



March 31, 2017

Jeff McClanahan
Director, Utilities Division
Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604-4027

Re: Docket No. 97-GIME-483-GIE

Dear Mr. McClanahan:

Please find enclosed the 2016 Line Clearance Information in response to the April 24, 1997, and February 26, 1998, orders issued by the Commission in the above-referenced docket.

Sincerely,

A handwritten signature in blue ink that reads 'Rebecca A. Fowler'. The signature is fluid and cursive.

Rebecca A. Fowler
Regulatory Affairs

Enclosures

CC: Jeff Martin
Larry Wilkus

KANSAS CORPORATION COMMISSION
DOCKET NO. 97-GIME-483-GIE
WESTAR ENERGY AND KGE
2016 LINE CLEARANCE INFORMATION
AND
ELECTRICAL SYSTEM RELIABILITY - SUSTAINED INTERRUPTION INDICES

Summary of the condition of line clearance at time of reporting:

The current line clearance policy was developed in 1993 and modified in 1999, 2004, 2007, 2014, 2015 and 2016. This policy provides guidelines which are necessary to ensure the safe and reliable delivery of electric energy. The ReliabiliTree Program was introduced mid 2010 in Wichita Division and expanded to Lawrence Division in the fourth quarter of 2011. Topeka Division was added in 2012 and the rest of the Divisions were added in 2013.

The line clearance manual outlines distribution circuit minimum clearances based on 4 years tree re-growth on urban lines and 5-year tree re-growth on rural lines, and is tree species specific. It also outlines a minimum clearance of 14 feet (more if possible) on 34 kV circuits and minimum vegetation approach clearances for transmission circuits of 69 kV and above. These guidelines are in accordance with the practices normally accepted throughout the industry.

Pruning cuts are made utilizing the natural target pruning methods which were developed by the Tree Care Industry Association and endorsed by the International Society of Arboriculture. This natural pruning method was developed from extensive research on tree physiology to enhance the natural wound healing process of the tree. When a tree is removed, the stump is treated with an approved herbicide which prevents re-sprouting and re-growth from the tree's root system. During a storm emergency, the material pruned is left for the customer or other agency (city or county) to clean up in order to speed the restoration of service.

Transmission line clearance work uses a combination of mechanical clearing (mowing of right-of-ways and trimming close to lines that traverse urban areas) and herbicide application. Distribution line clearance work is done primarily by mechanical pruning methods.

Contractors are utilized almost entirely for line clearance work on the company's systems. Distribution and transmission line clearance activities are coordinated by the Manager of Vegetation Management. Prior to trimming, the contractor notifies the landowner that line clearance work will be done. Permission is requested for the removal of non-volunteer trees that are larger than four inch DBH (Diameter at Breast Height).

The ReliabiliTree program finished first cycle work in all divisions in December 2016. Westar's Community Relations team has worked extensively with neighborhood, city, county and state officials and representatives to enhance their knowledge of our program's goal; to provide safe and reliable power. Circuit interruption statistics have been established relative to customer outage data.

To help educate the public on tree planting and tree safety, information is provided on the Company's website.

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A. Annual line clearance expenditures (1):

| <u>Year</u> | <u>Westar</u> | <u>KGE</u> | <u>Total</u> |
|-------------|------------------|------------------|--------------|
| 2016 | \$17,883,406 (2) | \$16,677,896 (3) | \$34,561,300 |
| 2015 | \$20,713,358 (4) | \$13,678,314 (5) | \$34,391,672 |
| 2014 | \$16,322,156 (6) | \$19,367,160 (7) | \$35,689,316 |
| 2013 | \$21,144,964 (8) | \$15,094,162 (9) | \$36,239,126 |

B. Annual hours of labor devoted to line clearance (1):

| <u>Year</u> | <u>Westar</u> | <u>KGE</u> | <u>Total</u> |
|-------------|---------------|------------|--------------|
| 2016 | 414,549 | 337,122 | 751,671 |
| 2015 | 386,380 | 251,273 | 637,653 |
| 2014 | 394,287 | 364,539 | 758,826 |
| 2013 | 448,202 | 363,123 | 811,325 |

