REPORT
March 1, 2017

DUKE ENERGY
FLORIDA

Matthew R. Bernier
SENIOR COUNSEL
Duke Energy Florida, LLC

March 1, 2017

VIA ELECTRONIC FILING

Carlotta Stauffer, Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Annual Service Reliability Report for 2016; Undocketed

Dear Ms. Stauffer:

Please find enclosed for electronic filing on behalf of Duke Energy Florida, LLC's ("DEF"), 2016 Annual Service Reliability Report. DEF also provided two (2) hard copies and two (2) CDs of its 2016 Annual Service Reliability Report to the Division of Engineering.

Thank you for your assistance with this matter. Please feel free to call me at (850) 521-1428 should you have any questions.

Sincerely,

s/Matthew R. Bernier
Matthew R. Bernier
Senior Counsel

MRB/mw
Enclosures

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DUKE ENERGY
FLORIDA

2016 Annual Reliability Report

March 1, 2017

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DUKE ENERGY

2016 Year End Customers Served by Region

Zone / Regions	3 Char OP	Op Center	Cust Served	Date
NORTH CENTRAL	APK	APOPKA	98,815	12/31/2016
	DEL	DELAND	80,237	12/31/2016
	JAM	JAMESTOWN	134,416	12/31/2016
	LNG	LONGWOOD	87,042	12/31/2016
			400,510	
NORTH COASTAL	INV	INVERNESS	72,170	12/31/2016
	MON	MONTICELLO	54,506	12/31/2016
	OCA	OCALA	73,889	12/31/2016
			200,565	
SOUTH CENTRAL	BNV	BUENA VISTA	113,594	12/31/2016
	CLR	CLERMONT	33,446	12/31/2016
	HIL	HIGHLANDS	57,265	12/31/2016
	LKW	LAKE WALES	98,051	12/31/2016
	SEO	SE ORLANDO	89,313	12/31/2016
	WGN	WINTER GARDEN	78,865	12/31/2016
			470,534	
SOUTH COASTAL	CLW	CLEARWATER	142,294	12/31/2016
	SEV	SEVEN SPRINGS	183,570	12/31/2016
	STP	ST. PETERSBURG	175,380	12/31/2016
	WAL	WALSINGHAM	150,642	12/31/2016
	ZEP	ZEPHYRHILLS	25,369	12/31/2016
			677,255	
SYSTEM			**1,748,864**	

OVERALL RELIABILITY PERFORMANCE – 2016 (Rule 25-6.0455, F.A.C.)

a. Discuss overall performance absent adjustments

On April 7th, there was a confirmed tornado on Clearwater beach that accounted for 0.1 SAIDI minutes. June 6th through June 8th were the result of outages from Tropical Storm Colin, and accounted for 9.0 SAIDI. September 1st through September 6th were outages resulting from Hurricane Hermine, and accounted for 82.8 SAIDI. September 14th exclusions were a result of Tropical Storm Julia, and accounted for 0.5 SAIDI minutes primarily in the North Central and North Coastal zones. Hurricane Matthew was the last set of weather-related exclusions for the year, from October 6th through October 10th, and it accounted for 174.5 SAIDI. Please reference Attachment "N" developed in the weeks following Hurricanes Hermine and Matthew for an internal DEF storm assessment.

Year	2011	2012	2013	2014	2015	2016
Weather Excluded SAIDI	65.3	52.4	18.8	0.4	1.1	266.9

The extreme jump in Weather Excluded SAIDI from 2015 to 2016 was due almost exclusively to the 4 named storms that impacted DEF to varying degrees. 2016 was the first year since 2004 that DEF had significant impacts by multiple hurricanes, along with extensive impacts to the South Coastal Zone from Tropical Storm Colin. Excluding the effects of the two hurricanes, weather excluded SAIDI was only 9.6 SAIDI minutes, which is 65.2% below the 5 year average from 2011 to 2015. This continued favorable performance trend is due to a focus on reliability projects including Pole Replacements, Cable Replacements, Storm Hardening, and Feeder Standardization programs, as well as Grid Automation investments.

Year	2011	2012	2013	2014	2015	2016
Reported SAIDI	172.4	142.9	107.9	102.8	98.6	370.7

b. Describe the level of detailed reliability data the Company tracks.

The Company tracks detailed reliability information in various databases. This detailed data is recorded per event, which includes affected device, time of day, length of outage, cause of outage, number of customers affected and other pertinent information.

c. Describe Company efforts to increase critical review of detailed reliability data.

In 2016, DEF continued to utilize the IEEE method for internal business goal reporting due to integrated business practices. Duke Energy uses the IEEE Methodology (2.5 Beta) for calculating the reliability indices. This is also the way Duke Energy measures reliability for incentive goals. DEF will continue tracking PSC indices which are reported at year-end. The IEEE Method is the industry standard for Reliability measurement and comparison.

DEF continued the practice of auditing outage data to ensure accuracy and using Outage Management System Reconciliation (OMSR) as a platform which allows outage data to be captured in greater detail.

DEF transitioned into the Outage History report to look at devices that have gone out four times or more in the given year along with outages that exceed other predefined thresholds of customers affected or duration. This report is distributed to planning engineers, field personnel, and management for review. Funding is set aside for issues that are determined to need immediate mitigation. Any redesigns or significant rebuilds necessary that are identified as part of this process are collated and submitted for prioritization and approval in future calendar year.

In 2016, DEF added additional staff to conduct analysis and reviews of reliability data that meet certain operational thresholds in order to reduce the number of outages and momentary interruptions. From 2015 to 2016, DEF had a 17% reduction of MAIFI customers. DEF will look to build on this success by refining processes and execution in 2017.

d. Describe the process used by your company to identify and select the level of detailed reliability data.

Customer feedback, benchmarking with other utilities, input from the FPSC, performance of assets, and trends are all considered when identifying the level of detailed reliability data.

e. Discuss adjustments

i. Generation events – *see pages 10-11.*
ii. Transmission events – *see page 12.*
iii. Distribution events – *see page 15.*
iv. Extreme weather – *see page 13-14.*

f. Discuss adjusted performance.

For the 2016 adjusted performance results, please see pages 16-24.

FLORIDA PUBLIC SERVICE COMMISSION
ANNUAL DISTRIBUTION SERVICE RELIABILITY REPORT – ACTUAL

PART I

CAUSES OF OUTAGE EVENTS – ACTUAL **(Absent Adjustments)**

Utility Name: Duke Energy Florida   Year: **2016**

Cause (a)	Customer Minutes Of Interruption	Number of Outage Events(N) (b)	Average Duration (L-Bar) (c)	Average Restoration Time (CAIDI) (d)
1. Animals	6,623,768	5,508	81.8	64.0
2. Vegetation	135,840,179	10,523	372.2	241.8
3. Lightning	5,469,667	1,310	180.4	98.6
4. Other Weather	369,888,109	12,216	911.4	586.9
5. Vehicle	10,343,169	441	240.9	103.5
6. Defective Equipment	48,630,888	9,880	171.7	97.9
7. Unknown	3,564,365	1,183	153.2	82.9
Subtotal	580,360,145	41,061	431.6	291.5
All Other Causes *See Attached	67,985,965	21,660	131.3	61.8
System Totals	648,346,110	62,721	327.9	209.8

PSC/ECR 102 (8/06)
Incorporated by reference in Rule 25-6.0455, F.A.C.

CAUSES OF OUTAGE EVENTS – ACTUAL **(Absent Adjustments)**

Utility Name: Duke Energy Florida Year: **2016**

Cause (a)	Customer Minutes Of Interruption	Number of Outage Events(N) (b)	Average Duration (L-Bar) (c)	Average Restoration Time (CAIDI) (d)
U/G Primary Cable	16,887,900	1,590	271.3	90.4
Emergency Shutdown-PGN	15,725,516	3,123	104.1	44.1
Line Maintenance	8,747,769	5,070	177.8	177.6
Substation-Animal	1,924,311	28	58.4	46.3
Emergency Shutdown-Customer Request	1,878,681	75	337.8	332.9
Transmission-Lightning	1,847,459	8	232.4	152.9
Substation-Breaker-Non-prevent	1,805,179	23	68.0	47.8
Substation-Breaker-Preventable	1,783,742	26	74.8	42.3
U/G Secondary/Service	1,626,155	3,684	211.6	249.7
Substation-Bushing-Failure	1,496,387	11	82.8	72.6
Substation-Insulator Failure	1,457,772	12	55.3	51.9
Miscellaneous	1,323,082	552	144.4	535.9
Human Error-Public	1,305,310	390	109.3	71.6
Substation-Breaker Failure	1,196,583	13	59.6	50.9
Right-Of-Way	1,156,290	40	51.0	25.2
Human Error-PGN	886,901	650	58.1	29.3
Human Error-PGN Contractor	797,738	148	118.9	39.8
Transmission-Conductor/Static	696,296	6	226.0	81.5
Relay-Unknown	688,600	3	88.0	88.0
Overload	645,549	124	118.2	77.2
Dig-In	513,218	239	202.3	112.2
Transmission-Vehicle	424,036	5	155.8	70.2
Foreign Material In Line	397,053	80	180.7	112.8
Substation-Defective Equipment	340,975	9	71.0	54.9
Improper Installation	266,918	26	145.5	132.9
Substation-Switch Failure	263,129	4	28.9	33.0
Transmission-Pole Failure-Non-Prevent	235,813	6	97.6	28.6

CAUSES OF OUTAGE EVENTS – (Absent Adjustments)				
Utility Name: Duke Energy Florida				Year: **2016**
All Other Causes Cause (a)	Customer Minutes Of Interruption	Number of Outage Events(N) (b)	Average Duration (L-Bar) (c)	Average Restoration Time (CAIDI) (d)
Substation-Lightning	170,256	2	58.4	42.9
O/H Secondary Cable	138,647	279	206.5	213.0
Transmission-Connector Failure	138,450	2	68.9	61.9
Transmission-Unknown	127,868	3	87.3	29.7
Transmission-Ground/Guy	125,394	2	58.4	57.3
Transmission-Storm	123,730	1	752.4	195.2
Substation-Transformer Failure	111,136	2	32.1	32.0
Voltage Ok At Meter-No Customer Contact	110,904	841	38.9	85.9
Relay-Relay Problem	98,485	22	4.7	3.3
Relay-Reclosing Relay Failure	87,482	1	34.4	34.0
Substation-Emergency Shutdown	76,984	4	31.2	29.2
Transmission-Cross-arm Failure	76,661	8	29.9	57.0
Substation-Switch Error-Sub	72,078	7	7.5	5.3
Construction Equipment	65,061	17	116.3	66.7
Transmission-Tree-Non-prevent	43,130	1	94.8	95.0
Substation-Current Transformer	22,584	2	7.7	8.0
Relay-Setting Error	18,745	2	5.0	5.0
Relay-Human Error-PGN	17,668	3	6.6	7.0
Transformer Change-out (TLM)	13,654	14	102.8	210.1
Customer Request	12,877	34	69.5	178.8
Vandalism	6,188	95	40.8	24.1
Inaccessible Meter	5,510	117	45.4	45.9
U/G Service Cable	2,880	1	192.5	192.0
Dispatcher Resolved	1,231	4,255	0.0	0.0
All Other Causes	67,985,965	21,660	131.3	61.8

PART II

THREE PERCENT FEEDER LIST - ACTUAL **(UNADJUSTED)**

Utility Name: Duke Energy Florida ___Year: **2016**

Primary Circuit Id. No. or Name (a)	Sub-station Origin (b)	Location (c)	Number of Customers: Residential (d)	Commercial (e)	Industrial (f)	Other (g)	Total (h)	Outage Events "N" (i)	Avg Duration "L-Bar" (j)	CAIDI (k)	Listed Last Year? (l)	No. of Years in the Last 5 (m)	Corrective Action Completion Date (n)
J895	SEMINOLE	WALSINGHAM	2,425	467	-	43	2,935	10	142.9	54.9	N	1	12/31/17
M34	ZELLWOOD	APOPKA	1,358	133	-	21	1,512	9	932.3	441.2	N	-	12/31/17
J406	LARGO	CLEARWATER	1,712	291	1	24	2,028	9	101.3	38.0	N	-	6/30/17
M33	ZELLWOOD	APOPKA	934	204	9	19	1,166	8	350.5	178.0	N	-	12/31/17
W0172	OVIEDO	JAMESTOWN	1,293	316	2	39	1,650	8	359.9	140.7	N	-	6/30/17
N67	MONTICELLO	MONTICELLO	1,115	206	-	50	1,371	8	658.5	461.5	Y	1	12/31/17
A186	GE ALACHUA	MONTICELLO	441	82	2	19	544	7	209.0	193.2	N	-	12/31/17
K1685	DINNER LAKE	HIGHLANDS	1,955	158	4	56	2,173	7	134.3	43.0	N	1	6/30/17
M664	SPRING LAKE	LONGWOOD	1,686	219	-	14	1,919	7	250.7	144.3	N	-	12/31/17
A379	O BRIEN	MONTICELLO	549	152	1	42	744	7	257.8	88.0	N	1	12/31/17
W0524	CASSADAGA	DELAND	1,686	139	1	40	1,866	6	1,163.4	1,447.1	N	-	12/31/17
N195	JENNINGS	MONTICELLO	377	80	1	27	485	6	628.3	301.6	N	-	12/31/17
X107	FIFTY-FIRST STREET	ST. PETERSBURG	2,123	99	-	-	2,222	6	202.6	48.7	N	-	12/31/17
N336	ST MARKS WEST	MONTICELLO	606	119	-	22	747	6	649.7	878.7	N	-	12/31/17
W0805	DELAND	DELAND	886	164	-	9	1,059	6	1,155.6	1,006.8	N	-	12/31/17
K3245	DUNDEE	LAKE WALES	1,362	154	-	51	1,567	6	87.9	44.5	N	-	6/30/17
M727	APOPKA SOUTH	APOPKA	759	83	-	35	877	6	420.0	410.4	N	-	12/31/17
N69	MONTICELLO	MONTICELLO	967	191	2	39	1,199	6	575.6	399.2	Y	2	6/30/17
C1008	BELLEAIR	CLEARWATER	2,868	465	5	40	3,378	6	125.8	53.9	N	-	6/30/17
C153	DENHAM	SEVEN SPRINGS	1,790	170	-	19	1,979	6	112.4	42.2	N	-	6/30/17
W0808	DELAND	DELAND	1,423	137	5	36	1,601	6	1,818.3	843.4	N	-	6/30/17
K118	AVON PARK	HIGHLANDS	1,575	163	-	2	1,740	6	90.7	37.2	Y	2	12/31/17
X70	VINOY	ST. PETERSBURG	1,912	134	-	14	2,060	6	222.1	137.8	N	-	12/31/17
X56	KENNETH CITY	WALSINGHAM	2,429	165	-	6	2,600	5	151.5	62.8	N	-	6/30/17
K1693	LAKEWOOD	HIGHLANDS	1,551	163	-	19	1,733	5	160.2	66.1	N	-	6/30/17
K55	LAKE WALES	LAKE WALES	1,479	257	13	42	1,791	5	117.9	49.6	N	-	6/30/17
C4	CLEARWATER	CLEARWATER	1,358	152	-	17	1,527	5	154.3	80.4	N	-	12/31/17
K894	AVON PARK NORTH	HIGHLANDS	330	69	1	5	405	5	111.6	48.5	N	-	12/31/17
A38	MARTIN	OCALA	1,753	239	-	20	2,012	5	269.8	170.1	N	1	12/31/17
K975	BONNET CREEK	BUENA VISTA	282	88	-	2	372	5	134.4	102.9	N	-	12/31/17
N9	PERRY	MONTICELLO	836	198	16	46	1,096	5	538.6	943.1	N	-	12/31/17
N15	PERRY NORTH	MONTICELLO	784	121	3	25	933	5	956.1	627.7	N	-	12/31/17
K1196	BABSON PARK	LAKE WALES	735	116	-	16	867	5	133.3	64.0	N	-	12/31/17
N332	ST MARKS WEST	MONTICELLO	919	89	-	39	1,047	5	487.5	353.2	N	-	12/31/17
W0032	DELEON SPRINGS	DELAND	1,517	69	-	7	1,593	5	1,105.3	824.1	N	-	6/30/17
M658	MYRTLE LAKE	LONGWOOD	808	47	3	11	869	5	700.7	114.1	N	-	12/31/17
K1320	LAKE PLACID	HIGHLANDS	1,960	250	-	14	2,224	5	113.2	53.4	Y	1	6/30/17
N1	MADISON	MONTICELLO	931	141	-	28	1,100	5	504.1	573.2	N	1	12/31/17
K24	LAKE PLACID NORTH	HIGHLANDS	856	70	-	22	948	5	107.8	61.8	N	1	12/31/17
W1108	DELAND EAST	DELAND	1,770	143	2	22	1,937	4	1,486.0	1,306.8	N	-	12/31/17
W0904	BARBERVILLE	DELAND	958	108	-	12	1,078	4	2,301.2	919.0	N	3	12/31/17

LBAR AND CAIDI Includes all devices.

PSC/ECR 102 (8/06)

Incorporated by reference in Rule 25-6.0455, F.A.C.

PART III

SYSTEM RELIABILITY INDICES – ACTUAL **(ABSENT ADJUSTMENTS)**

Utility Name: Duke Energy Florida Year: 2016

District or Service Area (a)	SAIDI (b)	CAIDI (c)	SAIFI (d)	MAIFIe (e)	CEMI5 (f)
North Coastal	**736.4**	**284.3**	**2.6**	**7.8**	**11.25%**
Inverness	309 6	181 3	1 71	6 9	2 87%
Monticello	1646 6	452 0	3 64	9 7	21 36%
Ocala	481 8	180 1	2 68	7 4	11 98%
South Coastal	**174.7**	**100.2**	**1.74**	**7.4**	**3.48%**
Clearwater	154 8	73 9	2 09	8 8	4 03%
Seven Springs	136 3	106 6	1 28	8 1	0 69%
St Petersburg	218 6	127 9	1 71	5 8	3 42%
Walsingham	203 4	94 5	2 15	7 3	6 97%
Zephyrhills	89 1	94 9	0 94	7 6	0 30%
North Central	**802.9**	**459.8**	**1.75**	**8.7**	**2.87%**
Apopka	423 1	252 6	1 68	7 9	2 96%
Deland	2162 8	920 4	2 35	6 5	5 77%
Jamestown	378 1	276 5	1 37	9 1	0 81%
Longwood	636 4	343 2	1 85	11 0	3 29%
South Central	**129.2**	**88.0**	**1.47**	**7.1**	**2.69%**
Buena Vista	61 1	70 9	0 86	5 6	0 34%
Clermont	98 2	94 7	1 04	6 3	0 33%
SE Orlando	143 6	116 6	1 23	4 3	1 58%
Highlands	133 1	53 5	2 49	10 9	7 82%
Lake Wales	162 8	79 8	2 04	9 2	5 43%
Winter Garden	179 5	133 8	1 34	7 5	1 19%
SYSTEM	**370.7**	**209.8**	**1.77**	**7.7**	**4.02%**

GENERATION EVENTS – ADJUSTMENTS (Rule 25-6.0455 F.A.C.)

a. **Discuss <u>each</u> generation event that resulted in customer outages.**

   There were no events to report for 2016.

b. **Address whether the event was localized or system-wide.**

   N/A

c. **Describe the Company's efforts to avoid or minimize any similar events in the future in terms of the level of costs incurred and outage duration.**

   N/A

d. **Provide the 2016 service reliability data for each generation outage event that is excluded from your Company's 2016 Annual Distribution Reliability Report pursuant to Rule 25-6.0455.**

Generation Event	N/A
C	N/A
CMI	N/A
CI	N/A
SAIDI	N/A
SAIFI	N/A

Please see attached Form 103.

PART I

CAUSES OF OUTAGE EVENTS – ADJUSTED			
Utility Name: Duke Energy Florida		Year: **2016**	
Cause (a)	Number of Outage Events(N) (b)	Average Duration (L-Bar) (c)	Average Restoration Time (CAIDI) (d)
Generation	N/A	N/A	N/A
System Totals:	N/A	N/A	N/A

PSC/ECR 103 (8/06)
Incorporated by reference in Rule 25-6.0455, F.A.C.

TRANSMISSION EVENTS – ADJUSTMENTS (Rule 25-6.0455 F.A.C.)

a. Discuss each transmission event that resulted in customer outages.

See Attachment A - "DEF Transmission Outages 2016 - Major Events Excluded".

b. Address whether the event was localized or system-wide.

See Attachment A - "DEF Transmission Outages 2016 - Major Events Excluded".

c. Describe the Company's efforts to avoid or minimize any similar events in the future in terms of the level of costs incurred and outage duration.

Outages are reviewed and investigated by local transmission maintenance staff. The results from these investigations are looked at from a system perspective by DEF's Transmission Department Asset Management Group to determine if the failure is isolated or similar failures are occurring on another part of the system. When similar failures are noted on the system, further investigation is performed to determine if a solution should be implemented system wide to remedy the problem. If a project is required, it is submitted for prioritization against other projects.

d. Provide the 2016 service reliability data for each generation outage event that is excluded from your Company's 2016 Annual Distribution Reliability Report pursuant to Rule 25-6.0455.

There were twelve major events resulting in an exclusion in 2016. This information is reflected in Attachment B-DEF Transmission Outages 2016-Major Events Only.

EXTREME WEATHER - EXCLUSIONS (Rule 25-6.0455 F.A.C.)

a. Include in the discussion, the type of weather event, strength (wind speeds/surge-flood levels), locations affected, source of meteorological information, and the performance of overhead and underground systems.

Distribution

See Attachment C - "Summary of Severe Weather Dates – 2016".
See Attachment C1-"Exclusion summary-2016.
See Attachment C2-"2016 Actual Adjusted Data Breakdown"

Transmission

There were twelve major events resulting in an exclusion in 2016. This information is reflected in Attachment B- DEF Transmission Outages 2016-Major Events Only.

b. Describe the Company's efforts to avoid or minimize in terms of costs incurred and outage duration any similar events in the future (Example: Reference specific storm hardening activity).

Distribution

Please see response to "Storm Hardened Facilities" on Pages 38-41. These efforts are also addressed in DEF's approved Storm Hardening Plan that was filed on May 3, 2016 (Attachment J).

Transmission

Please see response to "Storm Hardened Facilities" on Pages 38-41. These efforts are also addressed in DEF's approved Storm Hardening Plan that was filed on May 3, 2016 (Attachment J).

c. If the method of deriving the weather exclusion is different from the method used for 2015, please explain the changes and provide the CMI and CI for 2016 using the prior method.

For Distribution & Transmission - The same exclusion method has been used for years 2006 through 2016.

d. Provide the 2016 service reliability data for <u>each</u> extreme weather outage event that is excluded from your Company's 2016 Annual Distribution Reliability Report pursuant to Rule 25-6.0455.

<u>Distribution</u>

Dates	Overhead vs. Underground	C	CMI	CI	Duration	L-Bar	N
4/7/2016	Overhead	142,294	113,260	1,445	464	232.2	2
6/6/16 to 6/7/16	Overhead	1,748,864	15,144,473	100,316	401,299	273.0	1,470
	Underground		561,890	2,464	41,655	205.2	203
9/1/16 to 9/6/16	Overhead	1,748,864	141,399,754	262,559	3,919,974	1,066.1	3,677
	Underground		3,467,842	4,422	296,874	519.9	571
9/14/2016	Overhead	1,748,864	870,542	9,088	17,823	124.6	143
	Underground		52,695	240	10,969	199.4	55
10/6/16 to 10/10/16	Overhead	1,071,609	293,228,950	262,129	8,660,538	1,547.1	5,598
	Underground		11,921,451	9,256	790,357	1,093.2	723

<u>Transmission</u>

There were twelve major events resulting in an exclusion in 2016. This information is reflected in Attachment B- DEF Transmission Outages 2016-Major Events Only.

OTHER DISTRIBUTION – ADJUSTMENTS (Rule 25-6.0455, F.A.C.)

a. Discuss the <u>causation</u> of each type of distribution event that resulted in customer complaints.

Since Duke Energy Florida has not taken other causations as exclusions for any events in 2016, DEF has no information to report in this section.

b. Describe the Company's efforts to avoid or minimize any similar events in the future in terms of the level of costs incurred and outage duration.

Since Duke Energy Florida has not taken other causations as exclusions for any events in 2016, DEF has no information to report in this section.

c. Provide the 2016 service reliability data for <u>each</u> distribution outage event that is excluded from your Company's 2016Annual Distribution Reliability Report pursuant to Rule 25-6.0455.

i. A table
ii. Electronic file
iii. Causation, Date, CMI, CI Total Repair Cost, etc.

Since Duke Energy Florida has not taken other causations as exclusions for any events in 2016, DEF has no information to report in this section.

2016 ADJUSTED RELIABILITY (Rule 25-6.0455, F.A.C.)

Duke Energy Florida's 2016 annual adjusted SAIDI showed a 7% increase from SAIDI observed in 2015 following a 6% decrease from 2014. One of the primary drivers for the rise in SAIDI was the particularly active weather pattern caused by the El Niño event encompassing the first half of 2016. On June 9th, the Climate Prediction Center of NOAA officially concluded their El Niño advisories. The timing of the El Niño event coincided with the bulk of the severe weather days experienced by DEF in 2016, of which 83% were before June 1st. Compare this to 2015, where 4 of the 5 severe weather days noted were after June 1st, following the typical summer weather patterns.

There were 6 days in 2016 that totaled more than 1 SAIDI minute as measured by the adjusted reliability rules; five of the six days were all a result of severe thunderstorms, in which more than 80% of the SAIDI for each day was weather-related. These 5 days were January 17th (2.03 SAIDI), February 15th (1.08 SAIDI), March 25th (1.37 SAIDI), May 4th (1.32 SAIDI), and May 20th (1.01 SAIDI). The remaining day, July 21st (1.18 SAIDI), had more than 60% of the SAIDI for the day as a result of weather, with the largest portion of the remainder due to a blown arrester combined with a recloser mis-operation that have since been rectified.

2016 presented DEF with a number of weather related challenges. The DEF service territory was significantly impacted by 3 named storms, record level heat in July, and many severe afternoon thunderstorms. There were two direct hits by named storms (Tropical Storm Colin and Hurricane Hermine (the first direct hit to Florida by a hurricane since 2005)) which had significant impacts to the North and South Coastal zones, and Hurricane Matthew grazed the east coast of Florida and caused extensive damage in the North Central zone. In part due to these challenges, DEF adjusted SAIDI increased from 79.7 in 2015 to 85.0 in 2016. However, DEF adjusted SAIFI stayed flat, and remained at 0.98 from 2015 to 2016. This increase in SAIDI for 2016 shows the 5 year trend from 2012 to 2016 as a slightly upward trend, even as SAIFI has a downward trend.

Since SAIDI is directly proportional to the product of SAIFI and CAIDI, with a flat SAIFI, the 7% rise in SAIDI is the result of a 7% rise of the CAIDI observed in 2015. The rise in CAIDI is mostly attributed to the active weather pattern described above which brought forth multiple days of outage counts above the normal daily average. The 6 days mentioned above had 155% more outages than the normal daily average in 2016. A rise in CAIDI is also expected from investments in grid automation devices such as Self-Healing Teams which eliminate outages to customers not directly impacted by necessary system repairs.

