

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

In the Matter of Union Electric Company d/b/a	)	
Ameren Missouri's 2018 Infrastructure	)	Case No. EO-2019-_____
Inspection Annual Report.	)	

**UNION ELECTRIC COMPANY d/b/a  
AMEREN MISSOURI'S 2018 INFRASTRUCTURE  
INSPECTION ANNUAL REPORT**

**COMES NOW**, Union Electric Company, d/b/a Ameren Missouri, and in compliance with 4 CSR 240-23.020(3)(C) submits the attached report.

Respectfully submitted,

**UNION ELECTRIC COMPANY,  
d/b/a AMEREN MISSOURI**

/s/ Wendy K. Tatro

**Wendy K. Tatro**, # 60261  
Director and Assistant General Counsel  
1901 Chouteau Avenue  
St. Louis, Missouri 63103  
(314) 554-3484 (Telephone)  
(314) 554-4014 (Facsimile)  
[AmerenMOService@ameren.com](mailto:AmerenMOService@ameren.com)

Dated: June 28, 2019

## **CERTIFICATE OF SERVICE**

I hereby certify that copies of the foregoing have been electronically mailed to all counsel of record this 28<sup>th</sup> day of June, 2019.

General Counsel Office  
Missouri Public Service Commission  
200 Madison Street, Suite 800  
P.O. Box 360  
Jefferson City, MO 65102  
[staffcounsel@psc.mo.gov](mailto:staffcounsel@psc.mo.gov)

Office Of the Public Counsel  
200 Madison Street, Suite 650  
P.O. Box 2230  
Jefferson City, MO 65102-2230  
[opcservice@ded.mo.gov](mailto:opcservice@ded.mo.gov)

*/s/ Wendy K. Tatro*

Wendy K. Tatro



## Ameren Missouri 4 CSR 240-23.020 Electrical Corporation Infrastructure Standards Annual Inspection Report for Calendar Year 2018

### Introduction

This document is Union Electric (dba Ameren Missouri) Company's annual report detailing its compliance with Missouri Public Service Commission Rule 4 CSR 240-23.020, Electrical Corporation Infrastructure Standards (referred to in the remainder of this document as "the Rule"). This annual report is required by Section (3) (C) of the Rule which states, *"Each electrical corporation subject to this rule shall file...an annual report detailing its compliance with this rule during the prior calendar year...."* This report details the results of the infrastructure inspections conducted in calendar year 2018.

### Definitions

For the purposes of this report, the following definitions shall apply:

1. Patrol – A simple visual inspection, of applicable electrical corporation equipment and structures, which is designed to identify obvious structural problems and hazards. Patrols may be carried out in the course of other electrical corporation business.
2. Visual Inspection – A careful visual examination of equipment and structures designed to identify structural problems, hazards, and defective or improperly operating equipment. Equivalent to "Detailed Inspection" as defined in Section (2) (B) of the Rule.
3. Ground Line Inspection – A complete intrusive inspection of overhead poles whereby the pole is excavated to a depth of 18 to 24 inches, tested for internal and external decay, treated with a preservative, and then backfilled. Equivalent to "Intrusive Inspection" as defined in Section (2) (C) of the Rule.
4. Overhead Equipment – Equipment used in the operation of the transmission and distribution system mounted on overhead poles including, but not limited to, conductors, transformers, fuses, switches, insulators, and lightning arresters.
5. Underground Pad-Mounted Equipment – Underground Residential Distribution (URD) system equipment including single phase and three phase pad-mounted transformers, pad-mounted switchgear, junction boxes, non-traffic rated vaults, and pedestals. Equivalent to "Underground-direct buried and conduit" and the equipment noted under Note 3 on the table entitled, "Electrical Corporation System Inspection Cycles (Maximum Intervals in Years)" included with the Rule.
6. Transmission System – That portion of the Ameren Missouri system operated at voltages of 100 kilovolts (kV) and above.
7. Distribution System – That portion of the Ameren Missouri system operated at voltages below 100kV.
8. Streetlights – Automatically controlled lighting for lighting of streets, alleys, walkways, and other thoroughfares open to and reserved for general public use when such lighting facilities are operated and maintained as an extension of Ameren Missouri's distribution system as described in Service Classification 5(M). This definition does not apply to lighting installed on public or private premises for the purpose of providing area or security lighting (i.e., "dusk-to-dawn" lights), customer-owned street and outdoor lighting as described in Service Classification 6(M), and incandescent municipal streetlighting or private streetlighting described under Service Classifications 7(M) and 8(M).



## Transmission System Inspections

Ameren Missouri conducted inspections on its Transmission System during calendar year 2018 as required by Missouri Public Service Commission Rule 4 CSR 240-23.020, Electrical Corporation Infrastructure Standards. The inspections conducted, as well as the deficiencies discovered and repaired as a result of these inspections, are described below.

