

N.C.'s Coal Ash Problem

James Borden

I. Introduction

The State of North Carolina gets the majority of its electricity from coal-fired power plants. Unfortunately, generating energy by burning coal produces solid byproducts that, when not disposed of properly and safely, can potentially have devastating impacts on environmental and human health. These byproducts, combined, are known as coal ash. Historically, the primary method of disposal of coal ash in North Carolina, and for plants nationwide, has been in unlined landfills, or ponds. Until recently, this method of disposal was largely out of the public conscious. Major spills of coal ash in Kentucky in 2008 and North Carolina in 2014 in particular, have brought the issue of coal ash disposal, and coal-generated power in general, to the forefront of national environmental issues.

II. Background

Coal-fueled power plants generate power by burning finely pulverized coal to create steam, which then turns a turbine to produce electricity.¹ However, when the coal is burned, it leaves behind coal combustion residuals (CCRs), also known as coal ash. Coal ash consists of an amalgam of materials, including mostly fly ash and bottom ash but also boiler slag and flue gas desulfurization material.² Fly ash is a fine, particulate material consisting mostly of silica, which is filtered out of exhaust gases through the use

¹ *How Energy Works*, DUKE ENERGY, <https://www.duke-energy.com/about-energy/generating-electricity/coal-fired-how.asp> (last visited Oct. 17, 2016).

² *Frequent Questions about the Coal Ash Disposal Rule*, US EPA, <https://www.epa.gov/coalash/frequent-questions-about-coal-ash-disposal-rule#1> (last visited Oct. 17, 2016).

of scrubbers in smokestacks.³ Bottom ash is a larger, coarse ash that forms in the bottom of the coal furnace.⁴ Boiler slag is molten bottom ash that forms into smooth, glassy pellets when cooled with water.⁵ Flue gas desulfurization material (FGD) is a wet sludge or dry powdery material, which is leftover from the process of reducing sulfur dioxide emissions from a coal-fired boiler.⁶

The composition of coal ash varies widely depending on where the coal was mined and the combustion process of the particular plant.⁷ Basically, coal ash is comprised of the inorganic material of coal.⁸ Oxides of silicon, aluminum, iron, and calcium constitute a major portion of the ash's composition.⁹ Compounds that occur in trace amounts in coal are further concentrated in coal ash. These include toxic contaminants such as arsenic, lead, mercury, cadmium, boron, hexavalent chromium, and selenium.¹⁰ All in all, the ash contains around 25 toxic heavy metals as well as other toxic chemicals.¹¹

Coal-fired power plants produce around 37 percent of all electricity generated in the U.S.¹² In the process, over 130 million tons of coal ash is produced annually.¹³ This

³ *Id.*

⁴ *Id.*

⁵ *Id.*

⁶ *Id.*

⁷ ELECTRIC POWER RES. INST, COAL ASH: CHARACTERISTICS, MANAGEMENT AND ENVIRONMENTAL ISSUES (2009), https://www.whitehouse.gov/sites/default/files/omb/assets/oira_2050/2050_meeting_101609-2.pdf.

⁸ *Id.*

⁹ *Id.*

¹⁰ *Facts About Coal Ash*, APPALACHIAN VOICES, <http://appvoices.org/coalash/facts/> (last visited Oct. 17, 2016).

¹¹ *Id.*

¹² *How Energy Works*, DUKE ENERGY (last visited Oct. 17, 2016) <https://www.duke-energy.com/pdfs/coalashinncc.pdf>.