C. Annual performance statistics for line clearance including, but not limited to, trees trimmed and trees removed (1):

| <u>Year</u> | <u>Trim Units</u> | <u>Remove Units</u> | <u>Total Units</u> | <u>Total Units/MH</u> |
|-------------|-------------------|---------------------|--------------------|-----------------------|
| 2016 Westar | 208,980 | 45,713 | 254,693 | 0.6 |
| 2016 KGE | <u>182,719</u> | <u>22,565</u> | <u>205,284</u> | 0.6 |
| Total | 391,699 | 68,278 | 459,977 | 0.6 |
| 2015 Westar | 208,971 | 41,868 | 250,839 | 0.6 |
| 2015 KGE | <u>83,771</u> | <u>25,743</u> | <u>109,514</u> | 0.4 |
| Total | 292,742 | 67,611 | 360,353 | 0.6 |
| 2014 WESTAR | 150,755 | 70,685 | 221,440 | 0.6 |
| 2014 KGE | <u>158,681</u> | <u>53,657</u> | <u>212,338</u> | 0.6 |
| Total | 309,436 | 124,342 | 433,778 | 0.6 |
| 2013 WESTAR | 177,707 | 96,343 | 274,050 | 0.6 |
| 2013 KGE | <u>92,047</u> | <u>47,588</u> | <u>139,635</u> | 0.4 |
| Total | 269,754 | 143,931 | 413,685 | 0.5 |

(1) Statistics reflect O & M activities only and does not include Capital activities

(2) Includes \$1,653,104 expended on major storms

(3) Includes \$491,590 expended on major storms

(4) Includes \$1,339,606 expended on major storms

(5) Includes \$862,726 expended on major storms

(6) Includes \$222,026 expended on major storms

(7) Includes \$41,881 expended on major storms

(8) Includes \$78,323 expended on major storms

(9) Includes \$983,427 expended on major storms

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D. System reliability indices:

| | | <u>All Causes</u> | | |
|----------------|--------|-------------------|-------|-------|
| 2016 | | SAIDI | SAIFI | CAIDI |
| Actuals | WESTAR | 146.222 | 1.414 | 103.4 |
| (UnNormalized) | KGE | 164.899 | 1.399 | 117.8 |
| Normalized | WESTAR | 116.264 | 1.238 | 93.9 |
| | KGE | 153.425 | 1.335 | 114.9 |

Normalized storms in 2016 were generally in the following areas: Systemwide wind & lightning on May 26, systemwide wind & lightning on June 15, and north areas wind & lightning on July 7.

| | | <u>All Causes</u> | | |
|----------------|--------|-------------------|-------|-------|
| 2015 | | SAIDI | SAIFI | CAIDI |
| Actuals | WESTAR | 224.496 | 1.620 | 138.6 |
| (UnNormalized) | KGE | 242.643 | 1.260 | 192.6 |
| Normalized | WESTAR | 127.809 | 1.354 | 94.4 |
| | KGE | 95.893 | 0.995 | 96.4 |

Normalized storms in 2015 were generally in the following areas: Systemwide extreme wind on April 2-3, systemwide lightning on July 6, north areas microburst wind and lightning on August 8, systemwide icing conditions on Nov.29-30 and Dec.27-28.

| | | <u>All Causes</u> | | |
|----------------|--------|-------------------|-------|-------|
| 2014 | | SAIDI | SAIFI | CAIDI |
| Actuals | WESTAR | 174.603 | 1.665 | 104.8 |
| (UnNormalized) | KGE | 117.082 | 1.291 | 90.7 |
| Normalized | WESTAR | 128.645 | 1.464 | 87.9 |
| | KGE | 110.807 | 1.251 | 88.6 |

Normalized storms in 2014 were generally in the following areas: NE Kansas area extreme wind on June 5, Northern KS area lightning and extreme wind on July 7, and system wide lightning and high winds on Aug. 5

| | | <u>All Causes</u> | | |
|----------------|--------|-------------------|-------|-------|
| 2013 | | SAIDI | SAIFI | CAIDI |
| Actuals | WESTAR | 138.572 | 1.470 | 94.3 |
| (UnNormalized) | KGE | 382.580 | 1.679 | 227.9 |
| Normalized | WESTAR | 101.949 | 1.244 | 82.0 |
| | KGE | 127.558 | 1.248 | 102.2 |

Normalized storms in 2013 were generally in the following areas: System wide Ice and wind on Feb.26, System wide extreme wind on May 18,19 & June 27,28 and KG&E area storms on Jul. 23 and Aug. 5,6

Note: Beginning in 2005, figures do not include incidents or incident steps which are deleted, have zero retail customers, exhibit partial power, or have cause codes of Customer Request, Customer Problem, Non-outage, Safety/Hazard, or Turn-On (Valid). Also excluded are any interruptions that were 5 minutes or less in duration.

Normalization in 2005 and thereafter adheres to the IEEE 1366-2003 statistical and objective methodology which is based upon the daily SAIDI for the entire company.