

US EPA ARCHIVE DOCUMENT

Comments

EPA HQ - None

EPA Region - None

State – See attachment from email dated January 28, 2010.

Company – See attachment dated February 16, 2010.

From: "Phelps, Scott (EEC)" <Scott.Phelps@ky.gov>  
To: James Kohler/DC/USEPA/US@EPA  
Date: 01/28/2010 09:20 AM  
Subject: Comments from Kentucky on Ash Pond Reports

James

I am attaching our comments on the draft reports that were sent to me. It is my understanding that Gary Wells with our office has already supplied comments on the LG&E Mill Creek impoundment. Let me know if you need further clarification or anything else.

**Scott Phelps P.E., C.F.M., Supervisor  
Dam Safety and Floodplain  
Compliance Section  
Water Infrastructure Branch**

Attachment:

Comments on Ash Pond inspections located within Kentucky.

General: Kentucky would like to correct a statement made in several of the draft reports. Many of the reports state that Kentucky does not have standards for dam stability. This statement is incorrect and should be corrected in all reports. The standards are clearly stated in "Guidelines for the Geotechnical Investigation and Analysis of Existing Earth Dams". This publication is located on our website and available for download. The necessary factors of safety are found on page 25. The web address for the document is: <http://www.water.ky.gov/damsafety/dsdownloads/>

**E.W. Brown Aux Pond.**

The statement that the ash pond has a permit number KYDW Permit 1213 is incorrect. The Kentucky Division of Water has assigned dam ID number KY1213 to this structure. This is the number that the structure can be found under in the NID.

**E.W. Brown Main Pond**

3.2 Summary of Local, State and Federal Environmental Permits:

The statement that the ash pond has a permit number KYDW Permit 0737 is incorrect. The Kentucky Division of Water has assigned dam ID number KY0737 to this structure. This is the number that the structure can be found under in the NID.

**Kentucky Utilities Ghent Power Plant**

1.2.1 There is no mention of permits issued by the Kentucky Division of Water for Construction of ATB 2 or the Gypsum Stacking Facility.

### 3.3 Structural Adequacy & Stability

The statement that Kentucky regulations and guidelines for dam safety do not provide specific factors of safety for slope stability is incorrect. The standards are clearly stated in “Guidelines for the Geotechnical Investigation and Analysis of Existing Earth Dams”. This publication is located on our website and available for download. The necessary factors of safety are found on page 25. The web address for the document is: <http://www.water.ky.gov/damsafety/dsdownloads/>

## **LG&E Cane Run**

The map on page 9 indicates the wrong plant and places the plant in Indiana.

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## 4.1 Acknowledement of Management Unit Condition

## **Big Rivers Coleman Plant**

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Big Rivers Reid, Green, HMPL

No comments from Kentucky Division of Water.

## American Electric Power Big Sandy Generating Station

### P.1 Company or Organization

The Kentucky Department of Natural Resources is a different agency than the Department for Environmental Protection. DEP is the correct agency for Scott Phelps.

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Generation Engineering  
220 West Main Street  
Louisville, Kentucky 40202  
T 1-502-627-2985

VIA E-MAIL AND OVERNIGHT DELIVERY

Mr. Stephen Hoffman  
U.S. Environmental Protection Agency  
Two Potomac Yard  
2733 South Crystal Drive  
Fifth Floor, N-5237  
Arlington, VA 22202-2733

Date: February 16, 2010

**Re: Kentucky Utilities Comments for  
Draft Report  
Coal Combustion Surface Impoundments  
Kentucky Utilities  
Ghent Generating Station  
Ghent, Kentucky**

Dear Mr. Hoffman:

The U.S. Environmental Protection Agency (EPA) provided a draft report to Kentucky Utilities (KU) regarding coal combustion product impoundment facilities at KU's Ghent Generating Station. The draft report was prepared by CHA and dated December 8, 2009. This letter provides the comments from KU included as an attachment.

Thank you for the opportunity to comment. If you have any questions regarding these comments, please contact me.

Thank you,

David Millay, PE  
Civil Engineer  
502-627-2468

Attachment

Cc: James Kohler, U.S. Environmental Protection Agency  
John Voyles, E.ON U.S.  
Michael Winkler, E.ON U.S.

