

## EXPERT ANALYSIS

### EPA Gets Dirty Regulating Coal Ash And Then Defers a Critical Issue

By **Jad Davis, Esq.**  
*Kutak Rock LLP*

In late December, the U.S. Environmental Protection Agency published its final rule regulating coal combustion residuals, or CCRs, generated by power plants. Since the early 1990s, the EPA has been analyzing and debating the regulation of CCRs, commonly referred to as coal ash. The proposed regulation quickly captured the attention of environmental activist groups, states and industrial trade associations.

The June 2010 proposed rule contemplated listing CCRs as hazardous wastes, which would devastate an emerging industry dedicated to recycling CCRs for beneficial uses. Environmental activist groups strongly supported this proposal, given the nature of certain elements in CCRs, such as mercury and arsenic.

The EPA examined substantial stakeholder input and hosted numerous public meetings during the rulemaking process, over a period of four-plus years. The EPA's final rule lists CCRs as non-hazardous waste and establishes detailed national minimum technical requirements for facilities disposing CCRs.

Certainly, states, trade associations and various business industries will cheer the EPA's decision to list CCRs as non-hazardous. Those entities should take special note, however, of the EPA's explicit deferral of its decision on continuing to grant CCRs the so-called Bevill exclusion and the EPA's statements that the final rule may be enforced by citizen lawsuits. The exclusion exempted coal ash from regulation as solid waste until the EPA studied the issue.

#### WHAT ARE COAL COMBUSTION RESIDUALS ANYWAY?

CCRs are byproducts of the combustion of coal at electric utility power plants and other independent power plants. In 2002 there were 633 coal power plants in the United States in 48 states.<sup>1</sup> In 2011 the number of coal power plants dropped to 589.

Those plants produced over 37 percent of the total production of electricity in the United States, though, and about 20 percent of the world's coal-fired electricity.<sup>2</sup> The EPA said that in 2012, over 470 coal power plants burned over 800 million tons of coal, generating about 110 million tons of CCRs.

Typically, power plants burn coal in large boilers to produce steam, which turns generators that make electricity. The waste from this process is CCRs, of which there are four main components:

- Fly ash is a powdery substance made of silica from the burning of finely ground coal in a boiler. Fly ash is often filtered by air pollution controls, such as bag houses and electrostatic precipitators. Generally, fly ash accounts for about 60 percent of CCRs from power plants.

*The EPA's final rule lists CCRs as non-hazardous waste and establishes detailed national minimum technical requirements for facilities disposing CCRs.*

- Flue gas desulfurization material, or FGD, is the byproduct of chemical emission control systems at plants that remove sulfur and oxides from plants' flue gas streams. FGD is either a wet sludge comprised of calcium sulfites and calcium sulfates or a dry powdered substance of sulfites and sulfates. The most common residue is FGD gypsum. FGD accounts for about 24 percent of CCRs from power plants.
- Bottom ash is a coarse ash-like substance that is too large to be transported into the air like fly ash. Consequently, bottom ash forms at the bottom of the coal furnaces. Bottom ash makes up about 12 percent of CCRs from power plants.
- Boiler slag is molten bottom ash from cyclone-type furnaces. The material turns into pellets with a smooth, glassy appearance after it has cooled. Boiler slag accounts for about 4 percent of CCRs from power plants.

These four components of CCRs are comprised of mercury, cadmium and arsenic. Consequently, regulators like the EPA are concerned about power plants' management and disposal of CCRs because these substances could leach into groundwater, posing serious public health risks and harming the environment.

### WHAT HAPPENS IN TENNESSEE DOES NOT STAY IN TENNESSEE

The Tennessee Valley Authority's Kingston Fossil Plant, located in Harriman, Tenn., is a coal power plant that began producing electricity in 1955. It produced about 10 billion kilowatt hours of electricity each year.

