

RECEIVED

JUN 17 2015

PUBLIC SERVICE
COMMISSION

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Frankfort, KY 40601
(502) 223-3477
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June 17, 2015

Mark R. Overstreet
(502) 209-1219
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HAND DELIVERED

Jeff R. Derouen
Executive Director
Public Service Commission
211 Sower Boulevard
P.O. Box 615
Frankfort, KY 40602-0615

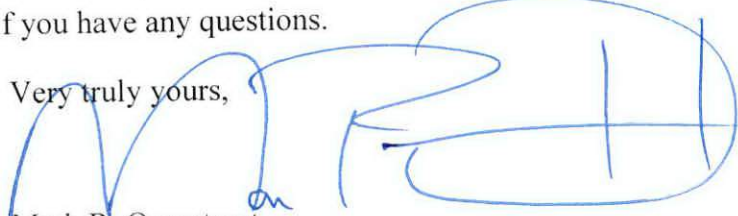
RE: Case No. 2014-00479

Dear Mr. Derouen:

Enclosed please find and accept for filing the original and ten copies of Kentucky Power Company's responses to Staff's second set of data requests.

Please do not hesitate to contact me if you have any questions.

Very truly yours,


Mark R. Overstreet

MRO

RECEIVED

JUN 17 2015

**PUBLIC SERVICE
COMMISSION**

COMMONWEALTH OF KENTUCKY

BEFORE THE

PUBLIC SERVICE COMMISSION OF KENTUCKY

IN THE MATTER OF

**AN APPLICATION OF KENTUCKY POWER)
COMPANY FOR: (1) AN ORDER DECLARING)
AND CLARIFYING THE APPLICATION OF THE)
INSPECTION REQUIREMENTS OF 807 KAR 5:006,)
SECTION 26(4), TO CERTAIN OF THE COMPANY'S)
TRANSMISSION FACILITIES; OR (2) IN THE)
ALTERATIVE, AND TO THE EXTENT REQUIRED,) Case No. 2014-00479
A DEVIATION IN PART FROM THE INSPECTION)
REQUIREMENTS OF 807 KAR 5:006, SECTION 26(4),)
WITH RESPECT TO THE COMPANY'S TRANSMISSION)
FACILITIES; AND (3) ALL OTHER REQUIRED)
APPROVALS AND RELIEF)**

**KENTUCKY POWER COMPANY RESPONSES TO
COMMISSION STAFF'S SECOND SET OF DATA REQUESTS**

June 17, 2015

VERIFICATION

The undersigned Everett G. Phillips, being duly sworn, deposes and says he is the Managing Director, Distribution Region Operations for Kentucky Power Company, that he has personal knowledge of the matters set forth in the forgoing data requests and the information contained therein is true and correct to the best of his information, knowledge, and belief.

Everett G. Phillips
Everett G Phillips

COMMONWEALTH OF KENTUCKY)
) CASE NO. 2014-00479
COUNTY OF BOYD)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by, Everett G. Phillips, this the 17th day of June, 2015.

Vickie Stone
Notary Public

My Commission Expires: 11-15-15

Kentucky Power Company

REQUEST

Refer to Kentucky Power's Application, numbered paragraph 8. Kentucky Power states, "Approximately one-half of the Company's [ten miles of] 34.5 kV transmission lines are supported by structures constructed of wood; the balance of the 34.5 kV transmission lines are supported by structures constructed with metal lattice." In response to Commission Staffs First Request for Information ("Staffs First Request"), Item 1, Kentucky Power states, "Upon further review, the Company has determined there are approximately two miles of 34.5-kV line in the Company's service territory functioning and classified as transmission facilities." State the portion of Kentucky Powers approximate two miles of 34.5-kV line that is supported by structures constructed of wood and the portion of the approximate two miles of 34.5-kV line that is supported by structures constructed with metal lattice.