Year	2011	2012	2013	2014	2015	2016
Adjusted SAIDI	86.9	73.4	89.1	85.1	79.7	85.0

Year	2011	2012	2013	2014	2015	2016
Adjusted SAIFI	1.07	0.96	1.09	1.09	0.98	0.98

a. **Causes of outages events –** *see attached forms*.

   i. **5-yr patterns/trends in outage causation for each of the top 10 causes of outage events, including the frequency, duration, restoration time, cost incurred to restore service, remediation programs and costs.**

      - *See Attachment D - "5 yr. Trend by Cause Code" Spreadsheet for 2012 - 2016.*

   ii. **The process used to identify and select the actions to improve the performance in each of the top 10 causes of outages.**

      DEF prioritizes the reliability improvement action plan by balancing historical and current year performance. System devices are evaluated based on the number of interruptions, customers interrupted (CI), and customer minutes of interruption (CMI). In addition, current year performance is monitored monthly to identify emergent and seasonal issues including load balancing for cold weather and the need for foot patrols of devices experiencing multiple interruptions.

   iii. **2017 activities and financial projection levels addressing each of the 10 causes of service outage.**

      - *See Attachment E - "2017 Program Projection" Spreadsheet.*

b. **Three percent Feeder list**

   i. **Identify whether any feeders appear on the 3% listing more than once within a consecutive 5-yr. period and any actions implemented to improve feeder performance.**

      Feeder K118*:*

      - *DEF will Infrared scan main feeder of K118 in June/July 2017.*
      - *K118 experienced 4 feeder level outages in 2016. One was due to Animal, two were due to Connector Failure, and the last was due to Defective Equipment.*
      - *DEF implemented a self-healing team in 2016 between feeder K118 and feeder K1296 out of Sun-N-Lakes substation. This self-healing team will allow automatic transfer of a large section of K118 to K1296 to reduce the impact of an outage on the main feeder of K118.*
      - *Operations techs will continue to analyze feeder and perform in-depth patrol to identify operational issues and initiate mitigation actions.*

Feeder A36*:*

- *DEF Infrared scanned the main feeder in June/July of 2016. No issues were found after completing Infrared scanning. DEF will continue to Infrared scan main feeder in June/July 2017.*
- *A36 is a primarily rural feeder that extends for 95 circuit miles through heavily treed areas. A36 experienced 3 feeder level outages in 2016. One was attributed to Corrosion, one to Tree-Non-preventable, and one to Vehicle/Construction Equipment.*
- *DEF completed 6.5 miles of backbone tree trimming and 72.3 miles of lateral tree trimming in 2016.*
- *DEF plans to implement a self-healing team between feeder A36 and feeder A50 out of McIntosh substation. This self-healing team will allow automatic transfer of large sections of A36 to A50 to reduce the impact of an outage on the main feeder.*
- *Operations techs will continue to analyze feeder and perform in-depth patrol to identify operational issues and initiate mitigation actions.*

Feeder W0630*:*

- *DEF will Infrared scan main feeder W0630 in June/July 2017.*
- *W0630 experienced 3 feeder level outages in 2016. Two were attributable to Connector Failure and the third was due to Vehicle/Construction Equipment.*
- *DEF completed 9.9 miles of backbone tree trimming in 2016.*
- *Operations techs will continue to analyze feeder and perform in-depth patrol to identify operational issues and initiate mitigation actions.*

Feeder A38*:*

- *DEF Infrared scanned main feeder A38 in June/July 2016, and no issues were found. DEF will continue to scan main feeder of A38 in June/July 2017.*
- *A38 serves heavily treed areas of North Marion County, and extends for a total of 152 circuit miles. Feeder A38 experienced 3 feeder level outages in 2016, and all three of them were attributable to Tree-Non-preventable.*
- *DEF completed 11.8 miles of backbone tree trimming in 2016.*
- *DEF plans to implement a self-healing team that will allow transfer of segments of A38 between two adjacent feeders, A34 out of Reddick substation and A39 out of Martin substation. This self-healing team will not be automatic, but will allow remote operation by the Distribution Control Center dispatchers, thus significantly reducing the impact of an outage on the main feeder.*
- *Operations techs will continue to analyze feeder and perform in-depth patrol to identify operational issues and initiate mitigation actions.*

Feeder K779:

- *DEF Infrared scanned in June/July of 2016. One issue was found on feeder during the IR scan, the bolted connection on the bottom of the bottom phase switch, and this issue is planned for completion by March 2017. DEF will continue to Infrared scan main feeder of K779 in June/July 2017.*
- *Feeder K779 is primarily an underground feeder, comprised of 81% underground backbone cable, and 92% underground lateral cable.*
- *K779 experienced 3 feeder level outages in 2016. Two were attributable to UG Primary Cable Failure, and a third due to Defective Equipment.*
- *Operations techs will continue to analyze feeder and perform in-depth patrol to identify operational issues and initiate mitigation actions.*

ii. The process used to identify and select the actions to improve the performance of feeders in the 3% feeder list, if any.

DEF prioritizes the reliability improvement action plan for 3% Feeder List by balancing historical and current year performance. Feeders are evaluated based on the number of interruptions, customers interrupted (CI), and customer minutes of interruption (CMI). In addition, current year performance is monitored monthly to identify emergent and seasonal issues including load balancing for cold weather and the need for foot patrols of feeders experiencing multiple interruptions.

iii. 2017 activities and financial projection levels directed at improving feeder performance.

Feeders are prioritized for maintenance and replacement work based on several criteria including customer minutes of interruption (CMI), number of interruptions, interruption cause code, and CEMI repeat outage performance. This process results in a work plan targeted at feeders and devices having the greatest impact on reliability indices and customer satisfaction. This process has resulted in consistent and sustained reliability performance.

The 3% feeder list is based solely on number of interruptions and does not take into consideration any of the additional criteria above. While all feeders on the 3% list are patrolled for corrective action, the possibility exists that they could appear on the list more than once due to their relative impact on system reliability indices.

For the 2017 budget levels, please see Attachment E - “2017Program Projection” Spreadsheet.

c. **Regional Reliability Indices –** *see attached forms.*

   i. **5-Yr. patterns/trends in each regions reliability for each index and on any overall basis.**

      - *See Attachment F - "5 yr. Sum by Region" Spreadsheet.*

   ii. **The process used to identify and select actions to improve the regional reliability trends.**

      - *Regional reliability trends are tracked to ensure alignment with the system level goals they support. Specific device level improvements are measured and prioritized at a system level to ensure maximum benefit for resources expended.*

   iii. **Discuss any 2017 projected activities and financial projection levels directed at improving regional reliability performance.**

      - *See Attachment E - "2017 Program Projection" Spreadsheet. Regional reliability trends are tracked to ensure alignment with the system level goals they support. Specific device level improvements are measured and prioritized at a system level to ensure maximum benefit for resources expended.*
      - *DEF will continue to implement the multi-year program by the Grid Solutions department to install new electronic reclosers. DEF installed 182 electronic reclosers in 2016 as part of the "Self-Healing Team" project that will continue through 2017. It is designed to reduce the overall number and duration of outages by increased sectionalization on distribution feeders. The SCADA communication between the devices and the DEF Distribution Control Center (DCC), allows automatic remote sectionalization to further reduce the number and duration of the outages. DEF currently has 77 active teams in operation and plans to add additional teams in 2017.*
      - *In 2016, DEF added additional staff to conduct analysis and reviews of reliability data that meet certain operational thresholds in order to reduce the number of outages and momentary interruptions. From 2015 to 2016, DEF had a 17% reduction in the number of MAIFI customers and the 5 year trend in MAIFI is downward. From 2015 to 2016, DEF had a 25% increase in CEMI5 devices as measured by the FPSC exclusion criteria. However, by the industry standard IEEE metrics that DEF measures, tracks, and has built an organization around, DEF showed a 2% decrease in 2016 CEMI6 following a 16% decrease in 2015. DEF will look to build on this success by refining processes and execution in 2017.*
      - *DEF will continue to build upon the Self-Healing Teams installed in prior years by the installation of Self-Healing Networks in 2017. These upgraded systems work together to further segment the system and reduce the number of customers impacted by any single outage.*

FLORIDA PUBLIC SERVICE COMMISSION
ANNUAL DISTRIBUTION SERVICE RELIABILITY REPORT – ADJUSTED
Top Ten Outage Causes: Form PSC/ECR 102-1(a) (8/06) and Form PSC/ECR 102-1(b) (8/06)

PART I

CAUSES OF OUTAGE EVENTS – ADJUSTED				
Utility Name: Duke Energy Florida				Year:2016
Cause** (a)	Customer Minutes Of Interruption	Number of Outage Events(N) (b)	Average Duration (L-Bar) (c)	Average Restoration Time (CAIDI) (d)
1.) Animals	6,457,762	5,369	80.3	63.1
2.) Vegetation	41,271,404	7,879	144.8	99.8
3.) Lightning	4,541,505	1,216	150.3	85.8
4.) Other Weather	23,090,742	4,965	133.7	97.2
5.) Vehicle	10,033,900	429	235.2	102.0
6.) Defective Equipment	37,431,197	9,195	146.7	82.4
7.) Unknown	2,597,197	1,097	90.3	63.1
Subtotal	125,423,707	30,150	131.6	89.6
All Other Causes*See attached	23,253,194	7,390	173.8	72.6
System Totals:	148,676,901	37,540	139.9	86.4

PSC/ECR 103 (8/06)
Incorporated by reference in Rule 25-6.0455, F.A.C.

CAUSES OF OUTAGE EVENTS – ADJUSTED				
Utility Name: Duke Energy Florida				Year:2016
All Other Causes Cause (a)	Customer Minutes Of Interruption	Number of Outage Events(N) (b)	Average Duration (L-Bar) (c)	Average Restoration Time (CAIDI) (d)
U/G Primary Cable	16,520,028	1,538	269.3	89.5
U/G Secondary/Service	1,307,720	3,407	186.7	220.2
Right-Of-Way	1,069,045	35	46.9	24.7
Human Error-Public	979,122	376	107.3	55.0
Human Error-PGN	808,964	630	54.7	27.2
Human Error-PGN Contractor	760,766	137	119.3	39.0
Overload	637,359	119	117.2	76.7
Dig-In	503,174	229	191.8	110.8
Improper Installation	265,700	23	111.6	132.5
Foreign Material In Line	122,827	55	83.7	82.3
Miscellaneous	108,912	488	68.6	85.4
O/H Secondary Cable	95,454	242	153.3	168.9
Construction Equipment	65,057	16	123.3	66.8
Vandalism	6,186	94	41.3	24.2
U/G Service Cable	2,880	1	192.5	192.0
All Other Causes	23,253,194	7,390	173.8	72.6

PART II

THREE PERCENT FEEDER LIST – **ADJUSTED**													
U ility Name: DUKE ENERGY FLORIDA, INC. Year: **2016**													
			NUMBER OF CUSTOMERS										
PRIMARY CIRCUIT ID. NO. OR NAME	SUBSTATION ORIGIN	LOCATION	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	OTHER	TOTAL	OUTAGE EVENTS "N"	AVERAGE DURATION "L-Bar"	CAIDI	LISTED LAST YEAR ?	NO. OF YEARS IN THE LAST 5	CORRECTIVE ACTION COMPLETION DATE
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
M664	SPRING LAKE	LONGWOOD	1,686	219	-	14	1,919	7	120.7	78.4	N	1	12/31/17
J406	LARGO	CLEARWATER	1,712	291	1	24	2,028	6	94.1	36.3	N	-	6/30/17
J895	SEMINOLE	WALSINGHAM	2,425	467	-	43	2,935	6	148.9	62.9	N	1	12/31/17
N69	MONTICELLO	MONTICELLO	967	191	2	39	1,199	5	138.4	92.5	N	1	12/31/17
N67	MONTICELLO	MONTICELLO	1,115	206	-	50	1,371	5	102.1	54.3	Y	1	12/31/17
K975	BONNET CREEK	BUENA VISTA	282	88	-	2	372	5	200.8	104.3	N	-	12/31/17
A230	SANTOS	OCALA	984	129	-	-	1,113	4	167.4	89.9	N	1	12/31/17
N195	JENNINGS	MONTICELLO	377	80	1	27	485	4	114.2	88.4	N	-	12/31/17
K1196	BABSON PARK	LAKE WALES	735	116	-	16	867	4	120.2	57.6	N	1	12/31/17
A379	O BRIEN	MONTICELLO	549	152	1	42	744	4	166.6	101.3	N	1	12/31/17
M501	EUSTIS	APOPKA	994	84	-	39	1,117	4	121.7	57.3	N	-	12/31/17
K3245	DUNDEE	LAKE WALES	1,362	154	-	51	1,567	4	98.6	63.6	N	1	6/30/17
X142	MAXIMO	ST. PETERSBURG	2,121	148	-	9	2,278	4	189.7	37.7	N	-	12/31/17
K118	AVON PARK	HIGHLANDS	1,575	163	-	2	1,740	4	92.6	53.5	Y	2	12/31/17
M342	CLARCONA	WINTER GARDEN	1,764	54	-	11	1,829	4	154.3	90.4	N	-	6/30/17
K1320	LAKE PLACID	HIGHLANDS	1,960	250	-	14	2,224	4	115.6	52.4	Y	1	6/30/17
A36	REDDICK	OCALA	889	243	-	15	1,147	3	148.0	140.1	Y	3	12/31/17
X133	CROSSROADS	ST. PETERSBURG	2,539	89	-	14	2,642	3	195.7	112.8	N	-	12/31/17
K58	LAKE WALES	LAKE WALES	1,212	267	-	37	1,516	3	151.3	101.1	N	-	12/31/17
W0630	HOLOPAW	SE ORLANDO	608	54	1	12	675	3	158.1	100.2	N	2	12/31/17
K563	CYPRESSWOOD	LAKE WALES	955	264	3	7	1,229	3	134.9	99.4	N	-	12/31/17
M908	FERN PARK	LONGWOOD	578	139	15	12	744	3	132.5	98.9	N	-	12/31/17
A38	MARTIN	OCALA	1,753	239	-	20	2,012	3	158.3	92.2	Y	2	12/31/17
M33	ZELLWOOD	APOPKA	934	204	9	19	1,166	3	144.0	84.2	N	-	12/31/17
X141	MAXIMO	ST. PETERSBURG	2,070	133	-	16	2,219	3	173.3	78.3	N	-	12/31/17
M417	LOCKHART	APOPKA	1,144	169	5	19	1,337	3	136.9	74.4	N	-	12/31/17
K1772	CROOKED LAKE	LAKE WALES	1,675	225	3	8	1,911	3	149.1	73.5	N	1	6/30/17
C18	CLEARWATER	CLEARWATER	1,887	145	-	14	2,046	3	349.7	73.0	N	-	12/31/17
K1693	LAKEWOOD	HIGHLANDS	1,551	163	-	19	1,733	3	108.8	69.8	N	-	6/30/17
M658	MYRTLE LAKE	LONGWOOD	808	47	3	11	869	3	126.2	66.9	N	-	12/31/17
K779	ISLESWORTH	WINTER GARDEN	976	88	-	14	1,078	3	125.1	64.9	N	2	6/30/17
W0212	NARCOOSSEE	SE ORLANDO	1,604	303	2	30	1,939	3	129.4	63.8	N	-	12/31/17
K967	INTERCESSION CITY	LAKE WALES	1,198	78	-	6	1,282	3	172.9	62.5	N	-	12/31/17
W0808	DELAND	DELAND	1,423	137	5	36	1,601	3	112.2	57.4	N	-	6/30/17
J1001	BELLEAIR	CLEARWATER	2,530	179	-	6	2,715	3	170.1	57.1	N	-	6/30/17
K1558	POINCIANA	LAKE WALES	1,749	14	-	12	1,775	3	144.2	56.1	N	-	12/31/17
M706	PLYMOUTH	PLYMOUTH	493	56	5	13	567	3	198.5	54.8	N	-	12/31/17
W0172	OVIEDO	JAMESTOWN	1,293	316	2	39	1,650	3	189.9	52.3	N	-	6/30/17
J893	SEMINOLE	WALSINGHAM	1,478	110	7	6	1,601	3	110.7	51.4	N	-	12/31/17
K2250	HEMPLE	WINTER GARDEN	1,508	117	-	20	1,645	3	176.2	50.2	Y	1	6/30/17
M1761	NORTH LONGWOOD	LONGWOOD	1,051	303	26	17	1,397	3	124.7	48.7	N	-	12/31/17

LBAR AND CAIDI Includes all devices.

PART III

SYSTEM RELIAB LITY NDICES – **ADJUSTED**

Utility Name: Duke Energy Florida Year: 2016

District or Service Area (a)	SAIDI (b)	CA DI (c)	SA FI (d)	MA FIe (e)	CEMI5 (f)
North Coastal	**154.8**	**111.3**	**1.39**	**7.8**	**4.00%**
Inverness	88 3	110 1	0 80	6 8	0 45%
Monticello	248 4	121 6	2 04	9 6	9 11%
Ocala	150 7	101 5	1 48	7 3	3 69%
South Coastal	**72.7**	**81.1**	**0.90**	**7.3**	**0.68%**
Clearwater	87 1	74 7	1 17	8 5	1 44%
Seven Springs	55 5	83 3	0 67	8 0	0 08%
St Petersburg	69 5	82 1	0 85	5 7	0 17%
Walsingham	85 7	84 1	1 02	7 2	1 40%
Zephyrhills	63 0	92 8	0 68	7 5	0 00%
North Central	**78.1**	**87.0**	**0.90**	**8.6**	**0.36%**
Apopka	85 9	91 8	0 94	7 8	0 53%
Deland	77 7	84 5	0 92	6 4	0 40%
Jamestown	62 7	82 4	0 76	9 0	0 07%
Longwood	93 6	89 2	1 05	11 0	0 58%
South Central	**78.8**	**78.2**	**1.01**	**7.0**	**1.06%**
Buena Vista	42 7	71 4	0 60	5 4	0 15%
Clermont	64 2	96 8	0 66	6 3	0 02%
SE Orlando	78 3	80 6	0 97	4 2	0 43%
Highlands	102 1	62 7	1 63	10 8	2 63%
Lake Wales	115 0	86 0	1 34	9 1	2 67%
Winter Garden	75 5	81 7	0 92	7 5	0 41%
SYSTEM	**85.0**	**86.4**	**0.98**	**7.6**	**1.09%**

FEEDER SPECIFIC DATA – Expanded to include OH/UG details

Provide the following information for each feeder circuit in service during 2016. If any data is not available explain whether the Company has any plans to begin tracking such data and if not, why.

For (A) thru (Y) - See Attachment G - CD containing Excel File – "2016 Feeder Specific Data".

- *In 2008, DEF transitioned from FRAMME to G-Electric. This change supported the move from a location-based GIS system to an asset-based GIS system. All 2016 data was obtained from G-Electric.*

For (Z) – See Attachment G - "2016 Summer Feeder Peaks".

(A) Feeder ID	*See Attachment G*
(B) Sub-Region in which the feeder is located	*See Attachment G*
(C) Number of overhead lateral lines	*See Attachment G*
(D) Number of overhead lateral miles	*See Attachment G*
(E) Number of Customers served on OH lateral lines	*See Attachment G*
(F) CMI for overhead lateral lines	*See Attachment G*
(G) CI for overhead lateral lines	*See Attachment G*
(H) Number of underground lateral lines	*See Attachment G*
(I) Number of underground lateral miles	*See Attachment G*
(J) Number of customers served on UG lateral lines	*See Attachment G*
(K) CMI for underground lateral lines	*See Attachment G*
(L) CI for underground lateral lines	*See Attachment G*
(M) Number of automatic line sectionalizing devices on the lateral lines	*See Attachment G*
(N) Number of automatic line sectionalizing devices on the feeder	*See Attachment G*
(O) Whether the feeder circuit is looped	*See Attachment G*
(P) Total length of the feeder circuit	*See Attachment G*
(Q) Length of underground portion of the feeder circuit	*See Attachment G*
(R) Number of customers served by underground feeders	*See Attachment G*
(S) CMI for underground feeders	*See Attachment G*
(T) CI for underground feeders	*See Attachment G*
(U) Length of overhead portion of the feeder circuit	*See Attachment G*
(V) Number of customers served by overhead feeders	*See Attachment G*
(W) CMI for overhead feeders	*See Attachment G*
(X) CI for overhead feeders	*See Attachment G*
(Y) Load growth since December 31, 2009	*See Attachment G*
(Z) Peak load recorded through December 31, 2009	*See Attachment G*
(AA) Vegetation Management-number of overhead lateral lines-miles	*See Attachment G*

DISTRIBUTION SUBSTATION (Rule 25-6.0455, F.A.C.)

a. Describe the five year patterns/trends in reliability performance of distribution substations.

The five year patterns/trends in reliability performance of distribution substations is best described by the performance indices. These indices are used for calculating system reliability:

- *SAIDI – System Average Interruption Duration Index (minutes/customer). Reflects the average number of minutes a customer was without power system wide. It is determined by dividing the sum of customer-minutes of interruption by the average number of customers served during a period.*

- *CAIDI - Customer Average Interruption Duration Index (minutes/customer). CAIDI is the average customer-minutes of interruption per customer interruption. It approximates the average length of time required to complete service restoration. It is determined by dividing the sum of all customer-minutes of interruption durations by the number of customer interruptions during a period. CAIDI measures how long it takes DEF to restore service after an interruption.*

- *SAIFI - System Average Interruption Frequency Index. SAIFI is the average number of interruptions per customer per a certain period. It is determined by dividing the total number of customer interruptions by the average number of customers served during a period.*

- *FOHMY – Forced Outages per Hundred Miles per Year, measures the number of transmission line events, momentary AND sustained, that are incurred per hundred circuit miles per year. This measure is often grouped by voltage class.*

The following charts will show the trending for these Reliability Indices:

Table 1: 2016 Duke Energy-Florida SAIDI Reliability Indices

Section	Grid SAIDI	SECI SAIDI	Retail SAIDI
North	1.76	3.31	2.06
Central	3.00	0.37	3.61
Coastal	2.75	1.48	3.44
Florida	7.51	5.17	9.11

In 2016, Grid SAIDI decreased from 2015 and SECI (Seminole Electric Cooperatives, Inc.) SAIDI also decreased from 2015. SECI represents its electric cooperative members in Florida.

Roughly 50% of the total customer interruptions in 2016 occurred during the months of April to July, inclusive, as shown in Figure 4. Line Equipment, Animal, and Breaker Equipment were the main contributors to higher CMI during this period.

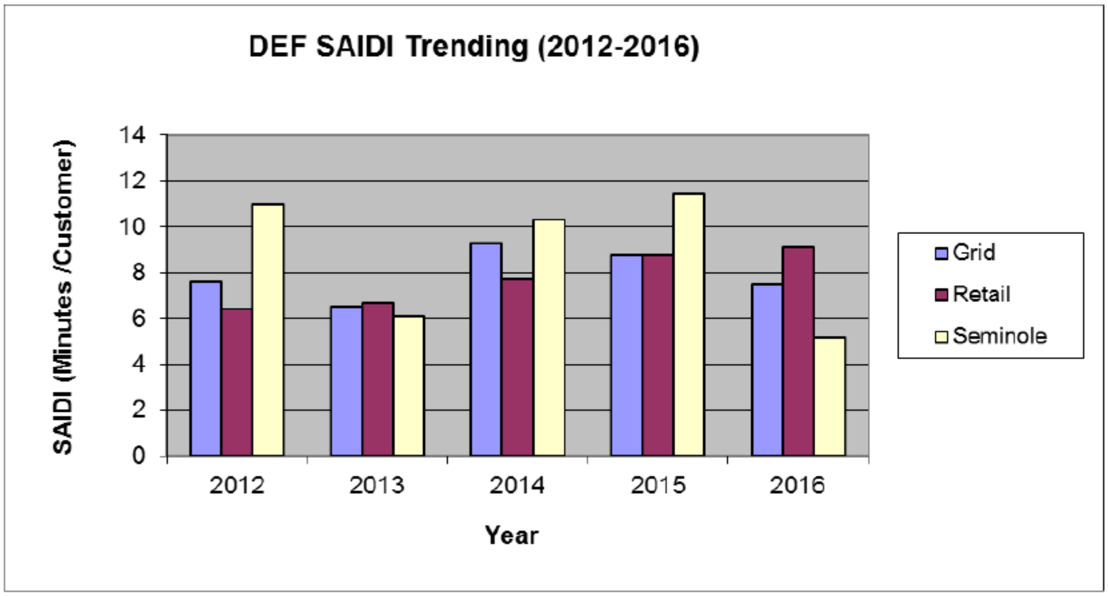


Fig.1 DEF SAIDI Trending (2012-2016)

Grid KPIs	2012	2013	2014	2015	2016
Customers (Thousands)	336.43	376.36	529.41	402.95	445.65
CMI (Millions)	16.65	14.57	20.32	20.57	18.91
SAIDI	7.614	6.526	7.72	8.77	8.18
CAIDI	46.992	39.266	39.4	49.64	39.68
SAIFI	0.136	0.17	0.14	0.18	0.21
FSO	32	N/A	N/A	N/A	N/A
FOHMY	N/A*	8.21	13.5	11.78	9.07

Table 2: DEF Statistics (2012-2016)

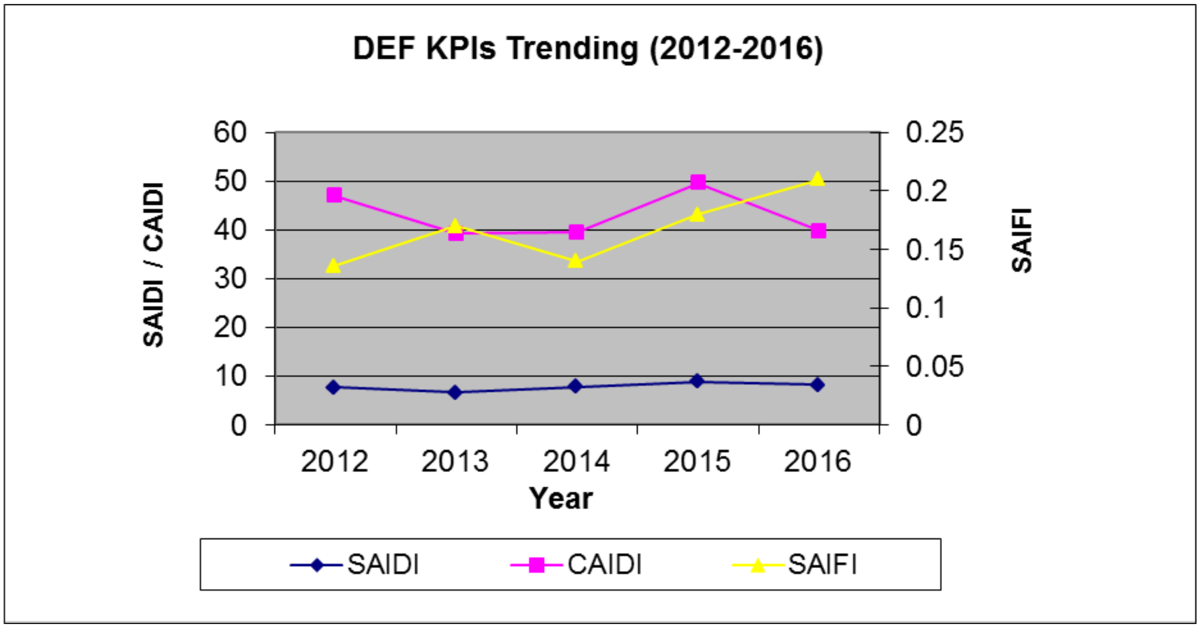


Fig.2 DEF Key Performance Indicators Trending (2012- 2016)

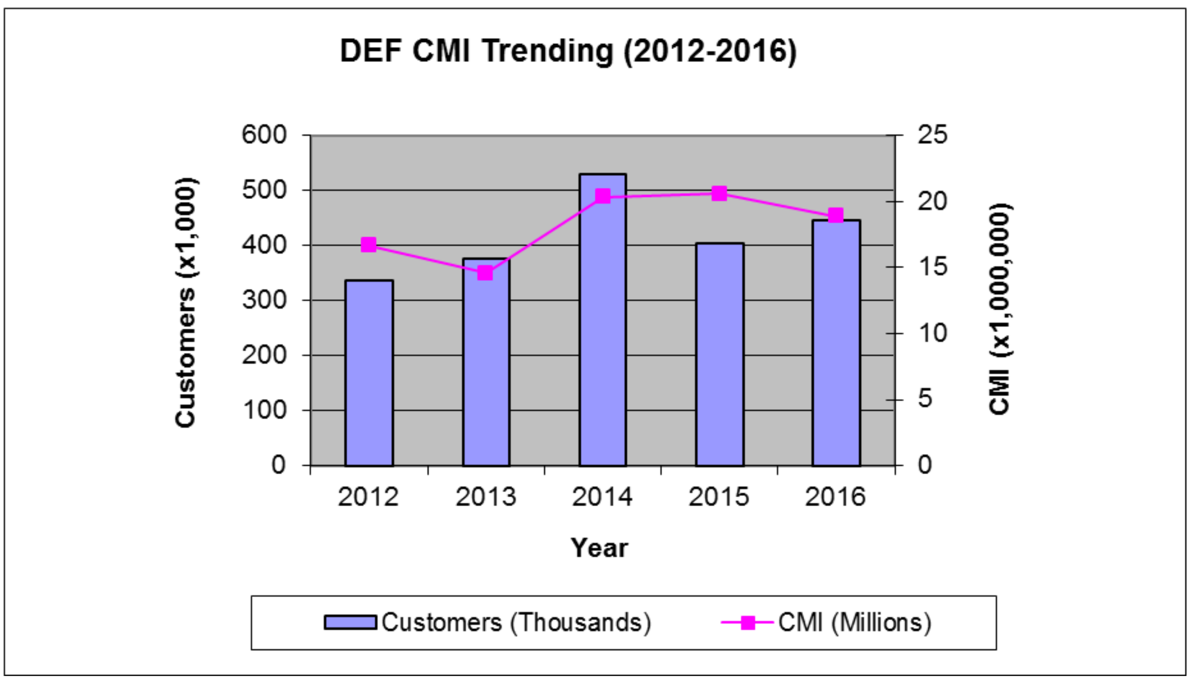


Fig.3 DEF Customers Minute Interruption Trending (2012- 2016)

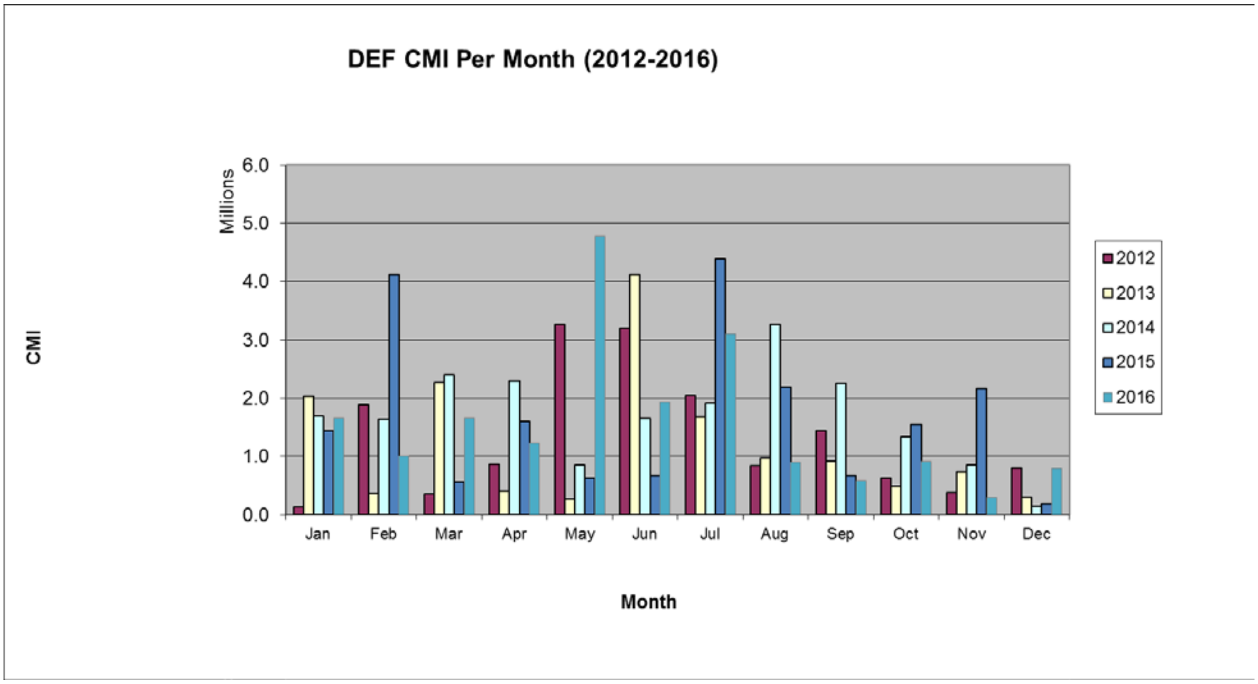


Fig.4 DEF CMI per month (2012- 2016)

a. Describe Company efforts to track the reliability of distribution substations.

