

Appendix A: Log of Summer Field Observations

The summary¹ for each inspection represents typical observations noted during the field inspections and **does not** represent all of the problems or potential problems that may exist.

To evaluate the overall trend of conditions in ComEd's service territory, Commission Staff conducted a series of field inspections in 2014. The purpose of the inspections was for Staff to see if there were any obviously visible reasons for poor reliability performance. For example, on distribution circuits Staff looked for problems such as poor tree trimming practices, broken or damaged equipment, rotten poles, and overly slack spans (low sagging lines), while at substations Staff looked for problems such as low or leaking oil, load tap changers regularly operated at extreme positions, and poor maintenance practices. It is important to note that it is not the purpose of Staff's field inspections to find problems for ComEd to fix² but rather to develop a picture of the overall condition of the power delivery infrastructure in ComEd's service territory.

Field Inspection Log

Utility: ComEd Investigators: J. Stutsman (Staff)

Feeder Ckt: F5283 City: Homewood Voltage: 12kV Date: Tuesday, June 24, 2014

<u>Photo ID</u>	<u>Drawing No.</u>	<u>Location Description</u>	<u>Observations at this Location</u>
613-649		TDC452 Glenwood Substation	Fence line Inspection: Red Fire Box noted on Fence. Fence Posts at Gate were Grounded but were not bound to Gate. Veg Management Sticker on Gate 5/5/2014 Heavy rust & signs of past oil leaks on transformer 74 Bushing oil levels look good from fence-line Tap changer on Transformer 74 looks good via picture 629 Rust on other equipment/poles/posts in yard Squirrel guards broken/missing on two circuits No direct stroke lightning protection

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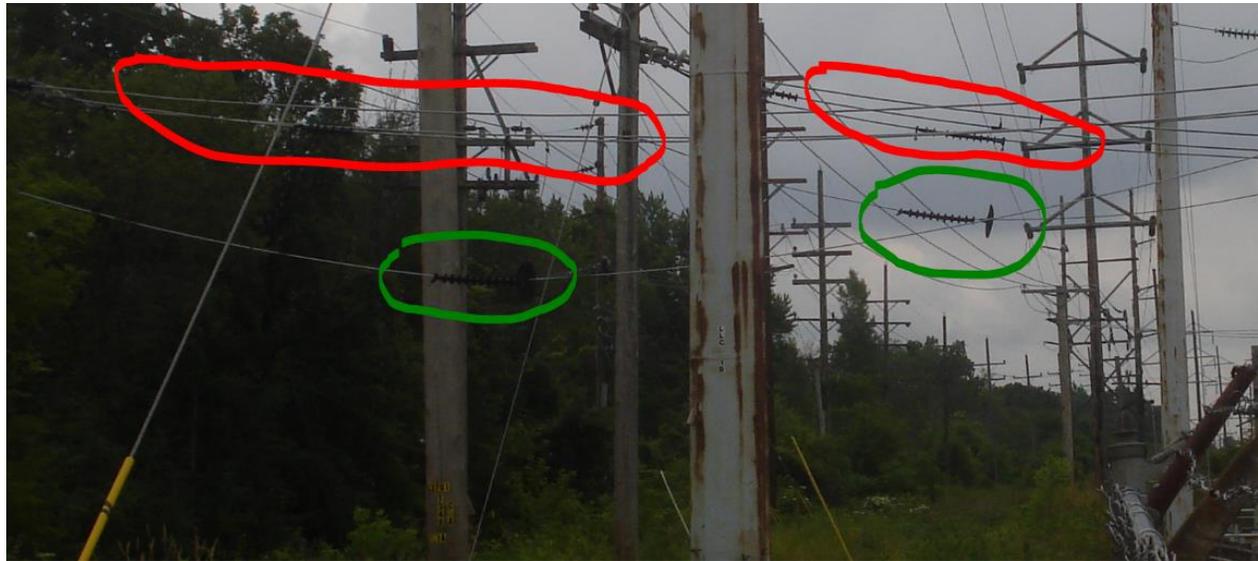
		Feeder Ckt: F5283 City: Homewood	
		Voltage: 12kV	
650	1	Corner of Patricia Dr & Holbrook Rd	Lose Ground Cover
654-5	1-2 Break	90 & 86 Holbrook Rd	Trees close to Primary located below Ckt F5283
656-7	1-2 Break	62 & 58 Holbrook Rd	Trees into Primary located below Ckt F5283 as well as into F5283
658-9	1-2 Break	West from 58 Holbrook Rd	More Tree issues for Primary below F5283
660-1	2	214-224 Holbrook Rd	More Tree issues into Primary below F5283 as well as into F5283
662	2	Near Intersection of Holbrook Rd & Serena Dr	Lose Cover on Ground
664-5	2	244 Holbrook Rd	Tree into Primary
667-8	2	234 Holbrook Rd	Tree into Primary
673	2	244 Holbrook Rd	Dead Part of Tree leaning into/towards Primary
674-7	2	535 Hamiltonwood RD	Heavy Overhang creating Tunnel effect in ROW behind house Missing Down Guy Guard
678-80	2	Line East of 400-408-416 etc. Hamiltonwood Rd	Primary buried in Trees/Brush Canopy DO NOT see direct contact on Primary Picture taken of New Pole in front of 400 Hamiltonwood Rd & Canopy above that Pole which was typical
682-7	3	1911 Hanover LN	Pole Top Bad – Mount for Primary is lose/lose bolts Pole Top Subsidence
689-90	3	1934 Hanover LN	Only 1 bolt holding Primary Mount & Primary Mount is twisting
691	3	1933 Hanover LN	Missing Guy Guard
	3	Near 1716 Cambridge Ave	Trees into Primary
692-4	4	187 th St	Overhang above Primary
696	5	1854 Heather Rd	Missing Down Guy Guard

