EARTHJUSTICE

Tennessee and Coal Ash Disposal in Ponds and Landfill

Summary of Coal Ash Generating Facilities in TN[i]

Plant	Operator	Site	County
Bull Run Power Station	Tennessee Valley Authority	4 ponds	Anderson
Allen Fossil Plant	Tennessee Valley Authority	2 ponds	Shelby
Cumberland Fossil Plant	Tennessee Valley Authority	3 ponds/landfill*	Stewart
Eastman Chemical Co-TN Ops	Eastman Chemical Co-TN Ops	landfill*	Sullivan
Gallatin Power Station	Tennessee Valley Authority	3 ponds	Sumner
John Sevier Power Station	Tennessee Valley Authority	2 ponds	Hawkins
Johnsonville Power Station	Tennessee Valley Authority	1 pond	Humphreys
Kingston Power Station	Tennessee Valley Authority	2 ponds	Roane
Watts Bar Fossil	Tennessee Valley Authority	1 pond	Rhea
Vanderbilt University Power Plant	Vanderbilt University		Davidson

* indicates one or more coal ash landfills.[ii]

Amount of coal ash generated per year: Over 3.2 million tons. TN ranks 13th in the country for coal ash generation.[iii]

Information on Tennessee Coal Ash Ponds

***Number of Coal Ash Ponds*:** 18 ponds at 8 plants.[iv]

Pond Ratings: EPA has rated 3 ponds in TN as "high hazard," meaning that a loss of life would be expected were the pond to fail; 11 have been rated as "significant hazard," indicating that a pond failure would cause significant economic loss, and environmental and infrastructure damage.[v]

***Age of Ponds*:** 17 ponds are over 30 years old, and 12 of those are over 40 years old.[vi] The age of these ponds makes it unlikely that they have safeguards like liners and leachate collection systems. In fact, a 2007 EPA risk assessment mentions 11 unlined coal ash ponds in Tennessee.[vii] Others may exist.

Capacity: The 18 Tennessee coal ash ponds have a capacity of 87.5 million cubic yards.

Condition of impoundments: At TVA's seven Tennessee plants, inspectors found that half the ponds (eight) failed to meet federal stability standards established by the U.S. Army Corps of Engineers. Remedial action was required at all eight dams to increase stability.

Coal Ash Contamination in TN*:* Damage from coal ash is abundant in TN. In addition to the TVA Kingston disaster, U.S. EPA has documented the following damage cases in Tennessee[viii]:

- DOE – Oak Ridge Y-12 Plant Chestnut Ridge Operable Unit 2, Oak Ridge: Aluminum, arsenic, iron, and selenium contamination, as well as fish deformities and fish kills from coal ash releases.
- TVA – Bull Run Plant, Oak Ridge: Exceedancess of aluminum, calcium, iron, and sulfate were detected in surface water and a toxicity study indicated the potential for ecological impacts.[ix]

In addition, Earthjustice, Environmental Integrity and Sierra Club identified five additional sites where coal ash has been responsible for environmental contamination in Tennessee:[x]

- TVA – John Sevier Fossil Plant. On-site groundwater contamination including exceedances of cadmium, aluminum, manganese, sulfate, and arsenic.[xi]
- Trans-Ash CCW Landfill, Ash from TVA– Johnsonville Fossil Plant. Off-site damage to groundwater and private residential water wells with mercury.. Tenn. Dept. of Environment and Conservation had to connect a residence to the municipal water supply because the water had become un-potable.[xii]

- TVA – Cumberland Steam Plant. On-site groundwater, which may spread into nearby drinking water sources, contains arsenic more than twice the MCL, selenium 3 times the MCL, and boron 13 times the Child Health Advisory level.[xiii]
- TVA – Gallatin Fossil Plant. An unlined ash pond contaminated groundwater with beryllium up to 6 times the MCL, cadmium, nickel exceeding the TN MCL by 2.5 times and boron over the Child Health Advisory. Concentrations of aluminum, iron, manganese, sulfate and TDS exceed SMCLs.[xiv]
- TVA – Johnsonville Fossil Plant. An active ash disposal area resides on an unlined island in the middle of the Tennessee River. Groundwater on the island and at-on shore dumps contains arsenic, aluminum, boron, cadmium, chromium, iron, lead, manganese, molybdenum, sulfate and TDS far above federal MCLs, SMCLs, and federal health advisory levels. Disposal areas discharge into recreational waters of Tennessee River within a mile of New Johnsonville and Camden municipal water intake pipes.[xv]
- **Kingston Coal Ash Spill:** On December 22, 2008, in Harriman, TN, a coal ash dam at the Kingston Fossil Plant broke, releasing 1.1 billion gallons of coal ash into the Emory and Clinch Rivers, destroying three homes and damaging a dozen others. By volume, this spill is the largest environmental disaster in U.S. history—100 times greater than the Exxon Valdez oil spill and 5 times larger than the BP Deepwater Horizon spill of 2010.[xvi]

Deficiencies in Tennessee Coal Ash Regulations: The collapse of the Kingston dam was a direct result of the absence of state oversight and maintenance at Tennessee's coal ash dams. There is *no set of rules* that apply to the structural stability and safety of Tennessee's coal ash dams. While the state does have a comprehensive set of dam safety laws and regulations, it specifically *exempts* coal-ash dams from its scope.

TN regulations also fail to prevent contamination of water via the slow escape of chemicals from landfills and impoundments. With respect to dry landfills, Tennessee law only provides for groundwater monitoring, financial assurances, landfill siting and composite liners *as a default*. The same law also contains a very broad provision to allow the Commissioner of the Tennessee Department of Environment and Conservation to waive any of these provisions at his discretion.

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[i] U.S. EPA. Database of coal combustion waste surface impoundments (2009). Information collected by EPA from industry responses to Information Collection Request letters issued to the companies on March 9, 2009.
[ii] U.S. DOE's Energy Information Administration, Form EIA-767, Annual Steam-Electric Plant Operation and Design Data. 2005.
[iii] U.S. EPA and U.S. DOE. *Coal Combustion Waste Management at Landfills and Surface Impoundments, 1994-2004* (August 2006).
[iv] U.S. EPA. Database of coal combustion waste surface impoundments (2009).
[v] *Id.*
[vi] *Id.*
[vii] RTI International. *Human and Ecological Risk Assessment of Coal Combustion Wastes, Draft* (August 6, 2007).
[viii] U.S. EPA, Office of Solid Waste. *Coal Combustion Waste Damage Case Assessments* (July 9, 2007).
[ix] *Id.*
[x] Earthjustice, *State of Failure* Appendix 2 (2011), *available at* http://earthjustice.org/news/press/2011/study-finds-state-protections-for-coal-ash-grossly-inadequate.
[xi] Earthjustice, *Out of Control* xx (Feb. 2010), *available at* http://www.environmentalintegrity.org/news_reports/documents/OutofControl-MountingDamagesFromCoalAshWasteSites.pdf.
[xii] *Id.* at xxi.
[xiii] Earthjustice, *In Harm's Way* xxii (Aug. 2010), *available at* http://www.environmentalintegrity.org/news_reports/documents/INHARMSWAY_FINAL.pdf.
[xiv] *Id*.
[xv] *Id.*
[xvi] Earthjustice, *State of Failure* at 4.