On Dec. 22, 2008, Harriman suffered the largest industrial spill in the history of the United States. The northwest side of an 84-acre, above-ground impoundment used to contain CCRs failed, and over 1 billion gallons of coal ash slurry, including about 5.4 million cubic yards of fly ash, were released, affecting over 300 acres.<sup>3</sup>

The spill flowed into both the Emory and Clinch rivers. The TVA retained a geotechnical engineering firm to determine the cause of the dam failure at the Kingston plant. The conclusion was that several long-lasting conditions at the impoundment combined to cause the failure. Those conditions included a high content of fly ash in the water, atypical bottom layer, construction of the dam over wet ash and the height of the fly ash.<sup>4</sup>

The Tennessee Department of Environment and Conservation fined the TVA \$11.5 million for the 2008 spill. The cleanup is estimated to be completed sometime this year, with a total cost in the \$1.2 billion range. The ramifications of this spill spread well beyond the borders of Tennessee.

### THE EPA'S AUDACIOUS PROPOSED REGULATION OF CCRS

The Kingston spill prompted the EPA to assess coal ash surface impoundments at coal ash facilities and re-examine its regulatory determination for the application of the Bevill exclusion to CCRs. In June 2010 the EPA proposed regulations under the Resource Conservation and Recovery Act to address the risks of coal ash generation.

The EPA proposed two options to regulate CCRs.<sup>5</sup> The first option was to list CCRs disposed of in landfills or surface impoundments as hazardous wastes under Subtitle C of RCRA.<sup>6</sup> The second option was to list CCRs under Subtitle D of RCRA.<sup>7</sup>

The first option quickly caught the attention of the manufacturing, transportation and construction industries, as well as environmental activist groups and plaintiffs' lawyers. Subtitle C establishes a program for controlling hazardous waste from the time it is generated until its ultimate disposal. In fact, the RCRA hazardous waste program regulates commercial businesses and governmental facilities that generate, transport, treat, store and dispose of hazardous waste.

The EPA's proposed intent to curtail such a designation to only CCRs in landfills or surface impoundments was illogical, at best. For instance, there is no difference between fly ash placed in a surface impoundment and fly ash that is recycled for beneficial use.

Yet, the EPA apparently intended to designate only fly ash placed in a surface impoundment as hazardous waste under Subtitle C. Such a designation would require a complex regulatory scheme to specifically designate which CCRs are and are not subject to Subtitle C. Then, regulators would have to create an enforcement procedure for CCRs in violation of this new rule. Undoubtedly, this designation would create an unimaginable administrative nightmare for regulators.

An esoteric implication of designating CCRs as hazardous wastes under Subtitle C is that such designation would also be necessary under the Comprehensive Environmental Response, Compensation and Liability Act, as defined under 40 C.F.R. §101, subdivision (14)(c). CERCLA enables the EPA to prosecute, either administratively or by way of litigation, potentially responsible parties for releases, or threatened releases, of hazardous substances to clean up or pay the costs for cleaning up such releases. An important aspect of CCRs being listed as hazardous substances under CERCLA is that, as the U.S. Supreme Court upheld, private parties have rights under CERCLA to sue for the recovery of costs associated with cleaning up hazardous substances.<sup>9</sup>

The threshold to prove liability under CERCLA is, perhaps, one of the lowest legal standards in the United States. Under Section 9607(a), plaintiffs need only demonstrate that there is a release, or threatened release, of a hazardous substance that causes the incurrence of response costs, and the potentially responsible parties shall be liable for such costs.<sup>9</sup>

Accordingly, plaintiffs do not need to show that defendants caused the releases that resulted in cleanup costs; instead, plaintiffs only need to show that defendants are covered persons under CERCLA and that threatened releases caused cleanup costs. Thereafter, defendants are saddled with the enormous burden of proving affirmative defenses that there is no causation.

Industries across the board, as well as defense lawyers, panicked over the apparent unintended consequence of listing CCRs as hazardous wastes under RCRA. On the other hand, environmental groups and plaintiffs' lawyers salivated over the endless possibilities of bringing CERCLA actions against any entity that released CCRs. If CCRs were listed as hazardous substances, CERCLA suits could be filed against companies that used CCRs beneficially.

There are thriving industries dedicated to recycling CCRs. In 2012 about 52 million tons of CCRs were beneficially used, and about 293 power plants supplied CCRs for beneficial uses. There are numerous ways industries use CCRs.<sup>10</sup> Fly ash makes concrete stronger and more durable, and it is widely used by the transportation industry.

