

KCP&L
2016 Annual Infrastructure Compliance Report
Pursuant to 4 CSR 240-23.020

KCP&L Greater Missouri Operations Company
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Infrastructure Inspection and Maintenance Program

June 30, 2017

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Introduction

Kansas City Power & Light Company (“KCP&L”) and KCP&L Greater Missouri Operations Company (“GMO”) (collectively, “Companies”), submit their 2016 Annual Infrastructure Compliance Reports as required under the State of Missouri’s *Electrical Corporation Infrastructure Standards*, 4 CSR 240-23.020 (“MoIR”). This report covers the period January 1, 2016, through December 31, 2016, incorporating by reference KCP&L and GMO’s infrastructure compliance plans filed July 1, 2008.

Distribution System Summary

KCP&L and GMO are aligned with the Overhead and Underground Infrastructure Inspection schedule set forth in the MoIR. Immediate corrective action is taken when conditions are identified as critical to safety and/or service reliability. Whenever possible, corrective work on non-critical conditions is bundled with future reliability work targeting underperforming feeders and laterals.

In 2016, Intrusive Wood Pole, Overhead Circuit Structure Patrol, Detail & Patrol of Underground Structure and Equipment, and Pad-mounted Equipment Patrol inspections were scheduled in both the KCP&L and GMO areas. Inspections are on schedule to be completed by the end of the cycle.

KCP&L Area Inspections

Intrusive Wood Pole, Overhead Circuit Structure Patrol, Detail & Patrol of Underground Structure and Equipment, and Pad-mounted Equipment Patrol inspections were scheduled for KCP&L's service area in 2016.

KCP&L is currently on schedule for all inspection types with the first 12-year cycle spanning from 2009-2020. The current schedule for inspections are as follows:

- 1) Overhead Patrols (Rural 2015-2020) (Urban 2017-2020)
- 2) Pad-mount Patrols (2015-2018) (cycle 2 finished in 2014)
- 3) Manhole Patrols (2015-2018) (cycle 2 finished in 2014)
- 4) Pad-mount Detailed (2019-2022) (cycle 2 finished in 2014)
- 5) Manhole Detailed (2015-2022) (cycle 1 was 2009-2014)
- 6) Overhead Detailed and Wood Pole Intrusive (2009-2020)

Table 1: KCP&L Inspection Corrective Action Inspections							
KCP&L Distribution				Completed Through December 2016			
System Class	Inspection Type	Facility Type	Units	Inspections Scheduled (Annual Plan)	Inspections Completed	Inspections Completed Prior to 2016 (Ahead of Cycle Plan)	Inspections Pending Outside of Plan
Distribution	Patrol	Overhead Circuits Structures & Equipment ¹	Structures	29,566	29,566	0	0
		Pad-mounted Equipment	Equipment Locations	9,927	9,927	0	0
		Underground Structures and Equipment	Structure Locations	537	537	0	0
	Detail	Overhead Circuits Structures & Equipment	Structures	24,909	24,909	0	0
		Pad-mounted Equipment	Equipment Locations	0	0	0	0
		Underground Structures and Equipment	Structure Locations	537	537	0	0
	Intrusive	Wood Poles	Poles	24,909	24,909	0	0

¹ Inclusive of conductors, transformers, reclosers, regulators, capacitors, switching/protective devices as required under the MoIR.

GMO Area Inspections

Intrusive Wood Pole, Overhead Circuit Structure Patrol, Detail & Patrol of Underground Structure and Equipment, and Pad-mounted Equipment Patrol inspections were scheduled for GMO's service area in 2016.