¹³ *Facts About Coal Ash*, APPALACHIAN VOICES, <http://appvoices.org/coalash/facts/> (last visited Oct. 17, 2016).

makes coal ash the second largest waste stream in the U.S., behind municipal garbage.¹⁴ Much like municipal garbage, the question of what should be done with this waste is a major question and source of contention. As it stands, around 40 percent of ash is beneficially used and the remaining 60 percent is managed in storage or disposal sites.¹⁵

The primary beneficial use of fly ash is as an ingredient in concrete, for use in structures like bridges, roads, and buildings.¹⁶ The use of fly ash in place of a percentage of Portland cement can increase the strength of concrete by up to 30 percent.¹⁷ Concrete made with fly ash also requires less water and, when hardened, is less permeable than its conventional counterpart.¹⁸ The ash can also be used as a structural fill where native soil is insufficient or not easily available, in places like mines, building embankments, and in trenches.¹⁹ The coarser bottom ash can be used in place of sand or gravel in the manufacture of concrete blocks and pipe and, like fly ash, can also be used as a structural fill.²⁰

Of the coal ash managed in storage or disposal sites, 80 percent is disposed of on land adjacent to the plant.²¹ The ash is generally disposed of in two different ways. First it may be put in landfills, in which the ash is placed in a dry or semi-dry state and then typically covered to prevent dry ash from blowing away.²² In the U.S., disposal currently

¹⁴ *Frequent Questions About Coal Ash Disposal Rule*, US EPA, <https://www.epa.gov/coalash/frequent-questions-about-coal-ash-disposal-rule#1> (last visited Oct. 17, 2016).

¹⁵ *Id.*

¹⁶ ELECTRIC POWER RES. INST, COAL ASH: CHARACTERISTICS, MANAGEMENT AND ENVIRONMENTAL ISSUES (2009), https://www.whitehouse.gov/sites/default/files/omb/assets/oira_2050/2050_meeting_101609-2.pdf.

¹⁷ Arnie Rosenberg, *Using Fly Ash in Concrete*, NAT'L PRECAST CONCRETE ASSOC. (May 8, 2010), <http://precast.org/2010/05/using-fly-ash-in-concrete/>.

¹⁸ *Id.*

¹⁹ *Frequent Questions About Coal Ash Disposal Rule*, US EPA, <https://www.epa.gov/coalash/frequent-questions-about-coal-ash-disposal-rule#17> (last visited Oct. 17, 2016).

²⁰ *Id.*

²¹ *Id.*

²² *Id.*

occurs at more than 310 active on-site landfills, averaging around 120 acres with an average depth of about 40 feet.²³ Second, the ash may be put in surface impoundments, also known as storage “ponds” or “lagoons.” When stored in these, coal ash is mixed with water to create a thick sludge.²⁴ These surface impoundments are held in place by large earthen dams and range widely in size.²⁵ In the U.S., there are around 735 active on-site surface impoundments, averaging around 50 acres and 20 feet in depth.²⁶

Either way it is stored, coal ash poses a threat to human and environmental health. There are risks of the ash, and its toxic constituents, blowing, spilling, and leaching from these storage units into the air, land, and drinking water.²⁷ When stored in landfills or surface impoundments without a protective liner, the toxic elements can leach into the ground and contaminate groundwater.²⁸ When stored in a dry state, there is a risk of ash, and its toxic constituents, getting into the air.²⁹ Also, coal plants, because they require millions of gallons of water for daily operation, are normally located near major lakes and rivers.³⁰ Due to this proximity, it follows that these on-site coal ash ponds constitute a significant risk to surface water as well. The toxic elements present in coal ash pose an acute risk of cancer and neurological effects as well as potential heart damage, lung and

²³ *Id.*

²⁴ *Facts About Coal Ash*, APPALACHIAN VOICES, <http://appvoices.org/coalash/facts/> (last visited Oct. 17, 2016).

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Coal Ash: Toxic – and Leaking*, PHYSICIANS FOR SOCIAL RESP., <http://www.psr.org/environment-and-health/code-black/coal-ash-toxic-and-leaking.html> (last visited October 17, 2016).

²⁸ EPA, FACT SHEET: FINAL RULE ON COAL COMBUSTION RESIDUALS GENERATED BY ELECTRIC UTILITIES (Dec. 2014), https://www.epa.gov/sites/production/files/2014-12/documents/factsheet_ccrfinal_2.pdf.