Both fly ash and bottom ash are used in manufactured aggregates, flowable fills, structural fills and embankments by the construction industry. Coal ash is used to replace natural materials in the production of Portland cement used in both the transportation and construction industries.

FGD is a primary component of wallboard manufacturing, roofing tiles and shingles. These beneficial uses reduce these industries' demand for mining of new material, such as limestone to make cement and gypsum to make wallboard. The reduction in mining activities preserves wildlife and undeveloped land, as well as reduces industrial consumption and waste from mining operations.

The EPA says the beneficial uses for CCRs will result in the following benefits for 2015:

- Over 53 million British thermal unit savings.
- Over 1.6 million gallons of water savings.

*The EPA said that in 2012, over 470 coal power plants burned over 800 million tons of coal, generating about 110 million tons of CCRs.*

*CCRs are comprised of mercury, cadmium and arsenic. Consequently, the EPA is concerned about power plants' management and disposal of CCRs because these substances could leach into groundwater.*

- Reduction of over 11.5 million tons per year in carbon dioxide and methane emissions.
- Reduction of 45,770 tons of air pollutant emissions.
- Reduction of over 3,000 pounds of toxic air pollutant emissions.

The EPA estimates the beneficial uses of CCRs will provide over \$2.3 billion in annual national environmental benefits.<sup>11</sup> Also, the American Coal Ash Association said each use of fly ash in place of traditional cement equals a reduction of slightly less than one ton of carbon dioxide, which is close to two months of emissions from a car.<sup>12</sup>

Despite the substantial savings in beneficially using CCRs, the EPA's first option to list CCRs as hazardous waste would cripple the industries dedicated to recycling CCRs. If CCRs were listed as hazardous substances under CERCLA, environmental activists and plaintiffs' lawyers would undoubtedly capitalize on such designation and file CERCLA actions against companies that recycled CCRs.

Cement manufacturers using fly ash in lieu of limestone in highway concrete would be sued as arrangers under CERCLA. Contractors who applied the concrete with fly ash on highways, or elsewhere, would be sued for the release of hazardous substances. States would be sued as the owners of highways paved with concrete composed of fly ash.

The lunacy in the first option proposed by the EPA is the possibility that every major highway containing fly ash could be designated as a contaminated site, and these large highways could be listed on the EPA's national priority list as contaminated Superfund sites. Such regulation would benefit the pocketbooks of environmental activist groups and plaintiffs' lawyers, rather than the environment itself.

The second option proposed by the EPA, to designate CCRs under Subtitle D of RCRA, would not list CCRs as hazardous wastes or hazardous substances under CERCLA. Instead, Subtitle D regulates and implements the management of non-hazardous waste, such as household garbage and non-hazardous solid waste.

This option was a self-implementing rule with no direct regulatory oversight; however, it would require plants to use composite liners, groundwater monitoring, structural stability requirements, corrective actions and post-closure care. The second option was much more practical than the first option.

From 2010 to 2014, the EPA received substantial stakeholder input on this proposal, including over 450,000 comments on the proposed rule. The EPA conducted numerous public hearings, webinars and studies on CCRs. In fact, the EPA assessed the condition and safety of over 500 coal ash ponds at over 200 plants from 2009 to 2012. This was one of the largest field assessments ever conducted by the EPA.

Also, trade associations, such as the American Coal Ash Association and the American Road and Transportation Builders Association, provided the EPA with industrial statistical input on the proposal. The EPA studied the proposals' impacts on science, the environment and industries during the rulemaking process.

#### **A MORE REALISTIC FINAL RULE**

On Dec. 19, 2014, the administrator of the EPA signed the final rule titled "The Disposal of Coal Combustion Residuals from Electric Utilities." The EPA submitted the final rule for publication in the Federal Register, and currently, only the 745-page unofficial Internet version of the final rule is available. The final rule will take effect six months after it is published in the Federal Register; however, the technical requirements in the final rule have various effective dates, as stated in the complicated schedule of implementation dates.

The final rule establishes national technical requirements for landfills and surface impoundments of CCRs under Subtitle D of RCRA. It applies to all CCRs generated by power plants with the designation of North American Industry Classification System code 221112, as well as disposal facilities that accept CCRs for disposal.