GMO is currently on schedule for all inspection types with the first 12-year cycle spanning from 2009-2020. The current schedule for inspections are as follows:

- 1) Overhead Patrols (Rural 2015-2020) (Urban 2017-2020)
- 2) Pad-mount Patrols (2015-2018) (cycle 2 finished in 2014)
- 3) Manhole Patrols (2015-2018) (cycle 2 finished in 2014)
- 4) Pad-mount Detailed (2019-2022) (cycle 2 finished in 2014)
- 5) Manhole Detailed (2015-2022) (cycle 1 was 2009-2014)
- 6) Overhead Detailed and Wood Pole Intrusive (2009-2020)

Table 2: GMO Inspection Corrective Action Inspections							
GMO Distribution				Completed Through December 2016			
System Class	Inspection Type	Facility Type	Units	Inspections Scheduled (Annual Plan)	Inspections Completed	Inspections Completed Prior to 2016 (Ahead of Cycle Plan)	Inspections Pending Outside of Plan
Distribution	Patrol	Overhead Circuits, Structures, Equipment and Street Lights ²	Structures	45,729	45,729	0	0
		Pad-Mounted Equipment	Pads	10,254	10,254	0	0
		Underground Structures and Equipment	Structures	163	163	0	0
	Detailed	Overhead Structures, Circuits, Equipment and Street Lights	Structures	36,043	36,043	0	0
		Pad-mount Equipment	Pads	0	0	0	0
		Underground Structures and Equipment	Structures	163	163	0	0
	Intrusive	Wood Poles	Poles	36,043	36,043	0	0

² Inclusive of conductors, transformers, reclosers, regulators, capacitors, switching/protective devices as required under the MoIR.

Distribution Equipment Rating Summary

Table 3: Combined Distribution Equipment Rating Summary						
System Class	Inspection Type	Facility Type	Units	Immediate Repair or Next Day	Bundled for Future Work	Corrective Action Not Required
Distribution	Detail	Overhead Circuits Structures & Equipment	Structures	135 (0.07%)	51,994 (25.74%)	149,864 (74.19%)
		Pad-mounted Equipment	Equipment Locations	0 (0%)	15,244 (100%)	0 (0%)
		Underground Structures and Equipment	Structure Locations	234 (15.32%)	1,142 (74.79%)	151 (9.89%)
	Intrusive	Wood Poles	Poles	121 (5.95%)	1,911 (94.05%)	0 (0%)

Distribution Corrective Action Summary

The number of corrective actions completed as the result of facility inspection concerns or in conjunction with Worst Performing Circuit and Lateral Improvement jobs are included in Table 4. Corrective efforts include infrared inspections of splices, ultrasound detection of insulators, ground wire repairs, varmint guards, riser conduit repairs, arrester replacements, critical pole and cross arm replacements, repair/replace transformers, and reinforce or replace wood poles, etc.

Table 4: Combined Distribution Corrective Action Summary							
System Class	Inspection Type	Facility Type	Component	CA Scheduled in 2016	CA Completed in 2016	CA Planned in 2017	CA Planned after 2017
Distribution	Patrol and Detailed Patrol	Overhead Circuits Structures & Equipment, Street Lights	Structures	6,000	6,991	6,000	7,000
		Pad-mounted Equipment	Pads	350	529	500	600
		Underground Structures and Equipment	Structures	40	3 ³	32	95
	Intrusive	Wood Poles	Poles	300	1,043	1,750	1,750

³ Work has not yet been completed due to the complexity of the remediation necessary. Budgetary funding is being allocated for 2018 and future years. The work identified in 2016 is planned to be completed by 2018 and work identified in 2017 completed by 2019.

Transmission System Summary

All KCP&L and GMO transmission lines are inspected annually by aerial and/or ground patrol, as was the case in the spring of 2016. This schedule is more rigorous than that required under the MoIR. There were 344 combined corrective actions, based on aerial and ground patrols, completed in 2016. There are 25 combined corrective actions scheduled for 2017 completion.

Detailed and intrusive inspections were completed on transmission lines in both KCP&L and GMO service areas in 2016. A total of 4,111 poles were inspected in the combined service areas, of which, 36 were found in need of corrective action. There were 7 combined corrective actions, based on detailed and intrusive inspections, completed in 2016. There are 6 poles scheduled for completion in 2017.

