2015 Reliability Compliance Report Submitted to Missouri Public Service Commission



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State of Missouri

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County of Jasper

I, Brent Baker, having been duly sworn upon my oath, state that I am the Vice President of Customer Service, Transmission and Engineering of The Empire District Electric Company (Empire), that I am duly authorized to make this affidavit on behalf of Empire, and that the matters and things stated in the foregoing are true and correct to the best of my information, knowledge and belief.

Subscribed and sworn before me this _____ day of June, 2016.

ANGELA M. CLOVEN
Notary Public - Notary Seal
State of Missouri
Commissioned for Jasper County
My Commission Expires: November 01, 2019
Commission Number: 15262659

Introduction

The Empire District Electric Company's (Empire) System Reliability Department and maintenance program comply with requirements of Missouri's Electrical Infrastructure Standards 4 CSR 240-23.020. The System Reliability department is in its seventh full year of operation and continues to improve the process of managing infrastructure inspections, corrective action monitoring, data management and reporting necessary to comply with 4 CSR 240-23.020. Empire anticipates the infrastructure inspection program will continue to evolve during the first full inspection cycle. This evolution is necessary to streamline the inspection processes, data collection, maintenance crew collaboration, and reporting documentation.

Osmose Utility Services, Inc. (Osmose) is currently contracted to perform infrastructure inspections on Empire facilities. They have been inspecting Empire facilities since 2008. Empire utilizes its own personnel to perform detail inspections on padmounted equipment, three-phase reclosers, capacitors, and regulators. Empire contracted with Hot Shot Services, Inc. (Hot Shot) to perform an annual aerial patrol inspection of the transmission system and an infrared inspection of equipment on the transmission system. Empire also utilizes a work management software solution (Maximo) to maintain records and track the progress associated with the infrastructure inspections and corrective actions.

Compliance Statement

The Empire District Electric Company has complied with the rules established in the State of Missouri's Electrical Corporation Infrastructure Standards, 4 CSR 240.23-020 for the 2015 calendar year.

2015 Inspection Plan Summary

Distribution

Empire completed patrol inspections on 28,732 overhead components, 3,040 streetlight components and 3,673 underground components in 2015 using the services of Osmose. Empire completed detail inspections on 33,692 overhead components and 3,888 streetlight components using the services of Osmose. Empire completed detail inspections on 4,981 underground components in 2015 using Empire's own personnel. Empire completed 10,030 intrusive inspections in 2015 using the services of Osmose.

Empire did not complete one scheduled detail distribution inspection in 2015. The detail inspection was delayed due to data issues related to the circuit. The circuit is scheduled for inspection in 2016.

	Distribut	ion 2015 Insp	ection Plan	Summary		
Inspection Type	Facility Type			Inspections Completed During 2015	Inspections Not Completed in 2015	
	Overhead Circuits, Structures, & Equipment	Poles, Transformers, Capacitors, Regulators, Reclosers, Switches	28,732	28,732	0	
Patrol	Streetlight System	Structures	3,040	3,040	0	
	Underground Structures & Equipment	Sectionalizing Cabinets, Vaults, Transformers, Switches	3,673	3,673	0	
	Overhead Circuits, Structures, & Equipment	Poles, Transformers, Capacitors, Regulators, Reclosers, Switches	35,289	33,692	1,597	
Detail	Streetlight System	Structures	3,998	3,888	110	
	Underground Structures & Equipment	Sectionalizing Cabinets, Vaults, Transformers, Switches	4,997	4,981	16	
Intrusive	Wood Poles	Poles	10,030	10,030	0	

Transmission

Empire completed an aerial patrol inspection on 15,293 poles out of the 15,293 poles that were planned using the services of Hot/Shot Infrared Inspections. Using the services of Osmose, Empire completed 6,509 detail inspections and 471 intrusive inspections.