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697-9	5	Near Intersection of Klimm Ave & Willow Rd	Badly leaning Pole
		Feeder Ckt: <u>Unknown Circuit(s)</u> City: <u>Homewood and Homewood Area</u> Voltage: <u>12kV</u>	
	NA	Vollmer Road between I-57 and HWY-1	Several locations of Vegetation into Primary and 1 location of broken lightning arrestors
700-4	NA	On Chicago Heights/Glenwood Rd in front of Coales Rd	Vines on Poles & down Guys
709	NA	771 Coales Rd	Service on old Pole and Replacement Pole – Service only partly moved to replacement pole
706-8, 710	NA	779 & 774 Coales Rd	2 dead Trees overhang Primary – 1 from each side of the road



Settings on Transformer 74 LTC
629 Glenwood Substation



Squirrel Guards Broken/Missing
634 Glenwood Substation

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Tree in contact with Primaries
660



Bad Pole Top & Lose Mount
684



Leaning Pole
699

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708: 2 dead trees overhanging/threatening Primary

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Field Inspection Log

Utility: ComEd Investigators: J. Stutsman (Staff)

Feeder Ckt: Random City: Freeport, Pearl City, Stillman Valley, Oregon Areas Voltage: 12kV Date: Tuesday, July 1, 2014

<u>Photo ID</u>	<u>Drawing No.</u>	<u>Location Description</u>	<u>Observations at this Location</u>
711-739		TDC370 Eleroy Substation	Fence line Inspection: Red Fire Box noted on Fence. Gate Posts at Gate were Grounded Gates bound to Gate Posts. Veg Management Sticker on Gate 5/3-4/2014 TB Some standing water in substation yard Corner Posts – can see grounded Rust on sides of LV switchgear Rust on Transformer 71 Overall, yard looks good except for standing water Bushing oil levels look OK on both Transformer high sides Direct Stroke Lighting protection visible from Transmission line static wires carried into substation over equipment Heavy rust on some poles in substation