RESPONSE

Steel support structures: 0.36 miles
Wood support structures: 1.69 miles

WITNESS: Everett G Phillips

Kentucky Power Company

REQUEST

Refer to Kentucky Power's Application, numbered paragraph 12. Kentucky Power states, "It is presumed the Commission intended to change the regulation [807 KAR 5:006, Section 26(4)(e)] governing the inspection of electric lines operating at less than 69 kV by the addition of the language 'to the point of service.'" Fully describe the inspection of the 46-kV and 34.5-kV lines for the three-year period prior to the amendments to 807 KAR 5:006 in 2013. State whether Kentucky Power changed or modified its inspection of these facilities as a result of the amendments in 2013. If so, identify the changes or modifications.

RESPONSE

Prior to 2013, Kentucky Power performed a non-aerial inspection every 6 years for wooden structures and every 12 years for steel structures. KPCo modified its inspection program to be every two years for 34.5 and 46 kV as a result of the amendments in 2013. Aerial Inspections also are performed on transmission lines twice a year.

WITNESS: Everett G Phillips

Kentucky Power Company

REQUEST

Refer to Kentucky Power's Application, numbered paragraphs 13 through 16. Does Kentucky Power conduct any type of non-aerial inspection of its 34.5-kV or 46-kV electric facilities at intervals not exceeding six months? If so, describe the inspections and state the corresponding inspection schedule.

RESPONSE

No.

WITNESS: Everett G Phillips

Kentucky Power Company

REQUEST

Refer to Kentucky Power's response to Staff's First Request, Item 7, page 19 of 28. Kentucky Power provides a table containing transmission line clearance guidelines. State whether Kentucky Power utilizes the guidelines listed on Table 3 for 69-kV transmission lines for its 34.5-kV and 46-kV lines. If not, provide, in a format similar to Table 3, the transmission line clearance guidelines for the 34.5-kV and 46-kV lines and explain the reason(s) for any difference.

RESPONSE

See KPSC_2_4_Attachment1.pdf. Table 3 in the attachment comes from a previous AEP vegetation management plan which contains line clearances for 34.5 and 46 kV transmission lines. Current NERC FAC-003-3 standards do not list transmission line voltages below 69kV. However, the Company's Transmission Vegetation Management Program meets or exceeds these clearance standards for 34.5 and 46 kV transmission lines.

WITNESS: Everett G Phillips

Table 3: Transmission Line Clearance Guidelines

Column A Nominal Voltage (kV phase to phase)	Column B³ NERC Clearance 1 (no restrictions) Desired Clearance between Conductor ^{4, 5, 6} & Vegetation	Column C^{2, 7} NERC Clearance 1 (with restrictions) Desired Clearance between Conductor ^{3, 5} & Vegetation	Column D⁶ ANSI Clearance between Conductor ^{3, 5} & Vegetation	Column E⁸ NERC Clearance 2 between Conductor ^{3, 5} & Vegetation
765 kV	45'	35' 00"	27' 04"	14' 0"
500 kV	45'	26' 08"	19' 00"	10' 0"
345 kV	30'	20' 05"	13' 02"	7' 6"
230 kV	30'	16' 05"	7' 11"	5' 2"
161 kV ⁹	25'	14' 00"	6' 00"	3' 5"
138 kV ⁹	25'	13' 02"	5' 02"	2' 11"
88 kV & 115 kV ⁹	25'	12' 04"	4' 06"	2' 6"
69 kV ⁹	25'	10' 09"	4' 02"	2' 6"
46 kV & 40 kV ⁹	20'	10' 00"	3' 04"	2' 6"
34.5 kV & 23 kV ⁹	20'	10' 00"	3' 00"	2' 6"

Kentucky Power Company

REQUEST

Refer to Kentucky Power's response to Staff's First Request, Item 9. Kentucky Power states that there is one point of service on its "Armco-Bellefonte 34.5 kV line. Explain why the Armco-Bellefonte 34.5-kV line should be considered a transmission facility rather than a distribution facility and why a ground inspection to the point of service at an interval not to exceed two years is not necessary.

