



Kingston TVA Fossil Plant Failure Dec 22, 2008

Coal Combustion Waste Impoundment Evaluations in Illinois

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Presented to IAFSM Conference

March 2011



Dewberry

Background – Kingston TN Disaster

- 12/22/08 1:00 am –coal combustion waste (CCW) impoundment in Kingston, TN failed
- Failure was a major environmental disaster...
 - 1.7 million yds³ at 300 acres of coverage
 - 42 homes damaged, no loss of human life
 - \$850,000 cleanup costs (100 Exxon Valdez ships)
 - 6.5 inches of rain Dec 1 > Dec 22 (cold temperatures)



Background –EPA Reacts

- EPA is primarily concerned with public safety
- Agency wants answers to several basic answers related to public safety
- Initially, EPA sent letters to all power plants that burn coal in the US
- Most plants that burn coal put the waste into a slurry and store it in a pond
- Release water from pond generally regulated via NPDES permit



EPA Starts “Rounds” of Assessments

- EPA orders evaluations of all high-hazard CCW impoundments in US
- “Round One” included two sites in Illinois
 - Havana;
 - Wood River.



Assessment Report Deliverables

- Arrange a Site visit (about one day)
 - take pictures, request geotechnical info
- Submit a checklist to EPA (one week later)
- Submit a full report (one month later)
- EPA comments back
 - Consultant responds to all comments



Checklist Overview

Site Name:	Walter Scott Energy Center	Date:	September 15, 2010
Unit Name:	South Pond	Operator's Name:	MidAmerican Energy Company
Unit I.D.:		Hazard Potential Classification:	High <input type="checkbox"/> Significant <input type="checkbox"/> Low <input checked="" type="checkbox"/>
Inspector's Name:		Frederic C. Tucker and Mark Hoskins	

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that si comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that i comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Quarterly ¹		18. Sloughing or bulging on slopes?	X ⁵	
2. Pool elevation (operator records)?	976 ²		19. Major erosion or slope deterioration?	X ⁶	
3. Decant inlet elevation (operator records)?		X ³	20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?		X ⁴	Is water entering inlet, but not exiting outlet?		X
5. Lowest dam crest elevation (operator records)?	979.0 ⁵		Is water exiting outlet, but not entering inlet?		X
6. If instrumentation is present, are readings recorded (operator records)?		X	Is water exiting outlet flowing clear?		X
7. Is the embankment currently under construction?		X	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation, stumps, ...)		X	From underdrain?		X

- Identify the Site, Operator, Hazard Potential
- Complete checklist of mainly geotechnical aspects