Duke Energy Florida has an in-house database, Transmission Outage Management System (TOMS), which is used to keep track and record all the events that occur every day. It maintains all the indices mentioned above.

b. Describe the process used by your Company to identify and select the actions to promote substation reliability.

To identify and promote substation reliability, DEF uses different methods, such as monthly substation inspections, predictive and preventive maintenance, infra-red analysis, and numerous diagnostics tests. Once a problem is identified, DEF's work management tool is used to track the efforts to correct it.

c. Provide the number of distribution substations inspected during normal operations (non-storm related) for 2007 through 2016.

Duke Energy Florida has inspected each of its current 437 substations on a routine basis since 2004 to present. These routine inspections are scheduled and performed monthly.

SUPPLEMENTAL DISTRIBUTION INFORMATION
The next six pages contain the following information:

2016

	Unadjusted Data		Adjusted Data	
	CMI	**CI**	**CMI**	**CI**
NORTH CENTRAL	**321,564,106**	**699,301**	**31,289,042**	**359,815**
APOPKA	41,811,647	165,542	8,484,687	92,438
DELAND	173,534,006	188,549	6,235,698	73,822
JAMESTOWN	50,822,427	183,814	8,423,011	102,256
LONGWOOD	55,396,026	161,396	8,145,646	91,299
NORTH COASTAL	**147,695,271**	**519,513**	**31,046,562**	**278,948**
INVERNESS	22,346,142	123,283	6,374,885	57,910
MONTICELLO	89,749,337	198,562	13,537,705	111,337
OCALA	35,599,792	197,668	11,133,972	109,701
SOUTH CENTRAL	**60,790,354**	**690,908**	**37,075,253**	**474,238**
BUENA VISTA	6,939,852	97,844	4,853,740	67,979
CLERMONT	3,284,540	34,698	2,147,252	22,175
HIGHLANDS	7,622,649	142,588	5,848,730	93,270
LAKE WALES	15,960,179	200,018	11,279,846	131,194
SE ORLANDO	12,826,158	109,961	6,993,833	86,763
WINTER GARDEN	14,156,976	105,799	5,951,852	72,857
SOUTH COASTAL	**118,296,379**	**1,180,876**	**49,266,044**	**607,422**
CLEARWATER	22,021,460	298,056	12,393,027	165,933
SEVEN SPRINGS	25,029,233	234,891	10,189,526	122,368
ST. PETERSBURG	38,341,403	299,789	12,182,119	148,427
WALSINGHAM	30,643,645	324,312	12,903,656	153,472
ZEPHYRHILLS	2,260,638	23,828	1,597,716	17,222
Grand Total	**648,346,110**	**3,090,598**	**148,676,901**	**1,720,423**

CEMI5 Unadjusted Report - 2016

	INTERRUPTIONS:	1	2	3	4	5	6	7	8	9	10 +	Cust >5	CEMI >5
NORTH COASTAL													
	Inverness	23,300	15,061	6,615	4,304	2,463	963	507	188	158	257	2,073	**2.87%**
	Monticello	8,148	8,998	8,351	6,423	4,157	3,290	2,302	1,420	1,006	3,622	11,640	**21.36%**
	Ocala	20,302	12,819	7,126	5,074	3,827	2,270	1,766	1,719	1,212	1,885	8,852	**11.98%**
	NORTH COASTAL	51,750	36,878	22,092	15,801	10,447	**6,523**	**4,575**	**3,327**	**2,376**	**5,764**	22,565	**11.25%**
SOUTH COASTAL													
	Clearwater	41,864	30,193	17,343	13,111	6,116	2,456	822	291	1,498	668	5,735	**4.03%**
	Seven Springs	46,382	35,732	18,975	6,912	2,646	1,028	126	8	60	36	1,258	**0.69%**
	St. Petersburg	45,448	32,203	19,211	10,138	7,109	3,499	1,510	708	175	99	5,991	**3.42%**
	Walsingham	54,568	31,628	13,584	9,452	5,177	3,837	2,529	1,556	457	2,118	10,497	**6.97%**
	Zephyrhills	9,343	2,979	1,113	677	308	66	10	-	-	-	76	**0.30%**
	SOUTH COASTAL	197,605	132,735	70,226	40,290	21,356	**10,886**	**4,997**	**2,563**	**2,190**	**2,921**	23,557	**3.48%**
NORTH CENTRAL													
	Apopka	27,666	23,329	10,173	6,194	1,735	1,417	529	557	297	122	2,922	**2.96%**
	Deland	21,985	19,796	11,632	7,960	3,629	2,374	1,371	539	206	142	4,632	**5.77%**
	Jamestown	44,521	25,808	12,612	5,712	2,230	729	232	66	25	42	1,094	**0.81%**
	Longwood	32,442	13,529	10,211	7,427	2,709	1,519	888	325	78	54	2,864	**3.29%**
	NORTH CENTRAL	126,614	82,462	44,628	27,293	10,303	**6,039**	**3,020**	**1,487**	**606**	**360**	**11,512**	**2.87%**
SOUTH CENTRAL													
	Buena Vista	35,104	8,914	7,798	2,760	624	301	68	9	8	-	386	**0.34%**
	Clermont	10,611	5,978	1,437	1,199	258	66	26	19	-	-	111	**0.33%**
	Highlands	13,806	10,273	7,368	6,886	4,714	2,290	1,028	620	348	194	4,480	**7.82%**
	Lake Wales	23,606	19,335	12,868	7,015	4,775	2,384	1,682	446	90	720	5,322	**5.43%**
	SE Orlando	34,412	15,893	5,349	2,320	855	520	232	416	132	107	1,407	**1.58%**
	Winter Garden	20,487	9,917	7,898	5,576	1,774	537	212	148	28	11	936	**1.19%**
	SOUTH CENTRAL	138,026	70,310	42,718	25,756	13,000	**6,098**	**3,248**	**1,658**	**606**	**1,032**	**12,642**	**2.69%**
	System	513,995	322,385	179,664	109,140	55,106	**29,546**	**15,840**	**9,035**	**5,778**	**10,077**	**70,276**	**4.02%**

CEMI5 Adjusted Report - 2016													
INTERRUPTIONS:		1	2	3	4	5	6	7	8	9	10 +	Cust >5	CEMI >5
NORTH COASTAL													
	Inverness	25687	7058	2816	935	394	154	48	18	57	49	326	**0.45%**
	Monticello	13916	11704	5428	3152	1818	1437	882	925	614	1107	4,965	**9.11%**
	Ocala	22173	11110	5719	2918	1389	1002	990	343	232	160	2,727	**3.69%**
	NORTH COASTAL	61776	29872	13963	7005	3601	**2593**	**1920**	**1286**	**903**	**1316**	8,018	**4.00%**
SOUTH COASTAL													
	Clearwater	44770	24938	11761	3224	404	1671	255	47	38	35	2,046	**1.44%**
	Seven Springs	46845	19093	7204	2220	502	85	35	14	0	0	139	**0.08%**
	St. Petersburg	46029	26545	7259	4017	812	213	53	27	0	0	293	**0.17%**
	Walsingham	44744	17822	9881	4060	842	164	95	1472	137	247	2,115	**1.40%**
	Zephyrhills	8985	2388	719	203	39	0	0	0	0	0	0	**0.00%**
	SOUTH COASTAL	191373	90786	36824	13724	2599	**2133**	**438**	**1560**	**175**	**282**	4,593	**0.68%**
NORTH CENTRAL													
	Apopka	32252	10746	5476	2929	909	317	115	65	16	13	526	**0.53%**
	Deland	26242	10916	3904	1819	478	153	120	23	4	23	323	**0.40%**
	Jamestown	46145	16086	5103	1041	375	36	60	0	0	0	96	**0.07%**
	Longwood	29765	13134	4671	2538	952	210	213	20	52	6	501	**0.58%**
	NORTH CENTRAL	134404	50882	19154	8327	2714	**716**	**508**	**108**	**72**	**42**	1,446	**0.36%**
SOUTH CENTRAL													
	Buena Vista	34750	7064	3826	497	567	114	48	8	0	0	170	**0.15%**
	Clermont	5841	4565	1445	277	229	7	0	0	0	0	7	**0.02%**
	Highlands	15171	10946	7907	3477	1345	960	406	105	26	9	1,506	**2.63%**
	Lake Wales	25846	12978	8805	4379	2575	1587	426	207	173	225	2,618	**2.67%**
	SE Orlando	33960	13407	3904	1438	678	255	34	27	20	47	383	**0.43%**
	Winter Garden	20942	8714	6843	1774	568	194	43	74	0	0	322	**0.41%**
	SOUTH CENTRAL	136510	57674	32730	11842	5962	**3117**	**957**	**421**	**219**	**281**	5,006	**1.06%**
	System	524063	229214	102671	40898	14876	**8559**	**3823**	**3375**	**1369**	**1921**	19,063	**1.09%**

MAIFIe - Unadjusted (01/01/2016 - 12/31/2016)

	Customers Served	# momentary events	CME	MAIFIe
NORTH COASTAL				
Inverness	72,170	387	496,149	**6.9**
Monticello	54,506	603	530,635	**9.7**
Ocala	73,889	339	545,022	**7.4**
NORTH COASTAL	**200,565**	**1,329**	**1,571,806**	**7.8**
SOUTH COASTAL				
Clearwater	142,294	662	1,245,974	**8.8**
Seven Springs	183,570	755	1,478,153	**8.1**
St. Petersburg	175,380	548	1,021,380	**5.8**
Walsingham	150,642	598	1,095,334	**7.3**
Zephyrhills	25,369	95	193,923	**7.6**
SOUTH COASTAL	**677,255**	**2,658**	**5,034,764**	**7.4**
NORTH CENTRAL				
Apopka	98,815	634	777,596	**7.9**
Deland	80,237	379	520,113	**6.5**
Jamestown	134,416	683	1,223,136	**9.1**
Longwood	87,042	729	960,402	**11**
NORTH CENTRAL	**400,510**	**2,425**	**3,481,247**	**8.7**
SOUTH CENTRAL				
Buena Vista	113,594	559	639,737	**5.6**
Clermont	33,446	151	211,110	**6.3**
Highlands	57,265	516	623,006	**10.9**
Lake Wales	98,051	631	897,894	**9.2**
SE Orlando	89,313	343	382,560	**4.3**
Winter Garden	78,865	388	594,496	**7.5**
SOUTH CENTRAL	**470,534**	**2,588**	**3,348,803**	**7.1**
System	**1,748,864**	**9,000**	**13,436,620**	**7.7**

MAIFIe - Adjusted (01/01/2016 - 12/31/2016)

	Customers Served	# momentary events	CME	MAIFIe
NORTH COASTAL				
Inverness	72,170	383	489,591	**6.8**
Monticello	54,506	595	522,354	**9.6**
Ocala	73,889	338	543,032	**7.3**
NORTH COASTAL	**200,565**	**1,316**	**1,554,977**	**7.8**
SOUTH COASTAL				
Clearwater	142,294	647	1,212,125	**8.5**
Seven Springs	183,570	751	1,470,535	**8**
St. Petersburg	175,380	541	1,007,150	**5.7**
Walsingham	150,642	593	1,086,932	**7.2**
Zephyrhills	25,369	93	189,888	**7.5**
SOUTH COASTAL	**677,255**	**2,625**	**4,966,630**	**7.3**
NORTH CENTRAL				
Apopka	98,815	626	768,634	**7.8**
Deland	80,237	373	510,967	**6.4**
Jamestown	134,416	677	1,211,372	**9**
Longwood	87,042	723	954,143	**11**
NORTH CENTRAL	**400,510**	**2,399**	**3,445,116**	**8.6**
SOUTH CENTRAL				
Buena Vista	113,594	541	615,853	**5.4**
Clermont	33,446	151	211,110	**6.3**
Highlands	57,265	510	617,021	**10.8**
Lake Wales	98,051	627	892,336	**9.1**
SE Orlando	89,313	337	375,865	**4.2**
Winter Garden	78,865	382	589,778	**7.5**
SOUTH CENTRAL	**470,534**	**2,548**	**3,301,963**	**7**
System	**1,748,864**	**8,888**	**13,268,686**	**7.6**

SYSTEM RELIABILITY INDICES – ABSENT ADJUSTMENTS Utility Name: Duke Energy Florida 2016		
Region	Operation Center	SAIDI
NORTH COASTAL		**736.4**
	Inverness	309.6
	Monticello	1,646.6
	Ocala	481.8
SOUTH COASTAL		**174.7**
	Clearwater	154.8
	Seven Springs	136.3
	St. Petersburg	218.6
	Walsingham	203.4
	Zephyrhills	89.1
NORTH CENTRAL		**802.9**
	Apopka	423.1
	Deland	2,162.8
	Jamestown	378.1
	Longwood	636.4
SOUTH CENTRAL		**129.2**
	Buena Vista	61.1
	Clermont	98.2
	Highlands	133.1
	Lake Wales	162.8
	SE Orlando	143.6
	Winter Garden	179.5
SYSTEM		**370.7**

Note: SAIDI indices are the contribution to the system level.

SYSTEM RELIABILITY INDICES – ADJUSTED Utility Name: Duke Energy Florida 2016		
Region	Operation Center	SAIDI
NORTH COASTAL		**154.8**
	Inverness	88 3
	Monticello	248.4
	Ocala	150.7
SOUTH COASTAL		**72.7**
	Clearwater	87.1
	Seven Springs	55 5
	St. Petersburg	69 5
	Walsingham	85.7
	Zephyrhills	63 0
NORTH CENTRAL		**78.1**
	Apopka	85 9
	Deland	77.7
	Jamestown	62.7
	Longwood	93.6
SOUTH CENTRAL		**78.8**
	Buena Vista	42.7
	Clermont	64 2
	Highlands	102.1
	Lake Wales	115 0
	SE Orlando	78 3
	Winter Garden	75 5
SYSTEM		**85.0**

Note: SAIDI indices are the contribution to the system level.

I. RELIABILITY RELATED CUSTOMER COMPLAINTS

Please see "Attachment H" for DEF's spreadsheet comparing DEF vs. PSC 2016 reliability-related complaints.

a. Describe the five year patterns/trends in reliability related customer complaints.

Duke Energy Florida receives its customer complaints from the FPSC via a variety of methods (Formal Complaints, Courtesy Calls, and Internet Transfers). The 5 year trend is shown below with DEF reliability related complaint data:

FPSC Formal (15 Day/Logged) Complaints					
Complaint Category		Year End Total			
	2012	2013	2014	2015	2016
Outages - Momentary	10	27	15	12	8
Outages - Frequent	29	35	53	38	39
Outages - Delay in Restoring	2	2	5	5	2
Voltage	0	3	2	3	5
Equipment/Facilities	9	6	5	4	4
Tree Trimming	8	9	9	6	6
Safety	0	2	1	0	0
Total	58	84	90	68	64

b. Describe Company efforts to correlate reliability related complaints with reliability indices for applicable feeder, lateral and subregion.

Reliability complaints are typically driven by localized delivery system performance. The most effective remedy is surgical corrective action based on patrol/survey of a discrete segment in conjunction with analysis of outage cause(s) and duration. Corrective action scope is typically increased when appropriate to ensure maximum impact on established reliability indices such as SAIDI, MAIFIe, CEMI5, and CELID3.

c. Describe the process used by your company to identify and select systematic actions to improve reliability due to customer complaints (if no such program exists explain why).

Customer complaints are investigated by Operations Technicians who analyze performance history utilizing various systems and tools. Field investigations and additional data gathering are conducted as part of this process as necessary. Work order(s) are generated for any item(s) that are identified as being related to the customer's concern and that are in need of immediate mitigation. DEF internally tracks PSC complaints as well as executive complaints received by our Consumer Affairs department that are related to reliability.

II. STORM HARDENED FACILITIES

Pursuant to the Stipulation regarding the "Process within the Process" entered into and filed jointly by the third-party attachers and IOU's with the FPSC on September 26, 2007, paragraph 7 requires each electric utility to file by March 1 each year a status report of its implementation of its storm hardening plan. Please see *Attachment I - "Spreadsheet of Storm Hardening Project Status*".

a. Describe each storm hardening activity undertaken in the field during 2016.

Distribution

In addition to the activities identified in DEF's Storm Hardening Plan (Attachment J), Wood Pole Inspection Plan (Attachment K), and other initiatives identified and discussed herein, Duke Energy Florida Distribution undertook the following specific activities that deliver a storm hardening benefit during 2016:

Existing Overhead to Underground Conversion:
See Attachment L - "Major Conversions Historical Data".

New Construction Cable footage installed underground:
In 2016, DEF installed 198 circuit miles of new underground cable. Overall, the DEF distribution system consists of 43.6% primary underground circuit miles (13,913 circuit miles).

Network Maintenance and Replacement:
2016 Actuals - $4.6m

Switchgear Replacement
2016 Actuals - $1.9m

Midfeeder Electronic Sectionalizing (Reclosers):
2016Actuals - $707k

Wood Pole Inspection and Treatment:
2016 Actuals - $4.0m

Wood Pole Replacement and Reinforcement:
2016 Actuals - $24.5m

Padmount Transformer Replacement:
2016 Actuals - $5.9m

Storm Hardening Projects
2016 Actuals - $4.9m

Transmission

In addition to the activities identified in DEF's Storm Hardening Plan (Attachment J), Wood Pole Inspection Plan (Attachment K), and other initiatives identified and discussed herein, Duke Energy Florida Transmission undertook the following specific Storm Hardening Activities during 2016:

Maintenance Change outs:
Duke Energy Florida Transmission is installing either steel or concrete poles when replacing existing wood poles. This activity resulted in the replacement of 698 wood poles with steel or concrete during 2016.

DOT/Customer Relocations and Line Upgrades and Additions:
Duke Energy Florida Transmission will design any DOT or Customer Requested Relocations and any line upgrades or additions to meet or exceed the current NESC Code Requirements and will construct these projects with either steel or concrete poles. This activity resulted in the installation of approximately 469 poles with steel or concrete during 2016.

b. Describe the process used by your company to identify the location and select the scope of storm hardening projects.

Distribution

The location and scope of projects that deliver hardening benefits varies by type of construction, maintenance, or replacement activity. Primary factors considered include operational and storm performance, remaining life, condition assessment of equipment as determined by inspection, and cost to repair or replace. In all cases, the cost to install, maintain, or replace equipment is balanced against the expected long term operational and cost benefit.

For additional information, please see Attachment J- DEF's Storm Hardening Plan.

Transmission

Maintenance Change outs
Poles that require change out are identified by Procedure TECP-MIM-TRM-00026, "Ground Patrols" (Attachment M). The change out schedule is determined by the condition of the wood pole based upon inspector experience.

DOT/Customer Relocations
Poles that are changed out and upgraded are identified by requests from DOT or customers.

Line Upgrades and Additions
Duke Energy Florida Transmission Planning will determine where and when lines need to be upgraded.

For additional information, please see Attachment J - DEF's Storm Hardening Plan.

c. Provide the costs incurred and any quantified expected benefits.

<u>Distribution</u>

See Subsection (a) above.

<u>Transmission</u>

<u>Line Maintenance Change outs</u>
Duke Energy Florida Transmission invested approximately $52.6 million in Capital Improvements during 2016. Capital Improvements include pole change outs and complete insulator replacements.

Quantified benefits will be a stronger and more consistent material supporting Transmission Circuits. Over the next 10 years, the percentage of wood poles on Duke Energy Florida's Transmission system should reduce wood poles on the system from approximately 50% today to 25%.

<u>DOT/Customer Relocations and Line Upgrades and Additions</u>
Duke Energy Florida Transmission invested approximately $57.8 million for DOT/Customer Relocations and Line Upgrades and Additions in 2016.

Quantified benefits will be a stronger and more consistent material supporting Transmission Circuits. Over the next 10 years, the percentage of wood poles on Duke Energy's Transmission system should reduce wood poles on the system from approximately 50% today to 25%.

d. Discuss any 2017 projected activities and budget levels.

<u>Distribution</u>

Duke Energy Florida Distribution's storm hardening strategy and activities for 2017 are still ongoing and under development. At this time, however, DEF Distribution reports as follows:

<u>Existing Overhead to Underground Conversion:</u>

Major Underground Conversions are a customer driven activity based upon a willingness to pay the conversion costs. While specific annual totals are difficult to forecast, the trend indicated by Attachment L, "Major Conversions Historical Data" over the last 15 years is expected to continue.

<u>New Construction Cable footage installed underground:</u>
The specific span miles of new underground cable installed is driven by the level of new connect activity. While the number of span miles installed varies from year to year, the percentage of new primary distribution span miles installed underground is expected to continue.

Network Maintenance and Replacement:
2017 Projections - $3.0m

Switchgear Replacement
2017 Projections - $2.5m

Wood Pole Inspection and Treatment:
2017 Projections - $3.2m

Wood Pole Reinforcements & Replacement:
2017 Projections - $28.4m

Padmount Transformer Replacement:
2017 Projections - $5.8m

Storm Hardening Projects
2017 Projections - $8.0m

Transmission

Duke Energy Florida Transmission's storm hardening strategy and activities for 2017 are still ongoing and under development. At this time, however, DEF Transmission projects as follows:

Line Maintenance Change outs
Duke Energy Florida Transmission is projecting replacement of approximately 685 poles in 2017. Capital Budget for Line Maintenance is $24.2 million for 2017 which includes pole change outs, insulator replacements and any overhead ground wire (OHGW) replacements.

DOT/Customer Relocations and Line Upgrades and Additions
Duke Energy Florida Transmission is projecting replacement of approximately 514 poles in 2017. Current identified DOT/Customer Relocation Projects and Line Upgrades and Additions have a capital budget of $ 81.4 million.

III. STORM SEASON READINESS

a. Describe the efforts the Company is taking to be storm-ready by June 1, 2017

<u>Distribution</u>

DEF's Distribution Storm Plan will be reviewed and revised if necessary, as of June 2017 (See Attachment X). The Distribution organization will conduct a storm readiness drill in preparation of the 2017 hurricane season. By the start of storm season, all feeder backbones will be surveyed for tree conditions and corrective work completed. System reliability is continually monitored and upgraded through DEF's storm hardening efforts. Critical restoration material and fuel will be ready and available from multiple sources, and DEF has taken steps to ensure that outside line and tree trimming resources are ready and available.

<u>Transmission</u>

DEF's Transmission Storm Plan has been reviewed and revised as of May 2016 (Attachment Y). The Transmission Department conducted a storm readiness drill during the week of April 18, 2016. Transmission will conduct its 2017 storm drill in conjunction with Distribution in May of 2017. Also, aerial patrols for DEF's entire transmission system took place between March-May and September-October, 2016. The next aerial patrols are scheduled between March-April and September-October, 2017.

IV. WOOD POLE INSPECTION PROGRAM

a. Provide a detailed description of the Company's wood pole inspection program.

Duke Energy Florida's wood pole inspection program's philosophy is to determine the condition of the wood pole plant and provide remediation for any wood poles that are showing signs of decay or fall below the minimum strength requirements outlined by NESC standards.

Duke Energy is utilizing the expertise of Osmose Utilities Services, Inc., to perform the inspections on an eight year cycle. Osmose is using visual inspection, sound and boring, and full excavation down to 18 inches below ground line to determine the condition of all poles with the exception of CCA poles less than 16 years of age and poles that cannot be excavated due to obstructions. For CCA poles less than 16 years of age, Osmose is using visual inspection and sound, as well as, selective boring to determine the pole condition. In addition, Osmose is providing remediation of decayed poles through external and internal treatments. If the pole is below NESC standards and has the minimum remaining wood above ground line, Osmose will also reinforce the pole back to original strength.

For additional information, please see Attachment K - "Wood Pole Inspection Plan".

b. 2016 accomplishments

Distribution

Duke Energy Florida inspected 103,684 wood distribution poles during 2016. This completes 2 years and 8 months of the second 8 year inspection cycle. In addition to the inspections, GPS coordinates and physical attributes were updated and/or verified and inspection results were collected in a central database on all poles inspected.

The distribution wood pole inspection program is planned to complete approximately 1/8 of the distribution pole fleet per year. In cycle 1, the route of the inspections was performed to inspect the coastal poles first, moving inland as the program proceeded. Cycle 2 is being conducted in a manner that provides a more even distribution of work to Duke Energy's engineering and line resources throughout Florida.

Transmission

In 2016, DEF's Transmission ground patrol inspected 15,761 wood pole structures. This represents approximately 65% of the wood pole structures on the DEF Transmission system.

c. Projected accomplishments for 2017

Distribution

DEF's goal for 2017 is to continue cycle two inspections of the system. DEF will continue to utilize the same inspection procedures in 2017 that were used in the past. Projected cost for the 2017 distribution pole inspection program is $3.15m.

Transmission

Plans for 2017 are to perform a visual and sounding inspection on 1/3 of the wood pole system. A sound and bore inspection will be performed on at least 1/8 of the wood pole system. Both inspections will be performed by outside contractors. The entire system will also be flown aerially twice via helicopter in 2017.

d. Wood pole inspection reports.

Each wood pole inspection report contains the following:

- A description of the methods used for structural analysis and pole inspection,
- A description of the selection criteria that was used to determine which poles would be inspected, and
- A summary report of the inspection data.

Distribution

Please see Attachment O – 2016 Annual Wood Pole Inspection Report filed with the FPSC on March 1, 2017.

For a description of the methods used for structural analysis and pole inspection – please refer to Attachment K - "Wood Pole Inspection Plan", pages 1 - 5 and 6 - 8.

For the summary report of the inspection data - See Attachment P – a CD containing Excel file - "2016 DEF Distribution Pole Inspection Data".

Transmission

Please see Attachment O - 2016 Annual Wood Pole Inspection Report filed with the FPSC on March 1, 2017.

For a description of the methods used for structural analysis and pole inspection – please refer to Attachment K - "Wood Pole Inspection Plan", pages 1 -8.

For the summary report of the inspection data – See Attachment Q – CD containing Excel files - "2016 Pole Data,""2016 Pole Visual Data", and "2016 Structure Data".

CCA Pole Sampling Report

Pursuant to Order No. PSC-08-0615-PAA-EI issued September 23, 2008 in Docket No. 080219-EI, the Commission approved modification to the sounding and boring excavation requirements of Order No. 06-0144-PAA-EI with regard to CCA wood poles less than 16 years old. On Pages 3 and 4 of Order No. PSC-08-0615-PAA-EI, it states,

> *"ORDERED that, consistent with the deviation granted to Gulf Power Company in Order No. PSC-07-0078-PAA-EU, Progress Energy Florida, Inc., Florida Power & Light Company, and Tampa Electric Company shall be required to sound and selectively bore all CCA poles under the age of 16 years, but shall not be required to perform full excavation on these poles. It is further*
>
> *ORDERED that Progress Energy Florida, Inc., Florida Power & Light Company, and Tampa Electric Company shall also be required to perform full excavation sampling to validate their inspection method. It is further*
>
> *ORDERED that the results of the utilities' sampling shall be filed in their annual distribution reliability reports."*

2016 CCA Pole Sampling Results

Please see Attachment O – Duke Energy's 2016 Annual Wood Pole Inspection Report filed with the FPSC on March 1, 2017. The "CCA Sampling Results for 2016" is included in Duke Energy's Wood Pole Inspection Report as "Attachment B".

V. EIW INITIATIVES

VEGETATION MANAGEMENT – THREE YEAR CYCLE (*Initiative 1*)

a. Provide a complete description of the Company's vegetation management program (policies, guidelines, practices) for 2016 and 2017 in terms of both activity and costs.