Table 5: KCP&L Transmission Corrective Action and Equipment Conditions

KCP&L Transmission				Completed Through December 2016			
System Class	Inspection Type	Facility Type	Units	Inspections Planned for 2016	Inspections Completed During 2016	Inspections Completed Prior to 2016 (Ahead of Plan)	Inspections Pending in 2016 Outside of Plan
Transmission	Aerial and Ground Patrol	Overhead Circuits Structures & Equipment	Structures	7,316	7,316	0	0
		Underground Structures and Equipment	Structures	34	34	0	0
	Detail and Intrusive	Wood/Steel Poles	Poles	610	1,575	0	0

Table 6: GMO Transmission Corrective Action and Equipment Conditions							
GMO Transmission				Completed Through December 2016			
System Class	Inspection Type	Facility Type	Units	Inspections Planned for 2016	Inspections Completed During 2016	Inspections Completed Prior to 2016 (Ahead of Plan)	Inspections Pending in 2016 Outside of Plan
Transmission	Aerial and Ground Patrol	Overhead Circuits Structures & Equipment	Structures	14,815	14,815	0	0
		Underground Structures and Equipment	Structures	1	1	0	0
	Detail and Intrusive	Wood/Steel Poles	Poles	1,235	2,536	0	0

Table 7: KCP&L Transmission Equipment Condition Rating Summary						
System Class	Inspection Type	Facility Type	Component	Repairs Completed Within 12-Months	Schedule for Repair Within 12 to 36 Months	Corrective Action Not Required
Transmission	Aerial and Ground Patrol	Overhead	Poles, Switches	5 (0.07%)	24 (0.33%)	7,287 (99.6%)
		Underground Structures	Manholes	0 (0.00%)	0 (0.00%)	34 (100%)
	Detail and Intrusive	Poles and Structures - Wood/Steel	Poles	1 (0.06%)	16 (1.02%)	1,558 (98.92%)

Table 8: GMO Transmission Equipment Condition Rating Summary						
System Class	Inspection Type	Facility Type	Component	Repairs Completed Within 12-Months	Schedule for Repair Within 12 to 36 Months	Corrective Action Not Required
Transmission	Aerial and Ground Patrol	Overhead	Poles, Switches.	3 (0.02%)	75 (0.51%)	14,737 (99.47%)
		Underground Structures	Manholes.	0 (0.00%)	0 (0.00%)	1 (100%)
	Detail and Intrusive	Poles and Structures - Wood/Steel	Poles	1 (0.04%)	18 (0.71%)	2517 (99.25%)


Table 9: KCP&L Transmission Corrective Action (CA) Summary							
System Class	Inspection Type	Facility Type	Component	CA Planned in 2016	CA Completed in 2016	CA Planned in 2017	CA Planned after 2017
Transmission	Aerial and Ground Patrol	Overhead Structures & Equipment	Poles, Switches	5	70	8	95
	Aerial and Ground Patrol	Underground Structures and Equipment	Manhole	0	0	0	0
	Detail and Intrusive	Poles and Structures - Wood/Steel	Poles	4	4	3	15

Table 10: GMO Transmission Corrective Action (CA) Summary							
System Class	Inspection Type	Facility Type	Component	CA Planned in 2016	CA Completed in 2016	CA Planned in 2017	CA Planned after 2017
Transmission	Aerial and Ground Patrol	Overhead Structures & Equipment	Poles, Switches	3	274	17	282
	Aerial and Ground Patrol	Underground Structures and Equipment	Manhole	0	0	0	0
	Detail and Intrusive	Poles and Structures - Wood/Steel	Poles	3	3	3	16

VERIFICATION

STATE OF MISSOURI)
) ss.
COUNTY OF JACKSON)

I, Kevin Noblet, being duly affirmed according to law, depose and hereby state that I am authorized to make this affidavit on behalf of Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company, as Vice President, and that the facts above set forth are true and correct to the best of my knowledge, information and belief.



Kevin Noblet
Kansas City Power & Light Company

Subscribed and affirmed before me this 30th day of June, 2017.



NOTARY PUBLIC

My Commission Expires:

4/26/2021