²⁹ *Id.*

³⁰ *Electricity from Coal*, DUKE ENERGY, <https://www.duke-energy.com/energy-education/how-energy-works/electricity-from-coal> (last visited Oct. 17, 2016).

kidney disease, reproductive issues, gastrointestinal illness, birth defects, and impaired bone growth.³¹

III. Coal ash disposal in NC and history

The production and storage of coal ash is a national issue and is no less of an issue in the State of North Carolina. The focus on coal ash has increased in the last few years for reasons that will be explained in this section.

In North Carolina, Duke Energy (Duke), the largest utility company in the country, is the major supplier of energy. Duke operates fourteen coal-fired power plants throughout the state,³² producing around 5.5 million tons of coal ash a year, making North Carolina the ninth highest coal-ash producing state.³³ At these plants, Duke currently maintains 32 active and non-active coal ash ponds, holding approximately 108 million tons of coal ash.³⁴ 29 North Carolina ponds have, at some point, been rated as “high-hazard” by the North Carolina Department of Environment and Natural Resources, meaning that a pond failure would likely cause a loss of human life as well as economic,

³¹ *Coal Ash: Toxic – and Leaking*, PHYSICIANS FOR SOCIAL RESP., <http://www.psr.org/environment-and-health/code-black/coal-ash-toxic-and-leaking.html> (last visited Oct. 17, 2016).

³² *About Us*, DUKE ENERGY (last visited Oct. 17, 2016), <https://www.duke-energy.com/pdfs/Duke-Energy-Generation-Portfolio.pdf>.

³³ EARTHJUSTICE, NORTH CAROLINA: COAL ASH DISPOSAL, DAMAGE, AND REGULATION (last visited Oct. 17, 2016), <http://earthjustice.org/sites/default/files/nc-coal-ash-factsheet-1112.pdf>.

³⁴ N.C. DEPARTMENT OF ENVIRONMENTAL QUALITY, INVENTORY OF DUKE ENERGY COAL ASH PONDS (2014), <https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/NPDES%20Coal%20Ash/Inventory%20of%20Duke%20Energy%20Coal%20Ash%20Ponds.pdf>.

environmental, and infrastructural damages.³⁵ In addition, none of these ponds have composite liners and only 4 have any kind of liner at all.³⁶ Only 6 of the 37 ponds have leachate collection systems to capture harmful chemicals before they can reach groundwater.³⁷ In addition, 17 of the ponds are over 40 years old and another 10 are over 30 years old.³⁸ The aging of these ponds is a major concern, as the earthen dams can weaken over time, ever increasing the likelihood of a rupture.³⁹ One of these ruptures is exactly what happened in 2014 and shot the State to the forefront of the coal ash debate.

Duke's Dan River Steam Station was commissioned in 1949 near Eden, NC. It remained open until 2012, when the plant was retired from service.⁴⁰ Its primary ash pond was constructed in 1956 and has existed in its current state since 1980.⁴¹ It spans 27 acres and sits behind a 40-foot dike.⁴² On February 2, 2014 a storm water pipe, running under the ash pond, collapsed, causing a spill that, over the following six days, sent up to 39,000 tons of coal ash and between 24 and 27 million gallons of contaminate-laden water into the Dan River.⁴³ The ash "coated the bottom of the river for miles, with mounds of ash five feet thick near the site of the spill and traces of the toxic waste

³⁵ EARTHJUSTICE, NORTH CAROLINA: COAL ASH DISPOSAL, DAMAGE, AND REGULATION (last visited Oct. 17, 2016), <http://earthjustice.org/sites/default/files/nc-coal-ash-factsheet-11112.pdf>.

³⁶ *Id.*

³⁷ *Id.*

³⁸ *Id.*

³⁹ CONNECTICUT DEPT. OF ENVIRONMENTAL PROTECTION, GUIDELINES FOR INSPECTION AND MAINTENANCE OF DAMS (Sep.2001), http://www.ct.gov/deep/lib/deep/water_inland/dams/guidelinesforinspectionandmaintenanceofdams.pdf.

⁴⁰ *Dan River Steam Station*, DUKE ENERGY, <https://www.duke-energy.com/our-company/about-us/power-plants/dan-river-steam-station> (last visited October 25, 2016).