The final rule does not address CCRs placed in coal mines, CCRs that meet the criteria of beneficial uses, CCRs generated from non-utility boilers, and municipal solid waste landfills that receive CCRs for disposal or daily cover.<sup>13</sup>

### CCRS ARE NOT HAZARDOUS WASTES

The highlight of the final rule is the EPA's decision to list CCRs under Subtitle D of RCRA and not Subtitle C. CCRs are not hazardous wastes under RCRA, and consequently, they are not hazardous substances under CERCLA. Such designation will not brand CCRs as "hazardous," and industries that beneficially recycle CCRs will not be devastated. Listing CCRs under Subtitle D allows the EPA to reduce the risks of surface impoundment failures; to protect the air, soil and groundwater at surface impoundments; and to establish a protocol for closing surface impoundments, while also encouraging beneficial recycling of CCRs.

### BENEFICIAL USE OF CCRS

An important aspect of the final rule is that it established four criteria to define final beneficial use of CCRs. An activity must comply with all four criteria to be considered a beneficial use of CCRs, except in the case of encapsulated uses,<sup>14</sup> which only need to comply with the first three criteria. This is because, according to the EPA, encapsulated uses of CCRs raise minimal health and environmental concerns.<sup>15</sup>

If all the criteria are not met, the activity is considered to be disposal of CCRs and must comply with the disposal regulations. The user will be considered to be an owner or operator of a CCR disposal unit. The final beneficial use criteria for CCRs are as follows:

- CCRs must provide a functional benefit.
- CCRs must substitute the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices such as extraction.
- The use of CCRs must meet relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, CCRs are not to be used in excessive quantities.
- When un-encapsulated use of CCRs involves 12,400 tons or more in non-roadway applications, the user must demonstrate that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCRs. Or, the user must show that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use. The user must keep records that demonstrate this and provide such documentation upon request.<sup>16</sup>

It appears that the EPA recognized the advantages of recycling CCRs in roadways as fill and in Portland cement by specifically excluding roadways from the fourth criteria. Under this definition, non-roadway applications that fail to meet all four criteria will be considered CCR landfills.

Interestingly, the EPA delayed its determination of the Bevill exclusion due to regulatory and technical uncertainties.<sup>17</sup> The Bevill amendment to Subtitle C of RCRA granted CCRs and other fossil fuels temporary exclusions from being listed as hazardous waste, pending the EPA's technical determination of whether each should be so listed.

*If CCRs were listed as hazardous substances, CERCLA suits could be filed against companies that used CCRs beneficially.*

*CCRs are not hazardous wastes under RCRA, and consequently, they are not hazardous substances under CERCLA.*

In 1993 the EPA issued a regulatory determination that the Bevill exclusion continued to apply to CCRs from power plants.<sup>18</sup> In 2000 the EPA issued another regulatory determination that the Bevill exclusion continued to apply to such CCRs, including Subtitle D of RCRA.<sup>19</sup> In 2008 the EPA reopened its 1993 and 2000 Bevill regulatory determinations.

The final rule states that classification of CCRs under either Subtitle C or D was not necessary to adequately address any risks associated with CCRs, as long as national technical regulations were in place for CCRs.<sup>20</sup> The EPA said the majority of commenters who supported revoking the Bevill exclusion and regulating CCRs under Subtitle C generally asserted that the state programs have failed and cited the inherent risks of managing CCRs.

On the other hand, states, state organizations and industrial groups supported regulating CCRs under Subtitle D, arguing that the Subtitle C regulation would devastate beneficial use of CCRs. These groups said the EPA did not have authority to re-examine the Bevill exclusion.<sup>21</sup>

The EPA identified a significant absence of critical information relating to the eight factors the agency must weigh in determining whether the Bevill exclusion should be retained. Accordingly, the EPA is deferring a final regulatory determination of whether the Bevill exclusion should apply to CCRs.<sup>22</sup>

In the future, if the EPA decides to revisit its determination that the Bevill exclusion applies, it is possible CCRs may be listed as hazardous wastes under Subtitle C of RCRA. Unfortunately, the final rule is not the final chapter on the EPA's regulation of CCRs.