Transmission 2015 Inspection Plan Summary								
Inspection Facility Type Type				Inspections Completed During 2015	Inspections Not Completed in 2015			
Patrol	Overhead Structures & Equipment	Poles	15,293	15,293	0			
Detail	Overhead Structures & Equipment	Poles, Switches	6,509	6,509	0			
Intrusive	Overhead Structures & Equipment	Poles	471	471	0			

2015 Work Order Rating Summary

Empire has developed a priority rating system to classify corrective actions and provide appropriate remediation schedules. The priority rating system allows Empire to balance its resources to remediate corrective actions in a timely and economical manner while improving the service reliability to its customers. Only items identified during the course of infrastructure inspections will be rated using this system. A listing of the priority ratings description and corresponding scheduling period are detailed in the table below.

Priority Rating	Description	Corrective Action Scheduling Period
5	Emergency/Safety/Load Limiting/Customer Outage	Immediate
4	Urgent/May Affect Load	180 days
3	Time Critical/Seasonal	365 days
2	Routine/Non-Critical	365 days
1	Project/Operational Improvements	Empire's discretion

Distribution

	Distribution 2015 Work Order Rating Summary							
Inspection Type	Facility Type	Components	Priority 5	Priority 4	Priority 3	Priority 2	Priority 1	
Patrol U	Overhead Circuits, Structures, & Equipment	Poles, Transformers, Capacitors, Regulators, Reclosers, Switches	1	37	0	867	0	
	Underground Structures & Equipment	Sectionalizing Cabinets, Vaults, Transformers, Switches,	0	1	0	59	0	
Detail	Overhead Circuits, Structures, & Equipment	Poles, Transformers, Capacitors, Regulators, Reclosers, Switches	0	32	0	947	0	
	Underground Structures & Equipment	Sectionalizing Cabinets, Vaults, Transformers, Switches,	0	7	0	129	0	
Intrusive	Wood Poles & Equipment	Poles	4	140	0	661	0	

Transmission

Transmission 2015 Work Order Rating Summary							
Inspection Type	Facility Type	Components	Priority 5	Priority 4	Priority 3	Priority 2	Priority 1
Patrol	Overhead Structures & Equipment	Poles	1	26	0	90	15
Detail	Overhead Structures & Equipment	Poles & Switches	0	11	0	260	0
Intrusive	Overhead Structures & Equipment	Poles	0	0	0	58	0

2015 Corrective Action Summary

Distribution

Empire completed 3,479 work orders of the 4,329 that were planned in 2015. Another 481 work orders were completed in 2016. The remaining 369 work orders are planned to be completed by December 31, 2016.

Distribution 2015 Corrective Action Summary									
Inspection Type	Facility Type	Components	Corrective Action Planned in 2015	Corrective Action Completed in 2015	Corrective Action Incomplete in 2015	Corrective Action Completed in 2016	Corrective Action to Complete in 2016		
Equipment Patrol	Circuits, Structures, &	Poles, Transformers, Capacitors, Regulators, Reclosers, Switches	1,490	1,054	436	142	294		
		Sectionalizing Cabinets, Vaults, Transformers, Switches	133	133	0	0	0		
Detail	Overhead Circuits, Structures, & Equipment	Poles, Transformers, Capacitors, Regulators, Reclosers, Switches	1,307	1,006	301	289	12		
Botan	Underground Structures & Equipment	Sectionalizing Cabinets, Vaults, Transformers, Switches	64	57	7	2	5		
Intrusive	Wood Poles & Equipment	Poles	1,335	1,229	106	48	58		

Transmission

Empire completed 323 work orders of the 505 that were planned in 2015. Another 84 work orders were completed in 2016. The remaining 98 work orders are planned to be completed by December 31, 2016.

	Transmission 2015 Corrective Action Summary									
Inspection Type	Facility Type	Components	Corrective Action Planned in 2015	Corrective Action Completed in 2015	Corrective Action Incomplete in 2015	Corrective Action Completed in 2016	Corrective Action to Complete in 2016			
Patrol	Overhead Structures & Equipment	Poles	59	0	59	27	32			
Detail	Overhead Structures & Equipment	Poles & Switches	264	187	77	36	41			
Intrusive	Overhead Structures & Equipment	Poles	182	136	46	21	25			