⁴¹ *Duke Energy Dan River Coal Ash Spill Updates*, CATAWBA RIVERKEEPER (2015), <http://www.catawbariverkeeper.org/issues/coal-ash-1/duke-energy-dan-river-coal-ash-spill-what-do-we-currently-know-what-do-we-need-to-know> (last visited October 25, 2016).

⁴² *Id.*

⁴³ Diane Lamb, *Timeline: Dan River Coal Ash Spill*, GREENSBORO NEWS AND RECORD (Jan. 29, 2015), http://www.greensboro.com/news/timeline-dan-river-coal-ash-spill/article_eded0be1-46f2-53c0-bf16-e21b43b6a242.html.

evident more than 70 miles downstream.”⁴⁴ Water quality samples soon after the spill revealed a battery of contaminants, including lead, iron, manganese, and arsenic that exceeded state and federal drinking water standards.⁴⁵ This has since been classified as the third largest coal ash spill in U.S. history.⁴⁶

Two years later, in February 2016, the North Carolina Department of Environmental Quality fined Duke 6.8 million dollars for the spill. Duke appealed and settled on a 6 million dollar fine in September 2016.⁴⁷

Though spills of coal ash may garner the most attention, leaching of coal ash ponds and landfills also poses a major risk to the environment and safe drinking water. A 2016 Duke University Study that tested surface waters and groundwater near 21 different coal-fired power plants in the Southeast revealed consistent and lasting contamination from unlined ponds, with 29 percent of surface water samples exceeding standards for drinking water and aquatic life.⁴⁸ In North Carolina specifically, in 2010 there had been documented cases of groundwater contamination from 13 different North Carolina coal-fired plants.⁴⁹ Arsenic, manganese, boron, iron, sulfate, chromium, barium, mercury, cadmium, and selenium are some of the contaminants that have been found in levels exceeding both state and federal standards for drinking water.⁵⁰

⁴⁴ *Id.*

⁴⁵ *Duke Energy Dan River Coal Ash Spill Updates*, CATAWBA RIVERKEEPER (2015), <http://www.catawbariverkeeper.org/issues/coal-ash-1/duke-energy-dan-river-coal-ash-spill-what-do-we-currently-know-what-do-we-need-to-know> (last visited October 25, 2016).

⁴⁶ David Zucchini, *N.C. regulators again cite Duke Energy over coal ash*, L.A. TIMES (Mar. 20, 2014), <http://www.latimes.com/nation/la-na-duke-coal-ash-20140321-story.html>.

⁴⁷ N.C. DEPARTMENT OF ENVIRONMENTAL QUALITY, DUKE ENERGY AGREES TO PAY \$6 MILLION FOR DAN RIVER SPILL, (Sep. 23, 2016), <http://deq.nc.gov/press-release/duke-energy-agrees-pay-6-million-dan-river-spill>.

⁴⁸ DUKE TODAY, *Coal Ash Ponds Found to Leak Toxic Chemicals* (June 10, 2016), <https://today.duke.edu/2016/06/ashpondleaks>.

⁴⁹ EARTHJUSTICE, NORTH CAROLINA: COAL ASH DISPOSAL, DAMAGE, AND REGULATION (last visited Oct. 17, 2016), <http://earthjustice.org/sites/default/files/nc-coal-ash-factsheet-1112.pdf>.

⁵⁰ *Id.*

In May 2015, Duke plead guilty to nine violations of the federal Clean Water Act, admitting to illegally discharging pollution from coal-ash dumps at five different North Carolina plants.⁵¹ They were ordered to pay 68 million dollars in fines and to spend an additional 34 million dollars on environmental projects and land conservation efforts that will benefit rivers and wetlands in North Carolina and Virginia.⁵² Duke was also sentenced to a five-year probationary period, where if it is found to violate the Clean Water Act again, could be subject to further action by the court.⁵³