### TECHNICAL REQUIREMENTS

Most of the final rule details the EPA's new minimum national requirements for landfills, surface impoundments and lateral expansions of such impoundments that dispose of CCRs. The purpose for these new national requirements is to prevent health and environmental impacts from CCR units.

The EPA sets forth specific location restrictions, detailed liner design criteria, structural integrity requirements, operating criteria, groundwater monitoring, corrective action requirements when necessary, closure requirements, post-closure requirements, recordkeeping, notification requirements and Internet posting requirements. Indeed, technical experts will undoubtedly publish detailed articles discussing the various nuances of each of these new requirements; however, there are a few primary requirements worth noting. The EPA established five location restrictions related to the placement of CCRs above uppermost aquifers in wetlands, within fault areas, in seismic impact zones and in unstable areas. These location restrictions apply only to new CCR units, except for CCR units in unstable areas.

The liner design and structural integrity requirements generally apply to new CCR units, but there are a few exceptions. The new day-to-day operating criteria are required for all CCR units. Also, the final rule establishes detailed requirements for closure and post-closure of CCR units.

### IMPLEMENTATION AND ENFORCEMENT

Surprisingly, the EPA has no role in planning, implementing or enforcing the final rule.<sup>23</sup> In short, the final rule is designed to be self-implementing. The genesis of the EPA's limitation is due to the final rule being promulgated under Subtitle D of RCRA. Subtitle D establishes a framework for federal and state cooperation in controlling the management of non-hazardous waste, and the EPA's role is limited to establishing national requirements.

The planning and implementation of the final rule under Subtitle D is left to the states to devise state-specific requirements. The EPA encourages states to revise their solid waste management

plans to comply with the final rule and invites states to submit revised plans to the EPA to confirm they comply with the new national minimal requirements.<sup>24</sup>

The final rule says the new requirements may be enforced by citizen suits.<sup>25</sup> Furthermore, the EPA has said that states acting as citizens may enforce these new requirements, particularly if such states incorporate the new requirements into state law.<sup>26</sup>

Consequently, the final rule may be used as a vehicle for environmental activist groups and plaintiffs' lawyers to impose new requirements on CCR units. The EPA did comment, though, that EPA-approved solid waste management plans may be used as a defense against any citizen suit brought to enforce the final rule. In fact, the agency has said, "EPA believes a court will accord substantial weight to the fact that a facility is operating in accord with an EPA-approved SWMP."<sup>27</sup> Unfortunately, it appears the final rule will likely create future litigation by citizen groups alleging violations of these new requirements, which the EPA is unable, or unwilling, to implement and enforce.

The practical advantages of the final rule listing CCRs under Subtitle D, and not Subtitle C, are tremendous and will undoubtedly encourage the development of more beneficial uses of CCRs. Also, the new technical requirements in the final rule provide guidance for states that desire to avoid future tragedies like the Kingston plant in Tennessee.

The EPA has bluntly stated, however, that it is not finished with CCR regulations. The agency will continue to analyze the application of the Bevill exclusion to CCRs and is working with the Department of Interior on drafting proposed regulations of CCRs placed in coal mines.

## NOTES

<sup>1</sup> Net Generation by Energy Source: Total (All Sectors), 1995 through January 2009, Energy Information Administration (Apr. 22, 2009); see also, Electricity Net Generation: Electric Power Sector, 1949-2007, Energy Information Administration (2009); see also, Count of Electric Power Industry Power Plants, by Sector, Predominant Energy Sources within Plant, 2002 through 2011 U.S. Energy Information Administration (2013).

<sup>2</sup> See Int'l Energy Agency, World Energy Statistics 2013, at 5.

<sup>3</sup> Env'tl. Prot. Agency, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities (Dec. 19, 2014), available at [http://www2.epa.gov/sites/production/files/2014-12/documents/ccr\\_finalrule\\_prepub.pdf](http://www2.epa.gov/sites/production/files/2014-12/documents/ccr_finalrule_prepub.pdf).

<sup>4</sup> See TENN. VALLEY AUTH., EXECUTIVE SUMMARY FOR ROOT CAUSE ANALYSIS OF KINGSTON DREDGE CELL FAILURE, [http://www.tva.gov/kingston/rca/FINAL-062609\\_Executive\\_Summary-REV3.pdf](http://www.tva.gov/kingston/rca/FINAL-062609_Executive_Summary-REV3.pdf).

<sup>5</sup> Hazardous and Solid Waste Management System: Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities, 75 Fed. Reg. 35, 154 (June 21, 2010).

<sup>6</sup> 40 C.F.R. pts. 260-279.

<sup>7</sup> 40 C.F.R. pts. 239-259.

<sup>8</sup> *United States v. Atl. Research Corp.*, 551 U.S. 128 (2007).

<sup>9</sup> 42 U.S.C. § 9607(a)(4).

<sup>10</sup> See Hazardous and Solid Waste Management System, *supra* note 3, at 20.

<sup>11</sup> *Id.* at 93-94.

<sup>12</sup> Am. Coal Ash Ass'n, Frequently Asked Questions, <http://www.aaa-usa.org/About-Coal-Ash/CCP-FAQs#Q2>

<sup>13</sup> See Hazardous and Solid Waste Management System, *supra* note 3, at 132-148.

<sup>14</sup> The EPA stated that filler in concrete, replacement for raw material in cement, plastics, rubber and in wallboard are examples of encapsulated uses of CCRs. See *id.* at 168.

<sup>15</sup> *Id.*; see also ENVTL. PROT. AGENCY, COAL COMBUSTION RESIDUAL BENEFICIAL USE EVALUATION: FLY ASH CONCRETE AND FGD GYPSUM WALLBOARD (February 2014), available at [http://www.epa.gov/waste/conservation/ccps/pdfs/ccr\\_bu\\_eval.pdf](http://www.epa.gov/waste/conservation/ccps/pdfs/ccr_bu_eval.pdf).

<sup>16</sup> See Hazardous and Solid Waste Management System, *supra* note 3, at 167-186.

<sup>17</sup> *Id.* at 3.

<sup>18</sup> Final Regulatory Determination on Four Large-Volume Wastes From the Combustion of Coal by Electric Utility Power Plants, 58 Fed. Reg. 42, 466 (Aug. 9, 1993) (amending 40 C.F.R. pt. 261).

<sup>19</sup> Regulatory Determination on Wastes from the Combustion of Fossil Fuels; Final Rule, 65 Fed. Reg. 32214 (May 22, 2000) (amending 40 C.F.R. pt. 261).

<sup>20</sup> Hazardous and Solid Waste Management System, *supra* note 3, at 55.

<sup>21</sup> *Id.* at 55-56.

<sup>22</sup> *Id.* at 58-59.

<sup>23</sup> *Id.* at 23-24.

<sup>24</sup> *Id.* at 465-466.

<sup>25</sup> *Id.* at 457.

<sup>26</sup> Env'tl. Prot. Agency, Frequently Questions on Coal Ash Rule, <http://www2.epa.gov/coalash/frequent-questions-coal-ash-rule>.

<sup>27</sup> Env'tl. Prot. Agency, Fact Sheet: Final Rule on Coal Combustion Residuals Generated by Electric Utilities (December 2014), available at [http://www2.epa.gov/sites/production/files/2014-12/documents/factsheet\\_ccrfinal\\_2.pdf](http://www2.epa.gov/sites/production/files/2014-12/documents/factsheet_ccrfinal_2.pdf).



**Jad Davis**, a partner at **Kutak Rock LLP** in Irvine, Calif., specializes in environmental legal matters involving hazardous waste disposal, soil and groundwater contamination, discharge permitting, air quality and permitting, Proposition 65, CERCLA, RCRA, and state law equivalents. He may be contacted at (949) 417-0984 and [Jad.Davis@KutakRock.com](mailto:Jad.Davis@KutakRock.com).

©2015 Thomson Reuters. This publication was created to provide you with accurate and authoritative information concerning the subject matter covered, however it may not necessarily have been prepared by persons licensed to practice law in a particular jurisdiction. The publisher is not engaged in rendering legal or other professional advice, and this publication is not a substitute for the advice of an attorney. If you require legal or other expert advice, you should seek the services of a competent attorney or other professional. For subscription information, please visit [www.West.Thomson.com](http://www.West.Thomson.com).