



AmerenUE 4 CSR 240-23.020 Electrical Corporation Infrastructure Standards Annual Inspection Report

Introduction

This document is Union Electric Company d/b/a AmerenUE'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 2008.

Definitions

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

1. 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.
2. 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.
3. 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.
4. 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.
5. Transmission System – That portion of the AmerenUE system operated at voltages of 100 kilovolts (kV) and above.
6. Distribution System – That portion of the AmerenUE system operated at voltages below 100kV.
7. 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 AmerenUE'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

AmerenUE conducted inspections on its Transmission System during calendar year 2008 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.

AmerenUE conducted Patrol Inspections on the entire transmission system in 2008. These inspections included wood and non-wood poles and associated overhead equipment such as insulators and conductors.

AmerenUE did not conduct Detailed Inspections on any transmission circuits in 2008 as no Detailed Inspections were scheduled in 2008.

AmerenUE conducted Ground Line Inspections on four transmission circuits in 2008 in accordance with the Compliance Plan submitted in July 2008.

The results of these inspections are summarized in the following tables.

Transmission Circuits Inspected in 2008:

Inspection Type	Inspections Scheduled	Inspections Completed	Inspections Not Completed
“Patrol”	67	67	None
“Detailed”	None	None	None
Ground Line	4	4	None

The results of the lines inspected are summarized as follows:

Results of Inspections

Component	Number Inspected	Number Requiring Repairs	%
Wood Poles	2345	27	1.2
Wood Structures	14621	78	0.5
Non-Wood Structures	7842	0	0.0
Conductors*	24808	0	0.0
Insulators*	24808	0	0.0



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	12	12	100	0	0.0
Wood Structures	10	8	80	2	20
Non-Wood Structures	0	0	0.0	0	0.0
Conductors*	0	0	0.0	0	0.0
Insulators*	0	0	0.0	0	0.0

*Note: Because AmerenUE'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 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 not repaired as scheduled:

Circuit	Component	Component Number	Reason Repairs Not Completed	Date Repairs Will be Completed
Gasco – Osage 2	Wood Structure	1162A	Ground too wet to access	10/1/09
Labadie – Montgomery 4	Wood Structure	111	Repair overlooked	7/1/09



The following equipment requires repairs, but was not scheduled for repairs during the reporting period:

Component	Total Number Requiring Repairs Outside the Reporting Period	Number of Open Repairs Outside the Reporting Period	Corrective Action Scheduled Complete						%
			1Q09	2Q09	3Q09	4Q09	1Q10	2Q10	
Wood Poles	15	15	0	0	0	3	12	0	100
Wood Structures	68	68	13	40	0	15	0	0	100
Non-Wood Structures	0	0	0	0	0	0	0	0	0.0
Conductors	0	0	0	0	0	0	0	0	0.0
Insulators	0	0	0	0	0	0	0	0	0.0

Distribution System Inspections

AmerenUE conducted inspections on its Distribution System during calendar year 2008 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.

AmerenUE conducted Visual Inspections on 446 circuits in 2008.

AmerenUE conducted Ground Line Inspections on 205 circuits in 2008.

AmerenUE inspected 2023 reclosers, 74 sectionalizers, 456 voltage regulators, and 5010 capacitors in 2008.

The Underground Pad-Mounted Equipment Patrol Inspection Program, the Underground Pad-Mounted Equipment Detailed Inspection Program, the Underground Network Inspection Program, and the Streetlight Inspection Program were under development in 2008 and not implemented until 2009. Therefore, no inspection or repair data for these programs and components is included in this report.



The following distribution circuits and components were inspected in calendar year 2008:

Distribution Circuits and Components Inspected in 2008

Inspection Type	Inspections Scheduled	Inspections Completed	Inspections Not Completed
Overhead Visual	453	446	7
Overhead Ground Line	205	205	0
Capacitors	5014	5010	4
Reclosers	2041	2023	18
Sectionalizers	75	74	1
Voltage Regulators	465	456	9

The following inspections were scheduled to be completed in 2008 but were not:

Inspections Scheduled But Not Completed in 2008

Operating Center	Inspection Type	Circuit Number	Component Number	Reason Inspection Not Completed	Date Inspection Will Be Completed
Missouri Valley	Visual/Audit	852051	N/A	Circuit was inadvertently assigned to the wrong division and subsequently missed in the inspection schedule.	7/31/09
Missouri Valley	Visual/Audit	959041	N/A	Inspection contractor mistakenly thought the entire circuit had been inspected in 2007.	7/17/09
SEMO	Device	776056	5G06594010		Completed 3/10/09
SEMO	Device	475051	2909014709		Completed 1/19/09
SEMO	Device	484054	2921249355		Completed 1/14/09
SEMO	Device	484054	2921250326		Completed 1/14/09
SEMO	Device	484054	2922222043		Completed 1/14/09
SEMO	Device	484054	2922244802		Completed 1/14/09