This moment may have come sooner than Duke bargained for. Hurricane Matthew, an Atlantic hurricane that wreaked havoc on the east coast of the U.S., hit North Carolina around October 8, 2016.⁵⁴ The massive amount of rain caused major flooding over the following week throughout eastern North Carolina.⁵⁵ Three inactive Duke coal ash ponds, a combined 170 acres, were inundated with water from the Neuse River for a period of 5 days after the storm.⁵⁶ As of the writing of this paper, the impact is unknown, as is exactly how much coal ash was released but, as waters receded, ash could be seen on the banks and trees along the river.⁵⁷

IV. North Carolina and Federal Regulation of Coal Ash

A. EPA's Clean Water Act

⁵¹ CBS NEWS, *Duke Energy fined \$102 million in coal ash spill* (May 14, 2015), <http://www.cbsnews.com/news/duke-energy-fined-102-million-in-coal-ash-spill/>.

⁵² *Id.*

⁵³ *Id.*

⁵⁴ Phil Helsel, *Hurricane Matthew Soaks North Carolina As It Churns North*, NBC NEWS (Oct. 9, 2016, 2:25 AM), <http://www.nbcnews.com/storyline/hurricane-matthew/hurricane-matthew-soaks-north-carolina-it-churns-north-n662621>.

⁵⁵ *Id.*

⁵⁶ Ken Silverstein, *Duke Energy Continues to be Haunted by Coal Ash Leaks*, ENVIRONMENTAL LEADER (October 25, 2016), <http://www.environmentalleader.com/2016/10/25/duke-energy-continues-to-be-haunted-by-coal-ash-leaks/>.

⁵⁷ *Id.*

The Environmental Protection Agency's (EPA) Clean Water Act (CWA), established in 1972, is the federal government's primary way of regulating water pollution.⁵⁸ The CWA regulates discharges of pollutants into waterways as well as sets water quality standards for surface waters in the U.S.⁵⁹ Under this act, the National Pollution Discharge Elimination System (NPDES) was created.⁶⁰ This system regulates by issuing permits, which allow a certain amount of point source discharges.⁶¹ Municipal and industrial facilities must obtain a permit through a state agency if their discharges directly flow into surface waters (rivers, lakes, streams, etc.).⁶² In North Carolina this agency is the Department of Environmental Quality (DEQ).⁶³ All fourteen of Duke's plants, and their respective ponds, are regulated by the NPDES system with permit issued from the N.C. DEQ.⁶⁴

B. EPA's Coal Combustion Residual Rules (2014)

On December 19, 2014 the head of the EPA signed the Disposal of Coal Combustion Residuals from Electrical Utilities final rule (CCR rule) and it was published into the *Federal Register* (FR) on April 17, 2015.⁶⁵ The "final rule" established a comprehensive set of requirements for the safe disposal of coal ash for new coal ash

⁵⁸ *Summary of the Clean Water Act*, EPA, <https://www.epa.gov/laws-regulations/summary-clean-water-act> (last visited October 25, 2016).

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.*

⁶³ *NPDES Permitting Process*, N.C. DEPARTMENT OF ENVIRONMENTAL QUALITY, <https://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/npdes-wastewater/permitting-process> (last visited October 25, 2016).

⁶⁴ *Duke Energy NPDES Permits for Facilities with Coal Ash Ponds*, N.C. DEPARTMENT OF ENVIRONMENTAL QUALITY, <https://deq.nc.gov/about/divisions/water-resources/water-resources-hot-topics/dwr-coal-ash-regulation/duke-energy-mpdes-permits-for-facilities-with-coal-ash-ponds> (last visited October 25, 2016).