- *See Attachment R - "Internal Policy & Guidelines".*
- *For activities and costs - See information herein on pages 46-54.*

b. Describe tree clearing practices in utility easements and authorized rights-of-ways.

See Attachment R - "Internal Policy & Guidelines".

c. Identify relevant portions of utility tariffs pertaining to utility vegetation management activities within easements and authorized rights-of-ways.

DEF's tariffs do not contain specific language pertaining to utility vegetation management activities within easements and authorized rights-of-ways.

d. Describe tree removal practices for trees that abut and/or intrude into easements and authorized rights-of-ways.

See Attachment R - "Internal Policy & Guidelines".

e. Describe tree clearing practices outside of utility easements and authorized rights-of-ways.

See Attachment R - "Internal Policy & Guidelines".

f. Identify relevant portions of utility tariffs pertaining to utility vegetation management activities outside of easements and authorized rights-of-ways.

DEF's tariffs do not contain specific language pertaining to utility vegetation management activities outside of easements and authorized rights-of-ways.

g. Describe tree removal practices for trees outside of easements and authorized rights-of-ways.

See Attachment R - "Internal Policy & Guidelines".

h. Identify relevant portions of utility tariffs pertaining to customer vegetation management obligations as a term or condition of electric service.

There is no specific language in DEF's tariffs that pertain to customer vegetation management obligations as a term or condition of electric service. However, in Section 4 of DEF's tariff book, Sheet 4.032, reference is made to a customer's responsibility for providing DEF with a cleared route for line extensions, upgrades or service drops. Implied in the obligation to provide a clear route to obtain service is the obligation to maintain the route sufficiently clear to not interfere with DEF's facilities.

i. Describe Company practices regarding customer trim requests.

When a customer calls into the call center, either a tree work ticket is generated or a Duke Energy Florida field resource will submit a ticket using the work management system. For the remaining process, please see Attachment S - "Vegetation Management – Customer Demand Tree Trimming Requests".

j. Describe the criteria used to determine whether to remove a tree, replace a tree, spot-trim, demand trim, or mid-cycle trim, etc.

The criteria used is comprised of a number of considerations, i.e., location, customers on the line, removal vs. trim candidate, species, customer permission, easement rights and risk. Apart from identifying these factors, as a general matter, DEF cannot elaborate as to how these factors may apply in a given factual circumstance.

k. Discuss any 2017 projected activities and budget levels.

See charts below.

SYSTEM VEGETATION MANAGEMENT PERFORMANCE METRICS

	Feeders			Laterals		
	Unadjusted*	Adjusted	Diff.	Unadjusted*	Adjusted	Diff.
(A) Number of Outages	N/A *	145	N/A *	N/A *	7,734	N/A *
(B) Customer Interruptions	N/A *	172,250	N/A *	N/A *	241,238	N/A *
(C) Miles Cleared	N/A *	1,016	N/A *	N/A *	2,173	N/A *
(D) Remaining Miles	N/A *	(52)	N/A *	N/A *	31	N/A *
(E) Outages per Mile [A ÷ (C + D)]	N/A *	0.14	N/A *	N/A *	3.65	N/A *
(F) Vegetation CI per Mile [B ÷ (C + D)]	N/A *	161.31	N/A *	N/A *	113.82	N/A *
(G) Number of Hotspot trims	N/A *	6,317	N/A *	N/A *	13,401	N/A *
(H) All Vegetation Management Costs	N/A *	$ 5,795,837	N/A *	N/A *	$ 24,987,134	N/A *
(I) Customer Minutes of Interruption	N/A *	10,547,399	N/A *	N/A *	30,724,005	N/A *
(J) Outage restoration costs	N/A *	***	N/A *	N/A *	***	N/A *
(K) Vegetation Management Budget (current year) – 2016	N/A *	$ 4,873,107	N/A *	N/A *	$ 21,009,041	N/A *
(L) Vegetation Goal (current year) - 2016	N/A *	1,068	N/A *	N/A *	2,143	N/A *
(M) Vegetation Management Budget (next year) – 2017	N/A *	$ 8,155,092	N/A *	N/A *	$ 15,130,612	N/A *
(N) Vegetation Management Goal (next year) – 2017	N/A *	1,970	N/A *	N/A *	1,919	N/A *
(O) Trim-Back Distance	N/A *	***	N/A *	N/A *	***	N/A *

Note: Total miles cleared in 2016 was 3,189. Annual variations from target are expected as DEF manages resource and unit cost factors associated with its integrated vegetation management plan. Based on the 3-year feeder / 5-year lateral tree trimming cycle, since 2006 initiation, DEF is at 50.77% of total 3-year cycle feeder miles and 15.37% of total 5-year cycle lateral miles. The term "feeder" within the vegetation management program is defined as the "backbone or big wire" portion of the 3 phase circuit typically within a substation breaker's zone of protection, and the lateral is defined as section of the circuit that is an extension beyond the "backbone or big wire" segment normally sectionalized by a line fuse or recloser. The vegetation management lateral line miles are defined in column AA of Attachment G. These definitions are consistent with the PSC filing in 2006.

* There is no unadjusted data on tree caused storm events that would be relevant to DEF's tree trimming program. It would not be reasonably possible to gather this data and furthermore the data would not be accurate if DEF could obtain it. It would take extraordinary effort and considerable conjecture to estimate the impact of trees on DEF's distribution system for outage causes that are currently coded

"storm". It would not be reasonably possible to gather such data because contractors move around the System and operate under a myriad of restoration contracts and agreements. To track this data, it would require the establishment of both a financially based tracking system to monitor costs as well as crew activity system-wide during a catastrophic event. Additionally, it is not practical to perform a forensic analysis of outages during a catastrophic event for the purpose of obtaining the root cause since several agencies assist in the effort as well as the magnitude of damage that impact a localized area of the system. During a storm event, outage tracking migrates from Outage Management System event to a Damage Assessment event. As such, DEF's ability to capture reliable data becomes significantly compromised.

** This data was actually completed in 2016 and scheduled in 2015.

*** Distance varies according to species' growth rates.

**** This data was not previously tracked. A means of extracting tree outage data from total storm restoration costs is still being investigated.

MANAGEMENT ZONE (NORTH CENTRAL) VEGETATION MANAGEMENT PERFORMANCE METRICS

	Feeders			Laterals		
	Unadjusted*	Adjusted	Diff.	Unadjusted*	Adjusted	Diff.
(A) Number of Outages	N/A *	40	N/A *	N/A *	1,682	N/A *
(B) Customer Interruptions	N/A *	50,360	N/A *	N/A *	47,210	N/A *
(C) Miles Cleared	N/A *	200	N/A *	N/A *	449	N/A *
(D) Remaining Miles	N/A *	0	N/A *	N/A *	0	N/A *
(E) Outages per Mile [A ÷ (C + D)]	N/A *	0.20	N/A *	N/A *	3.74	N/A *
(F) Vegetation CI per Mile [B ÷ (C + D)]	N/A *	251.65	N/A *	N/A *	105.10	N/A *
(G) Number of Hotspot trims	N/A *	1,915	N/A *	N/A *	4,299	N/A *
(H) All Vegetation Management Costs	N/A *	$ 1,374,918	N/A *	N/A *	$ 6,712,749	N/A *
(I) Customer Minutes of Interruption	N/A *	2,810,129	N/A *	N/A *	5,680,363	N/A *
(J) Outage restoration costs	N/A *	***	N/A *	N/A *	***	N/A *
(K) Vegetation Management Budget (current year) – 2016	N/A *	$ 1,156,023	N/A *	N/A *	$ 5,644,041	N/A *
(L) Vegetation Goal (current year) - 2016	N/A *	200	N/A *	N/A *	449	N/A *
(M) Vegetation Management Budget (next year) – 2017	N/A *	$ 2,335,370	N/A *	N/A *	$ 3,929,402	N/A *
(N) Vegetation Management Goal (next year) – 2017	N/A *	427	N/A *	N/A *	378	N/A *
(O) Trim-Back Distance	N/A *	***	N/A *	N/A *	***	N/A *

MANAGEMENT ZONE (SOUTH CENTRAL) VEGETATION MANAGEMENT PERFORMANCE METRICS

	Feeders			Laterals		
	Unadjusted*	Adjusted	Diff.	Unadjusted*	Adjusted	Diff.
(A) Number of Outages	N/A *	25	N/A *	N/A *	935	N/A *
(B) Customer Interruptions	N/A *	24,392	N/A *	N/A *	27,998	N/A *
(C) Miles Cleared	N/A *	219	N/A *	N/A *	465	N/A *
(D) Remaining Miles	N/A *	0	N/A *	N/A *	0	N/A *
(E) Outages per Mile [A ÷ (C + D)]	N/A *	0.11	N/A *	N/A *	2.01	N/A *
(F) Vegetation CI per Mile [B ÷ (C + D)]	N/A *	111.60	N/A *	N/A *	60.16	N/A *
(G) Number of Hotspot trims	N/A *	1,534	N/A *	N/A *	3,267	N/A *
(H) All Vegetation Management Costs	N/A *	$ 1,371,652	N/A *	N/A *	$ 4,827,928	N/A *
(I) Customer Minutes of Interruption	N/A *	1,295,066	N/A *	N/A *	3,909,915	N/A *
(J) Outage restoration costs	N/A *	***	N/A *	N/A *	***	N/A *
(K) Vegetation Management Budget (current year) – 2016	N/A *	$ 1,153,277	N/A *	N/A *	$ 4,059,295	N/A *
(L) Vegetation Goal (current year) - 2016	N/A *	219	N/A *	N/A *	465	N/A *
(M) Vegetation Management Budget (next year) – 2017	N/A *	$ 2,186,253	N/A *	N/A *	$ 982,666	N/A *
(N) Vegetation Management Goal (next year) – 2017	N/A *	498	N/A *	N/A *	143	N/A *
(O) Trim-Back Distance	N/A *	***	N/A *	N/A *	***	N/A *

MANAGEMENT ZONE (NORTH COASTAL) VEGETATION MANAGEMENT PERFORMANCE METRICS

	Feeders			Laterals		
	Unadjusted*	Adjusted	Diff.	Unadjusted*	Adjusted	Diff.
(A) Number of Outages	N/A *	53	N/A *	N/A *	2,532	N/A *
(B) Customer Interruptions	N/A *	50,427	N/A *	N/A *	86,532	N/A *
(C) Miles Cleared	N/A *	479	N/A *	N/A *	589	N/A *
(D) Remaining Miles	N/A *	(52)	N/A *	N/A *	31	N/A *
(E) Outages per Mile [A ÷ (C + D)]	N/A *	0.10	N/A *	N/A *	4.73	N/A *
(F) Vegetation CI per Mile [B ÷ (C + D)]	N/A *	95.06	N/A *	N/A *	161.63	N/A *
(G) Number of Hotspot trims	N/A *	2,244	N/A *	N/A *	2,313	N/A *
(H) All Vegetation Management Costs	N/A *	$ 2,734,858	N/A *	N/A *	$ 4,932,303	N/A *
(I) Customer Minutes of Interruption	N/A *	4,614,481	N/A *	N/A *	11,703,891	N/A *
(J) Outage restoration costs	N/A *	***	N/A *	N/A *	***	N/A *
(K) Vegetation Management Budget (current year) – 2016	N/A *	$ 2,299,453	N/A *	N/A *	$ 4,147,052	N/A *
(L) Vegetation Goal (current year) - 2016	N/A *	531	N/A *	N/A *	558	N/A *
(M) Vegetation Management Budget (next year) – 2017	N/A *	$ 1,499,149	N/A *	N/A *	$ 6,169,294	N/A *
(N) Vegetation Management Goal (next year) – 2017	N/A *	380	N/A *	N/A *	1,008	N/A *
(O) Trim-Back Distance	N/A *	***	N/A *	N/A *	***	N/A *

MANAGEMENT ZONE (SOUTH COASTAL) VEGETATION MANAGEMENT PERFORMANCE METRICS

	Feeders			Laterals		
	Unadjusted*	Adjusted	Diff.	Unadjusted*	Adjusted	Diff.
(A) Number of Outages	N/A *	27	N/A *	N/A *	2,585	N/A *
(B) Customer Interruptions	N/A *	47,071	N/A *	N/A *	79,498	N/A *
(C) Miles Cleared	N/A *	119	N/A *	N/A *	670	N/A *
(D) Remaining Miles	N/A *	0	N/A *	N/A *	(0)	N/A *
(E) Outages per Mile [A ÷ (C + D)]	N/A *	0.23	N/A *	N/A *	3.86	N/A *
(F) Vegetation CI per Mile [B ÷ (C + D)]	N/A *	396.69	N/A *	N/A *	118.74	N/A *
(G) Number of Hotspot trims	N/A *	624	N/A *	N/A *	3,522	N/A *
(H) All Vegetation Management Costs	N/A *	$ 314,410	N/A *	N/A *	$ 8,514,154	N/A *
(I) Customer Minutes of Interruption	N/A *	1,827,723	N/A *	N/A *	9,429,836	N/A *
(J) Outage restoration costs	N/A *	***	N/A *	N/A *	***	N/A *
(K) Vegetation Management Budget (current year) – 2016	N/A *	$ 264,354	N/A *	N/A *	$ 7,158,653	N/A *
(L) Vegetation Goal (current year) - 2016	N/A *	119	N/A *	N/A *	670	N/A *
(M) Vegetation Management Budget (next year) – 2017	N/A *	$ 2,134,319	N/A *	N/A *	$ 4,049,251	N/A *
(N) Vegetation Management Goal (next year) – 2017	N/A *	664.68	N/A *	N/A *	390.53	N/A *
(O) Trim-Back Distance	N/A *	***	N/A *	N/A *	***	N/A *

Local Community Participation: A discussion was held addressing utility efforts to collect and use input from local communities and governments regarding (a) r-o-w tree clearing, (b) easement tree clearing, (c) hard-to-access facilities, (d) priority trees not within r-o-w or within easements where the utility has unobstructed authority to remove the danger tree, and (e) trim-back distances.

Please see pages 71-78.

Priority Trees

a. Number of priority trees removed? ***10,648***
b. Expenditures on priority tree removal? ***$832,444***
   -includes tree removal, removal trims, overhang & vines
c. Number of request for removals that were denied? ***190***

-These trees were on private property. The owners refused a request for removal. DEF instead trimmed the trees as much as possible within its legal rights to do so.

d. Avoided CI with priority trees removed (estimate)? ***See Below***
e. Avoided CMI with priority trees removed (estimate)? ***See Below***

In response to items d) and e), the determination of the number of customers (CI) that would have been interrupted and/or the extent of an outage (CMI) is dependent upon a number of variables such as: species of tree; tree wind resistance characteristics; age of tree; condition of tree; type of failure – electrical vs. mechanical (limb or stem); location along the feeder; soil conditions, the extent of any disease and/or insect infestation; the type, magnitude and duration of a storm; etc. To quantify or estimate the avoided CI or CMI as a general matter for all possible conditions would require DEF to guess and speculate on conditions for which it has neither reliable nor supporting data. DEF therefore cannot provide data for these fields.

JOINT-USE POLE ATTACHMENT AUDITS FOR THE YEAR 2016 (*Initiative 2*)

a. **Percent of system audited.** *Feeders and Laterals: 100%*
b. **Date audit conducted?** *A Joint-Use Pole Loading Analysis is conducted every eight (8) years per FPSC requirements. In 2016, one-eighth (1/8) of the joint attachments were audited to fulfill the 8-year requirement.*
c. **Date of previous audit?** *2016 Partial Joint Use Structural Analysis System Audit.*
d. **List of audits conducted annually.** *Partial system audits are conducted annually. A full Joint-Use Pole Loading Analysis is conducted every eight years.*

2016 Joint-Use Structural Audits – Distribution Poles (all pole types)

(A) Number of company owned distribution poles.	1,004,863
(B) Number of company distribution poles leased.	449,832
(C) Number of owned distribution pole attachments (cable & phone attachments on DEF poles)	775,918
(D) Number of leased distribution pole attachments. (DEF attachments on phone poles)	13,994
(E) Number of authorized attachments. (2,815 new attachments approved in 2016)	775,918
(F) Number of unauthorized attachments.	0
(G) Number of distribution poles strength tested. (complete loading analysis needed)	57,698
(H) Number of distribution poles passing strength test. (complete loading analysis needed) *	57,650
(I) Number of distribution poles failing strength test (overloaded).	48
(J) Number of distribution poles failing strength test (other reasons). (Hardware upgrades required)	0
(K) Number of distribution poles to be corrected (strength failure) (added down guy)	23
(L) Number of distribution poles corrected (other reasons).	6
(M) Number of distribution poles to be replaced. (Overloaded poles entered into the FMDR database)	19
(N) Number of apparent NESC violations involving electric infrastructure.	None
(O) Number of apparent NESC violations involving 3rd party facilities.	None

* *For each group of poles in a tangent line, the pole that had the most visible loading, line angle, and longest or uneven span length was selected to be modeled for wind loading analysis. If that one pole failed, the next worst case pole in that group of tangent poles was analyzed as well. Each pole analyzed determined the existing pole loading of all electric and communication attachments on that pole. If the existing analysis determined the pole was overloaded, that pole was added to a current year work plan to be corrected. Should the original pole analyzed meet the NESC loading requirements, all similar poles in that tangent line of poles was noted as structurally sound and entered into the database as "PASSED" structural analysis.*

2016 Joint-Use Attachment Audits – Transmission Poles (all pole types)

(A) Number of company owned transmission poles.	58,621
(B) Number of company transmission poles leased.	5,580
(C) Number of owned transmission pole attachments (cable & phone attachments on DEF poles)	7,554
(D) Number of leased transmission pole attachments. (DEF attachments on phone poles)	0
(E) Number of authorized attachments. (111 new attachments approved in 2016)	7,554
(F) Number of unauthorized attachments.	0
(G) Number of transmission poles strength tested.	262
(H) Number of transmission poles passing strength test.	262
(I) Number of transmission poles failing strength test (overloaded).	0
(J) Number of transmission poles failing strength tests (other reasons).	0
(K) Number of transmission poles corrected (data provided to transmission for replacement)	0
(L) Number of transmission poles corrected (other reasons).	0
(M) Number of transmission poles replaced	0
(N) Number of apparent NESC violations involving electric infrastructure.	None
(O) Number of apparent NESC violations involving 3rd party facilities.	0

State whether pole rents are jurisdictional or non-jurisdictional. If pole rents are jurisdictional, then provide an estimate of lost revenue and describe the company's efforts to minimize the lost revenue.

Pole attachment rents are jurisdictional and are booked in Account 454 – "Rent from Electric Property". DEF conducts partial audits of its pole attachments throughout the year. A full Joint-Use Pole Loading Analysis is conducted every eight years. When DEF discovers unauthorized attachments on DEF poles, DEF follows-up with the attacher who owns the unauthorized attachments and DEF seeks all revenue applicable under controlling laws, rules, and regulations.

SIX YEAR INSPECTION CYCLE FOR TRANSMISSION STRUCTURES (*Initiative 3*)

Describe the extent of the inspection and results pertaining to transmission wires, towers, and substations for reliability and NESC safety matters. The intent is to assure the Commission that utilities know the status of their facilities and that reasonable efforts are taken to address transmission structure reliability and NESC safety matters.

Duke Energy Florida's Transmission Department follows Procedure TECP-MIM-TRM-00026 titled "Ground Patrols" (Attachment M) to periodically assess the condition of the transmission circuits. The primary goal of the ground patrol is to inspect transmission line structures and associated hardware and conductor on a routine basis to identify any required material repairs or replacements. Please also see Initiative 3 in DEF's Storm Hardening Plan.

Transmission Circuit, Substation and Other Equipment Inspections

	2016 Activity		2016 Current Budget		Next Year (2017)	
	Goal	Actual	Budget	Actual	Goal	Budget
(A)Total transmission circuits	N/A	587	$ 2,230,904	$ 1,918,500	N/A	$ 1,608,436
(B) Planned transmission circuit inspections	175	N/A	N/A	N/A	195	N/A
(C) Completed transmission	N/A	175	N/A	N/A	N/A	N/A
(D) Percent of transmission	N/A	30%	N/A	N/A	33%	N/A
(E) Planned transmission substation	N/A	485	$4,648,181	$ 5,649,691	482	$ 6,490,557
(F) Completed transmission	N/A	485	N/A	N/A	N/A	N/A
(G) Percent transmission	N/A	100%	N/A	N/A	N/A	N/A
(H) Planned transmission	N/A	N/A	N/A	N/A	N/A	N/A
(I) Completed transmission	N/A	N/A	N/A	N/A	N/A	N/A
(J) Percent of transmission	N/A	N/A	N/A	N/A	N/A	N/A

Note: For most entries of "N/A" in the chart above, DEF does not specifically budget for Transmission line or substation inspections on an item by item basis. The budget and actual figures that are entered include inspections, emergency response, preventative maintenance, training, and other O&M Costs.

Transmission Tower Structure Inspections

	2016 Activity		2016 - Current Budget		Next Year (2017)	
	Goal	Actual	Budget	Actual	Goal	Budget
(A) Total transmission tower structures.	N/A	3,330	Please see note 1	N/A	N/A	Please see note 1
(B) Planned transmission tower structure inspections	N/A	Please see note 2	N/A	Please see note 2	N/A	N/A
(C) Completed transmission tower structure inspections.	N/A	0	N/A	N/A	N/A	N/A
(D) Percent of transmission tower structure inspections completed.	N/A	0	N/A	N/A	N/A	N/A

Note 1: Please see the previous budget and actuals on page 57 for line inspections. All inspections for wood poles, towers, steel and concrete structures are included in the O&M budget. Duke Energy Florida does not specifically budget for Transmission line or substation inspections on an item by item basis. The budget and actual figures that are entered include inspections, emergency response, preventative maintenance, training, and other O&M Costs.

Note 2: Transmission circuits with towers are inspected on a 5-year cycle. Inspections are planned and completed based upon the 5-year cycle.

Transmission Pole Inspections

	2016 Activity		Current Budget (2016)		Next Year (2017)	
	Goal	Actual	Budget	Actual	Goal	Budget
(A) Total number of transmission pole structures.	N/A	51,018	$2,230,904	$1,918,500 See Note 1	N/A	$,608,436
(B) Number of transmission pole structures strength tested. *Item A: number of poles analyzed* *Item B: Number of pole structures ground inspected*	N/A	A: B: 15,761	N/A	N/A	N/A	N/A
(C) Number of transmission pole structures passing strength test. *Item A: number of poles analyzed* *Item B: Number of pole structures ground inspected*	N/A	A: B: 15,761	N/A	N/A	N/A	N/A
(D) Number of transmission poles failing strength test (overloaded).	N/A		N/A	N/A	N/A	N/A
(E) Number of transmission poles failing for other reasons – *Ground Inspection (See Note 2)*	N/A	1,306		N/A	N/A	N/A
(F) Number of transmission poles corrected (strength failure).	N/A			N/A	N/A	N/A
(G) Number of transmission poles corrected for other reasons - *Ground Inspection*	N/A	0 see note 2	N/A	N/A	N/A	N/A
(H) Total transmission poles replaced.	N/A	698	N/A	N/A	N/A	N/A

Note 1: Duke Energy Florida does not specifically budget for Transmission line or substation inspections on an item by item basis. The budget and actual figures that are entered include inspections, emergency response, preventative maintenance, training, and other O&M costs.

Note 2: Duke Energy Florida Transmission has prioritized the remaining number of transmission poles that need to be corrected based upon the inspection results and the status of the poles. Poles that needed to be replaced quickly have already been replaced as reflected above. Poles that can remain in service have been prioritized and DEF is in the process of working through corrections based on those prioritizations.

Note 3: Transmission circuits are inspected on a 3 or 5 year cycle depending on structural material. Inspections are planned and completed based on the 5 year cycle.

Please also see Attachment O – "Wood Pole Inspection Report" filed on March 1, 2017 with the FPSC.

STORM HARDENING ACTIVITIES FOR TRANSMISSION STRUCTURES (*Initiative 4*)

Describe the extent of any upgrades to transmission structures for purposes of avoiding extreme weather, storm surge or flood-caused outages, and to reduce storm restoration costs. The intent is to assure the Commission that utilities are looking for and implementing storm hardening measures.

Hardening of Existing Transmission Structures

	2016 Activity		Current Budget (2016)		Next Year (2017)	
	Goal	Actual	Budget	Actual	Goal	Budget
(A) Transmission structures scheduled for hardening.	1782	N/A	110.9M	N/A	1,199	$15.5M
(B) Transmission structures hardening completed.	N/A	1,167	N/A	$110.4M	N/A	N/A
(C) Percent transmission structures hardening	N/A	65%	N/A	N/A	N/A	N/A

Note: Budget and Actual costs include maintenance pole change-outs, insulator replacements, and other capital costs. The budget and actual figures also include DOT/Customer Relocations, line rebuilds and System Planning additions. Structures are designed to withstand current NESC Wind Requirements and are build utilizing steel or concrete structures. DEF does not break out the cost of the structures separately and is reporting the entire construction costs for the Transmission Line Projects.

Storm Hardening Activity and Remaining Population

Report Year	Maintenance Change outs	DOT/Relocation, Upgrades and Rebuilds	Total
2016	698	469	**1167**
2015	1,738	559	**2,297**
2014	2,028	1,440	**3,468**
2013	1,384	857	**2,241**
2012	1,080	857	**1,937**
2011	635	915	**1,550**

Report Year	Wood Pole Beginning Balance	Current Balance	Poles changed
2016	24,265	23,567	**698**
2015	25,370	24,265	**1,105**
2014	28,000	25,370	**2,630**

GEOGRAPHIC INFORMATION SYSTEM (GIS) (*Initiative 5*)

In 2008, DEF completed the transition to the new Geographical Information System (GIS) system (G-Electric). The move to G-Electric enabled DEF to migrate from a location based GIS system to an asset based GIS system (consistent with Commission Order No. PSC-06-0351-PAA-EI).

In addition to this effort, DEF created a team dedicated to upgrading the Work Management system. The scope of this project included the implementation of the Facilities Management Data Repository (FMDR) along with the Compliance Tracking System (CTS). The implementation of these two systems was completed in 2011, allowing DEF to facilitate the compliance tracking, maintenance, planning, and risk management of the major Distribution assets.

Since its creation in 2010, the Distribution Data Integrity department has continued to ensure the accuracy and quality of the data within the GIS and the Outage Management System (OMS) with a focus on business processes. This department has created and enhanced key performance indicators that are used to continually measure and monitor the quality of DEF's GIS and OMS data. The consistency, accuracy, and dependability of these systems have led to improvements in the reliability and performance of DEF's utility system, contributing to the safety of the DEF field crews.

Distribution OH Data Input

	Activity		Current Budget		Next Year	
	Goal	Actual	Budget	Actual	Goal	Budget
(A) Total number of system wide OH assets for input.	N/A	N/A	N/A	N/A	N/A	N/A
(B) Number of OH assets currently on system.	N/A	1,359,229	N/A	N/A	N/A	N/A
(C) Percent of OH assets already on system.	N/A	100%	N/A	N/A	N/A	N/A
(D) Annual OH assets targeted for input (goal).	N/A	N/A	N/A	N/A	N/A	N/A
(E) Annual OH assets input to system (actual).	N/A	N/A	N/A	N/A	N/A	N/A
(F) Annual percent of OH assets input.	N/A	100%	N/A	N/A	N/A	N/A

DEF cannot necessarily report data in the form of items (A)-(F) above given that such items are not entirely consistent and in line with the status of DEF's current GIS system and DEF's ongoing efforts to upgrade that system.

Distribution UG Data Input

	Activity		Current Budget		Next Year	
	Goal	Actual	Budget	Actual	Goal	Budget
(A) Total number of system wide UG assets for input.	N/A	N/A	N/A	N/A	N/A	N/A
(B) Number of UG assets currently on system.	N/A	180,031	N/A	N/A	N/A	N/A
(C) Percent of UG assets already on system.	N/A	100%	N/A	N/A	N/A	N/A
(D) Annual UG assets targeted for input (goal).	N/A	N/A	N/A	N/A	N/A	N/A
(E) Annual UG assets input to system (actual).	N/A	N/A	N/A	N/A	N/A	N/A
(F) Annual percent of UG assets input.	N/A	100%	N/A	N/A	N/A	N/A

DEF cannot necessarily report data in the form of items (A)-(F) above given that such items are not entirely consistent and in line with the status of DEF's current GIS system and DEF's ongoing efforts to upgrade that system.

Transmission OH Data Input

	Activity (2016)		Current Budget (2016)		Next Year (2017)	
	Goal	Actual	Budget	Actual	Goal	Budget
(A) Total number of system wide OH transmission assets for input.	N/A	49,133	N/A	N/A	N/A	N/A
(B) Number of OH transmission assets currently on system.	N/A	49,113	N/A	N/A	N/A	N/A
(C) Percent of OH transmission assets already on	N/A	100%	N/A	N/A	N/A	N/A
(D) Annual OH transmission assets targeted for	N/A	N/A	N/A	N/A	N/A	N/A
(E) Annual OH transmission assets input to	N/A	N/A	N/A	N/A	N/A	N/A
c(F) Annual percent of OH transmission assets	N/A	100%	N/A	N/A	N/A	N/A

DEF cannot necessarily report data in the form of items (A)-(F) above given that such items are not entirely consistent and in line with the status of DEF's current GIS system and DEF's ongoing efforts to upgrade that system.