RESPONSE

As provided in the response to KPSC Staff 1-1, the Armco-Bellefonte 34.5 kV line meets the three FERC criteria for the definition of a transmission system. Industrial customers served directly from the transmission system provide their own substation facilities and voltage conversion equipment. The transmission point of service terminates at the meter in the customer substation. This is similar for all transmission customers. The transmission point of service of the Armco-Bellefonte 34.5 kV transmission line is in a heavily industrialized area, and is located in a corridor with other similar transmission lines. Inspection of this 34.5 kV transmission line should coincide with the inspection of the other transmission lines in the area.

WITNESS: Everett G Phillips

Kentucky Power Company

REQUEST

Refer to Kentucky Power's response to Staff's First Request, Item 5. For the 34.5-kV facilities that were not constructed or have not been rebuilt to 69-kV construction standards, explain why these facilities should be treated, for purposes of 807 KAR 5:006, Section 26(4), in a manner similar to the treatment of electric facilities operating at 69-kV or greater.

RESPONSE

These facilities, which continue to be used for transmission purposes, were constructed to the transmission standards utilized for 34.5 kV transmission facilities in use at the time of construction. The fact that the standards for construction of new facilities were modified following the construction of these facilities does not make them distribution facilities. These facilities should be treated, for purposes of 807 KAR 5:006, Section 26(4), in a manner similar to electric facilities operating at 69-kV or greater because they are utilized for the same purpose – transmission – as facilities operating at 69 kV or higher. Stated otherwise, the Company's application seeks a deviation from the requirements of the Commission's regulation to permit similarly functioning facilities to be treated similarly without regard to their voltage.

WITNESS: Everett G Phillips

Kentucky Power Company

REQUEST

Refer to Kentucky Power's response to Staff's First Request, Item 6. For the 46-kV facilities that were not constructed or have not been rebuilt to 69-kV construction standards, explain why these facilities should be treated, for purposes of 807 KAR 5:006, Section 26(4), in a manner similar to the treatment of electric facilities operating at 69 kV or greater.

RESPONSE

These facilities, which continue to be used for transmission purposes, were constructed to the transmission standards utilized for 46 kV transmission facilities in use at the time of construction. The fact that the standards for construction of new facilities were modified following the construction of these facilities does not make them distribution facilities. These facilities should be treated, for purposes of 807 KAR 5:006, Section 26(4), in a manner similar to electric facilities operating at 69-kV or greater because they are utilized for the same purpose – transmission – as facilities operating at 69 kV or higher. Stated otherwise, the Company's application seeks a deviation from the requirements of the Commission's regulation to permit similarly functioning facilities to be treated similarly without regard to their voltage.

WITNESS: Everett G Phillips

Kentucky Power Company

REQUEST

In its response to Staff's First Request, Item 1, Kentucky Power revised the amount of 34.5-kV line from ten miles down to approximately two miles. Does the revision change or modify Kentucky Power's request, made in the alternative, for a deviation?

RESPONSE

No.

WITNESS: Everett G Phillips

Kentucky Power Company

REQUEST

Refer to Kentucky Power's Application, numbered paragraph 12. Kentucky Power states, "Transmission lines, including the Company's 34.5 kV and 46 kV transmission lines, run from station to station and do not directly serve customers. They have no "point of service" for transmission lines" (paragraph 12(a)). Kentucky Power then indicates further that Transmission lines lack a point-of-service" (paragraph 12(b)). Fully discuss how these

statements may be reconciled with Kentucky Power's response to Commission Staffs First Request, Item No. 9, in which Kentucky Power identified four electric-service arrangements that directly utilize electricity from 34.5-kV and 46-kV transmission lines.

- a. Explain how these electric service arrangements are classified (i.e., whether they are treated as distribution or transmission) for inspection purposes, and describe the inspections performed the corresponding inspection schedules for each electric-service arrangement.
- b. Are the lengths of the facilities supplying these electric-service arrangements included in the overall transmission-line lengths identified in the Application?
- c. What aspect of the electric-service arrangements constitutes the demarcation point between Kentucky Power's facilities and that of the customer, and what is the distance of each electric service arrangement to this point?