Checklist Overview

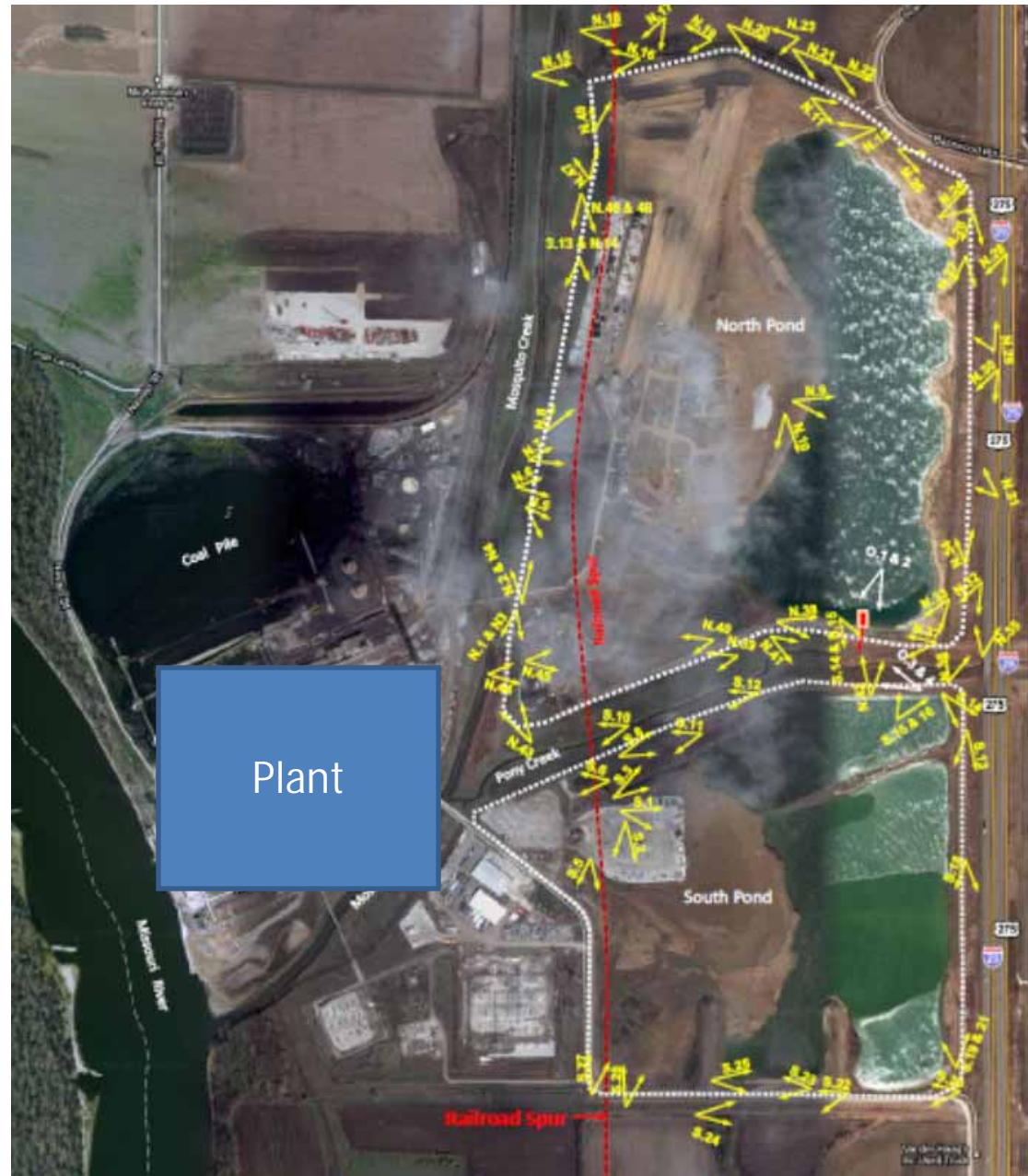
- LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

- SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

- Low hazard means failure causing property losses
- Significant Hazard Potential = environmental damage



- “Typical” two Pond CCW location
- Photographs and site operations are documented.



Havana

- Owner: Dynegy Midwest
- IL DNR Dam Safety Division has a permit file for Havana
- Plant and CCW impoundment facilities are in town of Havana
- Site visit performed May 2009
- Photos follow



Havana Photo – home near toe of embankment



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Havana Photo – other development near toe of impoundment



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Havana Photo – Fly Ash



Havana Conclusion

- CCW impoundments designed and maintained according to industry standards
- Dynegy cooperated fully with team
- Full report is on EPA website:
- <http://www.epa.gov/epawaste/nonhaz/industrial/special/fossil/surveys2/index.htm>
- No safety issues identified



Wood River

- Owner: Dynegy Midwest, Inc.
- Generating facility and CCW Impoundments not located in residential area
- IL DNR Dam Safety Division has a permit file for Wood River
- Site visit performed May 2009
- Photos follow



Wood River photo – plant entrance road at toe of CCW impoundment



Wood River – few industrial structures near toe



Wood River Conclusion

- CCW impoundments designed and maintained according to industry standards
- Dynegy cooperated fully
- Full report on EPA website:
- <http://www.epa.gov/epawaste/nonhaz/industrial/special/fossil/surveys2/index.htm>
- No safety issues identified



Questions? Call this guy!



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