Transmission UG Data Input

	Activity (2016)		Current Budget (2016)		Next Year (2017)	
	Goal	Actual	Budget	Actual	Goal	Budget
(A) Total number of system wide UG transmission assets for input.	N/A	69.87 miles	N/A	N/A	N/A	N/A
(B) Number of UG transmission assets currently on system.	N/A	69.87 miles	N/A	N/A	N/A	N/A
(C) Percent of UG transmission assets already on	N/A	100%	N/A	N/A	N/A	N/A
(D) Annual UG transmission assets targeted for	N/A	N/A	N/A	N/A	N/A	N/A
(E) Annual UG transmission assets input to system.	N/A	N/A	N/A	N/A	N/A	N/A
(F) Annual percent of UG transmission assets	N/A	100%	N/A	N/A	N/A	N/A

POST-STORM DATA COLLECTION AND FORENSIC ANALYSIS (*Initiative 6*)

a) **Has a forensics team been established?**

Distribution

Yes. The forensics process will again participate in DEF's 2017 Storm Drill.

Transmission

Yes.

b) **Have forensics measurements been established? If yes, please describe/provide.**

Distribution

Yes. During the field observations, Forensic Assessors collect various information regarding poles damaged during storm events:

- *Data points typically collected during the initial approach to the pole would include: pole type, number of conductors, joint-use status, number of transformers and other distribution equipment attached, etc.*
- *Data points typically collected during the pole detail review would include: birth date, pole class, pole height, etc.*
- *Data points typically collected during the site review would include a free form rendering of the site as well as qualitative data about damaged pole structures (e.g. whether the pole is leaning, broken, location of break, etc.).*

Transmission

Yes. The forensic team collects sufficient data at the failure sites to determine the nature and cause of the failure. Data collection includes the following:

- *Structure identification*
- *Photographs*
- *Sample of damaged components as necessary*
- *Field technical assessment (soil conditions, exposure, vegetation, etc.)*
- *Inventory of attachments and guys*

Forensic Analysis: Data and forensic samples will be analyzed to determine the cause and correlating factors contributing to the failure. Analysis will include as required:

- *Conditional assessment of failed components*
- *Structural evaluations*
- *Failure analysis*
- *Correlation with storm path and intensity*
- *Correlation with GIS data*

c) **Has a forensics database format been established?**

Distribution

Yes, in collaboration with the University of Florida's Public Utility Research Center (PURC), DEF and the other Florida investor owned utilities developed a common format to collect and track data related to damage discovered during a forensics investigation. This ensures that DEF is collecting compatible data to allow analysis of performance and refinement of the inputs to OH to UG Cost/Benefit model.

Transmission

Yes, DEF Transmission uses a spreadsheet tool to manage the data described in subsection (b) above.

d) **Describe/provide GIS and forensics data tracking integration.**

Distribution

Pole location information is manually collected during forensic inspections in the field. Data is then available for analysis using GIS applications.

DEF has re-assessed statistical pods in DEF's GIS system to ensure their accuracy and statistical validity as a sample of the Duke Energy Florida service territory. The statistical pods are a post-storm sample used to quickly forecast the level of damage sustained by DEF's facilities following a major storm or hurricane. The damage assessment that results from these statistical samples allows more accurate targeting of the need and location for forensics teams.

Transmission

The forensic data that is collected is identified and cataloged by the structure number or GPS coordinate if the structure number is not available. The failure data can then be correlated with the data contained in the MapInfo GIS system. The maintenance history of the poles/structures will be populated in the GIS system.

e) **Describe/provide forensics and restoration process integration. (Established and documented processes to capture forensics data during the restoration process.)**

See Attachment T - "Damage Assessment" – GDLP-EMG-DOS-00008- Distribution's damage assessment process and "Transmission Storm Forensic Analysis Specification".

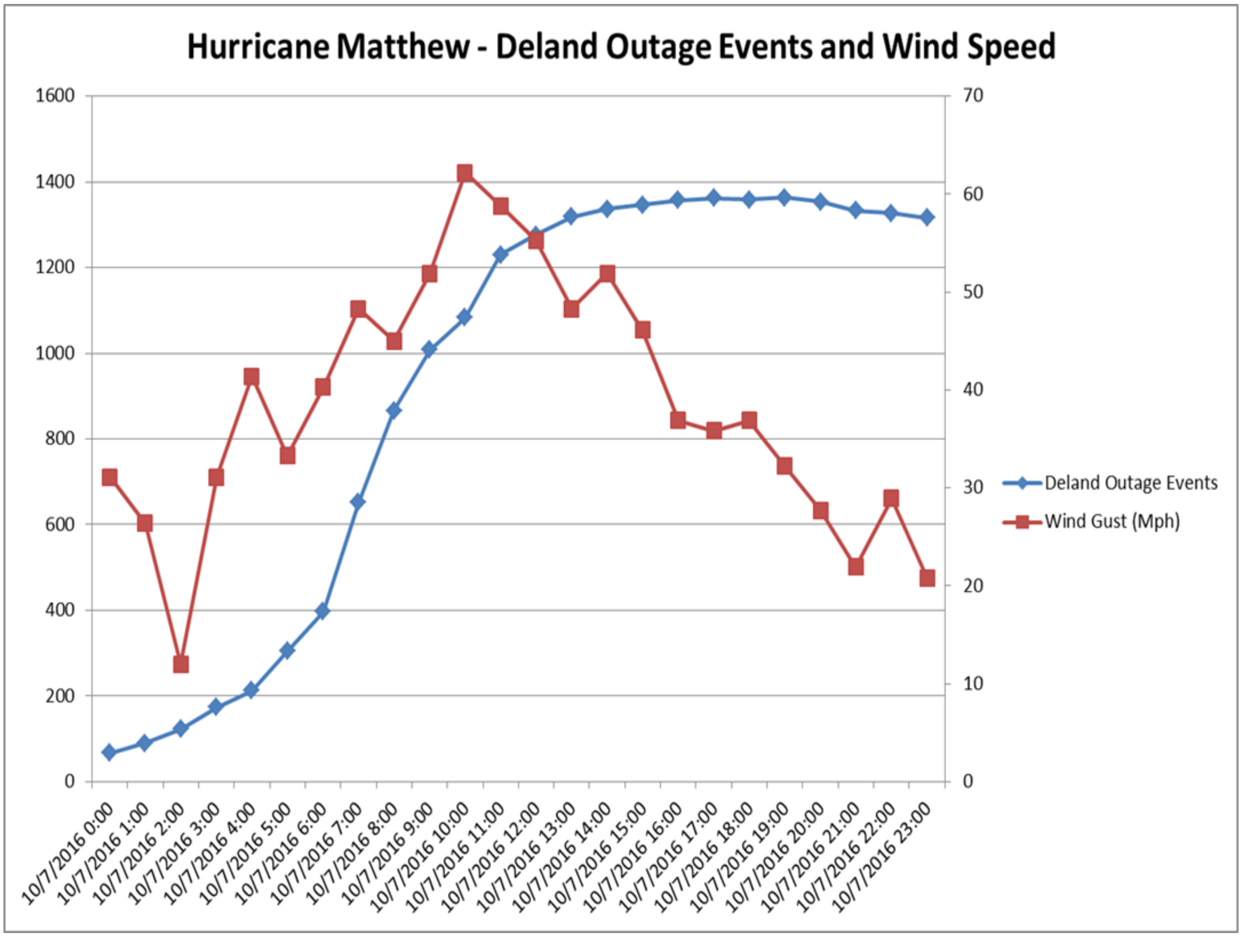
f) **Describe/provide any forensics data sampling methodology.**

Distribution

Forensic assessors are mobilized to areas predicted to have the highest sustained wind speeds within the service territory to identify pole failure modes in a manner that will minimize interference with the restoration process.

As a result of the installation of weather stations across Florida (as part of the collaborative research project done with PURC and the other Florida electric utilities), DEF is now able to correlate, at a high level, experienced outages with nearby wind speeds. The graphs below show the registered wind speeds (mph) at the Deland Airport weather station on October 7th, as Hurricane Matthew caused more than 8000 outage and non-outage events between October

6th and October 10th. This type of information is augmented with on-site forensics data following a major storm or hurricane.



<u>Transmission</u>

See Attachment T.

g) **Describe/provide forensics reporting format used to report forensics results to the Company and the Commission.**

See Attachment T - "Damage Assessment" – GDLP-EMG-DOS-00008- Distribution's damage assessment process and "Transmission Storm Forensic Analysis Specification".

OVERHEAD/UNDERGROUND RELIABILITY (OH/UG) (INITIATIVE 7)

a. **Describe the five year patterns/trends in reliability performance of underground systems vs. overhead systems.** See separate spreadsheet attachment.

See Attachment U -"Comparison of Historical Trends-Overhead vs. Underground"

b. **Describe Company efforts to separately track the reliability of overhead and underground systems**.

Following is a description of the process that will be used to separately track the reliability of overhead and underground systems:

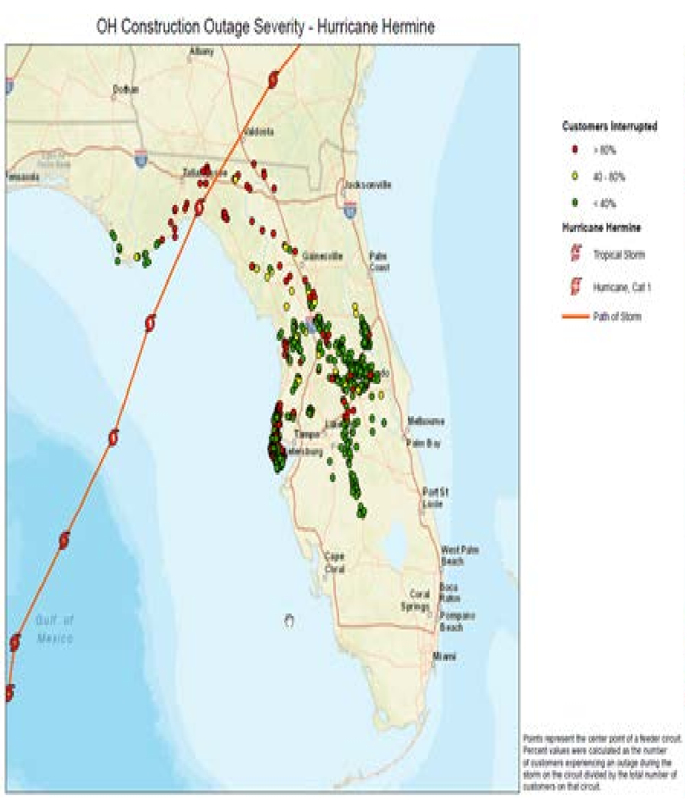
DEF will collect information to determine the percentage of storm caused outages on overhead systems and underground systems. Some assumptions are required when assessing the performance of overhead systems versus underground systems. For example, underground systems are typically protected by overhead fuses. DEF will provide for these factors in its analysis.

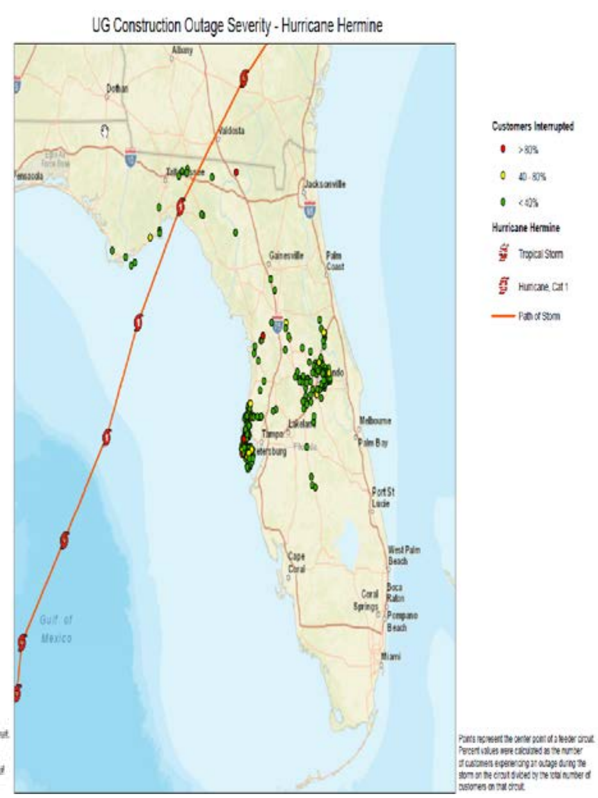
DEF has an internal hierarchy in its Outage Management System (OMS) that models how all of its facilities are connected to each other. This information provides the connection to the feeder breaker down to the individual transformer. DEF's Customer Service System (CSS) captures which customer is tied to what individual transformer. DEF's Geographical Information System (GIS) provides several sets of data and information points regarding DEF's assets. DEF uses these systems to help analyze the performance of the following types of overhead and underground assets:

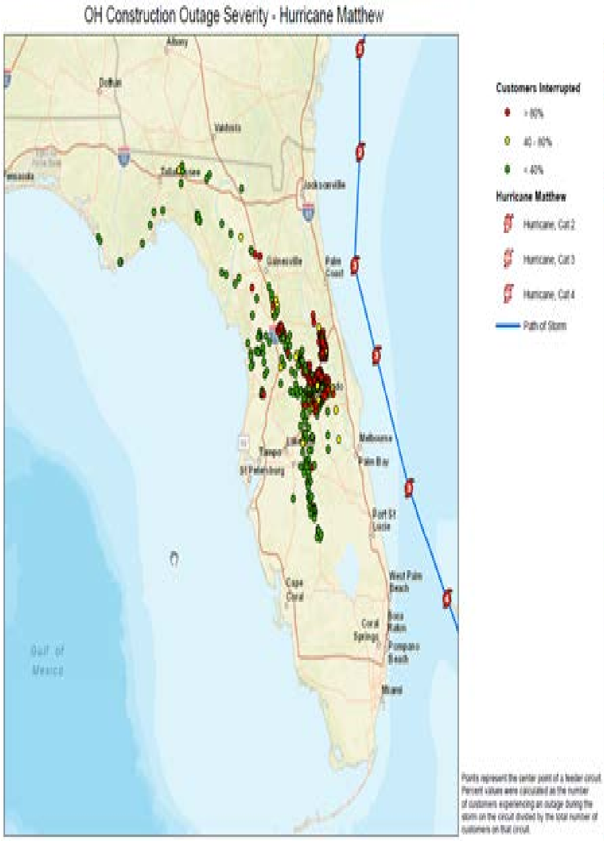
- *Breakers*
- *Electronic Reclosers*
- *Fuses*
- *Hydraulic Reclosers*
- *Interrupters*
- *Motor Operated Switches*
- *OH Conductors*
- *OH Transformers*
- *Primary Meters*
- *Switch Gear Fuses*
- *Sectionalizers*
- *Services*
- *Switches*
- *Terminal Pole Fuses*
- *Under Ground Conductors*
- *Under Ground Transformers*

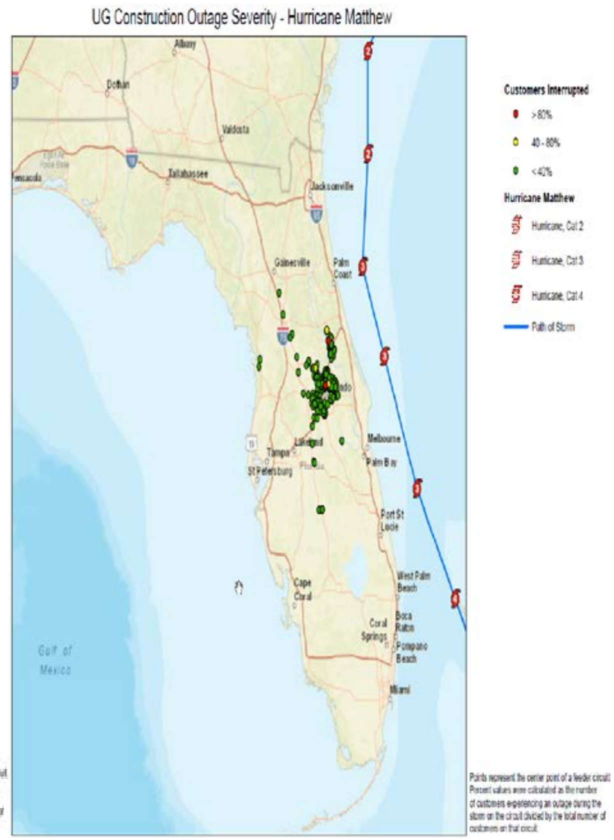
As part of this process, the location of each feeder circuit point is determined by approximating the geographic midpoint of each circuit. Outages experienced as a result of a named storm will be extracted from system data. The outages will then be grouped by feeder *circuit ID and by outage type, where outage type is either overhead or underground. The number of customers interrupted by an overhead device will then be summed by feeder circuit ID and the number of customers interrupted by an underground device will be summed by feeder circuit ID. A single feeder circuit may have overhead and underground outages, so approximations will be made in those circumstances.*

Once this information is collected, the percentage of customers interrupted will be calculated by dividing the sum of customers interrupted per feeder circuit by the total customers served for that feeder circuit. This process is applied as the sum of customers interrupted by all overhead devices on a feeder circuit divided by the number of customers served by the feeder circuit and the sum of customers interrupted by all underground devices on a feeder circuit divided by the number of customers served by the feeder circuit. As a result of this process, DEF will produce graphic representations of performance such as those depicted below for Hurricanes Hermine and Matthew:









DEF will also collect available performance information as a part of the storm restoration process via servicemen in the field, such as:

- *Restore time;*
- *Cause code;*
- *Observations and comments;*
- *Failed device name;*
- *Failed device size;*
- *Failed device type;*
- *Failed device phase; and*
- *Failed device location.*

c. Describe the process used by your company to identify and select the actions to promote underground distribution systems.

DEF notes that it does not necessarily promote underground distribution systems in all instances. Rather, DEF's programs are designed to identify areas where an underground distribution system would be effective both from an operational and cost/benefit perspective, and to help customers considering underground projects to receive the information that they need to make a well-thought decision.

In 2007, DEF created a project management organization dedicated to streamlining the engineering and construction of all infrastructure projects including underground conversions.

In 2016, DEF installed 198 circuit miles of new underground cable. Overall, the DEF distribution system consists of 43.6% primary underground circuit miles (13,913 circuit miles).

d. Provide Overhead/Underground metrics (miles, # of customers, CMI, CI, MAIFIe, CEMI5 and L-Bar for the Calendar Year).

See Attachment V-"Overhead/Underground Metrics"

See Separate Spreadsheet with data listed (a) through (j).

(k) Overhead equipment of performance analysis by type per system. (wood pole vs. concrete pole, etc.) will not be available:

COORDINATION WITH LOCAL GOVERNMENTS (*Initiative 8*)

Update on Duke Energy Florida's (DEF) local government storm preparation, storm hardening, and storm response coordination activities:

This part DEF's storm planning and response program addresses increased coordination with local governments to enhance DEF's ability to prepare for and respond to storms and other severe weather events. DEF's goal is to provide excellent customer service and through a collaborative partnership with local governments before, during, and after emergencies through year-round dialogue and planning, strong relationships, the provision of resources, and communication and feedback mechanisms.

Specifically, DEF focuses on the following in implementing DEF's storm planning and response program in conjunction with local governments:

- *Identify opportunities throughout the year to improve preparedness on both the part of the utility and the public taking advantage of government's local knowledge and existing organization.*
- *Develop enhanced organization and planning to improve readiness.*
- *Educate the public on proper storm preparation and restoration actions.*
- *Provide local governments with the support needed to facilitate the coordination of outage restoration in a safe and efficient manner.*
- *Provide local governments with ongoing information and updates in advance of, during and after storm events to assist them with their local storm preparation and restoration efforts including informing the public.*

DEF's storm planning and response program is operational twelve months out of the year and response activities can be implemented at any time. In order to meet the requirements of FPSC Order No. PSC-06-0351-PAA-EI, DEF has established an internal team focused on local governmental coordination activities. These activities include dedicated resources, training, continuous coordination with government, storm preparation and restoration, and an Emergency Operation Center (EOC) program. DEF provides local governments with resource and restoration information before, during and after storm events to assist with their local emergency response. Currently, there are approximately seventy resources assigned to coordination with local government as part of an emergency planning and response program. Also, approximately sixty employees are assigned full-time, year-round, to coordinate with local government on issues such as emergency planning, vegetation management, undergrounding and service related issues and governmental coordination. In 2016, DEF enhanced its coordination with local governments by emphasizing a critical internal role that functions as a direct point of contact for the EOC representatives, stationed in the DEF Operation Centers. This operation center liaison role is critical to providing immediate prioritization of the EOC priorities. Additionally, DEF created a new internal internet based issues tracking spreadsheet in order to record, track and prioritize EOC requests. As part of DEF's yearly planning process, DEF works with counties to identify and prioritize specific infrastructure within the counties. This prioritization of these critical accounts is factored into DEF's tactical restoration plan.

In addition to DEF's resources in Florida, DEF also has access to resources throughout the Duke Energy multi-state organization, which provide important extra resources. All of Duke Energy's jurisdictions are prepared to provide assistance.

Emergency Planning and Storm Coordination *– DEF's team works with counties and municipalities year round and during major storm events. Prior to storm season, DEF holds meetings with communities to discuss emergency planning preparations and coordination, participates in county drills and training exercises, and holds community education workshops and events.*

Annually, DEF conducts an internal system-wide week-long storm drill in which all members of the team participate. This supports initiatives to coordinate with local government including emergency management organizations throughout the year. Storm preparedness training prior to storm season simulates the response to a real storm including pre-storm preparations activities during a major storm event and post-storm response. Staffing scenarios are created to simulate different storm impacts and staffing assignments to support each impact scenario. During this exercise, the county EOCs are engaged as part of the simulation. Additionally, the DEF State EOC Lead works with the state agencies to coordinate DEF's participation in the annual state storm drill.

DEF has enhanced the capability to produce detailed electronic outage information which is provided to county EOCs throughout storm events. The information is available in multiple formats, including formats that may be imported into county GIS systems. This program provides significant information to EOCs during storms to assist in their response efforts. The information includes detailed outage data per each square mile within the county and is produced periodically during each day of a significant event. DEF has modified its program to make this detailed outage data available to counties during mid-level storm events as well.

DEF has created a dedicated storm web page with an interactive map that is available to the public, including the media and local governments. The interactive map provides access to the latest outage information twenty-four hours a day, seven days a week. These maps provide county-specific estimates for power restoration when available, and the ability to search by address. Also, DEF has developed a system to report outages online via computer or other mobile devices. This online reporting tool gives DEF's customers another way to communicate with DEF, helping ensure any disruptions in service are recognized immediately and that power is restored as quickly and safely as possible.

Honors and Awards – *In 2016, DEF was designated a "Tree Line USA Utility." This designation is given by the National Arbor Day Foundation, in cooperation with the National Association of State Foresters. It recognizes public and private utilities across the nation that demonstrate practices that protect and enhance community forests while managing the need for reliable electric power. DEF has received the Tree Line USA designation for multiple years. Additionally, the Edison Electric Institute (EEI) awarded Duke Energy with the Emergency Recovery Award for its outstanding power restoration efforts after Winter Storm Jonas assaulted the Carolinas earlier this year. DEF crews responded to assist the counties in that region as needed. The award is presented twice annually to EEI member companies in recognition of their extraordinary efforts to restore power to customers* *after service disruptions caused by severe weather conditions or other natural events. Duke Energy has earned the award twelve times since EEI began presenting it in 1998.*

***Vegetation Management** – It has become essential to implement programs designed to improve coordination with communities regarding vegetation management. Maintaining trees and vegetation along distribution and transmission right of ways help reduce outages on a day to day basis as well as during storm events and enhances safety for customers, the public, and DEF's employees and contractors. DEF manages tree placement under transmission and distribution lines through the "Know Where You Grow" outreach program. DEF maintains a rigorous inspection process that identifies vegetation encroachments and ensures vegetation management activities follow required pruning and clearance specifications. To enhance communication with DEF's communities regarding specific tree trimming projects, DEF meets with municipalities prior to implementation of significant projects in order to inform them of the general areas that are expected to be impacted, note concerns, and answer questions. DEF also conducts communication and outreach to customers along the impacted areas for significant activities to inform them of the project, as well as explain the need for vegetation management. DEF has completed the development of a community vegetation management education program, designed to ensure that DEF customers will have received some form of vegetation management education through community outreach, events, website information, advertising and other communication outlets. DEF is targeting distributing information on vegetation management activities that will reach more than 30% of the Duke Energy Florida market. Not only will these activities support efforts to improve overall reliability improvement programs, they will also support storm preparation and restoration activities.*

***Undergrounding** – The impact of hurricanes in Florida since 2004 has renewed local government interest in burying overhead power lines. In an effort to work with communities to address this continued interest in undergrounding their utilities, DEF is enhancing its programs in this area and has seen a marked increase in interest in the programs. DEF works with communities to inform them of available undergrounding options and to be a part of their planning processes. This assists them in several ways, including better fiscal planning, coordination with other utilities, and improved communications with affected residents. DEF also coordinates with local governments on subaqueous cable projects to DEF's beach and island communities to improve reliability and storm restoration efforts.*

***Other Construction Projects** – In addition to undergrounding conversion projects, there are planned transmission and distribution enhancement projects that are expected to result in improvements to system reliability during storm events. DEF works extensively with local governments and communities to coordinate such projects.*

***Educational Outreach** - DEF continues to expand the live line demonstrations, which include critical information for first responders and emergency management personnel. DEF's team of experts recreate live-voltage scenarios such as downed power lines, trees, animals, and/or ladders on power lines, vehicle wrecks involving power lines, and digging into underground facilities incidents. DEF also provides a safety presentation at the session, as well as sharing DEF's storm coordination and planning efforts in a separate presentation. DEF shares this information with city,* *county and emergency personnel to assist them in planning and safety instruction. Additionally, these live line demonstrations were conducted in conjunction with select county high school and grade schools. In total, in 2016, DEF held 25 individual sessions, with 380 first responders and emergency management personnel, and 886 students attending the sessions.*

DEF continues its educational efforts in communicating with government leaders and customers by creating storm preparedness publications for use by community relations personnel at public events, participating in storm discussions on the radio and in television storm discussion broadcasts and advertising in newspaper inserts and storm preparedness publications.

EOC Road Clearing Program *- In 2016, DEF further enhanced and enacted the "Make It Safe" road clearing program to provide dedicated resources to assist County EOC road clearing programs within DEF's service territories for the first 24 – 48 hours of storm restoration with road clearing and "make it safe" activities. DEF resources work with county road clearing crews and remove DEF facilities from across roads, allowing the county to safely clear the roads. DEF has dedicated crews for each service territory zone staged at county facilities or DEF operations centers. The benefits of this program include improved response time to county priorities, improve customer satisfaction by reducing customer outage times, reduced exposure to night time storm hazards, and increased DEF crew productivity during daylight hours.*

Hurricane Hermine *- Hurricane Hermine hit hard, especially in North Florida, impacting nearly 240,000 customers. The majority of those customers were restored within 48 hours following the storm.*

Damaging winds and rain caused power outages in the North and South Coastal zones with reported widespread wind gusts of 65-78 mph. Three tornadoes were confirmed during Hermine in DEF's North Coastal zone.

Flooding was significant with Hurricane Hermine. The storm surge was 8-9 feet in Dixie County, along the North Florida coastline. DEF's South Coastal zone experienced 22.36" rainfall. The St. Marks River, Aucilla River and Suwanee River reached flood stage and the Anclote River crested at 25 feet, which was the 8th highest in history.

DEF provided around the clock support for the State EOC and twenty-one(21) County EOCs within DEF's service territory. The EOCs were staffed with DEF EOC representatives during daytime operations and remotely after hours. DEF's EOC representatives, Government and Community Relations Managers and the DEF Operations Centers worked closely with EOCs in areas de-energized due to the flooding as part of DEF's flooding protocol.

In addition to restoring power, DEF worked to address other urgent concerns. DEF's State President participated in daily round table calls with Governor Scott and the other investor owned utilities. Upon completion of DEF's restoration, DEF line and vegetation management resources were offered to the City of Tallahassee. DEF partnered with law enforcement agencies in Jefferson and Hamilton counties to distribute hundreds of lunches to customers who sustained longer outages. Additionally, DEF delivered thousands of bottles of water to seven north Florida counties most severely impacted by Hermine.

Hurricane Matthew - *Hurricane Matthew was the first major hurricane to interact with the Florida Atlantic coast since Hurricane Jeanne in 2004 and, to a lesser extent, Hurricane Katrina in 2005. Despite causing extensive damage and power outages to eastern Florida, Matthew never officially made landfall on the Florida Peninsula. DEF safely restored more than 316,000 customers in less than 72 hours throughout eastern Central Florida. While Florida felt Matthew's impact, DEF's service territory in the Carolinas suffered much greater consequences, on a scale similar to the destruction of Hurricanes Hugo and Floyd.*

As with Hurricane Hermine, DEF provided around the clock support for the State EOC and twenty-eight (28) County EOCs within DEF's service territory. The EOCs were staffed with DEF EOC representatives during daytime operations and remotely after hours. DEF's EOC representatives, Government and Community Relations Managers and the DEF Operations Centers worked closely with EOCs to coordinate emergent and priority issues.

