

KCP&L
2014 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

July 1, 2015

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Introduction

Kansas City Power & Light Company (“KCP&L”) and KCP&L Greater Missouri Operations Company (“GMO”) (collectively, “Companies”), submit their 2014 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, 2014, through December 31, 2014, incorporating by reference KCP&L and GMO’s infrastructure compliance plans filed July 1, 2008.

The real-time monitoring reporting referenced in the July 1, 2014 edition of this report has not yet been implemented. KCP&L and GMO continue to investigate and explore real-time monitoring programs that are self-sustainable in the future.

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.

KCP&L and GMO Patrol inspections scheduled for 2013 were extended into the 2014 plan schedule and completed. In 2014, all KCP&L and GMO streetlights (including wood poles) were inspected concurrently with the Overhead Inspection Program and corrective action was completed as required. This work satisfied the Patrol and Detailed Street Light Inspection requirements.

Additionally in 2014, Intrusive Wood Pole inspections were not scheduled in the KCP&L MO area because the inspection cycle was moved ahead of schedule in 2012. GMO Intrusive Wood Pole inspections were scheduled in 2014. All of the poles identified as “reinforceable rejects” were reinforced in 2014. The replacement of non-reinforceable rejects was completed on pace to keep up with the continuing inspections.

KCP&L Area Inspections

All Overhead Patrol and Overhead Detailed Equipment inspections in the KCP&L service area were completed ahead of the required cycle. KCP&L began the second 4-year patrol cycle in 2013 as set forth in the MoIR. KCP&L's second 8-year detailed inspection cycle for Below Grade Manholes and Vaults will begin in 2015. There were no Intrusive Wood Pole inspections scheduled for KCP&L's service areas in 2014; the increased amount of inspections completed in 2009 and 2011 placed KCP&L ahead of schedule to achieve the 12-year cycle set forth in the MoIR.

In 2013, KCP&L Overhead Patrol inspections were extended into 2014. A schedule change required additional Overhead Patrol inspections and was completed in 2014.

Table 1: KCP&L Inspection Corrective Action Inspections							
KCP&L MO Distribution				Completed Through December 2014			
System Class	Inspection Type	Facility Type	Units	Inspections Scheduled (Annual Plan)	Inspections Completed	Inspections Completed Prior to 2014 (Ahead of Cycle Plan)	Inspections Pending Outside of Plan
Distribution	Patrol	Overhead Circuits Structures & Equipment ¹	Structures	54,114 ²	54,114	0	0
		Pad-mounted Equipment	Equipment Locations	0	0	0	0
		Underground Structures and Equipment	Structure Locations	0	0	0	0
	Detail	Overhead Circuits Structures & Equipment	Structures	0	0	0	0
		Pad-mounted Equipment	Equipment Locations	0	0	0	0
		Underground Structures and Equipment	Structure Locations	0	0	0	0
	Intrusive	Wood Poles	Poles	0	0	0	0

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

² Error discovered in the Overhead Patrol Plan schedule for 2013 that required KCP&L to extend additional inspections into the 2014 Patrol Plan Inspection Schedule. Those Overhead Patrol inspections were completed in 2014.

GMO Area Inspections

All Overhead Patrol and Overhead Detailed Equipment inspections in the GMO service area were completed ahead of the required cycle³. In 2014, GMO started the 2nd 4-year patrol cycle. The 8-year detailed cycle requirements for the Below Grade Manholes and Vault Inspections were not scheduled in 2014; a schedule change was put in place to begin in 2015. Future inspections will be aligned with the MoIR schedule. There were intrusive wood pole inspections scheduled for GMO areas in 2014. All of the poles identified as “reinforceable rejects” were reinforced in 2014. The replacement of non-reinforceable rejects were completed on pace to keep up with the continuing inspections.

Table 2: GMO Inspection Corrective Action Inspections

GMO Distribution					Completed Through December 2014		
System Class	Inspection Type	Facility Type	Units	Inspections Scheduled (Annual Plan)	Inspections Completed	Inspections Completed Prior to 2014 (Ahead of Cycle Plan)	Inspections Pending Outside of Plan
Distribution	Patrol	Overhead Circuits, Structures, Equipment and Street Lights ⁴	Structures	65,929 ⁵	65,929	0	0
		Pad Mounted Equipment	Pads	0	0	0	0
		Underground Structures and Equipment	Structures	0	0	0	0
	Detailed	Overhead Structures, Circuits, Equipment and Street Lights	Structures	0	0	0	0
		Padmount Equipment	Pads	0	0	0	0
		Underground Structures and Equipment	Structures	0		0	0
	Intrusive	Wood Poles	Poles	22,060	22,060	0	0

³ Error discovered in the Overhead Patrol Plan schedule for 2013 that required GMO to extend additional inspections into the 2014 Patrol Plan Inspection Schedule. Those Overhead Patrol inspections were completed in 2014.

⁴ Inclusive of conductors, transformers, reclosers, regulators, capacitors, switching/protective devices as required under the MoIR.

⁵ Error discovered in the Overhead Patrol Plan schedule for 2013 that required GMO to extend additional inspections into the 2014 Patrol Plan Inspection Schedule. Those Overhead Patrol inspections were completed in 2014.