⁶⁵ *Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities*, US EPA, <https://www.epa.gov/coalash/coal-ash-rule> (last visited October 25, 2016).

ponds as well as guidelines for existing sites.⁶⁶ The requirements included structural integrity design criteria and assessments; groundwater monitoring; location restrictions; composite liner requirements; operating criteria; record keeping; notifications; internet posting requirements; and in some cases closure.⁶⁷ The most impactful element of this rule, however, must be that it classified coal ash as a non-hazardous solid waste under subsection D of the Resource Conservation and Recovery Act (RCRA).⁶⁸ This classification placed coal ash in the same category as municipal garbage, mandating less stringent disposal regulations than similar industrial hazardous wastes.⁶⁹

C. North Carolina Coal Ash Management Act (2014)

Not long after the Dan River spill, on August 20, 2014, the North Carolina General Assembly passed the Coal Ash Management Act (CAMA).⁷⁰ The CAMA briefly predates the EPA's CCR rule and addresses many of the same issues but is significantly more stringent.⁷¹ In theory, the CAMA mandates that Duke phase out wet ash handling, i.e. coal ash ponds, by 2030.⁷² The Act requires the NC DEQ to assign a classification to each coal ash pond, active or retired, based on the site's risk to the public, environment, and natural resources.⁷³ The deadline for closure for a particular coal ash pond depends

⁶⁶ EPA, FACT SHEET: FINAL RULE ON COAL COMBUSTION RESIDUALS GENERATED BY ELECTRIC UTILITIES (Dec. 2014), https://www.epa.gov/sites/production/files/2014-12/documents/factsheet_ccrfinal_2.pdf.

⁶⁷ *Id.*

⁶⁸ *Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities*, US EPA, <https://www.epa.gov/coalash/coal-ash-rule> (last visited October 25, 2016).

⁶⁹ *Solid Waste; RCRA Subtitle D*, US EPA, <https://www3.epa.gov/region02/waste/dsummary.htm> (last updated Feb. 23, 2016).

⁷⁰ Andrew Kenney, *NC lawmakers pass coal ash legislation; adjourn very short session*, THE NEWS AND OBSERVER (Aug. 20, 2014, 11:24 AM), <http://www.newsobserver.com/news/politics-government/state-politics/article10035944.html>.

⁷¹ Shalina Chatlani, *Two years after EPA's coal ash rule, progress depends on states*, UTILITY DIVE (May 24, 2016), <http://www.utilitydive.com/news/two-years-after-epas-coal-ash-rule-progress-depends-on-states/419672/>.

⁷² Coal Ash Management Act of 2014, N.C. GEN. STAT. § 130A-309.214(f) (2014).

⁷³ *Proposed Impoundment Classifications*, N.C. DEPARTMENT OF ENVIRONMENTAL QUALITY, <https://deq.nc.gov/news/hot-topics/coal-ash-nc/draft-classifications> (last visited Oct. 25, 2016).

on its classification of low, intermediate, or high risk.⁷⁴ High-risk impoundments are to be closed by December 31, 2019; intermediate-risk ponds by December 31, 2024; and low-risk ponds by December 31, 2029.⁷⁵

The CAMA also established a commission to oversee the closures of Duke's coal ash ponds statewide, appropriately called the N.C. Coal Ash Management Commission.⁷⁶ The purpose of the commission was to provide an added element of independent review of the cleanup effort.⁷⁷ However in *State v. Berger*⁷⁸, North Carolina's Governor McCrory, filed suit claiming the legislative appointments to the commission to be unconstitutional.⁷⁹ The N.C. Supreme Court ruled in McCrory's favor, disbanning the commission and shifting the responsibility of enforcement back to the N.C. DEQ.⁸⁰

In the 2016 short session, the N.C. Legislature attempted to revive the commission, specifying that the governor would make the majority of the appointments, but McCrory vetoed the bill.⁸¹ After negotiations with the Governor, the legislature then enacted the bill HB630, which loosened the requirements instituted by the CAMA. First, the bill requires Duke to remove ash from seven of its fourteen plant's ash sites.⁸² The remaining seven sites need only be drained, or dried out and covered, with the ash remaining in place, as long as Duke provides safe drinking water to nearby residents and

⁷⁴ *Id.*

⁷⁵ Coal Ash Management Act of 2014, N.C. GEN. STAT. § 130A-309.214(f) (2014).

⁷⁶ Bruce Henderson, *NC Coal Ash Management Commission disbanded as risk hearings underway*, THE NEWS AND OBSERVER (March 17, 2016), <http://www.newsobserver.com/news/politics-government/state-politics/article66754397.html>.

