BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's 2017 Infrastructure Inspection Annual Report.	)))	Case No. EO-2018-_____

UNION ELECTRIC COMPANY d/b/a
AMEREN MISSOURI'S 2017 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
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Dated: June 29, 2018

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been electronically mailed to all counsel of record this 29th day of June, 2018.

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/s/ Wendy K. Tatro
Wendy K. Tatro

Ameren Missouri 4 CSR 240-23.020 Electrical Corporation Infrastructure Standards Annual Inspection Report for Calendar Year 2017

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 2017.

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).

Ameren MISSOURI

Transmission System Inspections

Ameren Missouri conducted inspections on its Transmission System during calendar year 2017 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 201617:

Inspection Type	Inspections Scheduled	Inspections Completed	Inspections Not Completed
"Patrol"	140	140	0
"Detailed"	8	8	0
Ground Line	8	8	0

The results of the lines inspected are summarized as follows:

Results of Inspections

Component	Number Inspected	Number Requiring Repairs	%
Wood Poles	2191	76	3.47%
Wood Structures	14,645	226	1.543%
Non-Wood Structures	5,637	6	0.106%
Conductors*	20,282	20	0.0009%
Insulators*	20,282	1	0.0000%

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	2	2	100.0%	0	0.0%
Wood Structures	0	6	100.0%	0	0.0%
Non-Wood Structures	1	1	100.0%	0	0.0%
Conductors*	0	0	100.0%	0	0.0%
Insulators*	0	0	100.0%	0	0.0%

*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 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
			2018	2019	Later	
Wood Poles*	74	74	25	20	29	100%
Wood Structures*	226	220	60	60	100	97.3%
Non-Wood Structures*	5	5	0	0	5	100%
Conductors*	20	20	5	10	5	100%
Insulators*	1	1	0	0	1	100%

Distribution System Inspections

Ameren Missouri conducted inspections on its Distribution System during calendar year 2017 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 2017

Inspection	Inspection Units	Inspections Scheduled	Inspections Completed	Inspections Not Completed
Overhead Visual	Circuit	383	383	0
Overhead Ground Line	Circuit	216	216	0
Capacitors	Equipment	2611	2611	0
Voltage Regulators	Equipment	562	562	0
Underground Patrol	Circuit	298	298	0
Underground Detailed	Circuit	303	303	0
Network Vaults	Equipment	110	110	0
Manholes	Equipment	1657	1654	3
Other Underground Structures	Equipment	77	77	0

Three manholes were not inspected because they could not initially be located due to over-paving or other issues. Two are in downtown St. Louis and one is in St. Louis County. The Company will continue to attempt to locate them and have them inspected in 2018.

*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*	166,281	5,374	3.2%
Anchors*	166,281	26	0.0%
Conductors*	166,281	345	0.2%
Crossarm Braces*	166,281	731	0.4%
Crossarms*	166,281	1,354	0.8%
Fuses*	166,281	46	0.0%
Grounding*	166,281	4,216	2.5%
Guy Wires*	166,281	5,611	3.4%
Insulators*	166,281	1,381	0.8%
Lightning Arresters*	166,281	410	0.2%
Minor Hardware*#	166,281	6,666	4.0%
Overhead Transformers*	166,281	3,312	2.0%
Reclosers*	166,281	4	0.0%
Sectionalizers*	166,281	3	0.0%
Switches	166,281	7	0.0%
Capacitors*	2,611	400	15.3%
Voltage Regulators	562	68	12.1%
UG Pad-Mounted Equipment**	39,475	2,432	6.2%
Network Vaults	110	36	32.7%
Manholes*	1,654	111	6.7%
Other Underground Structures***	77	5	6.5%
Streetlights	51,969	2,029	3.9%

*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	%	Number of Repairs Not Completed in the Period	%
Poles/Towers*	230	230	100.0%	0	0.0%
Anchors*	0	0	0.0%	0	0.0%
Conductors*	15	15	100.0%	0	0.0%
Crossarm Braces*	11	11	100.0%	0	0.0%
Crossarms*	8	8	100.0%	0	0.0%
Fuses*	0	0	0.0%	0	0.0%
Grounding*	185	185	100.0%	0	0.0%
Guy Wires*	115	115	100.0%	0	0.0%
Insulators*	35	35	100.0%	0	0.0%
Lightning Arresters*	10	10	100.0%	0	0.0%
Minor Hardware*#	138	138	100.0%	0	0.0%
Overhead Transformers*	174	174	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*	175	175	100.0%	0	0.0%
Voltage Regulators	45	45	100.0%	0	0.0%
UG Pad-Mounted Equipment**	742	742	100.0%	0	0.0%
Network Vaults	1	1	100.0%	0	0.0%
Manholes*	4	4	100.0%	0	0.0%
Other Underground Structures***	0	0	0.0%	0	0.0%
Streetlights	1065	1065	100.0%	0	0.0%

All equipment repairs required in the reporting period were completed in the period.

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 To Be Completed			Percent of Equipment in Need of Corrective Action, but with a Scheduled Date Beyond the Reporting Period
			2017	2018	Later	
Poles/Towers*	5144	3407	0	3407	0	63.4%
Anchors*	26	15	0	15	0	57.7%
Conductors*	330	173	0	173	0	50.1%
Crossarm Braces*	720	367	0	367	0	50.2%
Crossarms*	1346	629	0	629	0	46.5%
Fuses*	46	19	0	19	0	41.3%
Grounding*	4031	2119	0	2119	0	50.3%
Guy Wires*	5496	3285	0	3285	0	58.5%
Insulators*	1346	699	0	699	0	50.6%
Lightning Arresters*	400	252	0	252	0	61.5%
Minor Hardware*#	6528	2974	0	2974	0	44.6%
Overhead Transformers*	3138	1504	0	1504	0	45.4%
Reclosers*	3	2	0	2	0	50.0%
Sectionalizers*	3	0	0	0	0	0.0%
Switches	7	5	0	5	0	71.4%
Capacitors*	225	124	0	124	0	31.0%
Voltage Regulators	22	17	1	13	4	25.0%
UG Pad-Mounted Equipment**	1673	856	17	856	0	35.2%
Network Vaults	35	35	1	4	31	97.2%
Manholes*	107	107	4	0	107	96.4%
Other Underground Structures***	5	5	0	0	5	100.0%
Streetlights	963	939	1	939	0	46.3%

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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 29th day of June, 2018.

Mary Price
Notary Public

My commission expires: 5-1-2022

Mary Price
Notary Public - Notary Seal, State of Missouri - St. Louis County
Commission #14397820
My Commission Expires 5/1/2022