DEF used the power of the media to keep customers informed. DEF created media releases throughout the events with an audience reach of nearly 90 million. DEF launched a storm web page that aggregates all of DEF's news releases and other communications into one location. DEF also sent 3 million customer communication emails and completed storm messaging calls to over 500,000 customers in Florida. At conclusion of restorations, DEF published thank you advertisements in six major newspapers and sent thank you emails to 500,000 residential and small business customers.

DEF executed the enhanced "Make It Safe" road clearing program for the first time during Hurricane Matthew. DEF provided four counties in North and South Central zones with distribution field support to collaborate with county resources to clear the roads of DEF facilities. The Make it Safe process was a lesson learned from prior storms and ongoing collaboration with the counties. While the intent of the process is to provide resources to assist County EOC road clearing programs within DEF service territories for the first 24 – 48 hours of storm restoration, DEF provided Make It Safe resource support for Orange, Osceola, Volusia, and Seminole counties' EOCs well beyond the 24-48 hour guidelines.

From DEF's linemen working in the field, dispatchers, customer care representatives, government and community relations staff and communications team to behind-the-scenes logistical support, it takes an integrated storm team to accomplish a successful restoration response. Storm response can be tough and stressful, yet DEF repeatedly received complimentary phone calls, emails, letters and social media posts of the professionalism DEF employees displayed when interacting with customers and community leaders. After Hurricanes Hermine and Matthew, Governor Scott thanked several dozen DEF linemen for a job well done at a crawfish boil in Tallahassee.

2016 Activities

The following activities are not an exhaustive list, but include examples of the activities associated with DEF's coordination activities with state and local governments for 2016:

- *Emergency Operation Center visits were performed in Alachua, Bay, Citrus, Columbia, Franklin, Gadsden, Gilchrist, Gulf, Hamilton, Hardee, Hernando, Highlands, Jefferson, Lafayette, Lake, Liberty, Leon, Levy, Madison, Marion, Orange, Osceola, Pasco, Pinellas, Polk, Seminole, Sumter, Suwannee, Taylor, Volusia and Wakulla counties. During those* *visits, DEF participated in EOC exercises to review storm procedures prior to storm season and to discuss the Make It Safe road clearing program. (April – August 2016)*

- *Live Line Demonstrations – From March to July, DEF held twenty-five individual live line demonstration sessions across its service territory. One additional event was held in November after the end of hurricane season. These events provided a forum for collaboration on emergency response and general safety awareness. Attendees included representatives from sheriff's departments, public works, fire and rescue departments, public schools, emergency management, large account customers, and elementary and high school students. (March – November 2016)*

- *Duke Energy Florida Storm Drill Exercise – As part of DEF's ongoing effort to ensure that DEF employees can perform their storm roles and processes are validated, DEF prepares a week long storm drill engaging various organizations across within the company, performing a review of existing storm plans and incorporates improvements from lessons learned processes following recent storm events and from identified organizational gaps discovered during structured storm drills and deployments. The purpose of a system level drill is to provide storm personnel an opportunity to evaluate, during a "realistic" storm scenario, their storm response concepts, plans and capabilities in response to a major hurricane.*

During the system level drill, DEF's North Coastal zones - from Bay to Sumter County - prepared mock storm scenarios and coordinated the event with the EOCs throughout the region. EOCs representatives were stationed at the Marion County EOC, who fully participated in the mock drill. The Marion County Public Information Officer interviewed key DEF personnel and produced a video on YouTube discussing DEF's store preparedness. Additionally, J.R. Kelly from the Office of Public Counsel attended the drill to see firsthand how DEF approaches coordination with local governments. (April 2016)

- *Pinellas County Emergency Management Debris Clearance / Power Restoration Seminar -*

  DEF held several meetings with the Pinellas County Emergency Management to discuss the collaborative restoration partnership between the Pinellas County EOC and Duke Energy Florida. DEF's Government and Community Relations Managers and Large Account Managers work throughout the year to validate Duke Energy Florida has critical accounts that serve general public health and safety to DEF's communities, such as hospitals, water and sewer plants, evacuation shelters and EOC's. DEF uses this information to assist with the restoration prioritization. DEF also presented the process for the Make It Safe program including the number of crews, the staging locations and the roads to be cleared. (April- July 2016)

- *Florida Statewide Hurricane Exercise - Representatives throughout the DEF service territory participated in storm preparedness activities throughout this event. (May 2016)*

- *Executive EOC Visits – DEF Executive Leaders, Government and Community Relations Managers, and EOC representatives met with the EOC Directors and staff to discuss storm coordination for 2016 in Pinellas, Pasco, Orange, Seminole and Volusia counties. (May and June 2016)*

- *Annual Orange County Hurricane Exposition – DEF sponsored a booth at this event held by the Orange County Emergency Management to assist residents prepare for storm season. (June 2016)*

- *Duke Energy Florida Large Account Management Storm Seminars - Representatives from DEF's Large Account Management group that serve as EOC representatives hosted a hurricane forum specifically for commercial, industrial and governmental customers on DEF's hurricane preparedness efforts. DEF held two seminars – one in Pinellas County and one in Orange County. (June 2016)*

- *Response to Tropical Storm Colin – Several EOC's in Duke Energy Florida's South Coastal and Coastal Zones were activated in response to Tropical Storm Colin. While no two storms are the same, Tropical Storm Colin was unique. A typical tropical storm is more clearly defined and has shorter impact duration. The lingering severe weather associated with Tropical Storm Colin resulted in numerous waves of scattered outages throughout Duke Energy Florida's coastal service territory. The DEF EOC representatives were available around the clock to assist in restoring power to customers. (June 2016)*

<u>2017 Activities</u>

The following activities are currently planned activities associated with DEF's coordination activities with state and local governments for 2017:

State Activities:

- *Florida Division of Emergency Management's Severe Weather Awareness Week (January 23 - 27, 2017)*

- *31st Annual Governor's Hurricane Conference (May 14 - 19, 2017)*

<u>2017 County/City Activities:</u>

- *DEF representatives will meet with county representatives in each of DEF's counties* *throughout the service territory during the year as well as participate in pre-storm season planning activities such as mock drills at the County EOCs. These meetings and visits will also include updating the EOCs on DEF emergency response policies and DEF website demonstrations on how to access electronic outage information during storm events. Some examples are provided below.*

   - *DEF conducts ongoing communications with municipalities to provide information about DEF's emergency response planning, respond to inquiries, and to update county contact information for all EOCs.*

   - *DEF executives will meet with many of the county EOC directors and their staff to discuss DEF's storm response planning and enhancement of the coordination between the company and county emergency management.*

- *DEF is planning to continue to expand the number of Live Line demonstrations across the service territory. These events will take place from January – May and continue after the end of the hurricane season.*

- *DEF will meet with school board superintendents and their staff to discuss storm coordination, restoration prioritization, shelter locations and back-up generation availability.*

- *DEF will participate in many community hurricane and storm expos held by counties or federal or state agencies throughout DEF's service territory to inform the public and encourage appropriate storm preparation by residents and business.*

COLLABORATIVE RESEARCH (*Initiative 9*)

<u>Project Planning Report:</u> For each project identified by the Steering Committee, provide a report that includes the purpose, scope, objectives, research method, data inputs, expected costs and benefits, sources of funding, schedule, and findings to date.

Please see Attachment W - "PURC Report on Collaborative Research for Hurricane Hardening" dated February 2017.

<u>Annual Progress Report:</u> For each project previously identified by the Steering Committee for which ongoing research is being pursued but not completed, provide an annual report, including updates on all aspects of the Project Planning Report.

Please see Attachment W - "PURC Report on Collaborative Research for Hurricane Hardening" dated February 2017.

<u>Project Completion Summary Report:</u> For each concluded project identified by the Steering Committee, provide a report that includes an assessment of the success of the research project, as well as any proposed implementation plan for any results or findings for each utility. Describe the benefits expected or realized as a result of plan implementation on storm hardening for each utility.

Please see Attachment W - "PURC Report on Collaborative Research for Hurricane Hardening" dated February 2017.

<u>Annual Report of the Collaborative Research Effort:</u> Provide a report to include an overall assessment of the collaborative research program to date, as described in the Memorandum of Understanding (MOU) dated January 1, 2010, including its operational and financial viability and future planning of the organization. Identify any extension of the MOU contemplated or finalized by the Steering Committee.

Please see Attachment W - "PURC Report on Collaborative Research for Hurricane Hardening" dated February 2017.

Describe the projects promoted, costs incurred, and benefits achieved. A single joint filing can address all collaborative research. Utilities should also discuss any additional independent activities in which it is engaged, such as EPRI, private research, or through universities.

Please see Attachment W - "PURC Report on Collaborative Research for Hurricane Hardening dated February 2017. In addition to DEF's involvement with PURC, DEF is actively engaged as both participant and presenter in a variety of technical and professional organizations where hardening alternatives are reviewed and assessed. Examples include the Southeastern Electric Exchange (SEE), Edison Electric Institute (EEI), Institute of Electrical and Electronics Engineers (IEEE), Chartwell Hardening Teleconference, and Davies Consulting Asset Management Conference. DEF Standards engineers also assess new products on a continuous basis.

DISASTER PREPAREDNESS AND RECOVERY PLAN (*Initiative 10*)

Submit formal disaster preparedness plan annually by March 1st. Include disaster recovery training completed, pre-storm preparation and staging activities, post storm recovery plans, lessons learned, and plan modifications or changes.

Duke Energy has an established storm recovery plan that is reviewed and updated annually based on lessons learned from the previous storm season and organizational needs.

For Distribution - See Attachment X – "Distribution System Storm Operational Plan (DSSOP).

For Transmission – See Attachment Y – "Transmission Storm Plan".

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VI. Other Storm Hardening Initiatives (OH/UG)

a. For each of the other ongoing storm hardening initiatives provide a detailed discussion describing the activity and costs incurred for 2016 and projected for 2017.

Please see DEF's Storm Hardening Plan – Attachment J. Also, please see response on pages 38-41.

b. Overhead/Underground

i. Describe the process used by your company to identify the scope of storm hardening projects.
ii. Provide any quantified expected benefits.
iii. If benefit quantification is not practical or possible at this time, explain when or how the cost-effectiveness of the activity is assessed.

Please see DEF's Storm Hardening Plan – Attachment J. Also, please see response on pages 38-41.

INDEX for Reliability Report

Eight-Year Wood Pole Inspection Programs

Ten Initiatives

INDEX for Reliability Report

Reliability Performance

INDEX for Reliability Report

ATTACHMENT A

DEF Transmission Outages 2016-Major Events Excluded

For Reporting Year **2016**

OUTAGE_ID	LOCATION	OUTAGE_START_TIME	INITIATINGCAUSE	SUSTAINEDCAUSE	RETAIL_CMI	GRID_CMI
56222	DRIFTON - PERRY 69KV (DP-1)	3/24/2016 20:28	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
56224	CABBAGE ISLAND - POINCIANA 69KV (ICP-2)	3/24/2016 21:01	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
56226	CABBAGE ISLAND - POINCIANA 69KV (ICP-2)	3/24/2016 21:03	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
56228	JASPER - OCC SWIFT CREEK #1 115KV (JS-1)	3/24/2016 21:20	LINE - UNKNOWN - INVESTIGATION COMPLETE	RELAY - UNKNOWN - INVESTIGATION COMPLETE	264	264
56232	MARTIN WEST - REDDICK 69KV (SI-4)	3/24/2016 23:06	LINE - WEATHER -	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	0	0
56235	CABBAGE ISLAND - POINCIANA 69KV (ICP-2)	3/25/2016 1:25	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
56288	HUDSON - NEW PORT RICHEY 115KV (BWR-HPNR-2)	3/29/2016 14:10	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
56311	OCCIDENTAL #1 115KV (0177)	3/31/2016 8:20	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56379	HOMELAND - MULBERRY 69KV (BH-2)	4/2/2016 18:27	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
56903	OCCIDENTAL #1 115KV (0177)	5/11/2016 13:34	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56967	LISBON TEMP 69KV (0027)	5/6/2016 19:29	SUB - ANIMAL - SQUIRREL	SUB - ANIMAL - SQUIRREL	224759	224759
56970	SUWANNEE RIVER - LIVE OAK (FP&L) 115KV (SF-1)	5/17/2016 3:02	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0

56999	BROOKSVILLE WEST - HUDSON 115KV (BWR-1)	5/17/2016 20:05	LINE - WEATHER -	- -		0
57055	OCCIDENTAL #1 115KV (0177)	5/20/2016 6:05	LINE - CUSTOMER - INDUSTRIAL	- -		0
57063	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	5/21/2016 0:51	LINE - ANIMAL - BIRD - CLEARANCE	- -		0
57073	OCCIDENTAL #1 115KV (0177)	5/22/2016 8:52	LINE - CUSTOMER - INDUSTRIAL	- -		0
57126	HINES ENERGY COMPLEX PLANT 230KV (0002)	5/25/2016 14:03	SUB - CUSTOMER - GENERATION	SUB - CUSTOMER - GENERATION		0
57209	LAKE BRANCH 115KV (0475)	5/31/2016 17:52	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56230	OCC SWIFT CREEK #1 - SUWANNEE RIVER 115KV (SSC-1)	3/24/2016 21:20	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -	0	2577.3
56231	OCCIDENTAL #1 115KV (0177)	3/24/2016 21:31	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56347	FT WHITE - PERRY 69KV (FP-1)	4/2/2016 8:58	LINE - WEATHER -	- -		0
56445	SUWANNEE RIVER - LIVE OAK (FP&L) 115KV (SF-1)	4/7/2016 6:55	LINE - WEATHER -	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
56771	ATWATER - US HYDRO WOODRUFF DAM 115KV (QX-2)	5/3/2016 22:18	LINE - WEATHER -	- -		0
56407	FORT GREEN #4 69KV (0335)	4/4/2016 11:58	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56558	JACKSON BLUFF-TALLAHASSEE 69KV (JBT-1)	4/18/2016 8:20	LINE - PUBLIC INTERFERENCE - VEHICLE	- -	0	0
56670	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	4/27/2016 11:02	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
56674	ATWATER - LIBERTY 115KV (ATL-1)	4/27/2016 19:31	LINE - WEATHER -	- -		0
56693	HINES ENERGY COMPLEX PLANT 230KV (0002)	4/29/2016 1:10	RELAY - MISOPERATION -	RELAY - MISOPERATION -		0

56712	WINDERMERE 230KV (0310)	5/1/2016 14:14	SUB - EQUIPMENT - BREAKER/TRANS - ELECTRICAL	SUB - EQUIPMENT - BREAKER/TRANS - ELECTRICAL		0
56745	FORT GREEN #4 69KV (0335)	5/2/2016 23:04	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56760	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	5/3/2016 11:28	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
56770	FT GREEN SPRINGS - VANDOLAH #1 CKT 69KV (VFG-1)	5/3/2016 22:03	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
56799	CAMPS SECTION 7 MINE 69KV (0120)	5/4/2016 2:00	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56428	LOCKHART - WOODSMERE 230KV (ASW-2)	4/6/2016 10:49	LINE - OPERATIONAL - EMERGENCY	LINE - OPERATIONAL - EMERGENCY		0
56430	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	4/6/2016 14:24	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56442	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	4/7/2016 3:36	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56473	OCCIDENTAL #1 115KV (0177)	4/8/2016 21:23	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56499	INGLIS MINING 115KV (0395)	4/11/2016 15:06	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56875	AVON PARK PL - DESOTO CITY 69KV (AD-1)	4/28/2016 20:08	RELAY - HUMAN ERROR - SETTING ERROR	- -		0
57238	LAKE WALES 69KV (0318)	6/2/2016 7:18	SUB - ANIMAL - SQUIRREL	RELAY - UNKNOWN - INVESTIGATION COMPLETE	144	144
57246	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	5/21/2016 11:33	LINE - ANIMAL - BIRD - CLEARANCE	- -		0
57272	LAKE BRANCH 115KV (0475)	6/4/2016 1:43	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57284	CRYSTAL RIVER SOUTH - TWIN COUNTY RANCH 115KV (CRB-4)	6/5/2016 15:38	LINE - LIGHTNING -	- -		0
57286	DUNNELLON TOWN - RAINBOW LK EST SEC 69KV RADIAL (DR-1)	6/5/2016 16:35	LINE - LIGHTNING -	LINE - EQUIPMENT - GROUND/GUY	125394	330463

57287	DESOTO CITY - LAKE PLACID NORTH 69KV (DLP-1)	6/5/2016 17:05	LINE - WEATHER -	- -	0
57312	JACKSON BLUFF 69KV (0078)	6/6/2016 10:31	LINE - CUSTOMER - GENERATION	LINE - CUSTOMER - GENERATION	0
57386	HORSE CREEK 69KV (0006)	6/10/2016 20:51	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
57413	CRAWFORDVILLE - ST MARKS EAST 69KV (CS-1)	6/12/2016 17:56	LINE - LIGHTNING -	LINE - LIGHTNING -	0
57560	DEBARY PL - SANFORD (FP&L) 230KV (DA-2)	6/19/2016 14:43	LINE - EQUIPMENT - CONDUCTOR/STATIC	LINE - EQUIPMENT - CONDUCTOR/STATIC	0
57561	WINTER SPRINGS 230KV (0252)	6/19/2016 14:45	LINE - EQUIPMENT - CONDUCTOR/STATIC	SUB - EQUIPMENT - CCPD	0
56805	SOUTH FORT MEADE 115KV (0360)	5/5/2016 6:24	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
56838	NEWBERRY - TRENTON 69KV (NT-1)	5/8/2016 15:10	LINE - CUSTOMER - DISTRIBUTION	- -	0
56842	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	5/9/2016 8:01	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
56858	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	5/9/2016 13:09	LINE - ANIMAL - BIRD - CLEARANCE	- -	0
56876	WINTER GARDEN 69KV (0311)	5/10/2016 9:18	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -	0
57008	DESOTO CITY - PHILLIPS PL (TECO) 69KV (AD-2)	5/18/2016 6:48	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -	0
57024	CRAWFORDVILLE - JACKSON BLUFF 69KV (JA-3)	5/18/2016 15:48	LINE - LIGHTNING -	LINE - LIGHTNING -	0
57041	FROSTPROOF - LAKE WALES 69KV (AL-3)	5/19/2016 14:53	LINE - LIGHTNING -	- -	0
57042	CONWAY - PINECASTLE 69KV (WR-4)	5/19/2016 15:17	LINE - LIGHTNING -	- -	0
57095	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	5/24/2016 6:14	LINE - CUSTOMER - INDUSTRIAL	- -	0
57132	SOUTH FORT MEADE 115KV (0360)	5/26/2016 7:47	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0

57164	OCCIDENTAL #1 115KV (0177)	5/27/2016 17:34	LINE - CUSTOMER - MILITARY	LINE - CUSTOMER - INDUSTRIAL		0
57174	DAVENPORT 69KV (0086)	5/29/2016 15:49	LINE - LIGHTNING -	SUB - EQUIPMENT - PT	1806318	1806318
57175	FT GREEN SPRINGS - VANDOLAH #1 CKT 69KV (VFG-1)	5/29/2016 16:09	LINE - WEATHER -	- -		0
57182	ATWATER - LIBERTY 115KV (ATL-1)	5/30/2016 18:26	LINE - WEATHER -	- -		0
56821	INTERCESSION CITY PLANT 230KV (0166)	5/6/2016 15:58	SUB - CUSTOMER - GENERATION	SUB - CUSTOMER - GENERATION		0
56826	OCCIDENTAL #1 115KV (0177)	5/7/2016 19:34	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56871	CRYSTAL RIVER SOUTH - TWIN COUNTY RANCH 115KV (CRB-4)	5/9/2016 20:26	LINE - EQUIPMENT - CONDUCTOR/STATIC	LINE - EQUIPMENT - CONDUCTOR/STATIC	0	606397
56910	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	5/11/2016 19:52	LINE - WEATHER -	- -		0
56911	FORTIETH STREET 230KV (0014)	5/11/2016 17:28	SUB - EQUIPMENT - BREAKER/DIST - BUSHING	SUB - EQUIPMENT - BREAKER/DIST - BUSHING	967176	967176
56987	COUNTRY OAKS - DUNDEE 69KV (DCO-1)	5/17/2016 11:50	LINE - LIGHTNING -	- -		0
56989	PASADENA 230KV (0135)	3/25/2016 13:54	SUB - EQUIPMENT - INSULATOR	SUB - EQUIPMENT - INSULATOR	75052	75052
56995	BROOKSVILLE - INVERNESS 69KV - CLEARWATER (HB-1)	5/17/2016 18:07	LINE - LIGHTNING -	- -		0
56996	CRYSTAL RIVER SOUTH - TWIN COUNTY RANCH 115KV (CRB-4)	5/17/2016 18:09	LINE - LIGHTNING -	- -		0
56589	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	4/20/2016 12:04	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56671	LONGWOOD 69KV (0304)	4/18/2016 5:23	SUB - ANIMAL - OTHER	SUB - ANIMAL - OTHER	289448	289448
56672	CANOE CREEK 230KV (0162)	4/8/2016 20:26	SUB - ANIMAL - OTHER	SUB - ANIMAL - OTHER	102129	102129

56690	DESOTO CITY - PHILLIPS PL (TECO) 69KV (AD-2)	4/28/2016 20:08	LINE - UNKNOWN - INVESTIGATION COMPLETE	RELAY - HUMAN ERROR - SETTING ERROR	0	0
56691	AVON PARK PL - SOUTH POLK 230KV (AF-1)	4/28/2016 22:09	LINE - WEATHER -	LINE - EQUIPMENT - INSULATOR		0
57652	FORT GREEN #10 69KV (0463)	6/23/2016 21:40	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57672	FORT GREEN #6 69KV (0437)	6/25/2016 22:23	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57675	DESOTO CITY - LAKE PLACID NORTH 69KV (DLP-1)	6/26/2016 3:36	LINE - WEATHER -	- -		0
57707	OCCIDENTAL SWIFT CREEK #1 - OCCIDENTAL METERING 115KV (JS-3)	6/28/2016 2:24	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57721	DELAND WEST - SILVER SPRINGS 230KV (SDW-1)	6/28/2016 15:33	LINE - LIGHTNING -	- -		0
57731	AVON PARK NORTH - FROSTPROOF 69KV (AL-1)	6/29/2016 18:15	LINE - LIGHTNING -	- -		0
57734	FISHEATING CREEK - SUN N LAKES 69KV (ALP-SUC-1)	6/29/2016 19:15	LINE - LIGHTNING -	- -		0
57736	ST JOHNS (SEC) - UMATILLA (SEC) 69KV (ED-4)	6/29/2016 21:21	LINE - CUSTOMER - REA/EMC	- -		0
57739	OCCIDENTAL #1 115KV (0177)	6/30/2016 0:27	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57746	HIGH SPRINGS - HULL ROAD 69KV (GH-1)	6/30/2016 11:07	LINE - WEATHER -	- -		0
57753	UCF 69KV (0200)	6/30/2016 17:21	LINE - LIGHTNING -	- -		0
57758	CENTRAL FLA - KATHLEEN 500KV - WILDWOOD (CFK-2)	6/30/2016 19:53	LINE - LIGHTNING -	LINE - LIGHTNING -		0
57784	HORSE CREEK 69KV (0006)	7/2/2016 20:49	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0	134
57792	FORT GREEN #6 69KV (0437)	7/3/2016 6:46	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

57795	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	7/3/2016 14:57	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57843	INTERCESSION CITY - BONNET CREEK 69KV (ICBL-1)	7/5/2016 21:05	LINE - WEATHER -	- -		0
56028	HOMELAND - ORANGE SWITCHING STATION 69KV (FMB-2)	3/8/2016 8:53	LINE - EQUIPMENT - CONDUCTOR/STATIC	LINE - EQUIPMENT - CONDUCTOR/STATIC	1446	1928
56787	CLEARWATER 69KV (0082)	5/3/2016 12:17	SUB - EQUIPMENT - DISCONNECT	SUB - EQUIPMENT - DISCONNECT	263129	263129
57252	SUWANNEE RIVER - LIVE OAK (FP&L) 115KV (SF-1)	6/3/2016 1:33	LINE - WEATHER -	- -		0
57269	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	6/3/2016 21:00	LINE - LIGHTNING -	- -		0
57327	LAKE TARPON - SHELDON ROAD CKT#1 (TECO) 230KV (LTX-1)	6/7/2016 1:43	LINE - NEIGHBORING UTILITY - OTHER	- -		0
57374	OCCIDENTAL #1 115KV (0177)	6/9/2016 22:54	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57383	ARCHER - HULL ROAD 69KV (AUF-1)	6/10/2016 19:20	LINE - TREE - NON-PREVENTABLE	LINE - TREE - NON-PREVENTABLE	0	127404.6
57400	JACKSON BLUFF - TALLAHASSEE 69KV (JT-1)	6/11/2016 15:45	LINE - LIGHTNING -	LINE - LIGHTNING -		0
57399	FISHEATING CREEK - SUN N LAKES 69KV (ALP-SUC-1)	6/11/2016 6:16	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
57411	BROOKSVILLE - UNION HALL 69KV (BZ-1)	6/12/2016 15:53	LINE - LIGHTNING -	- -		0
57453	CYPRESSWOOD 69KV (0267)	5/28/2016 15:30	SUB - EQUIPMENT - TRANSFORMER - BUSHING	SUB - EQUIPMENT - TRANSFORMER - BUSHING	114609	114609
56997	DUNDEE - LAKE WALES 69KV (ICLW-3)	5/17/2016 19:48	LINE - WEATHER -	- -		0
57006	LAKE BRANCH 115KV (0475)	5/18/2016 5:47	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57009	OCCIDENTAL #1 115KV (0177)	5/18/2016 7:13	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

57028	OCCIDENTAL #1 115KV (0177)	5/18/2016 21:55	LINE - CUSTOMER - INDUSTRIAL	- -		0
57039	ECON 230KV (0368)	4/13/2016 6:38	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	95888	95888
57052	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	5/20/2016 4:55	LINE - ANIMAL - OTHER	- -		0
57062	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	5/21/2016 0:00	RELAY - MISOPERATION -	- -		0
57064	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	5/21/2016 4:30	LINE - ANIMAL - BIRD - CLEARANCE	LINE - ANIMAL - BIRD - CLEARANCE	0	2561
57065	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	5/21/2016 11:31	LINE - ANIMAL - BIRD - CLEARANCE	- -		0
57066	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	5/21/2016 11:49	LINE - ANIMAL - OTHER	LINE - ANIMAL - OTHER	0	7740.4
57075	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	5/22/2016 15:49	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56811	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	5/5/2016 12:02	LINE - ANIMAL - BIRD - CLEARANCE	LINE - ANIMAL - BIRD - CLEARANCE	0	4020.4
56861	MONASTERY 115KV (0435)	4/18/2016 6:18	SUB - ANIMAL - OTHER	SUB - ANIMAL - OTHER	221358	221358
56964	OCCIDENTAL #1 115KV (0177)	5/16/2016 6:38	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57844	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	7/6/2016 4:01	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57948	DAVENPORT - WEST DQVENPORT 69KV (DWD-1)	7/9/2016 17:52	LINE - WEATHER -	- -		0
58039	LAKE MARION 69KV (0339)	7/13/2016 16:56	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
58065	VANDOLAH - MYAKKA PREC 69KV RADIAL (VHC-1)	7/14/2016 3:59	LINE - WEATHER -	- -		0
58121	MULBERRY - NORTHWEST (CITY OF BARTOW) 69KV (MSW-NWSW-1)	7/15/2016 19:15	LINE - WEATHER -	- -		0

58138	VANDOLAH - MYAKKA PREC 69KV RADIAL (VHC-1)	7/16/2016 18:09	LINE - WEATHER -	- -		0
58139	VANDOLAH - MYAKKA PREC 69KV RADIAL (VHC-1)	7/16/2016 18:23	LINE - LIGHTNING -	- -		0
57507	TAVARES SUMTER CO-OP 69KV (6791)	6/15/2016 19:23	SUB - EQUIPMENT - METERING	SUB - EQUIPMENT - METERING	0	283458
57547	SOUTH FORT MEADE 115KV (0360)	6/18/2016 8:38	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57565	LAKE BRANCH 115KV (0475)	6/20/2016 6:59	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57586	FORT GREEN #6 69KV (0437)	6/21/2016 19:14	LINE - CUSTOMER - INDUSTRIAL	- -		0
57210	BONNET CREEK - LAKE BRYAN 69KV (ICBL-2)	5/31/2016 19:29	LINE - LIGHTNING -	- -		0
57224	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	6/1/2016 21:09	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57239	LAKE WALES - CITRUSVILLE 69KV (LWC-1)	6/2/2016 7:18	SUB - ANIMAL - SQUIRREL	SUB - ANIMAL - SQUIRREL	144	144
57270	VANDOLAH - WAUCHULA 69KV (VW-1)	6/3/2016 21:48	LINE - LIGHTNING -	- -		0
57271	AVON PARK PL - WAUCHULA 69KV (APW-1)	6/3/2016 22:25	LINE - LIGHTNING -	- -		0
57275	INGLIS 115KV (0037)	6/4/2016 6:47	LINE - WEATHER -	- -		0
57183	HOWEY SEC - OKAHUMPKA (CLL-3)	5/30/2016 20:51	LINE - WEATHER -	- -		0
57225	OCCIDENTAL #1 115KV (0177)	6/1/2016 21:31	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57228	SILVER SPRINGS - SILVER SPRINGS NORTH SECI CKT2 230KV (XSX-1)	6/2/2016 3:35	LINE - PLANNED - EMERGENT	LINE - PLANNED - EMERGENT		0
57243	MONTVERDE 69KV (0300)	5/17/2016 21:02	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - NON PREVENTABLE	61977	61977
57265	INVERNESS 115KV (0028)	6/3/2016 15:46	LINE - WEATHER -	- -		0

