently, the retrofit requirements combined with the LDR standards for CCBs essentially would end the use of ash ponds for CCB disposal.

The compliance deadline for the Subtitle C proposal is relatively short considering the enormity of the regulatory implications. Under RCRA, where a nonhazardous waste surface impoundment is storing a waste that becomes newly subject to the RCRA Subtitle C requirements, RCRA would require that surface impoundments either be closed or upgraded to meet the minimum technology requirements within four years. For CCB surface impoundments, EPA proposed to provide seven years for facilities to either comply with Subpart C or to close. EPA recognizes the costs of the Subtitle C requirements will be significant, especially for existing surface impoundments and similar units that handle wet CCBs.

Future of Surface Impoundments Under Subtitle C

Under the Subtitle C proposal, EPA also recognizes that it is unlikely that most CCB surface impoundments will be able to comply with the Subtitle C requirements (i.e., retrofit or clean closure) within seven years. Essentially, EPA believes the practical effect of the rule will require the closure of existing CCB surface impoundments receiving CCBs within four years of the proposed rule. This shift to Subtitle C approach would thus end the use of surface impoundments and mandate the use of Subtitle C permitted landfills for the disposal of CCBs. In her statement accompanying the proposed rule, Administrator Jackson stated unequivocally that surface impoundments will be phased out under the Subtitle C proposal.

In proposing to create this new category of special waste, EPA considered the potential toxicity, fate and transport, ecological exposure, and human health risks associated with CCBs disposed in surface impoundments and landfills. Also discussed in the proposed rule is the toxicity of antimony, arsenic, barium, and other metals often found in CCBs. In fact, a substantial portion of the preamble to the proposed rule summarizes the Agency's view on the human health and environmental risks and hazards associated with CCB disposal and management potentially associated with ingestion and inhalation. While EPA evaluated the human health and environmental risks for purposes of the CCB rule, the summary offered by EPA may generate concerns—justified or not—far beyond the regulatory review process.

The "Subtitle D" Option: Regulating CCBs in a Manner Similar to Municipal Solid Waste

Under EPA's second option, CCBs would be subject to existing Subtitle D requirements under RCRA, which largely involve landfill standards for municipal and non-hazardous solid waste. Unlike Subtitle C, which contains requirements for virtually every aspect of the treatment, storage and disposal process, EPA's role under Subtitle D is largely advisory, with EPA setting minimum standards and states largely responsible for day-to-day enforcement.

Under Subtitle D, the federal role is to establish overall regulatory direction for solid waste disposal by providing minimum standards for protecting human health and the environment, and by providing technical assistance to states for planning and developing their own environmentally sound waste management programs. The actual planning and direct implementation of solid waste

programs under RCRA Subtitle D, however, remains a state and local function, and EPA has no direct role in the planning and direct implementation of solid waste programs under Subtitle D.

Unlike the Subtitle C option, which includes complex regulatory requirements, the Subtitle D option proposed by EPA focuses more on performance standards. As proposed, the draft regulations would set national performance criteria under Subtitle D to ensure the safe disposal of CCBs in landfills. For instance, CCB landfills would be subject to, among other things, location standards; composite liner requirements; groundwater monitoring and corrective action standards for releases; closure and post-closure care, and requirements to address the stability of surface impoundments.

Under EPA's Subtitle D approach, new landfills and surface impoundments would require composite liners, a move which EPA believes would lead many utilities to seek safer alternatives to impoundments and prompt an increased transition to CCB landfills. Existing surface impoundments without liners would also have to be retrofitted within five years, or cease receiving CCBs and close. Although not explicitly stated, the practical goal of the Subtitle D proposal seems to be to phase out the wet handling and disposal of CCBs in existing surface impoundments. In her statement accompanying the proposed rule, Administrator Jackson stated that impoundments would require composite liners, which would lead many utilities to seek "safer alternatives to impoundments and transition to landfills" under the Subtitle D proposal.

As part of the new Subtitle D regulations, EPA is proposing new "public notice" provisions applicable to CCBs. In the draft, EPA intends to require that owners or operators of CCB landfills provide notice that: (1) CCB landfills or surface impoundments will not adversely affect human health or the environment; (2) fugitive dust is being controlled; (3) post-closure care complies with groundwater monitoring and corrective action requirements; (4) all monitoring data and other measuring information is included in the facility record; (5) proper certifications by certified hydrogeolgists have been included in the record; (6) statistical methods to analyze groundwater conditions are appropriate and justified; (7) the unit's estimated closure date, and (8), as applicable, post-closure care has been completed in compliance with applicable regulations. In short, the new Subtitle D requirements include significant new duties to notify the public.

As part of the proposed rule, EPA also proposed what it calls "**D prime**," a variant on the Subtitle D option. In this approach, all of the changes described above would take effect, but existing surface impoundments would not be required to close or install composite liners. They would be permitted to operate for their useful life with additional monitoring, after which Subtitle D post-closure care requirements would take effect. According to EPA, the costs of compliance with the "D-prime" option would be roughly half of the full Subtitle D option.

Key Differences: How Much Detail and Who's In Charge?

The main differences between the two CCB regulatory alternatives involve implementation and enforcement. Technically, both options would require liners and groundwater monitoring, and both options would require corrective action once contaminated groundwater is detected. As a

general rule, even according to EPA, the corrective action requirements and the financial assurance requirements are far less extensive and expensive under the Subtitle D option. As for the cost difference, EPA estimates the Subtitle C approach would cost roughly three times more than the Subtitle D approach.