US EPA ARCHIVE DOCUMENT

**Kentucky Utilities Comments**

**Assessment of Dam Safety, Coal Combustion Surface Impoundments (Task 3) DRAFT Report  
for Ghent Generating Station**

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**Footer throughout the document, fourth line down:**

~~"E.ON/Kentucky Utilities"~~

**Page 1, section 1.1 Introduction**

**First Paragraph, fourth sentence:**

"Kentucky Utilities, a subsidiary of ~~E.ON~~ U.S., is owner and operator of the Ghent Generating Station"

**Page 1, list of individuals at bottom of page:**

<u>Company or Organization Name</u>	<u>Name</u>
KY DEP – Division of Waste Management	Charles B. Dickerson, Environmental Inspector
KY DEP – Division of Water	Scott Phelps, P.E., <b>Dam Safety</b> Supervisor
<del>E.ON</del> E.ON U.S.	Michael Winkler, Manager, Environmental Programs
<del>E.ON</del> E.ON U.S.	David Millay, P.E., Civil Engineer
Kentucky Utilities/ <del>E.ON U.S.</del>	Stephen Nix, Lead Engineer
Kentucky Utilities/ <del>E.ON U.S.</del>	Paul Wright, Manager – Production
Kentucky Utilities/ <del>E.ON U.S.</del>	Larry Byrd, Manager – Maintenance
Kentucky Utilities/ <del>E.ON U.S.</del>	Timothy Smith, Manager – Commercial

**Page 3, First paragraph, end of first sentence:**

"...ATB#1 was commissioned in 1972 ~~and was expanded in 1977.~~"

Note: Sentence ends at 1972. ATB#1 has not been expanded since it was commissioned.

**Page 3, Second paragraph, first sentence:**

"ATB#2 was commissioned in ~~1995~~ 1994 and was raised in 2003."

**Page 3, Third paragraph, first sentence:**

"The Gypsum Stacking Facility was commissioned in ~~1995~~ 1994 with an earthen starter dike."

**Page 4, section 1.4 Previously Identified Safety Issues**

**First sentence:**

"Based on our review of the information provided to CHA and as reported by ~~Duke-Energy~~ Kentucky Utilities, there have been..."

**Page 5, section 1.6 Bibliography**

**First sentence:**

"CHA reviewed the following documents provided by ~~Duke-Energy~~ Kentucky Utilities in preparing this report:"

**Page 13, Figure 7, Critical Infrastructure Location Map**

Note: Numerous infrastructure facilities within 5 miles of Ghent Station are not identified on Figure 7. For example: there is a fire station and numerous churches in Ghent.

**Page 14, section 2.1 Visual Observations**

**First paragraph, First sentence:**

"CHA performed visual observations of the ATB#1, ATB#2 and Gypsum ~~Stacking~~ Stacking Facility..."

**Kentucky Utilities Comments**  
**Assessment of Dam Safety, Coal Combustion Surface Impoundments (Task 3) DRAFT Report**  
**for Ghent Generating Station**

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**Page 17, Second paragraph, second sentence:**

"Some of these drains ~~has~~ have minor amounts of clear flow."

**Page 17, section 2.3.2 ATB#2 Outlet Control Structure and Discharge Structure**

**First paragraph, first sentence**

"The outlet control structure for the ~~secondary ash pond~~ ATB Number Two is a stop log controlled drop inlet..."

Note: The outflow pipe from the ATB Number Two discharge structure is ductile iron beneath the constructed embankment connected to High Density Polyethylene (HDPE) pipe that runs along the ATB Number 2 access road.

**Page 19, First paragraph, last sentence:**

Remove comma after "...berm is shown in Photos 86~~7~~ and 103."

Note: Remove comma after '86'.

**Page 19, next to last sentence of second bullet, bottom of page:**

"...storm water runoff from the Gypsum Stacking Facility to the Secondary Ash Treatment Basin ~~outfall structure~~."

**Page 20, last sentence of first bullet, top of page:**

"These storm drains drain to the Secondary Ash Treatment Basin ~~outfall structure~~."

**Page 22, First paragraph, second sentence:**

"CHA noted that the peizometric elevations towards the groins of the main fill area are within the Zone 4 fill. ~~Zone 4 fill~~ ~~which~~ is higher than the designed ~~chimney~~ inclined drains at the full height section."

**Page 22, Second paragraph, fifth sentence:**

"The plots of these inclinometers as presented by Stantec follow on Pages ~~21, 22 and~~ 23, 24 and 25."

**Page 26, sentence 3, bottom paragraph:**

"Surface Movement Monuments (SMM) 5, 8 and 11 are to be on the starter dike crest, SMM 1, ~~3~~, 6, 9 and 12 are to be installed on the El. 560 bench, and SMM 2, ~~4~~, 7, 10, 13 and 14 are to be installed on the El. 600 bench."

**Page 36, caption under Photo 16:**

"Start of bench around ~~northwest~~ northeast corner of ATB #1 dike."

**Page 48, caption under Photo 40:**

"Crest of ATB #2 looking south ~~toward~~ from east abutment."

**Page 54, caption under Photo 51:**

"Downstream slope of ATB ~~#1~~ #2 just east of eastern knoll looking northeast."

**Page 54, caption under Photo 52:**

"Downstream slope of ATB ~~#1~~ #2 looking east."

**Page 55, caption under Photo 53:**

"Downstream slope of east end of ATB #2 dike looking ~~north from east~~ northeast near abutment."