57273	NORTH BARTOW - PEBBLEDALE (TECO) 230KV (WLXT-1)	6/3/2016 22:29	LINE - NEIGHBORING UTILITY - EQUIPMENT	LINE - NEIGHBORING UTILITY - EQUIPMENT		0
57278	LAKE BRANCH 115KV (0475)	6/4/2016 18:55	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57285	HAMMOCK 115KV (0257)	6/5/2016 15:38	LINE - LIGHTNING -	SUB - EQUIPMENT - TRANSFORMER - OTHER		0
57301	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	6/6/2016 6:40	RELAY - MISOPERATION -	RELAY - MISOPERATION -		0
57355	OCCIDENTAL #1 115KV (0177)	6/8/2016 16:03	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57358	LAKE TARPON -SEVEN SPRINGS 230KV (LTS-1)	6/8/2016 17:20	LINE - OPERATIONAL - EMERGENCY	LINE - OPERATIONAL - EMERGENCY		0
56072	SOUTH FORT MEADE 115KV (0360)	3/14/2016 6:46	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57846	SUWANNEE RIVER 230KV (0061)	7/6/2016 5:07	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
57862	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	7/6/2016 12:13	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57865	CASSELBERRY - WINTER PARK EAST 69KV (WA-2)	6/14/2016 18:51	RELAY - MISOPERATION -	- -		0
57871	CASSELBERRY - LAKE ALOMA 69KV (CLA-1)	7/6/2016 20:09	LINE - LIGHTNING -	LINE - EQUIPMENT - CONDUCTOR/STATIC	15840	15907
57875	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	7/7/2016 2:51	LINE - WEATHER -	- -		0
57952	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	7/10/2016 7:09	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57958	FT WHITE - JASPER EAST CKT 115KV (IJ-1)	7/10/2016 16:43	LINE - LIGHTNING -	- -		0
57977	FORT GREEN #10 69KV (0463)	7/11/2016 15:48	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57984	SUWANNEE RIVER - LIVE OAK (FP&L) 115KV (SF-1)	7/12/2016 2:16	LINE - WEATHER -	- -		0

57994	SHINGLE CREEK 69KV (0336)	6/18/2016 16:55	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - PREVENTABLE	79603	79603
58006	LAKE BRANCH 115KV (0475)	7/12/2016 18:22	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58009	OCOEE - HEMPLE 69KV (OH-1)	7/12/2016 18:49	LINE - WEATHER -	- -		0
58085	VANDOLAH - WAUCHULA 69KV (VW-1)	7/14/2016 15:36	LINE - LIGHTNING -	- -		0
58087	NORTH BARTOW - WEST LAKE WALES 69KV (BWL-2)	7/14/2016 17:43	LINE - LIGHTNING -	- -		0
58114	FORT GREEN #10 69KV (0463)	7/15/2016 16:55	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57647	ECON 230KV (0368)	6/14/2016 18:35	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - PREVENTABLE	43090	43090
57661	HORSE CREEK 69KV (0006)	6/24/2016 20:00	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0	0
57680	ZEPHYRHILLS NORTH - DADE CITY (TECO) 69KV (BZ-6)	6/26/2016 12:43	LINE - WEATHER -	LINE - UNKNOWN - INVESTIGATION COMPLETE	0	3806.4
57681	HAINES CITY - HAINES CITY EAST 69KV (HP-1)	6/26/2016 13:25	LINE - LIGHTNING -	- -		0
57683	BRONSON 230KV (0295)	6/26/2016 17:38	LINE - WEATHER -	- -		0
57685	KELLY PARK 69KV (0384)	6/26/2016 17:38	LINE - LIGHTNING -	- -		0
57706	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	6/27/2016 23:15	LINE - WEATHER -	- -		0
57724	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	6/29/2016 5:57	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57752	CASSELBERRY - LAKE ALOMA 69KV (CLA-1)	6/30/2016 17:24	LINE - LIGHTNING -	- -		0
57783	VANDOLAH - MYAKKA PREC 69KV RADIAL (VHC-1)	7/2/2016 17:57	LINE - LIGHTNING -	- -		0

55912	SUWANNEE RIVER - LIVE OAK (FP&L) 115KV (SF-1)	2/25/2016 14:50	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
57356	NORTH BARTOW - ORANGE SWITCHING STA 69KV (FMB-3)	6/8/2016 16:41	LINE - LIGHTNING -	LINE - LIGHTNING -	6	8
57357	FORT GREEN #11 69KV (0472)	6/8/2016 17:27	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57373	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	6/9/2016 20:51	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
57380	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	6/10/2016 8:13	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
57398	OCCIDENTAL #1 115KV (0177)	6/11/2016 4:24	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57412	CRAWFORDVILLE - SUB #32 (CITY OF TALLAH) 230KV (CRAW-1)	6/12/2016 17:35	LINE - WEATHER -	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
57414	CRAWFORDVILLE - ST MARKS EAST 69KV (CS-1)	6/12/2016 18:11	LINE - LIGHTNING -	LINE - LIGHTNING -		0
57433	SILVER SPRINGS - SILVER SPRINGS SHORES 69KV (OCF-1)	6/13/2016 17:41	LINE - LIGHTNING -	- -		0
57442	MAGNOLIA RANCH 69KV (0377)	5/31/2016 1:53	SUB - ANIMAL - RACCOON	SUB - ANIMAL - RACCOON	60792	60792
57448	WINTER PARK EAST 230KV (0133)	5/25/2016 0:22	SUB - EQUIPMENT - BREAKER/DIST - ELECTRICAL	SUB - EQUIPMENT - BREAKER/DIST - ELECTRICAL	199112	199112
57457	LAKE ALOMA - WINTER PARK EAST 69KV (WL-1)	6/14/2016 18:51	LINE - LIGHTNING -	SUB - EQUIPMENT - CCPD	6358	6358
57369	OCCIDENTAL #1 115KV (0177)	6/9/2016 12:34	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57385	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	6/10/2016 20:51	RELAY - MISOPERATION -	- - UNDER INVESTIGATION		0
57397	OCCIDENTAL #1 115KV (0177)	6/11/2016 3:42	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

57484	CASSELBERRY 69KV (0195)	5/25/2016 6:50	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	103104	103104
57506	OCCIDENTAL #1 115KV (0177)	6/15/2016 22:26	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57524	DRIFTON - PERRY 69KV (DP-1)	6/16/2016 14:33	LINE - WEATHER -	RELAY - EQUIPMENT - RECLOSING	2550	4298.5
57537	LIBERTY 69KV (0466)	6/17/2016 16:13	LINE - NEIGHBORING UTILITY - OTHER	- -		0
57540	FT WHITE - PERRY 69KV (FP-1)	6/17/2016 16:52	LINE - TREE - NON-PREVENTABLE	LINE - TREE - NON-PREVENTABLE	4275	25423.4
57552	OCCIDENTAL #1 115KV (0177)	6/18/2016 16:52	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57894	INTERCESSION CITY PLANT 230KV (0166)	7/8/2016 0:44	SUB - LIGHTNING -	SUB - EQUIPMENT - INSULATOR		0
57913	MARTIN WEST - SILVER SPRINGS 69KV (MS-1)	7/8/2016 18:12	LINE - LIGHTNING -	- -		0
57920	LAKE WALES - WEST LAKE WALES CKT#1 69KV (WLLW-1)	7/8/2016 18:08	LINE - LIGHTNING -	- -		0
57953	PEACOCK 69KV (0461)	7/10/2016 10:57	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57955	NORTH BARTOW - WEST LAKE WALES 69KV (BWL-2)	7/10/2016 15:26	LINE - WEATHER -	- -		0
57957	AVON PARK NORTH - FROSTPROOF 69KV (AL-1)	7/10/2016 16:14	LINE - LIGHTNING -	- -		0
57983	BROOKSVILLE - INVERNESS 69KV - CLEARWATER (HB-1)	7/11/2016 22:15	LINE - LIGHTNING -	- -		0
57995	SIXTEENTH STREET 115KV (0011)	7/12/2016 15:21	RELAY - HUMAN ERROR - INADVERTENT TRIP	- -	7141	7141
57997	HOLOPAW - WEST LAKE WALES 230KV (WLXF-3)	7/12/2016 17:11	LINE - WEATHER -	- -		0
58004	SOUTH FORT MEADE 115KV (0360)	7/12/2016 17:55	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

58007	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	7/12/2016 18:27	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58008	FT WHITE - HIGH SPRINGS 69KV (FH-1)	7/12/2016 18:32	LINE - WEATHER -	- -		0
58014	BOGGY MARSH - LAKE LOUISA SEC 69KV (CEB-2)	7/12/2016 19:59	LINE - LIGHTNING -	- -		0
58018	OCCIDENTAL #1 115KV (0177)	7/13/2016 0:38	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58028	SEMINOLE - STARKEY ROAD 69KV (DLW-5)	7/13/2016 13:33	LINE - WEATHER -	- -		0
58029	FLORIDA GAS TRANSMISSION EAST - WEWAHOOTEE 69KV (RW-3)	7/13/2016 14:36	LINE - WEATHER -	- -		0
58045	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	7/13/2016 17:40	LINE - LIGHTNING -	LINE - LIGHTNING -		0
58040	AVON PARK PL - DESOTO CITY 69KV (AD-1)	7/13/2016 17:04	LINE - LIGHTNING -	- -		0
58044	FROSTPROOF - LAKE WALES 69KV (AL-3)	7/13/2016 17:16	LINE - WEATHER -	- -		0
55980	DELAND EAST 115KV (0145)	2/9/2016 7:31	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	17437	17437
57870	CASSELBERRY - LAKE ALOMA 69KV (CLA-1)	7/6/2016 20:04	LINE - LIGHTNING -	- -		0
57873	SIXTEENTH STREET 115KV (0011)	7/6/2016 23:17	SUB - EQUIPMENT - TRANSFORMER - OTHER	- -		0
57949	MONTVERDE - WINTER GARDEN 69KV (WCE-1)	7/9/2016 18:15	LINE - LIGHTNING -	- -		0
57956	FORT GREEN #11 69KV (0472)	7/10/2016 15:43	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57998	FT WHITE - JASPER EAST CKT 115KV (IJ-1)	7/12/2016 17:18	LINE - LIGHTNING -	- -		0
57999	DINNER LAKE - PHILLIPS 69KV (PDL-1)	7/12/2016 17:18	LINE - LIGHTNING -	- -		0
58002	AVON PARK PL - DESOTO CITY 69KV (AD-1)	7/12/2016 17:26	LINE - LIGHTNING -	- -		0

58005	FISHEATING CREEK - SUN N LAKES 69KV (ALP-SUC-1)	7/12/2016 18:08	LINE - WEATHER -	- -		0
58010	OCOEE - HEMPLE 69KV (OH-1)	7/12/2016 18:59	LINE - WEATHER -	- -		0
58011	BOGGY MARSH - LAKE LOUISA SEC 69KV (CEB-2)	7/12/2016 19:30	LINE - LIGHTNING -	- -		0
58032	CRYSTAL RIVER SOUTH - TWIN COUNTY RANCH 115KV (CRB-4)	7/13/2016 14:47	LINE - LIGHTNING -	- -		0
58046	BARCOLA - FT MEADE 69KV (BF-1)	7/13/2016 17:40	LINE - LIGHTNING -	LINE - LIGHTNING -		0
58098	FORT GREEN #11 69KV (0472)	7/15/2016 7:36	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58108	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	7/15/2016 14:45	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58110	OCCIDENTAL #1 115KV (0177)	7/15/2016 14:55	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58130	GA PACIFIC - COUNTRY CLUB CFEC 69KV RADIAL (GPX-IS-1)	7/16/2016 14:23	LINE - LIGHTNING -	- -		0
57515	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	6/16/2016 9:00	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57549	DELAND WEST - DELEON SPRINGS 115KV (DWDS-1)	6/18/2016 15:51	LINE - TREE - NON-PREVENTABLE	LINE - TREE - NON-PREVENTABLE	143080	143080
57550	BARBERVILLE - DELAND WEST 69KV (DWB-1)	6/18/2016 15:51	LINE - WEATHER -	LINE - TREE - NON-PREVENTABLE	0	13362
57551	SUWANNEE RIVER - LIVE OAK (FP&L) 115KV (SF-1)	6/18/2016 16:40	LINE - WEATHER -	- -		0
57553	SUWANNEE RIVER - LIVE OAK (FP&L) 115KV (SF-1)	6/18/2016 16:42	LINE - WEATHER -	- -		0
57554	MARTIN WEST - SILVER SPRINGS 69KV (MS-1)	6/18/2016 17:22	LINE - LIGHTNING -	- -		0
57556	CRYSTAL RIVER SOUTH - TWIN COUNTY RANCH 115KV (CRB-4)	6/18/2016 17:47	LINE - LIGHTNING -	- -		0

57557	CRYSTAL RIVER SOUTH - TWIN COUNTY RANCH 115KV (CRB-4)	6/18/2016 17:59	LINE - LIGHTNING -	- -		0
57650	PERRY - PERRY TREC 69KV RADIAL (PC-1)	6/23/2016 16:25	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE	0	2981.3
57669	CENTER HILL 69KV (0240)	6/25/2016 17:44	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57671	FORT GREEN #11 69KV (0472)	6/25/2016 18:25	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57674	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	6/26/2016 2:07	LINE - WEATHER -	- -		0
55557	SOUTH FORT MEADE 115KV (0360)	1/17/2016 4:54	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55558	LAKE BRANCH 115KV (0475)	1/17/2016 5:01	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55684	OCCIDENTAL #1 115KV (0177)	2/5/2016 16:06	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55758	FLORIDA GAS TRANSMISSION EAST - WEWAHOOTEE 69KV (RW-3)	2/15/2016 7:06	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -	0	0
55772	COUNTRY OAKS - EAST LAKE WALES 69KV (LEL-1)	2/16/2016 2:29	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
56804	AVON PARK PL - SOUTH POLK 230KV (AF-1)	5/4/2016 21:46	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
57016	DINNER LAKE - PHILLIPS 69KV (PDL-1)	5/18/2016 12:55	LINE - ANIMAL - BIRD - CLEARANCE	- -		0
57169	FORT GREEN #11 69KV (0472)	5/28/2016 14:34	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57184	HEMPLE - LAKE LUNTZ 69KV (AH-2)	5/30/2016 22:07	LINE - LIGHTNING -	- -		0
57227	SILVER SPRINGS - SILVER SPRINGS NORTH SECI CKT2 230KV (XSX-1)	6/1/2016 23:19	LINE - PLANNED - EMERGENT	- -		0
58140	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	7/16/2016 18:27	LINE - ANIMAL - BIRD - CLEARANCE	LINE - ANIMAL - BIRD - CLEARANCE	0	189444.8

58144	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	7/17/2016 9:17	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58153	QUINCY - GRETNA TEC 69KV RADIAL (QX-3)	7/17/2016 13:48	LINE - WEATHER -	- -		0
58154	FT WHITE - JASPER WEST CKT 115KV (IJ-2)	7/17/2016 19:00	LINE - WEATHER -	- -		0
58155	SOUTH ELOISE (TECO) - WEST LAKE WALES 230KV (WLXT-3)	7/18/2016 3:42	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
58166	HINES ENERGY COMPLEX PL - TIGER BAY 230KV (HETB-1)	7/18/2016 9:20	LINE - OPERATIONAL - EMERGENCY	LINE - OPERATIONAL - EMERGENCY		0
55512	OCCIDENTAL #1 115KV (0177)	1/7/2016 17:02	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55513	LARGO - ULMERTON WEST 69KV (DLW-2)	1/8/2016 4:27	SUB - EQUIPMENT - INSULATOR	SUB - EQUIPMENT - INSULATOR	1527512	1527512
55525	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	1/9/2016 20:09	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55592	SOUTH FORT MEADE 115KV (0360)	1/22/2016 19:17	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56535	SUWANNEE RIVER - LIVE OAK (FP&L) 115KV (SF-1)	4/13/2016 21:18	LINE - WEATHER -	- -		0
56539	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	4/14/2016 13:14	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56618	FOLEY 69KV (0247)	4/22/2016 17:35	LINE - CUSTOMER - INDUSTRIAL	- -		0
56658	MULBERRY - MULBERRY COGEN CKT#1A 69KV (BH-3)	4/25/2016 15:02	LINE - CUSTOMER - GENERATION	- -		0
56702	OCCIDENTAL #1 115KV (0177)	4/30/2016 1:36	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56722	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	5/2/2016 5:59	RELAY - MISOPERATION -	- -		0
56747	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	5/3/2016 7:37	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55505	OCCIDENTAL #1 115KV (0177)	1/6/2016 14:10	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

56543	OCCIDENTAL #1 115KV (0177)	4/15/2016 2:30	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56545	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	4/15/2016 7:54	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56598	INVERNESS 115KV (0028)	4/18/2016 16:14	SUB - EQUIPMENT - STATION SERVICE	SUB - EQUIPMENT - OTHER	52584	52584
57268	DELAND WEST - SILVER SPRINGS 230KV (SDW-1)	6/3/2016 19:33	LINE - LIGHTNING -	- -		0
57555	CIRCLE SQUARE 69KV (0354)	6/18/2016 17:28	LINE - WEATHER -	- -		0
57388	OCCIDENTAL #1 115KV (0177)	6/11/2016 2:15	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57872	BARBERVILLE - DELAND WEST 69KV (DWB-1)	7/6/2016 20:14	LINE - LIGHTNING -	- -		0
57898	SOUTH FORT MEADE 115KV (0360)	7/8/2016 6:50	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57961	CRAWFORDVILLE - JACKSON BLUFF 69KV (JA-3)	7/10/2016 18:28	LINE - LIGHTNING -	- -		0
57991	WEKIVA 230KV (0269)	6/26/2016 15:15	SUB - EQUIPMENT - CCPD	SUB - EQUIPMENT - BREAKER/DIST - TRIP COIL	317023	317023
58012	AVALON - REEDY LAKE 69KV (CET-2)	7/12/2016 19:37	LINE - WEATHER -	- -		0
58017	TAYLOR AVE - WALSINGHAM 69KV (DL-LTW-1)	7/12/2016 21:55	LINE - LIGHTNING -	- -		0
58025	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	7/13/2016 7:58	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58027	AVON PARK NORTH - FROSTPROOF 69KV (AL-1)	7/13/2016 11:56	LINE - PLANNED - EMERGENT	LINE - PLANNED - EMERGENT		0
55628	EAST CLEARWATER - LAKE TARPON 230KV (NC-LTC-1)	1/27/2016 3:55	LINE - EQUIPMENT - INSULATOR	LINE - EQUIPMENT - INSULATOR		0
55633	DEBARY PLANT 230KV (0246)	1/28/2016 12:59	RELAY - EQUIPMENT - RELAY PROBLEM	RELAY - EQUIPMENT - RELAY PROBLEM		0

55687	NORTH BARTOW - PEBBLEDALE (TECO) 230KV (WLXT-1)	2/6/2016 9:09	LINE - OPERATIONAL - EMERGENCY	LINE - OPERATIONAL - EMERGENCY		0
55718	HIGH SPRINGS 69KV (0067)	2/9/2016 10:39	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
55724	SOUTH FORT MEADE 115KV (0360)	2/9/2016 15:43	LINE - CUSTOMER - DISTRIBUTION	LINE - CUSTOMER - DISTRIBUTION		0
55745	BARCOLA - WEST SUB (CITY OF LAKELAND) 230KV (BLX)	2/12/2016 3:40	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - OPERATIONAL - OTHER		0
55757	CRYSTAL RIVER SOUTH - TWIN COUNTY RANCH 115KV (CRB-4)	2/15/2016 6:30	LINE - EQUIPMENT - CONNECTOR	LINE - EQUIPMENT - CONNECTOR	0	510025.5
55766	LIBERTY 69KV (0466)	2/15/2016 23:01	LINE - WEATHER -	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
55770	MANLEY ROAD (CARGILL) 115KV (0004)	2/16/2016 2:04	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55771	COUNTRY OAKS - DUNDEE 69KV (DCO-1)	2/16/2016 2:33	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
55797	NEW PORT RICHEY 115KV (0070)	2/16/2016 8:17	SUB - HUMAN ERROR - SWITCHING ERROR - TRANS	SUB - HUMAN ERROR - SWITCHING ERROR - TRANS	8888	8888
55811	MYRTLE LAKE - WEKIVA 230KV (NLP-2)	2/19/2016 18:52	SUB - OPERATIONAL - EMERGENCY	SUB - OPERATIONAL - EMERGENCY		0
55812	BROOKSVILLE WEST - HUDSON 115KV (BWR-1)	2/21/2016 21:28	LINE - WEATHER -	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
56772	ATWATER - QUINCY 115KV (QX-1)	5/3/2016 22:43	LINE - WEATHER -	- -		0
56778	CURLEW 115KV (0149)	5/4/2016 6:27	SUB - EQUIPMENT - PT	SUB - EQUIPMENT - PT		0
56874	OCCIDENTAL #1 115KV (0177)	5/10/2016 8:51	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

56936	FORTIETH STREET 230KV (0014)	5/12/2016 14:10	SUB - EQUIPMENT - BREAKER/DIST - ELECTRICAL	SUB - EQUIPMENT - BREAKER/DIST - ELECTRICAL	65520	65520
56992	CLEARWATER 69KV (0082)	2/16/2016 6:24	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - PREVENTABLE	82836	82836
57057	OCCIDENTAL #1 115KV (0177)	5/20/2016 11:28	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57185	OCCIDENTAL #1 115KV (0177)	5/31/2016 0:02	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57208	FORT GREEN #11 69KV (0472)	5/31/2016 17:33	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57212	FORT GREEN #6 69KV (0437)	6/1/2016 0:00	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55537	IDYLWILD - UNIVERSITY FLA 69KV (IG-GUF-1)	1/11/2016 20:15	LINE - OPERATIONAL - EMERGENCY	LINE - OPERATIONAL - EMERGENCY		0
55556	FORT GREEN #6 69KV (0437)	1/17/2016 4:31	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55608	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	1/25/2016 12:13	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55688	OCCIDENTAL #1 115KV (0177)	2/6/2016 20:19	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55706	OCCIDENTAL #1 115KV (0177)	2/8/2016 17:51	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55767	CRYSTAL RIVER SOUTH - TWIN COUNTY RANCH 115KV (CRB-4)	2/15/2016 23:33	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
55769	OCCIDENTAL #1 115KV (0177)	2/16/2016 1:10	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55874	BEACON HILL - PORT ST JOE 69KV RADIAL (PBH-1)	2/24/2016 13:28	LINE - WEATHER - WIND	- -		0
57682	MYRTLE LAKE - WEKIVA 230KV (NLP-2)	6/26/2016 15:15	SUB - EQUIPMENT - CCPD	RELAY - HUMAN ERROR - SETTING ERROR		0
57817	SILVER SPRINGS - SILVER SPRINGS SHORES 69KV (OCF-1)	7/5/2016 1:44	LINE - WEATHER -	- -		0

57855	FORT GREEN #10 69KV (0463)	7/6/2016 7:03	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
57959	FT WHITE - JASPER WEST CKT 115KV (IJ-2)	7/10/2016 16:43	LINE - LIGHTNING -	- -	0
57993	CENTER HILL 69KV (0240)	7/12/2016 15:11	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58047	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	7/13/2016 20:28	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58079	FT WHITE - HIGH SPRINGS 69KV (FH-1)	7/14/2016 13:57	LINE - LIGHTNING -	- -	0
58080	HIGH SPRINGS - HULL ROAD 69KV (GH-1)	7/14/2016 13:58	LINE - WEATHER -	- -	0
58095	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	7/15/2016 2:54	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58103	SUWANNEE RIVER PL - FT WHITE 115KV (SF-2)	7/15/2016 14:17	LINE - LIGHTNING -	- -	0
58105	FT WHITE - JASPER WEST CKT 115KV (IJ-2)	7/15/2016 14:25	LINE - WEATHER -	- -	0
58106	FT WHITE - JASPER EAST CKT 115KV (IJ-1)	7/15/2016 14:25	LINE - LIGHTNING -	- -	0
58107	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	7/15/2016 14:43	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58109	OCCIDENTAL #1 115KV (0177)	7/15/2016 14:51	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58113	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	7/15/2016 14:57	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58112	LIBERTY 69KV (0466)	7/15/2016 15:09	LINE - WEATHER -	- -	0
58115	SOUTH FORT MEADE 115KV (0360)	7/15/2016 17:26	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58120	UMATILLA - UMATILLA (SEC)69KV (ED-3)	7/15/2016 19:13	SUB - EQUIPMENT - BUS - BUS WORK	SUB - EQUIPMENT - BUS - BUS WORK	0
58123	FORT GREEN #4 69KV (0335)	7/15/2016 18:48	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58129	CHIEFLAND - INGLIS 69KV (IS-1)	7/16/2016 13:41	LINE - LIGHTNING -	- -	0
58131	ATWATER - LIBERTY 115KV (ATL-1)	7/16/2016 16:04	LINE - LIGHTNING -	- -	0
58137	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	7/16/2016 17:43	LINE - LIGHTNING -	- -	0

55982	FORT GREEN #4 69KV (0335)	3/3/2016 15:16	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56054	PORT ST. JOE 230KV (0113)	3/11/2016 2:32	SUB - EQUIPMENT - TRANSFORMER - WINDING	SUB - EQUIPMENT - TRANSFORMER - WINDING		0
56094	BABSON PARK 69KV (0283)	3/9/2016 19:00	SUB - EQUIPMENT - BREAKER/DIST - OTHER	SUB - EQUIPMENT - BREAKER/DIST - OTHER	62866	62866
56142	CROSS CITY - OLD TOWN NORTH SW STA 69KV (TC-2)	3/17/2016 12:44	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
56151	HOMELAND - MULBERRY 69KV (BH-2)	3/18/2016 18:04	LINE - ANIMAL - OTHER	LINE - EQUIPMENT - CONDUCTOR/STATIC	0	206
56172	VANDOLAH - CHARLOTTE (FPL) 230KV (VCX-1)	3/21/2016 7:07	LINE - NEIGHBORING UTILITY - OTHER	- -		0
56198	FORT GREEN #6 69KV (0437)	3/22/2016 15:39	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56207	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	3/23/2016 16:24	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56660	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	4/26/2016 8:12	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56663	WAUCHULA 69KV (0130)	2/27/2016 1:39	SUB - OPERATIONAL - EMERGENCY	SUB - OPERATIONAL - EMERGENCY		0
55930	CARRABELLE BEACH 69KV (0226)	2/15/2016 22:47	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	69642	69642
55931	FIFTY-FIRST STREET 230KV (0012)	2/27/2016 0:19	SUB - ANIMAL - OTHER	SUB - ANIMAL - OTHER	123266	123266
56039	FORT GREEN #4 69KV (0335)	3/9/2016 1:10	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56092	FT MEADE - VANDOLAH 230KV (FV-1)	3/15/2016 5:53	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
56233	MARTIN WEST - MARTIN 69KV RADIAL (MM-1)	3/24/2016 23:06	LINE - WEATHER -	SUB - EQUIPMENT - BREAKER/TRANS - MECHANICAL	207010	207010

56398	FORT GREEN #6 69KV (0437)	4/4/2016 10:18	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57604	NORTH BARTOW - WEST LAKE WALES 69KV (BWL-2)	6/22/2016 16:04	LINE - EQUIPMENT - CONNECTOR	LINE - EQUIPMENT - CONNECTOR	0	32
55479	OCCIDENTAL #1 115KV (0177)	1/1/2016 10:33	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55482	EAST LAKE WALES - INDIAN LAKES ESTATES 69KV RADIAL (ELX-AL-1)	1/4/2016 23:58	LINE - NEIGHBORING UTILITY - EQUIPMENT	LINE - NEIGHBORING UTILITY - EQUIPMENT		0
55523	LARGO 230KV (0123)	1/9/2016 15:32	SUB - EQUIPMENT - INSULATOR	SUB - EQUIPMENT - INSULATOR		0
55524	G. E. ALACHUA 69KV (0160)	1/9/2016 16:59	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55928	BARCOLA - WEST SUB (CITY OF LAKELAND) 230KV (BLX)	2/29/2016 9:45	LINE - OPERATIONAL - EMERGENCY	LINE - OPERATIONAL - EMERGENCY		0
55985	OCCIDENTAL #1 115KV (0177)	3/4/2016 5:22	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56509	WINDERMERE 230KV (0310)	4/12/2016 8:10	SUB - ANIMAL - SQUIRREL	SUB - ANIMAL - SQUIRREL	50864	50864
56542	HAINES CITY - HAINES CITY EAST 69KV (HP-1)	4/14/2016 20:45	LINE - WEATHER - WIND	LINE - EQUIPMENT - POLE FAILURE - PREVENTABLE	0	0
56692	CARRABELLE - CRAWFORDVILLE 69KV (JA-2)	4/28/2016 22:57	LINE - PUBLIC INTERFERENCE - VEHICLE	LINE - PUBLIC INTERFERENCE - VEHICLE	410060	410060
55561	MANLEY ROAD (CARGILL) 115KV (0004)	1/18/2016 18:48	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57720	OCCIDENTAL #1 115KV (0177)	6/28/2016 14:45	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57722	OCCIDENTAL #1 115KV (0177)	6/29/2016 2:16	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57737	LAKE BRANCH 115KV (0475)	6/29/2016 21:36	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57747	ODESSA - TARPON SPRINGS 69KV (TZ-2)	6/30/2016 12:25	LINE - LIGHTNING -	- -		0