RESPONSE

- a. The transmission lines serving transmission customers are classified as transmission. A transmission customer takes service at the transmission voltage, and the customer owns the equipment to transform the voltage to the level needed for their facility. See the response to KPSC Staff 2-2 for the inspections performed. The Application filed in this proceeding is seeking to use the KPCo transmission inspection schedules for these transmission facilities.

- b. Yes. The lengths of the transmission lines supplying these customers are included in the overall transmission-line lengths identified in the Application.
- c. The demarcation point is at the meter. The Company's transmission lines terminate at the meter, so there are no additional line miles owned by the Company beyond the meter. There may be a few feet of conductor between the metering and the customer's bus.

WITNESS: Everett G Phillips

Kentucky Power Company

REQUEST

Refer to Kentucky Power's Application, numbered paragraph 17.

- a. Describe the nature and extent of damage and deterioration of supporting facilities that may be inspected from the air and explain how these conditions are detected.
- b. If any damage or deterioration of a supporting facility is identified from the air, explain the process for documenting and reporting such conditions and describe the follow-up activities that would occur to ensure that adequate corrective action is taken. Provide documentation of an example demonstrating this process.
- c. Are there any portions of Kentucky Power's transmission system, including electric lines below 69-kV as identified in this proceeding, which cannot be effectively inspected by air? If so, explain the nature and extent of inspections of supporting facilities that occurs to comply with 807 KAR 5:006, Section 26(4)(b)(2).

RESPONSE

- a. The company utilizes experienced journey line mechanics, whom can identify any significant damage and deterioration from the air (insulators, conductor, hardware and poles), to conduct aerial inspections every six months. If a significant condition is identified, a follow-up inspection from the ground is scheduled to further evaluate corrective action.
- b. When a condition is identified during an aerial inspection, it is logged and then uploaded into the system. A ground inspection of the condition will be conducted if a closer inspection is deemed necessary. Otherwise, a workorder is generated and the repair will be scheduled based on the severity of the condition. Once the repair has been made, the workorder is closed out. Each step of the process is logged.

Please see KPSC_2_10_Attachment1.pdf. A condition was reported during the Company's biannual KY Aerial Patrol. On 10/21/2014, a static wire (shield wire) was reported down at structure 6 of the Coleman - Elkhorn City - Johns Creek 69kV circuit. The event was entered into the system at 10:36 am. An emergency outage was obtained through the Roanoke TDC and repairs were completed that day 10/21/2014 at 4:19 pm.

- c. There are no known portions that cannot be effectively inspected by air.
- WITNESS: Everett G Phillips

Integrated Transmission Information System (ITIS SLI) - (Condition)

File Schedule Inspections Conditions Work Orders Reports Forestry Plans Window Help

Structure: Second Fork - Coleman K365-6 -82.2317847463732 37.452559112653

No associated inspections

Inspector: Walters Craig Date Inspected: 10/21/2014 10:29:53

Work Order #: TL024471

Condition Type: Conductor

Left	Middle	Right	Span Quarter
<p>Actual Blanket Ball</p> <p>Conductor</p> <p>CRG-W</p> <p>CRG-W / J4DES</p> <p>CRG-W / J4DES</p>	<p>Juniper (Shield Wire)</p> <p>Pin Splice - Dead End</p> <p>Pin Splice - Dead End</p> <p>Pin Splice (Shield Wire)</p>	<p>Bird Cage</p> <p>Birds</p> <p>Birds - Strands</p> <p>Burn</p> <p>Contaminated</p> <p>Corroded</p> <p>Debris</p> <p>Gumhol</p> <p>Inadequate Clearance</p> <p>Long High</p> <p>Swollen</p> <p>Worm</p>	
<p>Left</p> <p>Right</p> <p>Sample</p>			

History:

10/21/2014 10:35:33 AM K314502

Inspection Type: No associated inspection

Action: Walters Craig - Discover

Note: found a cable down on the arm at str. 6 from aerial pulled

Status: Completed by JEP

OK

Integrated Transmission Information System (ITIS 5.11.0) - [New Work Order]

File Schedules Inspections Conditions Work Orders Reports Forestry Plans Window Help

Work Order Details

WU# 7524271 WU Type CO Status COMPLETE Status Date 10/21/14

Task SECOND FORD - FTD ENL SHELDON VALLEY FORD TRIP 4001 SAGINAW

Facility FLD Work Group 11-300 Project Number 210100246 Planner KSH4562

Asset Description SECOND FORD - FTD ENL Planning Center ALL 1 BP

Area NOT AVAILABLE Region BOADWIN Asset Loc ID 023569 PWU 13429

Ranall 1 ac/3 RI 160 FERC Class 1 OP Co NPC In Service 12/21/2014 Estimate Total \$2,250.00

Equipment SECOND FORD - COLENA

Task Info

Task Number	Task Type	Planner	Task Description	Cost Center	Activity Code	Account	Group ID	Est Hrs
21	CO	KSH4562	STRUCTURE - ALL MAINTENANCE	11637	566	5710000	180	0.10
22	CO	KSH4562	SECOND FORD - COLEMAN'S CONDUCTOR - AL	11637	566	5710000	180	0.10
23	CO	KSH4562	STRUCTURE GROUNDING - ALL MAINTENANCE	11637	566	5710000	180	0.10
24	CO	KSH4562	GROUNDLINE INSPECTION AND TREATMENT	11637	566	5710000	180	0.10
25	CO	KSH4562	TOWER PAINTING - CORROSION CONTROL MAINTENANCE	11637	566	5710000	180	0.10
26	CO	KSH4562	FLAT MOUNTING LIGHT ALL MAINTENANCE	11637	566	5710000	180	0.10
27	CU	KSH4562	THREE THROUGHPUT REMOVAL	11637	566	5710000	180	0.10

Conditions Associated with WO

Structure	First Component	Second Component	Condition	Category	Status	Work Order Number	Work Order Status	Date Completed	Operating Company	Circuit	Phase Position	Desk#	Latitude
KSH456	Shield Wire	Shield Wire	Damaged	21	Complete	11024271	COMPLETE	10/21/2014 12:00:00	Kennedy Power Co			63	37.425981

Use CTRL+Q to logoff onto database ITIS from max-base DRI 3.81

11:30 AM 6/15/2015

COLEMAN ELKHORN CITY JOHNS CREEK (69 KV) Windows Internet Explorer

http://optool.scc.aepsc.com/200/dol/event/editEvent.html?editEventId=540002

File Edit View Favorites Tools Help

COI FMAN - ELKHORN CITY - JOHNS CREEK (69 KV) Suggested Sites AEP Now Web Slice Gallery AEP Application Publishin... AEPNow APS Help AEP

Roanoke-North Change Dispatch Center

Event List Station Entry Callout Phone Book

Event Outage Times Target Acquisition Routing

Title: COI FMAN - ELKHORN CITY - JOHNS CREEK (69 KV) Event ID: 589562 Case #: 540002

Start Time: 10/21/2014 10:40
End Time: 10/21/2014 17:20
EET: ☐

Priority: -- Select Priority --
Isolated: ☐

Comments: Static wire down between Coleman and Second Fork (SOS # 6157 Rev. 4)

Operating Arrangements: Craig Walters issued clearance.

Information: Static wire down at str G.