**Page 70, caption 84 under Photo 84:**

"~~North-West~~ end of gypsum stacking facility, looking northeast."

**Kentucky Utilities Comments**  
**Assessment of Dam Safety, Coal Combustion Surface Impoundments (Task 3) DRAFT Report**  
**for Ghent Generating Station**

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**Page 85, section 3.1 Design Assumptions**

**First paragraph, end of first sentence:**

(toward end) "...which were available at the time of our site visits and provided to us by ~~E-On~~/Kentucky Utilities."

**Page 86, section 3.2.1 ATB #1 Hydrologic and Hydraulic Analyses**

**Third paragraph, fourth sentence:**

(toward middle) "...some material needed to be excavated from ATB#1 to provide adequate ~~detention~~ retention time for water quality purposes..."

**Page 87, section Table 4 - ATB#2 - Design Storm Flows and Water Surface Elevation**

Storm Hydrograph	Peak Inflow (cfs)	Peak Outflow (cfs)	Reservoir Elev. (ft)
100- year storm	674	44.4	<del>797.3</del> 797.8
Emergency Spillway	1,644	<del>83</del> 82.5	798.0
PMP	4,372	288.6	799.5

**Page 92, sentence below Table 11 - CHA Computed Stability Factors of Safety:**

"FMSM has not performed a rapid drawdown analysis for the ATB#2 embankment."

Note: Kentucky Utilities contacted the design engineer of record, Stantec, formerly known as FMSM regarding the rapid drawdown analysis for the ATB #2 embankment. Stantec commented as follows:

*For the ATB2 basin there is a controlled inflow and discharge. There is not a condition that causes the impoundment to have a rapid drawdown (other than failure of the embankment); therefore the analysis is not considered applicable.*

**Page 93, paragraph below Table 10 - ATB #2 - Summary of Stability Analyses, First sentence:**

(toward end) "...the computer program Slide™ and the soil properties from ~~Table 8~~ Table 9 above to confirm these results."

**Page 94, paragraph below Table 12 - Soil Strength Properties as Determined by FMSM Engineers, beginning with the second sentence:**

"Therefore, not only is there an underdrain system in the bottom of the pond, but periodic seepage drains are scheduled to be installed at various elevations as the gypsum is stacked. ~~In addition, a supplemental drainage layer has been designed and is being added.~~ These seepage drains are intended to act as a backup in case the underdrain system ~~and supplemental drain~~ fails. Figure 6 (in ~~Section 2~~ Section 1) shows the stability analysis results and anticipated phreatic..."

**Page 95, last paragraph:**

(toward middle) "...and vertical movement, and groundwater monitoring wells ~~will be~~ have been installed to evaluate the competency of the liner system."

**Page 107, section 4.1 Acknowledgement of Management Unit Condition**

**Third paragraph, second sentence:**

~~"E-On~~/Kentucky Utilities provided CHA with descriptions of a proactive maintenance and monitoring program at these facilities."

**Kentucky Utilities Comments**  
**Assessment of Dam Safety, Coal Combustion Surface Impoundments (Task 3) DRAFT Report  
for Ghent Generating Station**

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**Page 107, Footer:**

~~Final-Draft~~ Report  
Assessment of Dam Safety of  
Coal Combustion Surface Impoundments  
~~Duke Energy~~ Kentucky Utilities  
~~Riverbend Steam Station~~ Ghent Generating Station  
~~Mount Holly, North Carolina~~ Ghent, Kentucky

**Page 108, section 4.3 ATB #2 General Condition Monitoring and Maintenance**

**Fifth bullet:**

- Monitor the crest ~~the~~ for potholes and erosion rills that may require refilling.

**Page 109, section 4.7 Seepage at the Gypsum Stacking Facility**

**First paragraph, first sentence:**

~~"We understand that~~ Kentucky Utilities is working with Stantec to evaluate and resolve a seep..."

**COAL COMBUSTION DAM INSPECTION CHECKLIST FORM**

**Ghent Power Generating Station - Ash Treatment Basin Number Two**

**First Page, *Inspection Issue # / Comments* section at bottom of page:**

"21. The decant pipe extends below grade (under the access road) about 3,200 feet to a stilling basin. When flowing, discharge end of pipe is inaccessible. Underdrains daylight at several locations, ~~se~~ some had minor seepage, some were dry."

**Fifth Page, TYPE OF OUTLET section, under *Material*:**

~~"X~~ other (specify) Ductile Iron beneath embankment"  
HDPE along access road

**COAL COMBUSTION DAM INSPECTION CHECKLIST FORM**

**Ghent Power Generating Station - Gypsum Stacking Facility**

**Sixth Page, Question:**

"Has there ever been a failure at this site? YES ~~X~~ NO X"

Note: There has never been a failure at this site.