SEMO	Device	484054	2923205289		Completed 1/14/09
SEMO	Device	475052	2916897449		Completed 1/19/09
SEMO	Device	451054	2998995764		Completed 1/19/09
Central Ozarks	Visual/Audit	055088	N/A	Inspection contractor mistakenly thought the entire circuit had been inspected in 2007.	7/10/09
Central Ozarks	Visual/Audit	943042	N/A	Inspection contractor mistakenly thought the entire circuit had been inspected in 2007.	7/10/09
Boone Trails	Visual/Audit	624043	N/A	Inspection contractor mistakenly thought the entire circuit had been inspected in 2007.	10/31/09
Boone Trails	Device	624073	6W54900034	System error prevented the release of the inspection order.	12/31/09
Boone Trails	Device	650051	6W67085407	Circuit reconfiguration caused a system error which prevented the release of the inspection order.	12/31/09
Boone Trails	Device	650051	6W68038504	Circuit reconfiguration caused a system error which prevented the release of the inspection order.	12/31/09
Boone Trails	Device	650051	6W69022396	Circuit reconfiguration caused a system error which prevented the release of the inspection order.	12/31/09
Boone Trails	Device	650051	6W69030500	Circuit reconfiguration caused a system error which prevented the release of the inspection order.	12/31/09
Boone Trails	Device	566051	2594357113		Completed 1/23/09

Boone Trails	Device	566051	2594358805		Completed 3/25/09
Archview	Device	142006	SL87035196	System error prevented the release of the inspection order.	12/31/09
Archview	Device	142006	SL87036368	System error prevented the release of the inspection order.	12/31/09
Archview	Device	142006	SL87041726	System error prevented the release of the inspection order.	12/31/09
Gateway	Visual/Audit	045079	N/A	Inspection contractor mistakenly thought the entire circuit had been inspected in 2007.	9/12/09
Gateway	Visual/Audit	077081	N/A	Inspection contractor mistakenly thought the entire circuit had been inspected in 2007.	9/12/09
Gateway	Device	256054	SL62151344		Completed 1/7/09
Gateway	Device	318051	SL62973360		Completed 1/7/09
Gateway	Device	256051	SL65154856		Completed 1/7/09
Gateway	Device	147052	SL66094159		Completed 1/8/09
Gateway	Device	147052	SL66094455		Completed 1/8/09
Gateway	Device	147052	SL67094458		Completed 1/8/09
Gateway	Device	147052	SL67095051		Completed 1/8/09
Gateway	Device	264053	SL69100810		Completed 1/8/09
Gateway	Device	134051	SL77256360		Completed 1/7/09
Gateway	Device	123057	SL65963488		Completed 1/7/09
Twin Rivers	Device	169055	SL28938696		Completed 1/7/09
Twin Rivers	Device	169056	SL37940086		Completed 1/7/09



Twin Rivers	Device	292051	SL40087045		Completed 1/7/09
-------------	--------	--------	------------	--	---------------------

The results of the inspections are summarized as follows:

Results of Inspections

Component	Number Inspected	Number Requiring Repairs	Percentage
Poles	162451	2441	1.5
Lightning Arresters*	162451	225	0.1
Crossarms*	162451	79	0.05
Crossarm Braces*	162451	172	0.1
Fuses*	162451	0	0.0
Insulators*	162451	58	0.04
Transformers*	162451	7	0.0
Conductors*	162451	278	0.2
Switches*	162451	0	0.0
Guy Wires*	162451	15793	9.7
Grounding*	162451	7645	4.7
Minor Hardware*#	162451	674	0.4
Capacitors	5010	346	6.9
Reclosers	2023	35	1.7
Sectionalizers	74	5	6.8
Voltage Regulators	465	29	6.2

*Note: Because AmerenUE'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 reclosers, sectionalizers, 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, flying loops, and spacer cable brackets.