### Transmission Circuits Inspected in 2018:

Inspection Type	Inspections Scheduled	Inspections Completed	Inspections Not Completed
"Patrol"	140	140	0
"Detailed"	14	14	0
Ground Line	11	11	0

The results of the lines inspected are summarized as follows:

### Results of Inspections

Component	Number Inspected	Number Requiring Repairs	%
Wood Poles	1,925	105	5.45%
Wood Structures	14,645	252	1.72%
Non-Wood Structures	5,637	3	0.05%
Conductors*	20,282	4	0.019%
Insulators*	20,282	8	0.039%

\*Note: Because Ameren Missouri's Transmission System Inspection Program is carried out on a per line basis and only those components which required repair are recorded, the number of individual conductors and insulators inspected is not recorded. The number of wood structures (which includes poles) and non-wood structures inspected will be used as the reference for the percentage of equipment requiring corrective action in this annual report.



The numbers of components requiring repairs in the period are summarized below:

Component	Number Requiring Repairs in the Period	Number of Repairs Completed in the Period	%	Number of Repairs Not Completed in the Period	%
Wood Poles	0	0	100.0%	0	0.0%
Wood Structures	8	35	100.0%	0	0.0%
Non-Wood Structures	1	1	100.0%	0	0.0%
Conductors*	0	1	100.0%	0	0.0%
Insulators*	0	0	100.0%	0	0.0%

The following equipment was scheduled for repairs outside the reporting period:

Component	Total Number Requiring Repairs Outside the Reporting Period	Number of Open Repairs Outside the Reporting Period	Corrective Action Scheduled Complete			Percent of Equipment in Need of Corrective Action, but with a Scheduled Date Beyond the Reporting Period
			2019	2020	Later	
Wood Poles*	105	105	15	12	78	100%
Wood Structures*	244	217	63	45	109	88.9%
Non-Wood Structures*	2	2	0	1	1	100%
Conductors*	4	3	0	1	2	75%
Insulators*	8	8	1	1	6	100%



## Distribution System Inspections

Ameren Missouri conducted inspections on its Distribution System during calendar year 2018 as required by Missouri Public Service Commission Rule 4 CSR 240-23.020, Electrical Corporation Infrastructure Standards. The inspections conducted, as well as the deficiencies discovered and repaired as a result of these inspections, are described below.

### Distribution Circuits and Components Inspected in 2018

Inspection	Inspection Units	Inspections Scheduled	Inspections Completed	Inspections Not Completed
Overhead Visual *	Circuit	349	349	0
Overhead Ground Line *	Circuit	174	174	0
Capacitors	Equipment	1277	1277	0
Voltage Regulators	Equipment	569	569	0
Underground Patrol #	Circuit	224	224	0
Underground Detailed #	Circuit	223	223	0
Network Vaults	Equipment	119	119	0
Manholes	Equipment	1537	1534	3
Other Underground Structures **	Equipment	99	99	0

The three manholes were not inspected due to flood conditions.

\*Note: Streetlight inspections were performed in conjunction with Overhead Visual and Ground Line inspections, as well as the Underground Patrol and Detailed inspections.

\*\*Note: Other Underground Structures include Indoor Rooms and Manhole Transformers.

#Note: During the Underground Patrol and Detailed circuit inspections, Ameren Missouri inspectors encountered various obstructions that prevented inspection of some individual pieces of equipment such as pad-mounted transformers. The obstructions encountered were customer facilities such as fences or landscaping in close proximity to equipment, thereby preventing its full inspection. Many of these situations require negotiations with customers to determine the best remedy for the customer and Ameren Missouri. Ameren Missouri has resolved most of the issues and continues to work with customers to resolve the remaining obstructions in order to complete the inspections of the equipment.



The results of the inspections are summarized as follows:

### Results of Inspections

Component	Number Inspected	Number Requiring Repairs	Percentage
Poles/Towers*	160,565	6,324	3.9%
Anchors*	160,565	39	0.0%
Conductors*	160,565	335	0.2%
Crossarm Braces*	160,565	698	0.4%
Crossarms*	160,565	1,563	1.0%
Fuses*	160,565	30	0.0%
Grounding*	160,565	3,138	2.0%
Guy Wires*	160,565	4,123	2.6%
Insulators*	160,565	1,328	0.8%
Lightning Arresters*	160,565	409	0.3%
Minor Hardware *#	160,565	5,980	3.7%
Overhead Transformers*	160,565	2,031	1.3%
Reclosers*	160,565	3	0.0%
Sectionalizers*	160,565	1	0.0%
Switches*	160,565	3	0.0%
Capacitors*	1,277	246	19.3%
Voltage Regulators	569	48	8.4%
UG Pad-Mounted Equipment**	41,012	3,410	8.3%
Network Vaults	119	19	16.0%
Manholes*	1,534	164	10.7%
Other Underground Structures***	99	17	17.2%
Streetlights	40,332	2,121	5.3%

\*Note: Because Ameren Missouri's Distribution System Circuit Inspection and Ground Line Inspection programs were performed on a per circuit basis and only those components which required repair were recorded, the numbers of these individual devices inspected were not recorded. For these components, the number of poles where problems were identified divided by the number of poles inspected was used as the reference for the percentage of equipment requiring corrective action. Where the actual number of components inspected, such as voltage regulators and capacitors could be ascertained, these numbers were used to calculate the percentage of equipment requiring corrective action.

