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Amanda King

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CLEANING UP THE PROBLEM OF POST-COMBUSTION COAL WASTE

by Amanda King*

When a dike at the Tennessee Valley Authority's ("TVA") Kingston Fossil Plant failed on December 22, 2008, 5.4 million cubic yards of coal ash spilled,¹ covering an area forty-eight times larger than the 1989 Exxon Valdez oil spill.² Families in the East Tennessee area filed a lawsuit against TVA for medical monitoring, testing, treatment and procedures, and environmental monitoring and clean-up costs, alleging TVA knew the coal ash containment pond was in danger of releasing the coal waste and had already failed on prior occasions.³ While much of the recent focus on "clean coal technology" has been on lowering the greenhouse gas emissions from coal power plants,⁴ the recent coal ash disaster in Tennessee has shifted attention to the environmental impacts of coal combustion waste. Unlike the capture and sequester technology for reducing global warming emissions from coal fired power plants, which currently is far from achieving any significant impact,⁵ clean technology for coal waste disposal can achieve a large impact today, but only if our regulatory structure encourages it. By classifying coal waste as a hazardous waste and creating stricter standards for disposal sites, we can prevent future coal waste environmental disasters.

Coal waste is typically disposed of in surface impoundments, minefills, landfills, and recycled into other products. Although there has been a recent trend away from disposal of coal wastes in surface impoundments and towards landfills,⁶ according to an Environmental Protection Agency ("EPA") estimate as many as three hundred sites still use surface impoundments.⁷ Unlike a landfill, which only holds dry wastes, a surface impoundment is an uncovered area of hollowed land, made of mainly earthen material, which holds liquid wastes.⁸ Under Subtitle C of the Resource Conservation and Recovery Act ("RCRA"), surface impoundments must have a double liner system to prevent the liquid waste from leaching through the ground to local water supplies.⁹ Due to an exemption in Subtitle C, coal waste is not currently regulated as a hazardous waste, and the regulation of coal waste surface impoundments is left to the states.¹⁰

Although EPA concluded in a 2000 report that coal waste disposal in surface impoundments, underground mines, and landfills should be regulated under Subtitle C as a hazardous waste, EPA reversed its recommendation just a few weeks later.¹¹ In the second regulatory determination, EPA stated that some regulation of coal wastes under RCRA would be necessary to protect human health, but did not state whether Subtitle C regulation was required.¹² Post combustion coal waste is a threat to human health because it contains numerous chemicals including aluminum, arsenic, boron, cadmium, chromium, lead,

manganese, molybdenum, selenium, and sulfate, which can cause health problems such as cancer, birth defects, and central nervous system damage.¹³ Furthermore, with stricter toxics emissions standards for coal-fired power plants, the waste will contain increased levels of arsenic, thallium, boron, barrium, and other harmful chemicals.¹⁴ Although clean technology to reduce emissions will help the environment, new emissions technology will make regulating coal waste disposal more important as coal waste becomes dirtier and more toxic.

On March 9, 2009, EPA announced that it planned to propose regulations for coal waste by the end of the year.¹⁵ However, EPA was silent on whether the regulation would be under Subtitle C as a hazardous waste or under Subtitle D's less stringent standards.¹⁶ Subtitle C hazardous waste regulations differ from Subtitle D in that, under Subtitle C, the federal government is authorized to do the permitting for the hazardous waste sites and has set specific standards.¹⁷ Because design criteria of coal waste surface impoundments is not regulated at all under either Subtitle C or Subtitle D, the regulation of landfills provides insight into the difference between the two types of regulations. Under the Subtitle C requirements, landfills must have multiple liners, be made of materials chemically resistant to the waste, and have a system in between liners for collection and removal of liquid leaching from the landfill.¹⁸ In contrast, for Subtitle D landfills EPA specifies only minimum standards, including a composite liner with two components, and gives states the authority to issue landfill permits and set more specific standards.¹⁹

Of the fifteen states that create nearly three-quarters of all the coal combustion waste in the United States, only one requires liners for surface impoundments and only three require liners for landfills for coal waste.²⁰ Although regulating coal waste under Subtitle D could help by creating minimum standards for surface impoundments, based on current regulation of coal waste by the states it is unlikely many would require high enough standards. Coal waste must be recognized and regulated for what it is—a hazardous waste. Regulation of coal waste under Subtitle C and use of currently available technology to contain coal waste are needed to reduce environmental contamination and prevent future disasters.