⁷⁷ *Id.*

⁷⁸ *McCrory v. Berger*, 781 S.E.2d 248 (N.C. 2016).

⁷⁹ *Id.* at 252.

⁸⁰ *Id.* at 257.

⁸¹ Shalina Chatlani, *North Carolina Gov. McCrory vetoes coal ash bill*, UTILITY DIVE (June 7, 2016), <http://www.utilitydive.com/news/north-carolina-gov-mccrory-vetoes-coal-ash-bill/420478/>.

⁸² *House Bill 630*, N.C. GENERAL ASSEMBLY (July 14, 2016), [https://www.sog.unc.edu/sites/www.sog.unc.edu/files/course_materials/H630-SMRI-70\(sl\)_v3.pdf](https://www.sog.unc.edu/sites/www.sog.unc.edu/files/course_materials/H630-SMRI-70(sl)_v3.pdf).

follows existing dam safety regulations.⁸³ Lastly, the bill states that “all other impoundments shall be classified as intermediate risk,” essentially eliminating the “high-risk” classification.⁸⁴

V. Conclusion

The regulation and disposal of coal ash is a major issue nationally and here in North Carolina. This highly hazardous waste, if not properly disposed of, poses major risks to human and environmental health. In addition, the laws and regulations currently dealing with coal ash in North Carolina can be interpreted as highly insufficient.

The EPA’s Coal Combustion Residual Rule established a national standard for safe disposal of coal ash, establishing important rules such as mandating a composite liner on all new ash ponds.⁸⁵ However, this regulation stops short of discouraging the creation of new ponds or advocating for closure of existing storage ponds. The rule also classified coal ash as a non-hazardous solid waste; a puzzling conclusion when considering the variety of toxic heavy metals known to exist within the byproduct.⁸⁶

The North Carolina Coal Ash Management Act (CAMA), though certainly not without fault, takes a step forward by establishing a strict risk classification system as well as setting a realistic time frame for the closing of existing ash ponds.⁸⁷ However, the bill passed by the legislature this year, HB630, seems to regress on some of the strides made in the CAMA. Chief among these regressions is the change in treatment of “low-

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ EPA, FACT SHEET: FINAL RULE ON COAL COMBUSTION RESIDUALS GENERATED BY ELECTRIC UTILITIES (Dec. 2014), https://www.epa.gov/sites/production/files/2014-12/documents/factsheet_ccrfinal_2.pdf.

⁸⁶ *Id.*

⁸⁷ *Proposed Impoundment Classifications*, N.C. DEPARTMENT OF ENVIRONMENTAL QUALITY, <https://deq.nc.gov/news/hot-topics/coal-ash-nc/draft-classifications> (last visited October 25, 2016)

risk” sites. Under this new provision, Duke will be permitted to “dewater” a “low-risk” pond and cover it with sediment, leaving the ash in an unlined pit indefinitely.⁸⁸ This is worrisome as, without a liner, nothing is stopping the leaching of toxic elements into groundwater.

The solutions prescribed in these regulations are not fixing the problem; they are quite literally and metaphorically covering it up. To ensure the protection of water quality and environmental and human health in general, coal ash must be disposed of and recycled responsibly. First, this means ponds which are at high risk for rupture, and/or that are in flood zones, should be excavated as soon as possible to avoid another Dan River-like environmental catastrophe. Second, no coal ash, whether it resides in a pond classified as low-risk or high-risk, should remain in an unlined pit. Finally, it means an increased effort to beneficially recycle as much coal ash as possible.

⁸⁸ *House Bill 630*, N.C. GENERAL ASSEMBLY (July 14, 2016), [https://www.sog.unc.edu/sites/www.sog.unc.edu/files/course_materials/H630-SMRI-70\(sl\)_v3.pdf](https://www.sog.unc.edu/sites/www.sog.unc.edu/files/course_materials/H630-SMRI-70(sl)_v3.pdf).