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	%
Poles	921	914	99.2	7	0.8
Lightning Arresters	0	0	0.0	0	0.0
Crossarms	0	0	0.0	0	0.0
Crossarm Braces	0	0	0.0	0	0.0
Fuses	0	0	0.0	0	0.0
Insulators	0	0	0.0	0	0.0
Transformers	0	0	0.0	0	0.0
Conductors	97	94	96.9	3	3.1
Switches	0	0	0.0	0	0.0
Guy Wires	0	0	0.0	0	0.0
Grounding	0	0	0.0	0	0.0
Minor Hardware	0	0	0.0	0	0.0
Reclosers	34	34	100	0	0.0
Sectionalizers	5	5	100	0	0.0
Capacitors	302	286	94.7	16	5.3
Voltage Regulators	26	26	100	0	0.0

The following equipment was not repaired as scheduled:

Operating Center	Inspection Type	Circuit Number	Component Number	Reason Repairs Not Completed	Date Repairs Will be Completed
Central Ozarks	Device	681052	Capacitor 12	Awaiting engineering evaluation to determine whether the capacitor is still needed.	12/1/09
Berkeley	Device	167053	Capacitor Unknown		Repairs Completed 6/9/09
Berkeley	Device	167051	Capacitor 3123	Delay in scheduling the repair	6/20/09
Berkeley	Device	281051	Capacitor Unknown		Repairs Completed 4/30/09

Jefferson	Ground Line	190053	Pole 359173	Confusion between the division and a repair contractor over who would make the repair.	7/31/09
Jefferson	Ground Line	190051	Secondary Conductor	Customer converted to underground service.	Conversion Verified Complete 6/4/09
Jefferson	Device	546054	Capacitor 5868	Capacitor to be removed.	12/31/09
Jefferson	Device	575056	Capacitor 3516	Capacitor to be removed.	12/31/09
Jefferson	Device	211054	Capacitor 9634	Capacitor to be removed.	12/31/09
Jefferson	Device	211052	Capacitor 5726	Capacitor to be removed.	12/31/09
Jefferson	Device	211056	Capacitor 8857	Capacitor to be removed.	12/31/09
Jefferson	Device	211056	Capacitor 1577	Capacitor to be removed.	12/31/09
Jefferson	Device	187053	Capacitor 4781	Awaiting materials to complete the required work.	8/30/09
Jefferson	Device	546056	Capacitor 2434	Capacitor to be removed.	12/31/09
Jefferson	Device	551053	Capacitor 1519	Awaiting materials to complete the required work.	7/3/09
Jefferson	Device	576057	Capacitor 5715		Repairs Completed 6/9/09
Jefferson	Device	560051	Capacitor 5898		Repairs Completed 6/9/09
Jefferson	Ground Line	190055	Pole 320886		Repairs Completed 3/10/09
Jefferson	Ground Line	190054	Pole 357692		Repairs Completed 3/10/09



Jefferson	Visual/ Audit	051074	Neutral Conductor		Repairs Completed 4/17/09
Twin Rivers	Device	506056	Capacitor 707		Repairs Completed 5/28/09
Archview	Ground Line	104008	Pole 151129		Repairs Completed 3/2/09
Archview	Ground Line	026002	Pole 19356		Repairs Completed 4/15/09
SEMO	Ground Line	557052	Pole 565556		Repairs Completed 1/14/09
SEMO	Ground Line	557052	Pole 569834		Repairs Completed 1/12/09
SEMO	Ground Line	602008	Secondary Conductor		Repairs Completed 1/21/09



The following equipment requires repairs, but was not scheduled for repairs during the reporting period:

Component	Total Number Requiring Repairs Outside the Reporting Period	Number of Open Repairs Outside the Reporting Period	Corrective Action Scheduled Complete						%
			1Q09	2Q09	3Q09	4Q09	1Q10	2Q10	
Poles	1520	455	4	96	205	145	0	5	29.9
Lightning Arresters	225	71	3	9	37	22	0	0	31.5
Crossarms	79	18	1	4	7	6	0	0	22.8
Crossarm Braces	172	42	0	7	29	6	0	0	24.4
Fuses	0	0	0	0	0	0	0	0	0.0
Insulators	58	14	0	4	5	5	0	0	24.1
Transformers	7	0	0	0	0	0	0	0	0.0
Conductors	181	27	2	9	8	7	0	1	14.9
Switches	0	0	0	0	0	0	0	0	0.0
Guy Wires	15793	5316	451	854	1833	2178	0	0	33.7
Grounding	7645	1160	62	281	510	307	0	0	15.2
Minor Hardware	674	176	6	36	72	62	0	0	26.1
Reclosers	1	0	0	0	0	0	0	0	0.0
Sectionalizers	0	0	0	0	0	0	0	0	0.0
Capacitors	44	11	1	5	1	4	0	0	25.0
Voltage Regulators	3	2	0	1	1	0	0	0	66.7