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* Amanda King is a J.D. candidate, May 2010, at American University, Washington College of Law.

ENDNOTES: CLEANING UP THE PROBLEM OF POST COMBUSTION COAL WASTE *continued from page 41*

¹ TENNESSEE VALLEY AUTHORITY, ASH RELEASE AT TVA'S KINGSTON FOSSIL PLANT 1 (2009), http://www.tva.gov/emergency/archive/ash_release_1-15-09.pdf.

² Greenpeace, Toxic Sludge Leaks Expose True Cost of Coal (Jan. 12, 2009), <http://www.greenpeace.org/international/news/coal-ash-spills-expose-more-of>.

³ Press Release, Lieff Cabraser Heimann & Bernstein, Tennessee Family Files Lawsuit Against Tennessee Valley Authority (TVA) Seeking Medical and Environmental Testing (Jan. 12, 2009), http://www.lieffcabraser.com/press_releases/20090112-coal.htm.

⁴ See Eoin O'Carroll, *What is 'clean coal' anyway?*, CHRISTIAN SCI. MONITOR, Oct. 17, 2008, <http://features.csmonitor.com/environment/2008/10/17/what-is-clean-coal-anyway/> (describing the shift in the definition of clean coal at the end of the 20th century from significant reductions in sulfur dioxide and nitrogen oxides to "zero greenhouse gas emission coal").

⁵ See Kent Garber, *Why Clean Coal is Years Away*, U.S. News, Mar. 17, 2009, <http://www.usnews.com/articles/news/energy/2009/03/17/why-clean-coal-is-years-away.html> (giving the example of a plant that has taken years and much research to establish clean coal technology, but still has only reduced emissions by 1%).

⁶ DEBRA ELCOCK & NANCY L. RANEK, U.S. DEP'T OF ENERGY, COAL COMBUSTION WASTE AT LANDFILLS AND SURFACE IMPOUNDMENTS 1994–2004 21-22 (2006), available at http://www.ead.anl.gov/pub/doc/coal_waste_report.pdf.

⁷ Press Release, U.S. Envtl. Prot. Agency, EPA Announces New Action to Prevent Coal Ash Releases (Mar. 9, 2009) [hereinafter EPA Announces New Action], available at http://www.epa.gov/aging/press/epanews/2009/2009_0309_1.htm.

⁸ 40 C.F.R. § 257.2 (2009).

⁹ See 40 C.F.R. § 264.221 (2009) (requiring a with a top geomembrane liner, a bottom liner with both a geomembrane component and a compressed soil component, and a leachate collection and removal system in between the liners).

¹⁰ Resource Conservation and Recovery Act, 42 U.S.C. § 6921 (West 2009).

¹¹ *Oversight Hearing on the Tennessee Valley Authority and the Recent Major Coal Ash Spill Before the S. Comm. on Environment and Public Works*, 111th Cong. 10 (2009) (statement of Steven A. Smith, Executive Director, Southern Alliance for Clean Energy) [hereinafter *Oversight Hearing*], available at http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=e918d2f7-9e8b-411e-b244-9a3a7c3359d9.

¹² *Id.* at 10-11.

¹³ NATURAL RES. DEF. COUNCIL, DANGEROUS DISPOSALS: KEEPING COAL COMBUSTION WASTE OUT OF OUR WATER SUPPLY (2007), available at <http://www.nrdc.org/health/files/coalwater.pdf>.

¹⁴ *Oversight Hearing*, *supra* note 11, at 18.

¹⁵ EPA Announces New Action, *supra* note 7.

¹⁶ *Id.*

¹⁷ 40 C.F.R. § 264.301 (2009).

¹⁸ *Id.*

¹⁹ 40 C.F.R. § 258.40 (2009).

²⁰ *Oversight Hearing*, *supra* note 11, at 14 (citing Earthjustice's response to EPA's Notice of Data Availability in 2008).