



**VIRGINIA COAL ASH DISPOSAL IN PONDS AND LANDFILLS**

FACILITY	OPERATOR	TYPE OF SITE <sup>i</sup>	COUNTY
Clinch River	Appalachian Power Co	5 ponds (3 unlined)/ 2 landfills	Russell
Glen Lyn Power Station	Appalachian Power Co	3 unlined ponds/ 1 landfill	Giles
Bremo Bluff Power Station	Virginia Electric & Power Co	3 ponds, 2 unlined (2 significant hazard)	Fluvanna
Chesapeake Energy Center	Virginia Electric & Power Co	5 ponds, 2 unlined (1 significant hazard)/1 landfill	Chesapeake
Chesterfield Power Station	Virginia Electric & Power Co	3 unlined ponds (1 significant hazard)/1 landfill	Chesterfield
Possum Point Power Station	Virginia Electric & Power Co	2 ponds (both significant hazard)	Dumfries
Clover	Virginia Electric & Power Co	5 ponds/3 landfills	Halifax
Yorktown	Virginia Electric & Power Co	1 pond/1 landfill	York
Potomac River	Mirant Corp.	landfill*	Alexandria
Hopewell Power Station	Virginia Electric & Power Co	1 pond	Hopewell City
Cogentrix Virginia Leasing Corp.	Portsmouth Operating Services LLC		Portsmouth City
Virginia Tech Power Plant	Virginia Polytechnic Inst and State Univ		Montgomery
Altavista Power Station	Virginia Electric & Power Co	1 pond	Campbell
Mecklenburg Power Station	Virginia Electric & Power Co		Mecklenburg
Southampton Power Station	Virginia Electric & Power Co	1 pond	Southampton
James River Cogeneration	James River Cogeneration Co		City of Hopewell
Covanta Fairfax Energy	Covanta Energy		Fairfax
Spruance Genco LLC	Spruance Operating Services LLC		City of Richmond
Birchwood Power	Birchwood Power Partners LP		King George

\*indicates one or more coal ash landfills.<sup>ii</sup>

**Amount of coal ash generated per year:** approx. 2.4 million tons. VA ranks 18<sup>th</sup> in the U.S for coal ash generation.<sup>iii</sup>

**Information on Virginia Coal Ash Ponds:**

**Number and Size of Coal Ash Ponds:** 30 ponds at 11 plants.<sup>iv</sup> Average height of ponds exceeds five stories (50 ft).

**Pond Ratings and Age of Ponds:** 13 ponds are unlined. Their average age is 47 years, exceeding the projected lifespan of ash ponds (40 yrs).<sup>v</sup> VA has 8 “significant hazard” ponds, which means that failure of these ponds would cause economic and/or environmental damage.<sup>vi</sup> Four of the significant hazard ponds are unlined.

**Poor Condition of VA coal ash ponds:** Two significant hazard ponds have been rated in “poor” condition by EPA.

- **Dominion Energy Chesapeake Energy Center, Chesapeake, VA:** In 2011, EPA gave a “poor” rating to the plant’s ash and sedimentation pond. The pond is ranked a significant hazard, because a failure would release toxic coal ash to the Elizabeth River, which would flow into Chesapeake Bay. The pond is contained by an earthen dam and is unlined, holding fly ash, bottom ash, and leachate contaminated with arsenic from the plant’s coal ash landfill. EPA identified the need to make “urgent” repairs to address slope failures at the pond.<sup>vii</sup>

- **AEP Clinch River Power Plant, Carbo, VA:** In 2011, EPA found that the slope stability analysis of the unlined significant hazard bottom ash pond (Ash Pond 2) could not be used to assess stability “based on design parameters used and inappropriate assumptions concerning saturated ash levels.”<sup>viii</sup> In 1967, Ash Pond 2 experienced a major collapse into the Clinch River, which caused a massive fish kill (see below). AEP plans to close Pond 2 and perform additional hydrologic and hydraulic analyses to assess safety. AEP’s two ash ponds were built in the 1950s. If either pond were to fail, there would be significant environmental and economic losses along Clinch River and Dumps Creek, State Routes 616 and 665 and the Norfolk & Western railway. In addition, VA DCR DSFM believes the outlet structure for Ash Pond 1 (capacity over 2 million tons) is inadequate to handle damage to the pond.<sup>ix</sup>

□

**Documented Contamination from Coal Ash in Virginia:** Coal ash from Virginia's 16 coal-fired power plants has created a substantial toxic legacy in the Commonwealth. Coal ash contamination has generated at least two federal Superfund sites in Virginia, including one on the National Priority List of the nation's most contaminated Superfund sites, as well as four other sites where coal ash contaminated groundwater or caused extensive ecological damage. One hundred percent of the releases to land of arsenic, chromium and selenium, and over 92 percent of the releases to land of mercury in Virginia, come from coal ash alone.<sup>x</sup> Virginia damage cases include:

- **Clinch River Plant:** Severe ecological damage to aquatic ecosystems from coal ash contamination. In 1967, a dike from a coal ash pond collapsed releasing a caustic ash slurry into the Clinch River. Some 217,000 fish were killed for up to 90 miles downriver. Forty years after the spill, aquatic ecosystems downstream remain degraded.<sup>xi</sup>
- **Glen Lyn Plant:** Coal ash releases caused off-site damage to surface water and aquatic ecosystems. Scientific studies in the 1970s and 1980s documented acute toxicity of effluent discharges from a fly ash holding pond to aquatic insects and bacteria in a stream that flows into the New River. High TSS, pH at 9.5 units, and cadmium and selenium exceeding VA Water Quality Standards for acute toxicity by 30 times and 4 times, respectively, in the stream were responsible for the mortality.
- **Chisman Creek** coal ash landfill, which served the Yorktown Power Station, was listed on the Superfund's National Priority List, the list of the most contaminated Superfund sites in the U.S., due to vanadium and selenium pollution of residential wells from coal ash contamination.<sup>xii</sup>
- **Possum Point Power Station** is listed as a "proven damage case" due to cadmium and nickel contamination of groundwater attributed to oil combustion and coal ash from leaking coal ash ponds.<sup>xiii</sup>
- **Dominion Virginia Power Chesapeake Energy Center's** leaking 22-acre coal ash landfill has contaminated groundwater with high levels of arsenic for almost a decade.<sup>xiv</sup> The VA Department of Environmental Quality has measured arsenic at one monitoring well 30 times higher than the safe standard.
- **Battlefield Golf Course in Chesapeake:** 1.5 million tons of coal ash from the Chesapeake Energy Center were used to construct a 216-acre golf course in Chesapeake without a liner or adequate separation from shallow groundwater. Groundwater contamination above federal drinking water standards have been found at the edges of the golf course. The concentrations of arsenic, boron, chromium, copper, lead and vanadium detected in groundwater collected from on-site monitoring wells were significantly above background concentrations.<sup>xv</sup>

**Deficiencies in Virginia Coal Ash Regulations:** Despite the abundant evidence of coal ash contamination in VA, state regulations do not require composite liners, groundwater monitoring and daily cover at all ash landfills and ponds. For example, daily cover is only imposed at the discretion of the state, expansions of existing landfills are exempted from some regulations that would apply to new landfills, no specific monitoring parameters are required at coal ash ponds, no post-closure monitoring is mandated for coal ash ponds, and post-closure monitoring is only required for 10 years at landfills, which is an insufficient time period to measure toxic releases. Virginia also does not require inspection of coal ash ponds by state regulators and requires only infrequent reporting by owners. Virginia also does not require a bond to ensure safe operation and maintenance or even completion of dam construction.

<sup>i</sup> U.S. EPA, Database of coal combustion waste surface impoundments (2012). Industry responses to Information Collection Request letters 2009-11, available at <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys/index.htm>. U.S. EPA, Response to FOIA (July 26, 2012) available at <http://earthjustice.org/sites/default/files/Coal-Plant-CCW-Disposal-Units-from-ICR.pdf>.

<sup>ii</sup> U.S. Dept. of Energy's Energy Information Administration, Form EIA-767, Annual Steam-Electric Plant Operation and Design Data. 2005.

<sup>iii</sup> U.S. EPA, *Regulatory Impact Analysis For EPA's Proposed RCRA Regulation Of Coal Combustion Residues Generated by the Electric Utility Industry* (Apr. 30, 2010) at Exhibit 3D.

<sup>iv</sup> *Supra* at 1.

<sup>v</sup> *Id.*

<sup>vi</sup> See <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/coalash-faqs.htm>.

<sup>vii</sup> See <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys2/index.htm>.

<sup>viii</sup> See <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys2/index.htm>.

<sup>ix</sup> *Id.*

<sup>x</sup> See U.S. EPA, Toxic Release Industry dataset update for 2009 released in February 2010, available at <http://www.epa.gov/triexplorer/>.

<sup>xi</sup> EIP, Earthjustice, and Sierra Club, *In Harm's Way: Lack of Federal Coal Ash Regulations Endangers Americans and Their Environment* (Aug. 26, 2010), available at [http://www.environmentalintegrity.org/news\\_reports/documents/INHARMSWAY\\_FINAL3.pdf](http://www.environmentalintegrity.org/news_reports/documents/INHARMSWAY_FINAL3.pdf);

<sup>xii</sup> U.S. EPA, *Coal Combustion Waste Damage Case Assessments* (July 9, 2007).

<sup>xiii</sup> *Id.* See also, Virginia Department of Conservation and Recreation, Division of Dam Safety and Floodplain Management report in App. A, Doc. 16.

<sup>xiv</sup> See <http://hamptonroads.com/2010/09/hearing-tonight-flyash-landfill>.

<sup>xv</sup> 75 Fed. Reg. at 35232