#Note: Minor Hardware includes risers, pins, jumpers, connectors, splices, terminations, and spacer cable brackets.

\*\*Note: Underground Pad-Mounted Equipment includes pad-mounted transformers, switchgear, junction boxes, non-traffic rated vaults, and pedestals.

\*\*\*Note: Other Underground Structures includes indoor rooms and manhole transformers.



The numbers of components requiring repairs in the period are summarized below:

Component	Number of Repairs Scheduled in the Period	Number of Repairs Completed in the Period	% Repairs Completed in Period	Number of Repairs Not Completed in the Period	% Repairs Not Completed in Period
Poles/Towers*	573	573	100.0%	0	0.0%
Anchors*	0	0	0.0%	0	0.0%
Conductors*	20	20	100.0%	0	0.0%
Crossarm Braces*	18	18	100.0%	0	0.0%
Crossarms*	41	41	100.0%	0	0.0%
Fuses*	0	0	0.0%	0	0.0%
Grounding*	152	152	100.0%	0	0.0%
Guy Wires*	213	213	100.0%	0	0.0%
Insulators*	53	53	100.0%	0	0.0%
Lightning Arresters*	10	10	100.0%	0	0.0%
Minor Hardware*#	285	285	100.0%	0	0.0%
Overhead Transformers*	77	77	100.0%	0	0.0%
Reclosers*	1	1	100.0%	0	0.0%
Sectionalizers*	0	0	0.0%	0	0.0%
Switches*	0	0	0.0%	0	0.0%
Capacitors*	112	112	100.0%	0	0.0%
Voltage Regulators	29	29	100.0%	0	0.0%
UG Pad-Mounted Equipment**	1114	1114	100.0%	0	0.0%
Network Vaults	21	19	90.5%	2	9.5%
Manholes*	105	76	72.4%	29	27.6%
Other Underground Structures***	0	0	0.0%	0	0.0%
Streetlights	706	706	100.0%	0	0.0%





The following equipment was scheduled for repairs outside the reporting period:

Component	Total Number Requiring Repairs Outside the Reporting Period (Completed or Scheduled)	Number of Open Repairs Outside the Reporting Period	Corrective Action Scheduled in 2018	Corrective Action Scheduled in 2019	Corrective Action Scheduled Later	Percent of Equipment in Need of Corrective Action but with a Scheduled Date Beyond the Reporting Period
Poles/Towers*	5751	4402	0	4373	29	69.6%
Anchors*	39	30	0	30	0	76.9%
Conductors*	315	205	0	205	0	61.2%
Crossarm Braces*	680	490	0	490	0	70.2%
Crossarms*	1522	1089	0	1089	0	69.7%
Fuses*	30	20	0	20	0	66.7%
Grounding*	2986	2059	0	2059	0	65.6%
Guy Wires*	3910	2585	0	2585	0	62.7%
Insulators*	1275	874	0	874	0	65.8%
Lightning Arresters*	399	269	0	269	0	65.8%
Minor Hardware *#	5695	3962	0	3962	0	66.3%
Overhead Transformers*	1954	1336	0	1336	0	65.8%
Reclosers*	2	1	0	1	0	33.3%
Sectionalizers*	1	1	0	1	0	100.0%
Switches*	3	2	0	2	0	66.7%
Capacitors*	134	71	0	71	0	28.9%
Voltage Regulators	18	10	1	10	0	20.8%
UG Pad-Mounted Equipment**	2292	607	4	607	0	17.8%
Network Vaults	21	19	21	0	19	100.0%
Manholes*	193	164	105	0	164	100.0%
Other Underground Structures***	17	17	0	0	17	100.0%
Streetlights	1414	1150	1	1150	0	54.2%

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Case No. EO-2019-\_\_\_\_\_

**AFFIDAVIT OF MARK C. BIRK**

STATE OF MISSOURI     )  
   ) ss  
CITY OF ST. LOUIS     )

Mark C. Birk, being first duly sworn on his oath, states:

1.     My name is Mark C. Birk. I work in the City of St. Louis, Missouri, and I am employed by Union Electric Company d/b/a Ameren Missouri as Senior Vice President, Customer and Power Operations.

2.     I hereby swear and affirm that I am the individual who sponsors the attached report filed in accordance with 4 CSR 240-23.020; that said report was prepared under my direction and supervision; that if inquiries are made as to the facts, I would respond as therein set forth; and that the aforesaid is true and correct to the best of my knowledge, information, and belief.

  
\_\_\_\_\_  
Mark C. Birk

Subscribed and sworn to before me this 27<sup>th</sup> day of June, 2019.

  
\_\_\_\_\_  
Notary Public

My commission expires:

