EARTHJUSTICE

West Virginia and Coal Ash Disposal in Ponds and Landfills

Summary of Coal Ash Generating Facilities in WV[i]

Coal-Fired Power Plant	Operator	Disposal Sites	County	Hazard Level
John E. Amos Power Station	Appalachian Power Co.	8 ponds/landfill*	Putnam	1 high, 1 sig
Kanawha River Power Station	Appalachian Power Co.	4 ponds/landfill*	Kanawha	
Mountaineer Power Station	Appalachian Power Co.	1 pond/landfill*	Mason	1 significant
Philip Sporn Power Station	Appalachian Power Co.	3 ponds/landfill*	Mason	2 significant
Mitchell Power Plant	Ohio Power Co.	3 ponds	Marshall	1 high
Pleasants Power Station	Allegheny Energy Supply	5 ponds/landfill*	Pleasants	1 high
Harrison Power Station	Allegheny Energy Supply	2 ponds, landfill*	Harrison	
Mount Storm (VIEP)	Dominion Virginia Power	1 pond, landfill*	Grant	
Fort Martin Power Station (MONG)	Monongahela Power Co.	3 ponds, landfill*	Monongalia	
Kammer	Ohio Power Co.	2 ponds	Marshall	
PPG Natrium Plant	PPG Industries Inc.	landfill*	Marshall	
Albright	Monongahela Power Co.	2 ponds, landfill*	Preston	2 unrated
Willow Island	Monongahela Power Co.	2 ponds, landfill*	Pleasants	
Rivesville	Monongahela Power Co.	landfill*	Marion	
Little Broad Run	American Electric Power	2 ponds	Mason	1 high
R Paul Smith (plant in MD, ponds in WV	Allegheny Energy	2 ponds/landfill*	Berkeley	2 significant
Little Blue Run Residual Waste Impoundment	First Energy	1 pond		1 high

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

Amount of coal ash generated per year: Over 7.2 million tons. WV ranks 4th in the U.S for coal ash generation.[iii]

Number of Coal Ash Ponds: At least 41 coal ash ponds at 11 power plants.[iv]

Pond Ratings and Size: At least five ponds in WV are rated "high hazard," and at least seven ponds are rated "significant hazard."[v] A pond is defined as "high hazard" if loss of life is likely in the event of a failure. A "significant hazard" pond is defined as one that will cause economic and/or environmental damage in the event of failure. According to the EPA surface impoundment database, twelve ponds alone in West Virginia have the capacity to store approximately 12 billion gallons of coal ash and cover an area of 643 acres.

Age and Safety of Ponds: The 12 ponds whose age is known are over 30 years old.[vi] Almost half of the ponds in WV are totally unlined (18).

Stability and Safety Issues at West Virginia Coal Ash Ponds:

- AEP Little Broad Run, Mason County: In August 2009, WV DEP inspected the Little Broad Run high hazard coal ash dam (height 60 feet) and found its condition "unsatisfactory" and in need of immediate repair.[vii] Unsafe conditions included: embankments of "highly erodible fly ash materials without apparent connection to natural ground formation" and no emergency spillway. WVDEP also issued a Notice of Violation to AEP for significant tears in the liner of its coal ash pond, failure of the leachate collection system, failure to control dust, and other conditions.
- AEP Philip Sporn Power Station, New Haven: Pursuant to inspections in 2009, EPA inspectors gave two significant hazard coal ash ponds at the Philip Sporn facility a preliminary condition rating of "poor," primarily

due to the lack of adequate studies to insure long-term safe operation of the ponds. EPA required corrective action at the two coal ash ponds due to dike erosion.[viii] After adequate studies were performed, the ponds were given ratings of "fair" by EPA.

• Alleghany Energy, Pleasants Power, Willow Island: An EPA inspection of the plant's high hazard dam uncovered seepage and a history of slope instability at the site. Further the downstream portion of the dam was constructed using compacted fly ash, and periodic layers of bottom ash for blanket/chimney drains. The ash landfill at the site is constructed with a bottom ash and/or sand filter blanket placed against the downstream slope of the dam, which itself is constructed from fly ash, a material that can be liquefaction susceptible under certain circumstances. EPA found no evaluation of liquefaction of the foundation or dam materials. While reports suggest the fly ash was compacted during construction, soil properties used in stability analyses were reportedly based on the engineer of record's experience with no site-specific backup of these properties. In addition, some of the soil strata defined in the slope stability analyses were also assumed values.

Documented Water Contamination at Coal Ash Disposal Sites in West Virginia:

Earthjustice and Environmental Integrity Project documented seven sites contaminated by coal ash:[ix]

•John Amos Power Plant, Appalachian Power, Winfield: Selenium discharges from a fly ash pond into surface waters caused selenium levels in fish tissue that exceeded EPA's proposed fish tissue criterion by 7-fold.

•Mitchell Generating Station, Ohio Power Company, Moundsville: Surface water discharges from the unlined Connor Run fly ash pond exceeded EPA's recommended water quality criteria for selenium by more than 23 times. Fish tissue exceeded EPA's proposed criterion by 3-4 times. Groundwater monitoring data show exceedances of standards for antimony, arsenic, sulfate, sodium and zinc.

Groundwater monitoring date reveal exceedances of federal and/or state standards for contaminants at the following sites: Albright Power Station: Thallium, chromium, nickel; Kanawha River Plant: Selenium; Mount Storm: Nickel, nitrogen nitrate, and nitrogen; Mountaineer Plant: Arsenic, barium; Philip Sporn: Nickel

Deficiencies of West Virginia Regulatory Program: State regulations fail to require coal ash ponds to maintain basic safeguards to ensure stability of coal ash dams:

- The state's jurisdictional threshold for dam regulation leaves moderate-sized coal ash ponds entirely unregulated. State regulations fail to regulate coal ash ponds unless they are very large: 25 feet high or impounding 15 acre-feet; or 6 feet high and 50 acre-feet.[x]
- State regulations fail to require any regular inspections by state regulators to ensure structural stability.
- State regulations require only infrequent inspections for structural stability by the operators of coal ash dams. For all existing dams, the state requires owner/operator inspections every 2,3,5 or 7 years, depending on hazard class.[xi]
- State regulations do not require any bond for operators of coal ash ponds. No financial assurance is required for coal ash ponds to assure funds for cleanup in the event of a breach or leak.
- State regulations fail to require all new and existing coal ash ponds and landfills to monitor groundwater;
- State regulations fail to require composite liners for all new landfills;

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[i] Information Request Responses from Electric Utilities, U.S. ENVT'L PROT. AGENCY (Jan. 13, 2012), http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys/ (follow link to Database Results (XLS)); West Virginia DEP, *Fly Ash Dam/Landfill Condition Evaluation* (November 2009), http://www.dep.wv.gov/WWE/ee/ds/Documents/Status_WV_Fly_Ash_Dams_Landfills_Nov609.pdf.

[ii] U.S. Department of Energy's Energy Information Administration, Form EIA-767, Annual Steam-Electric Plant Operation and Design Data. 2005; West Virginia DEP, *Fly Ash Dam/Landfill Condition Evaluation* (November 2009), http://www.dep.wv.gov/WWE/ee/ds/Documents/Status_WV_Fly_Ash_Dams_Landfills_Nov609.pdf.

[iii] 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.

[iv] Coal Combustion Residuals Impoundment Assessment Reports: Summary Table for Impoundment Reports , U.S. ENVT'L PROT. AGENCY (Oct. 12, 2011), http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys2/ (follow link to Summary Table for Impoundment Reports (XLS))

[v] *Id.*; WVDEP, *Fly Ash Dam/Landfill Condition Evaluation* (2009).

[vi] *Id.*

[vii] *Id.*

[viii] http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys2/statement.htm

[ix] Environmental Integrity Project and Earthjustice. Out of Control: Mounting Damages from Coal Ash Waste Sites, February 24, 2010, available at http://earthjustice.org/sites/default/files/library/reports/ej-eipreportout-of-control-final.pdf.

[x] 47 W.Va. Code R. § 34-2.12.

[xi] 47 W.Va. Code R. § 34-15.4.c.