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	0 (0.00%)	37,229 (24.77%)	113,093 (75.23%)
		Pad-mounted Equipment	Equipment Locations	0 (0.00%)	13,735 (46.96%)	15,513 (53.04%)
		Underground Structures and Equipment	Structure Locations	0 (0.00%)	85 (97.70%)	2 (2.30%)
	Intrusive	Wood Poles	Poles	0 (0.00%)	279 (100.00%)	(0.00%)

Distribution Corrective Action Summary

The number of corrective actions completed on Worst Performing Circuits and Lateral Improvements are inclusive of corrective efforts such as: infrared inspections of splices, ultrasound detection of insulators, ground wire repairs, riser conduit repairs, arrester replacements, and, additionally, critical pole and cross arm replacements.

Table 4: Combined Distribution Corrective Action Summary

System Class	Inspection Type	Facility Type	Component	CA Scheduled in 2014	CA Completed in 2014	CA Planned in 2015	CA Planned after 2015 ⁶
Distribution	Patrol and Detailed Patrol	Overhead Circuits Structures & Equipment, Street Lights	Structures	6,000	7,751	6,000	7,000
		Pad-mounted Equipment	Pads	350	342 ⁷	350	400
		Underground Structures and Equipment	Structures	80	107	40	85
	Intrusive	Wood Poles	Poles	950	279 ⁸	300	950

⁶ CA Planned after 2015 reflects the number of Corrective Actions planned on an annual basis through 2020 and variances from 2014.

⁷ Work not completed due to scheduling issues expected to be completed by the end of the cycle, which is 2020.

⁸ Work not completed due to scheduling issues expected to be completed by the end of the cycle, which is 2020.

Transmission System Summary

All KCP&L and GMO transmission lines are inspected annually by aerial and ground patrol, as was the case in spring 2014. This schedule is more rigorous than that required under the MoIR. There were 242 combined corrective actions, based on patrols, completed in 2014. There are 64 combined corrective actions scheduled for 2015 completion.

Detailed and intrusive inspections were completed on transmission lines in both KCP&L and GMO service areas. In 2014, 4,632 combined poles were inspected, of which, 44 were found in need of corrective action. There were 82 poles in need of corrective action scheduled for completion in 2014, including 24 that rolled over from 2013; 68 of these structures were completed. The remaining 14 structures are scheduled for completion in 2015.

Table 5: KCP&L Transmission Corrective Action and Equipment Conditions							
KCP&L Transmission				Completed Through December 2014			
System Class	Inspection Type	Facility Type	Units	Inspections Planned for 2014	Inspections Completed During 2014	Inspections Completed Prior to 2014 (Ahead of Plan)	Inspections Pending in 2014 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	1,648	0	0

Aerial patrols of the transmission system are completed annually.

Table 6: GMO Transmission Corrective Action and Equipment Conditions							
GMO Transmission				Completed Through December 2014			
System Class	Inspection Type	Facility Type	Units	Inspections Planned for 2014	Inspections Completed During 2014	Inspections Completed Prior to 2014 (Ahead of Plan)	Inspections Pending in 2014 Outside of Plan
Transmission	Aerial and Ground Patrol	Overhead Circuits Structures & Equipment	Structures	14,789	14,789	0	0
		Underground Structures and Equipment	Structures	1	1	0	0
	Detail and Intrusive	Wood/Steel Poles	Poles	1,233	2,984	0	0

Aerial and ground patrols of the transmission system are completed annually

Transmission Equipment Rating Summary

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.	20 (0.27%)	34 (0.47%)	7,262 (99.26%)
		Underground Structures	Manholes.	0 (0.00%)	0 (0.00%)	34 (100%)
Transmission	Detail and Intrusive	Poles and Structures - Wood/Steel	Poles	0 (0.00%)	18 (1.09%)	1630 (98.91%)

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.	28 (0.19%)	66 (0.45%)	14,695 (99.36%)
		Underground Structures	Manholes.	0 (0.00%)	0 (0.00%)	1 (100%)
Transmission	Detail and Intrusive	Poles and Structures - Wood/Steel	Poles	0 (0.00%)	26 (0.87%)	2958 (99.13%)

Transmission Corrective Action Summary

Table 9: KCP&L Transmission Corrective Action (CA) Summary							
System Class	Inspection Type	Facility Type	Component	CA Planned in 2014	CA Completed in 2014	CA Planned in 2015	CA Planned after 2015
Transmission	Aerial and Ground Patrol	Overhead Structures & Equipment	Poles, Switches	20	94	15	192
Transmission	Aerial and Ground Patrol	Underground Structures and Equipment	Manhole	0	0	0	0
Transmission	Detail and Intrusive	Poles and Structures - Wood/Steel	Poles	47	36	11	19

Table 10: GMO Transmission Corrective Action (CA) Summary							
System Class	Inspection Type	Facility Type	Component	CA Planned in 2014	CA Completed in 2014	CA Planned in 2015	CA Planned after 2015
Transmission	Aerial and Ground Patrol	Overhead Structures & Equipment	Poles, Switches	28	148	49	477
Transmission	Aerial and Ground Patrol	Underground Structures and Equipment	Manhole	0	0	0	0
Transmission	Detail and Intrusive	Poles and Structures - Wood/Steel	Poles (treated or replaced)	35	32	3	14

VERIFICATION

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