State: KY
District: Select District
Add event to: Select List
Facility Rating Affected: ☐
Upload File:

READ ONLY

Event Devices

Event Logs

Date/Time	Created By	Modified By
10/21/2014 10:40	Aaron Fink	
Craig Walters reported (via Donnie Bartley) static wire down at str G of Coleman - Elkhorn City - Johns Creek 69KV Ckt between Coleman and Second Fork. Craig reported that outage will be necessary to facilitate repair.		
10/21/2014 12:02	Mitchell Cook	
Began switching on SOS # 6157 Rev. 4 to isolate the Coleman - Elkhorn City - Johns Creek 69KV Ckt between Coleman and Second Fork.		
10/21/2014 13:20	Mitchell Cook	
Issued Craig Walters clearance on the Coleman - Elkhorn City - Johns Creek 69KV Ckt between Coleman and Second Fork to make repairs to static wire at Str. G. (SOS # 6157 Rev. 4)		
10/21/2014 14:22	Aaron Fink	(10/23/2014 08:24)
Notified Dave Adkins, Ky DDC, of Coleman - Elkhorn City - Johns Creek 69KV Ckt outage between Coleman and Second Fork.		
10/21/2014 16:00	Mitchell Cook	(10/21/2014 16:19)
Craig Walters released clearance on the Coleman - Elkhorn City - Johns Creek 69KV Ckt between Coleman and Second Fork. He reports that they have pinned the static wire back to Str. G. (SOS # 6157 Rev. 4)		
10/21/2014 16:37	Aaron Fink	
Began switching on SOS #6157 Rev. 4 to restore Coleman - Elkhorn City - Johns Creek 69KV Ckt between Coleman and Second Fork normal.		
10/21/2014 17:26	Aaron Fink	
Notified David McDaniel, Ky DDC, that Coleman - Elkhorn City - Johns Creek 69KV Ckt is normal.		

Log Archive

Created: Aaron Fink Last Mod: Aaron Fink
10/21/2014 10:50 10/23/2014 08:26

Local intranet | Protected Mode: Off 100% 1:30 PM 6/15/2015

Kentucky Power Company

REQUEST

Refer to Kentucky Power's response to Commission Staffs First Request for Information, Item 5. For the following classes of facilities:

- a. Existing 34.5-kV lines identified in this proceeding.
 - b. New/Rebuilt 34.5-kV lines identified in this proceeding.
 - c. Existing 46-kV lines identified in this proceeding.
 - d. New/Rebuilt 46-kV lines identified in this proceeding.
 - e. Existing 69-kV and above lines identified in this proceeding.
 - f. New/Rebuilt 69-kV and above lines identified in this proceeding.
-
- (1) Describe the zone (Zone 1 - Heavy or Zone 2 - Medium) identified in the National Electrical Safety Code ("NESC") (Rule 230B) utilized for ice and wind loading clearances for the design and construction of each of the class of facilities above.
 - (2) Refer to Kentucky Public Service Commission's Ike and Ice Report, dated November 19, 2009, at page 82. Kentucky Power was identified as one of the jurisdictional utilities with transmission facilities of which most have decided to build 69-kV and above transmission lines to meet the heavy loading requirements. In light of this information, describe in detail Kentucky Power's design and construction practices with regard to each class of facility identified above and fully explain the reason for any differences.
 - (3) Explain any additional design considerations that are typically incorporated or may be considered as added safety factors when applying the NESC construction standards for each class of facility identified above.

RESPONSE

- (1) a. - f. Historically, the Company has utilized the NESC Zone 1 – Heavy for the design and construction of all transmission lines including the 34.5 and 46 kV transmission facilities.
- (2) a. – f. As noted in the response to KPSC Staff 2-1a – 1f, the company has historically utilized the Heavy design for all transmission lines regardless of voltage. The primary differences between 34.5, 46, and 69 kV facilities are the length or number of insulators and the conductor spacing. The physical loading capabilities of these facilities would be similar.
- (3) a. – f. The KPCo transmission design standards have historically been more conservative than the NESC requirements. Generally, the transmission line facilities are designed for higher ice and wind loading (and combinations of both) and more ground to line clearance than required by the NESC. Regardless of the voltage or when the transmission line facilities were built, the Company has inspected the facilities and corrected any known deficiencies.

WITNESS: Everett G Phillips