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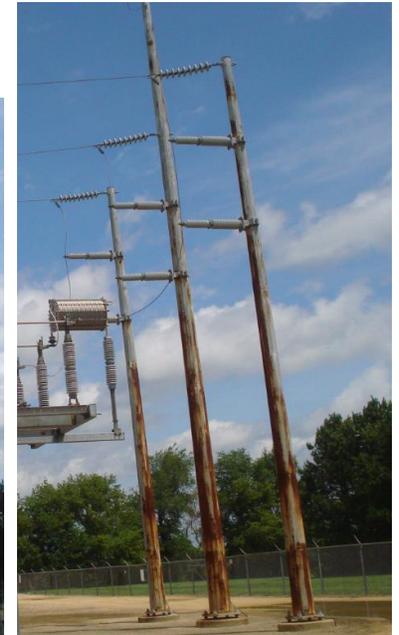
			Rust on Transmission poles immediately outside Substation
		Feeder Ckt: <u>Random</u> City: <u>various</u> locations Voltage: <u>4-12kV</u>	
741-2	NA	1368 Helter Rd	Missing guard on down guy Evidence of past problems with vines on down guy & pole
744-5	NA	1413 S. Silberman Rd	Bad Pole Top – J mount appears loose (Pole Top Subsidence) Possible bad Pole?
747-8	NA	1818 S. Silberman Rd	Pole Top Subsidence
750	NA	2425 S. Silberman Rd – looking North	Significant Overhang but no Contact
751	NA	2425 S. Silberman Rd – looking South	Re-enforced Pole
753-4	NA	2 poles East of: 2001 Mill Grove Rd	Pole completely covered with Vines
755	NA	2001 Mill Grove Rd – Area	Slack on Down Guy Wire on 2 different poles Subsequent field review by ComEd personnel found only 1 pole in the area with Slack Down Guy Wire – the 2nd pole could not be located in the immediate area Heavy leaning Pole with Transformer mounted on Pole
757-9	NA	8178 US Highway 20E	Catastrophic failure of Lightning Arrestor
761-3	NA	16101 W. State Rd, Pecatonica	Near Failure -- Loose bolt on Primary insulator Mount Noted 3 more locations East of here with similar issue (between here & Winnebago Rd)
765-6	NA	15788 W. State Rd, Pecatonica	Damaged/Splintered Pole Top
768-71	NA	15682 W. State Rd, Pecatonica	Damaged Pole Top – Large portion of pole missing and exposing bolts holding primary mount
	NA	~1/2-1 mile East of: 15682 W. State Rd, Pecatonica	Very loose down guy covered with vines
773-5	NA	10662 N Kennedy Hill Rd	Damaged Cross Arm Brace

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776-797		DCB 27 Stillman Valley Substation	<p>Fence line Inspection:</p> <p>Gate Posts at Gate were Grounded Gates bound to Posts. Veg Management Sticker on Gate 6/18/2014 Standing water outside of Gate but not in Substation Yard Transformer 51 slight spots of rust Overall, substation yard looks good No squirrel guards on primaries into/out of substation Yard Bushing oil levels look good from fence-line Trees into and Over Fence on Cap-Bank Side of Substation Yard Animal Protection visible on bushings and Insulators in bus-work Transformer 51 Reg looks good No visible direct stroke lightning protection in Substation Yard but Communications tower nearby probably provides significant protection</p>
		Feeder Ckt: <u>Random</u> City: <u>Stillman</u> Area Voltage: <u>12kV</u>	
	NA	Drive from Winnebago to Stillman Valley	Observed some good Tree Trimming – Observed a few slack down guys and a few emerging vine problems

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800-812		DCB 54 Oregon Substation	<p>Fence line Inspection:</p> <p>Fence Posts at Gate were Grounded but were not bound to Gate. Veg Management Sticker on Gate 6/17/2014 No Squirrel guards on primaries into/out of substation yard Animal guards on bushings/insulators in bus-work Animal guards on equipment bushings No animal guards on Transformer secondary bushings Overall, substation yard looks good No visible direct stroke lightning protection</p>