Unlike the Subtitle C option, the Subtitle D option would not regulate the generation, storage, or treatment of CCBs *prior to disposal*. This is a major distinction with significant financial and operational implications for coal-fired utilities. Under Subtitle C, with EPA controlling the creation, transportation, storage, and disposal of CCBs, what was historically a routine aspect of utility operations would become the most expensive component of running a facility, a regulatory nightmare with tremendous financial impact for many coal-fired utilities.

Enforcement would also differ significantly between the two EPA options. Under the Subtitle D option, no specific permits would be required for the disposal of solid waste, and EPA would not have the legal authority to enforce the Subtitle D program implemented by the states, something that would be left to states or citizens filing citizen suits under RCRA. States would also be able to enforce Subtitle D under their independent state authority. Under RCRA Subtitle D, EPA would not have administrative enforcement authority to enforce any RCRA Subtitle D criteria for CCB facilities, authority to require states to issue permits for CCB, or any authority over a state program to determine if the CCB Subtitle D requirements are being met. In short, EPA's role would largely be advisory under Subtitle D.

Exclusion: Beneficial Use of CCBs

In the draft rule, EPA strongly supports the safe and protective beneficial use of CCBs. According to EPA, the draft rule maintains the Bevill exemption for beneficial uses of CCBs, and EPA's proposed regulations would not alter the regulatory status of coal ash that is used beneficially. The Agency specifically states that "encapsulated uses of CCB, as is common in many consumer products, does not merit regulation." The proposed rule does, however, include an attempt to distinguish between CCBs beneficially used and those CCBs "intended for disposal."

In the preamble, EPA identified certain concerns with some uses of CCBs in unencapsulated form, such as the use of CCBs in road embankments and agricultural applications, in the event proper practices are not employed. For those uses, EPA is soliciting comment on whether to regulate and, if so, the most appropriate regulatory approach to be taken. While it does not intend to negatively impact the legitimate beneficial use of CCBs unnecessarily, EPA states that it wants to fully consider the risks, management practices, and other pertinent information related to CCBs.

As for specific applications, EPA continues to support the use of coal ash in highway applications, and EPA strongly supports the use of FGD gypsum in wallboard. And as for agricultural uses, the proposed rule would not alter the regulatory status of coal ash that is beneficially used in agricultural applications. Other uses of CCBs warrant additional research, according to EPA.

Exclusion: Minefilling of Coal Ash

In the draft rule, EPA specifically does not address the minefilling of CCBs under either option. Rather, EPA states that it intends to work with the Office of Surface Mining Reclamation and Enforcement to develop federal regulations concerning the placement of coal ash in minefill operations. According to EPA, the agencies will consider the recommendations of the National Research Council, which, at the direction of Congress, studied the health, safety and environmental risks associated with the placement of coal ash in active and abandoned coal mines. For those placing CCBs in mines, the existing regulatory framework—however uncertain—remains in effect.

Effective Date

Under the Subtitle D option, the rule would be effective six months after promulgation of the final regulation. Under the Subtitle C option, the requirements applicable to CCBs would go into effect in authorized states when a state adopts the rule. While the timing will vary from state to state, it likely will take a year or more before the regulations are implemented.

Ninety-Day Comment Period

EPA is seeking comments on the rule over the next 90 days. But for a rule of this scope and importance, an extension of the comment period is likely. As with many regulations of this scope and potential cost, when EPA finally selects a preferred alternative and issues a final rule, parties on both sides of the issue are likely to challenge the legality of the rule.

Implications

According to EPA, more than 300 landfills and 500 surface impoundments holding CCBs exist at more than 495 coal-fired power plants throughout the United States. The vast majority of these units are greater than 25 years old, and many are greater than 50 years old. Effectively, EPA's proposed CCB regulations are designed to end the use of CCB surface impoundments and redefine how CCBs are managed. Regardless of whether implemented under Subtitle C or Subtitle D, EPA's proposed options for CCB disposal will force coal-fired utilities to make fundamental decisions on how they manage the byproducts of generating electricity. Ultimately, compliance with either option may reshape energy policy in fundamental ways still unknown.

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Table 1: Comparison of EPA's Two CCB Regulatory Approaches*

Issue	Subtitle C	Subtitle D
Effective Date:	Timing will vary from state to state because each state must adopt the rule individually, a process that can take one to two years or more	Six months after final rule is promulgated for most provisions; certain provisions have a longer effective date
Enforcement:	State and federal enforcement	Enforcement through citizen suits; States can act as citizens. States can also enforce state solid waste requirements
Corrective Action	Monitored by authorized States and EPA	Self-implementing by permittee
Financial Assurance	Yes, required	Not under existing federal law, but EPA is considering subsequent rule to require financial assurance; States may have separate financial assurance requirements
Permit Issuance	Federal requirement for permit issuance by States	No "Subtitle D" permit required
Requirements for storage, including containers, tanks, and containment buildings	Yes	None.
Surface impoundments built before rule is finalized	Remove solids and meet land disposal restrictions; retrofit with a liner within five years of effective date. Effectively would phase out use of existing non-lined surface impoundments	Must remove solids and retrofit with a composite liner or cease receiving CCBs within five years of effective date and close unit
Surface impoundments built after rule is finalized	Meet RCRA Land Disposal Restrictions and liner requirements. Effectively would phase out use of new surface impoundments and require Subtitle C Landfills.	Must install composite liners, but no Land Disposal Restrictions
Landfills built before CCB rule finalized	No liner requirements, but would require groundwater monitoring	No liner requirements, but require groundwater monitoring
Landfills built after CCB rule 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 by permittee

* Modified from a table prepared by EPA. http://www.epa.gov/osw/nonhaz/industrial/special/fossil/ccr-rule/ccr-table.htm