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Rust & Peeling Paint
717 Eleroy Substation



Lose J-Mount/Bad Pole Top
744



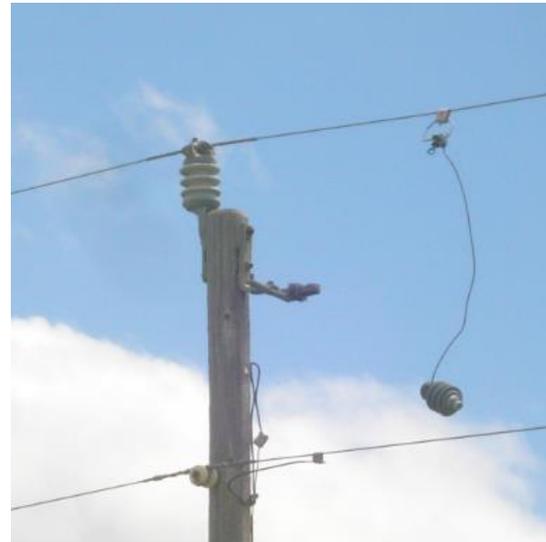
Static Lines protecting Circuits into Sub
721 Eleroy Substation



Pole Completely Vine covered
753



Heavy Rust on Poles
727 Eleroy Substation



Catastrophic failure of Lightning Arrester
758



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Near Failure: Bolt on Primary Mount
763

Damaged Pole Top Exposing Mount Bolts
770

Trees into and over Fence
789 Stillman Valley Substation



Animal Guards visible on equipment and bus-work insulators
807 Oregon Substation

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Field Inspection Log

Utility: ComEd Investigators: J. Stutsman (Staff)

Feeder Ckt: G102 City: Calumet City, Lansing, Beecher Areas Voltage: 4-12kV Date: Thursday, July 17, 2014

<u>Photo ID</u>	<u>Drawing No.</u>	<u>Location Description</u>	<u>Observations at this Location</u>
813-836		DCG100 Calumet City Substation	<p>Fence line Inspection:</p> <p>Gate Posts at Gate were Grounded New Gates. Previous Gates had been bound to Gate Posts – bonding straps are currently hanging. Veg Management Sticker on Gate 5/20/2014 TC Transformer Oil Leak in the past with visible staining at base of Transformer and substation yard – Some appeared wet and may represent an active leak Trees into Fence and over Fence No Animal guard on Primary into Yd No Animal guard on Transformer Transformer needs painting Substation yard – some weeds and trash No direct Stroke lightning protection Ground cover on riser G102712 next to Substation looks new</p>

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			Some trees/bushes had been cut on the South Side of Substation via visible stumps
		Feeder Ckt: <u>G102</u> City: <u>Calumet City</u> Voltage: <u>4kV</u>	
837	1	41.61594 -87.53638 looking East	Trees into Primary
838	1	41.61594 -87.53638 looking West	Trees into Primary
839	1	41.61596 -87.53419	Vines on Down Guy
840	1	41.61597 -87.53197	Tree into Primary
841	1	41.61678 -87.53051	Tree threatening Primary
842	1	41.61880 -87.52930	Trees into Primary
843	1	Looking North from 41.61880 -87.52930	Overhang
-	1	41.62022 -87.52913	Tree into Primary
-	1	41.62077 -87.52932	Leaning & bad pole – noted that it was already marked for removal
844-5	1	41.62255 -87.52917	Temporary wood brace on Pole using Cross-Arms
846	1	Near 41.62255 -87.52917	Tree into Primary
848	1	41.62255 -87.52917 looking West	Line Hose on Primary
849	1	41.62255 -87.52917 looking East	Tree into and overhanging Primary
			General Note G102: Lots of old hardware but none appeared damaged or otherwise not serviceable – 1 pole noted above had been marked for removal