57745	FT WHITE - PERRY 69KV (FP-1)	6/30/2016 10:10	LINE - LIGHTNING -	LINE - LIGHTNING -		0
57755	ALTAMONTE - SPRING LAKE 230KV (ASW-1)	6/30/2016 17:56	LINE - LIGHTNING -	- -		0
57751	AVON PARK PL - DESOTO CITY 69KV (AD-1)	6/30/2016 15:34	LINE - LIGHTNING -	- -		0
57756	ALTAMONTE - DOUGLAS AVE 69KV (ASL-1)	6/30/2016 17:57	LINE - LIGHTNING -	- -		0
57757	ALTAMONTE - DOUGLAS AVE 69KV (ASL-1)	6/30/2016 18:52	LINE - LIGHTNING -	- -		0
57759	VANDOLAH - MYAKKA PREC 69KV RADIAL (VHC-1)	6/30/2016 20:36	LINE - WEATHER -	- -		0
57775	OCCIDENTAL #1 115KV (0177)	7/1/2016 10:06	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57776	GA PACIFIC - COUNTRY CLUB CFEC 69KV RADIAL (GPX-IS-1)	7/1/2016 12:11	LINE - WEATHER -	- -		0
57781	BOGGY MARSH - LAKE LOUISA SEC 69KV (CEB-2)	7/2/2016 9:45	LINE - NEIGHBORING UTILITY - EQUIPMENT	LINE - NEIGHBORING UTILITY - EQUIPMENT		0
57782	FORT GREEN #11 69KV (0472)	7/2/2016 16:54	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57794	OCCIDENTAL #1 115KV (0177)	7/3/2016 13:49	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55550	NEW RIVER - HANDCART (TECO) 69KV (TZ-4)	1/15/2016 9:12	LINE - WEATHER -	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
55643	OCCIDENTAL #1 115KV (0177)	1/30/2016 12:08	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55749	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	2/13/2016 9:08	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55685	BEVERLY HILLS - HOLDER 115KV (HBH-1)	2/5/2016 20:34	SUB - ANIMAL - RACCOON	- -		0
55695	NORTHEAST 230KV (0077)	1/10/2016 16:48	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - ELECTRICAL	969	969

55802	KATHLEEN - WEST SUB (CITY OF LAKELAND) 230KV (KWX-1)	2/19/2016 12:42	LINE - EQUIPMENT - CONDUCTOR/STATIC	LINE - EQUIPMENT - CONDUCTOR/STATIC		0
55807	SUWANNEE RIVER PL - TWIN LAKES (GA PWR) 115KV (SP-1)	2/19/2016 14:08	LINE - EQUIPMENT - POLE FAILURE - NON PREVENTABLE	LINE - EQUIPMENT - POLE FAILURE - NON PREVENTABLE		0
55852	FT WHITE - NEWBERRY 230KV (CF-3)	2/24/2016 7:07	LINE - WEATHER - WIND	LINE - TREE - NON-PREVENTABLE		0
55881	BEACON HILL - PORT ST JOE 69KV RADIAL (PBH-1)	2/24/2016 14:20	LINE - WEATHER - WIND	- -		0
55989	ULMERTON 230KV (0126)	3/3/2016 18:35	SUB - EQUIPMENT - OTHER	SUB - EQUIPMENT - OTHER	287001	287001
56776	BROOKRIDGE - TWIN COUNTY RANCH 115KV - CLEARWATER (CRB-1)	5/4/2016 4:33	LINE - LIGHTNING -	- -		0
56993	FT MEADE - VANDOLAH 230KV (FV-1)	5/17/2016 16:37	LINE - ANIMAL - BIRD - CLEARANCE	LINE - ANIMAL - BIRD - CLEARANCE		0
56998	OCCIDENTAL #1 115KV (0177)	5/17/2016 19:52	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57000	FROSTPROOF - LAKE WALES 69KV (AL-3)	5/17/2016 20:17	LINE - LIGHTNING -	- -		0
57001	FT MEADE - VANDOLAH 230KV (FV-1)	5/17/2016 20:35	LINE - EQUIPMENT - INSULATOR	LINE - EQUIPMENT - INSULATOR		0
57002	FORT GREEN #5 69KV (0352)	5/17/2016 21:34	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55578	GATEWAY 115KV (0382)	1/20/2016 19:29	SUB - ANIMAL - RACCOON	SUB - ANIMAL - RACCOON		0
55594	ANCLOTE PL - EAST CLEARWATER 230KV (ANEC-1)	1/23/2016 6:57	LINE - EQUIPMENT - INSULATOR	LINE - EQUIPMENT - INSULATOR		0
55596	DINNER LAKE - PHILLIPS 69KV (PDL-1)	1/23/2016 10:35	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
55644	OCCIDENTAL #1 115KV (0177)	1/30/2016 20:37	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55704	CROSS BAYOU 69KV (0085)	2/8/2016 13:14	SUB - UNKNOWN - INVESTIGATION COMPLETE	- -		0

55746	FORT GREEN #6 69KV (0437)	2/12/2016 7:17	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55945	QUINCY - GRETNA TEC 69KV RADIAL (QX-3)	3/1/2016 3:24	LINE - NEIGHBORING UTILITY - OTHER	LINE - NEIGHBORING UTILITY - OTHER		0
56058	FORT GREEN #10 69KV (0463)	3/11/2016 18:16	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56068	OCCIDENTAL #1 115KV (0177)	3/13/2016 18:57	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56124	BROOKSVILLE 115KV (0026)	3/16/2016 13:53	SUB - HUMAN ERROR - ENGINEERING	SUB - HUMAN ERROR - ENGINEERING		0
56125	FORT GREEN #4 69KV (0335)	3/16/2016 15:49	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56128	LARGO 230KV (0123)	3/16/2016 19:05	SUB - EQUIPMENT - TRANSFORMER - OTHER	SUB - EQUIPMENT - BREAKER/TRANS - MECHANICAL	23668	23668
57167	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	5/28/2016 12:17	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57176	LAKE BRANCH 115KV (0475)	5/29/2016 22:51	LINE - CUSTOMER - INDUSTRIAL	- -		0
57216	BROOKRIDGE - TWIN COUNTY RANCH 115KV - CLEARWATER (CRB-1)	6/1/2016 15:10	LINE - LIGHTNING -	- -		0
57798	BRICKYARD (TEC) 69KV (6007)	7/3/2016 16:51	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
57813	OCCIDENTAL #1 115KV (0177)	7/4/2016 7:35	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
57828	BROOKRIDGE - TWIN COUNTY RANCH 115KV - CLEARWATER (CRB-1)	7/5/2016 11:36	LINE - WEATHER -	- -		0
56043	OCCIDENTAL #1 115KV (0177)	3/9/2016 19:19	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56100	INGLIS MINING 115KV (0395)	3/15/2016 8:30	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56143	VANDOLAH PWR STA - VANDOLAH 230KV (VPV-1)	3/17/2016 16:23	LINE - CUSTOMER - GENERATION	LINE - CUSTOMER - GENERATION		0

56248	DAVENPORT - WEST DQVENPORT 69KV (DWD-1)	3/26/2016 17:48	LINE - LIGHTNING -	LINE - EQUIPMENT - POLE FAILURE - PREVENTABLE	813240	813240
56236	INTERCESSION CITY PL - CABBAGE ISLAND 69KV (ICP-1)	3/25/2016 1:25	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
56290	LAKE MARION 69KV (0339)	3/29/2016 14:52	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
56333	ECON - WINTER PARK EAST 230KV (NR-1)	4/1/2016 4:36	SUB - EQUIPMENT - LIGHTNING ARRESTER	SUB - EQUIPMENT - CCPD		0
56344	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	4/2/2016 0:17	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56345	SUWANNEE RIVER 230KV (0061)	4/2/2016 1:28	LINE - WEATHER -	- -		0
56346	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	4/2/2016 3:48	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55481	SOUTH FORT MEADE 115KV (0360)	1/3/2016 15:41	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55634	SOUTH FORT MEADE 115KV (0360)	1/28/2016 16:35	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55720	OCCIDENTAL #1 115KV (0177)	2/9/2016 11:09	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55755	HORSE CREEK 69KV (0006)	2/14/2016 8:07	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55617	OCCIDENTAL #1 115KV (0177)	1/26/2016 11:54	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55625	EAST CLEARWATER - LAKE TARPON 230KV (NC-LTC-1)	1/27/2016 1:36	LINE - EQUIPMENT - INSULATOR	LINE - EQUIPMENT - INSULATOR		0
55689	OCCIDENTAL #1 115KV (0177)	2/7/2016 7:02	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55752	OCCIDENTAL #1 115KV (0177)	2/13/2016 18:57	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55768	SUWANNEE RIVER 230KV (0061)	2/16/2016 0:42	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
55925	FORT GREEN #4 69KV (0335)	2/28/2016 16:54	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

55522	HORSE CREEK 69KV (0006)	1/9/2016 8:03	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55480	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	1/2/2016 20:04	SUB - EQUIPMENT - BREAKER/TRANS - MECHANICAL	SUB - EQUIPMENT - BREAKER/TRANS - MECHANICAL	0	5939.6
55579	LAKE WALES 69KV (0318)	1/21/2016 0:17	SUB - EQUIPMENT - CIRCUIT SWITCHER - MECHANICAL	SUB - EQUIPMENT - CIRCUIT SWITCHER - MECHANICAL		0
55595	UCF - WINTER PARK EAST 69KV (WF-1)	1/23/2016 9:03	LINE - EQUIPMENT - GROUND/GUY	LINE - EQUIPMENT - GROUND/GUY		0
55681	HAINES CREEK - LEESBURG EAST 69KV (LE-2)	2/5/2016 12:23	LINE - PUBLIC INTERFERENCE - VEHICLE	LINE - PUBLIC INTERFERENCE - VEHICLE		0
55686	BEVERLY HILLS 115KV (0227)	2/5/2016 20:34	SUB - ANIMAL - RACCOON	SUB - EQUIPMENT - BREAKER/DIST - ELECTRICAL	153020	153020
55701	WINTER PARK EAST 230KV (0133)	1/18/2016 5:21	SUB - ANIMAL - OTHER	SUB - ANIMAL - OTHER	120640	120640
55808	FT WHITE - PERRY 69KV (FP-1)	2/19/2016 19:33	LINE - UNKNOWN -	LINE - UNKNOWN -		0
55864	BROOKSVILLE 115KV (0026)	2/9/2016 16:08	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - PREVENTABLE	40964	40964
55870	DRIFTON - HANSON 115KV (JQ-4)	2/24/2016 12:52	LINE - WEATHER -	RELAY - EQUIPMENT - OTHER		0
55911	BROOKRIDGE - TWIN COUNTY RANCH 115KV - CLEARWATER (CRB-1)	2/25/2016 13:20	LINE - OPERATIONAL - EMERGENCY	LINE - OPERATIONAL - EMERGENCY		0
55941	FOLEY 69KV (0247)	2/29/2016 14:28	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55994	OCCIDENTAL #1 115KV (0177)	3/5/2016 17:02	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56003	SOUTH FORT MEADE 115KV (0360)	3/6/2016 23:03	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56036	OCCIDENTAL #1 115KV (0177)	3/8/2016 15:42	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

55713	EAST CLEARWATER - LAKE TARPON 230KV (NC-LTC-1)	2/9/2016 10:26	RELAY - HUMAN ERROR - INADVERTENT TRIP	RELAY - HUMAN ERROR - INADVERTENT TRIP	0
55848	LAKE BRANCH 115KV (0475)	2/23/2016 16:51	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
56048	OCCIDENTAL #1 115KV (0177)	3/10/2016 7:13	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
56075	OCCIDENTAL #1 115KV (0177)	3/14/2016 10:24	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
56249	RIO PINAR PL - FLORIDA GAS TRANSMISSION EAST 69KV (RW-4)	3/26/2016 18:57	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -	0
56285	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	3/29/2016 10:24	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
55547	LAKE BRANCH 115KV (0475)	1/14/2016 11:03	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
55692	FORT GREEN #11 69KV (0472)	2/8/2016 10:01	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
55551	MANLEY ROAD (CARGILL) 115KV (0004)	1/15/2016 11:15	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
55877	BEACON HILL - PORT ST JOE 69KV RADIAL (PBH-1)	2/24/2016 13:45	LINE - WEATHER - WIND	- -	0
55922	OCCIDENTAL #1 115KV (0177)	2/28/2016 7:19	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
55923	OCCIDENTAL #1 115KV (0177)	2/28/2016 7:21	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
55984	OCCIDENTAL #1 115KV (0177)	3/4/2016 0:35	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
55486	FORT GREEN #10 69KV (0463)	1/4/2016 8:04	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
55503	FORT GREEN #6 69KV (0437)	1/6/2016 11:21	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
56044	LARGO - ULMERTON 230KV (UL-1)	3/9/2016 21:46	SUB - EQUIPMENT - LIGHTNING ARRESTER	SUB - EQUIPMENT - LIGHTNING ARRESTER	0
56060	AVON PARK PLANT 230KV (0503)	3/12/2016 5:52	SUB - ANIMAL - BIRD - DAMAGE	SUB - ANIMAL - BIRD - DAMAGE	0

56067	WEIRSDALE 69KV (0250)	3/13/2016 16:14	LINE - PUBLIC INTERFERENCE - VEHICLE	LINE - EQUIPMENT - POLE FAILURE - NON PREVENTABLE		0
56153	OCCIDENTAL #1 115KV (0177)	3/19/2016 7:55	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56154	APOPKA SOUTH - WOODSMERE 69KV (WP-2)	3/19/2016 11:29	LINE - EQUIPMENT - CROSSARM	LINE - EQUIPMENT - CROSSARM		0
56155	APOPKA SOUTH - WOODSMERE 69KV (WP-2)	3/19/2016 12:20	LINE - EQUIPMENT - CROSSARM	LINE - EQUIPMENT - CROSSARM		0
56159	VANDOLAH PWR STA - VANDOLAH 230KV (VPV-1)	3/19/2016 16:34	LINE - HUMAN ERROR - OTHER	LINE - HUMAN ERROR - OTHER		0
56160	DRIFTON - PERRY 69KV (DP-1)	3/19/2016 19:24	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
56441	NORTH BARTOW - SOUTH ELOISE (TECO) 230KV (WLXT-2)	4/6/2016 22:51	LINE - NEIGHBORING UTILITY - OTHER	- -		0
56840	OCCIDENTAL #1 115KV (0177)	5/9/2016 2:14	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56873	OCCIDENTAL #1 115KV (0177)	5/10/2016 7:10	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
55854	CIRCLE SQUARE 69KV (0354)	2/24/2016 8:12	LINE - WEATHER -	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
56103	ODESSA 69KV (0445)	3/9/2016 6:03	RELAY - EQUIPMENT - SUDDEN PRESSURE RELAY FAILURE	RELAY - EQUIPMENT - SUDDEN PRESSURE RELAY FAILURE		0
56113	FT GREEN SPRINGS - VANDOLAH #2 CKT 69KV (VFGS-1)	3/16/2016 0:03	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE	0	1414
56114	OCCIDENTAL #1 115KV (0177)	3/16/2016 0:54	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56119	FORT GREEN SPRINGS 69KV (0439)	3/15/2016 14:25	SUB - OPERATIONAL - EMERGENCY	- -		0

56131	WINTER PARK EAST 230KV (0133)	3/16/2016 21:39	SUB - UNKNOWN - INVESTIGATION COMPLETE	SUB - EQUIPMENT - TRANSFORMER - OTHER	0
56163	OCCIDENTAL #1 115KV (0177)	3/20/2016 9:42	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
56168	HOMELAND - MULBERRY 69KV (BH-2)	3/20/2016 18:23	LINE - ANIMAL - BIRD - CLEARANCE	- -	0
56208	FORT GREEN SPRINGS 69KV (0439)	3/23/2016 20:09	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -	0
56227	CABBAGE ISLAND - POINCIANA 69KV (ICP-2)	3/24/2016 21:09	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -	0
56229	OCCIDENTAL #1 115KV (0177)	3/24/2016 21:29	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
56056	OCCIDENTAL #1 115KV (0177)	3/11/2016 7:02	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
56069	DISSTON - NORTHEAST 230KV (ND)	3/13/2016 20:37	SUB - EQUIPMENT - INSULATOR	- -	0
56156	EATONVILLE - WOODSMERE 69KV (WO-4)	3/19/2016 12:14	LINE - PLANNED - EMERGENT	LINE - PLANNED - EMERGENT	0
56138	FORT GREEN #6 69KV (0437)	3/17/2016 8:41	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
56179	DUNDEE - HAINES CITY EAST 230KV CKT #2 (ICD-3)	3/21/2016 14:22	LINE - ANIMAL - BIRD - CLEARANCE	- -	0
56180	EAST CLEARWATER - ULMERTON 230KV (NC-1)	3/9/2016 21:46	RELAY - HUMAN ERROR - SETTING ERROR	- -	0
56181	NORTHEAST - ULMERTON CKT#2 230KV (NC-3)	3/9/2016 21:47	RELAY - UNKNOWN - INVESTIGATION COMPLETE	- -	0
56218	OCCIDENTAL #1 115KV (0177)	3/24/2016 9:24	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
56221	BARCOLA - WEST SUB (CITY OF LAKELAND) 230KV (BLX)	3/24/2016 19:44	LINE - ANIMAL - BIRD - CLEARANCE	LINE - ANIMAL - BIRD - CLEARANCE	0

56223	HAVANA - TALLAHASSEE 69KV (TQ-HH-1)	3/24/2016 20:32	LINE - WEATHER -	LINE - WEATHER - WATER		0
56234	DENHAM - CABBAGE HILL (TECO) 69KV (TZ-1)	3/25/2016 0:41	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
56237	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	3/25/2016 3:22	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56238	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	3/25/2016 4:14	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56244	OCCIDENTAL #1 115KV (0177)	3/26/2016 4:23	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56250	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	3/26/2016 22:57	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
56289	PIEDMONT - WOODSMERE 230KV (PW-1)	3/29/2016 14:30	LINE - WEATHER - WIND	LINE - EQUIPMENT - CROSSARM		0
56302	OCCIDENTAL SWIFT CREEK #1 - OCCIDENTAL METERING 115KV (JS-3)	3/30/2016 10:21	LINE - ANIMAL - BIRD - CLEARANCE	- -		0
56323	SOPCHOPPY 69KV (0181)	3/30/2016 21:01	LINE - CUSTOMER - DISTRIBUTION	RELAY - HUMAN ERROR - SETTING ERROR	183168	183168
56348	BROOKSVILLE - INVERNESS 69KV - CLEARWATER (HB-1)	4/2/2016 10:36	LINE - WEATHER -	- -		0
58199	AVON PARK PL - DESOTO CITY 69KV (AD-1)	7/19/2016 15:14	LINE - LIGHTNING -	- -		0
58362	HUDSON - PASCO TRAILS WREC 115KV RADIAL (HPTX-1)	7/29/2016 11:44	LINE - WEATHER -	RELAY - EQUIPMENT - RECLOSING	0	13185.6
58583	BROOKRIDGE - TWIN COUNTY RANCH 115KV - CLEARWATER (CRB-1)	8/10/2016 20:31	LINE - WEATHER -	- -		0
58981	FT WHITE - PERRY 69KV (FP-1)	9/2/2016 3:35	LINE - WEATHER - MAJOR STORM	- -		0
58995	ANCLOTE PL - EAST CLEARWATER 230KV (ANEC-1)	9/2/2016 18:05	SUB - EQUIPMENT - PT	- -		0

59464	DELAND EAST - ORANGE CITY 115KV (OD-1)	10/7/2016 8:20	LINE - WEATHER - MAJOR STORM - HURRICANE	- -	0
59472	NORTH LONGWOOD - SANFORD (FP&L) 230KV (NLSX-1)	10/7/2016 11:29	LINE - WEATHER - MAJOR STORM - HURRICANE	- -	0
59893	DEBARY PL - LAKE EMMA 230KV (DWS-1)	11/6/2016 1:47	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE	0
59922	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	11/8/2016 23:01	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
59940	CHIEFLAND - INGLIS 69KV (IS-1)	11/10/2016 21:48	SUB - EQUIPMENT - LIGHTNING ARRESTER	- -	0
59945	FORT GREEN #4 69KV (0335)	11/11/2016 6:00	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
59975	FORT GREEN #11 69KV (0472)	11/14/2016 17:22	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
60010	FORT GREEN #3 METERING 69KV (0544)	11/17/2016 8:08	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
60062	PIEDMONT - WOODSMERE 230KV (PW-1)	11/21/2016 17:54	LINE - EQUIPMENT - POLE ROT	SUB - EQUIPMENT - CCVT	0
60093	LAKE BRANCH 115KV (0475)	11/25/2016 0:10	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
60096	OCCIDENTAL #1 115KV (0177)	11/26/2016 7:07	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
60100	DESOTO CITY - PHILLIPS PL (TECO) 69KV (AD-2)	11/27/2016 7:56	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -	0
60124	TIMBER SW STA - TIMBER ENERGY 69KV RADIAL (JH-2)	11/29/2016 1:02	LINE - CUSTOMER - CUSTOMER REQUEST	- -	0
60158	OCCIDENTAL #1 115KV (0177)	11/29/2016 15:54	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
60169	FT MEADE - SOUTH POLK 230KV (AF-2)	11/30/2016 4:16	LINE - WEATHER -	- -	0
60213	FT GREEN SPRINGS - VANDOLAH #2 CKT 69KV (VFGS-1)	12/1/2016 7:08	LINE - ANIMAL - BIRD - CLEARANCE	- -	0

58173	BAY RIDGE - KELLY PK 69KV (BK-1)	7/18/2016 13:01	LINE - LIGHTNING -	- -	0
58758	CLEARWATER 69KV (0082)	8/20/2016 13:53	SUB - EQUIPMENT - CT	- -	0
58759	CLEARWATER 69KV (0082)	8/20/2016 13:54	SUB - EQUIPMENT - CT	- -	0
59459	KELLY PARK - ZELLWOOD 69KV (EP-3)	10/7/2016 6:17	LINE - WEATHER - MAJOR STORM - HURRICANE	- -	0
59860	AVON PARK PL - FISHEATING CREEK 230KV (AFC-1)	11/2/2016 13:53	LINE - WEATHER -	LINE - WEATHER - WIND	0
60050	SOUTH POLK 230KV (0498)	11/19/2016 23:50	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE	645
60126	AVON PARK PL - SOUTH POLK 230KV (AF-1)	11/29/2016 3:53	LINE - ANIMAL - BIRD - EXCREMENT	- -	0
60171	AVON PARK PL - SOUTH POLK 230KV (AF-1)	11/30/2016 5:16	LINE - ANIMAL - BIRD - EXCREMENT	- -	0
60177	DESOTO CITY - PHILLIPS PL (TECO) 69KV (AD-2)	11/30/2016 9:47	LINE - EQUIPMENT - CONDUCTOR/STATIC	- -	0
60205	FT GREEN SPRINGS - VANDOLAH #2 CKT 69KV (VFGS-1)	11/30/2016 23:13	SUB - EQUIPMENT - INSULATOR - CONTAMINATION	- -	0
60207	FORT GREEN #10 69KV (0463)	11/30/2016 23:13	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
60208	FT GREEN SPRINGS - VANDOLAH #2 CKT 69KV (VFGS-1)	12/1/2016 1:16	SUB - EQUIPMENT - INSULATOR - CONTAMINATION	- -	0
60238	OCCIDENTAL #1 115KV (0177)	12/5/2016 17:38	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
60241	OCCIDENTAL #1 115KV (0177)	12/5/2016 23:57	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
60244	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	12/6/2016 13:58	LINE - WEATHER -	- -	0
60257	FORT GREEN #10 69KV (0463)	12/7/2016 11:33	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
60264	PEACOCK 69KV (0461)	12/8/2016 5:16	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0

60290	STARKEY ROAD 69KV (0234)	12/10/2016 15:52	SUB - EQUIPMENT - BREAKER/DIST - ELECTRICAL	SUB - EQUIPMENT - BREAKER/DIST - ELECTRICAL	533009	533009
60401	HAINES CREEK - SORRENTO 230KV (CFS-2)	12/27/2016 6:43	LINE - WEATHER -	- -		0
60235	LARGO - TAYLOR AVE 69KV (LTW-1)	12/5/2016 11:27	SUB - EQUIPMENT - INSULATOR	RELAY - MISOPERATION -		0
60262	HINES ENERGY COMPLEX PLANT 230KV (0002)	12/8/2016 3:37	SUB - OPERATIONAL - EMERGENCY	SUB - EQUIPMENT - BREAKER/TRANS - BUSHING		0
60287	FORT GREEN #6 69KV (0437)	12/12/2016 7:19	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60352	BARCOLA - WEST SUB (CITY OF LAKELAND) 230KV (BLX)	12/19/2016 7:10	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
60367	DUNDEE - LAKE MARION 69KV (DLM-1)	12/19/2016 23:42	LINE - WEATHER -	- -		0
59605	FORT GREEN #6 69KV (0437)	10/9/2016 4:29	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59973	HEMPLE 69KV (0340)	7/18/2016 17:16	LINE - WEATHER -	SUB - EQUIPMENT - BREAKER/DIST - ELECTRICAL	62434	62434
60390	BROOKSVILLE WEST - SILVERTHORNE WREC 115KV RADIAL (BWSX-1)	12/24/2016 13:51	SUB - EQUIPMENT - LIGHTNING ARRESTER	SUB - EQUIPMENT - LIGHTNING ARRESTER	4678	29612
59861	AVON PARK PL - FISHEATING CREEK 230KV (AFC-1)	11/2/2016 13:45	LINE - WEATHER -	- -		0
58602	CAMP LAKE - GROVELAND - CAMP LAKE LOOP 69KV (CLG-1)	8/11/2016 18:46	LINE - LIGHTNING -	RELAY - MISOPERATION -	9146	29601.2
59606	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	10/9/2016 6:38	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58471	MONTVERDE 69KV (0300)	7/30/2016 7:59	SUB - ANIMAL - SQUIRREL	SUB - ANIMAL - SQUIRREL	51689	51689
59475	DELAND - DELAND WEST 69KV (ED-1)	10/7/2016 11:45	LINE - WEATHER - MAJOR STORM - HURRICANE	- -		0

59474	DEBARY PL - ORANGE CITY 230KV (DDW-1)	10/7/2016 11:41	LINE - WEATHER - MAJOR STORM - HURRICANE	- -		0
59502	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	10/7/2016 18:54	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58191	DESOTO CITY - PHILLIPS PL (TECO) 69KV (AD-2)	7/19/2016 11:14	LINE - WEATHER -	- -		0
58215	DESOTO CITY - PHILLIPS PL (TECO) 69KV (AD-2)	7/20/2016 17:11	LINE - WEATHER -	- -		0
58367	BOGGY MARSH - LAKE LOUISA SEC 69KV (CEB-2)	7/29/2016 15:17	LINE - LIGHTNING -	- -		0
58581	BROOKSVILLE - FLORIDA ROCK 69KV RADIAL (BFR-1)	8/10/2016 19:51	LINE - LIGHTNING -	- -		0
58584	DRIFTON - PERRY 69KV (DP-1)	8/10/2016 21:22	LINE - PUBLIC INTERFERENCE - VEHICLE	LINE - PUBLIC INTERFERENCE - VEHICLE	141774	146750.5
58600	CLERMONT EAST- LAKE LOUISA SEC 69KV (INACTIVE) (CEB-1)	8/11/2016 17:09	LINE - LIGHTNING -	LINE - OPERATIONAL - OTHER	0	30165
58601	CAMP LAKE - HOWEY BKR STA (SEC)69KV (CLL-1)	8/11/2016 18:05	LINE - LIGHTNING -	- -		0
58692	BRADFORDVILLE WEST-HAVANA 115KV (BWH-1)	8/17/2016 2:27	LINE - WEATHER -	- -		0
58913	FOUR CORNERS - GIFFORD 69KV (BMF-2)	8/30/2016 17:39	LINE - LIGHTNING -	- -		0
58916	BARCOLA - WEST SUB (CITY OF LAKELAND) 230KV (BLX)	8/30/2016 23:07	LINE - EQUIPMENT - INSULATOR	LINE - EQUIPMENT - INSULATOR		0
58183	MANLEY ROAD (CARGILL) 115KV (0004)	7/18/2016 15:58	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58295	BROOKSVILLE - FLORIDA ROCK 69KV RADIAL (BFR-1)	7/24/2016 20:54	LINE - WEATHER -	- -		0
58317	BAY RIDGE - KELLY PK 69KV (BK-1)	7/26/2016 18:18	LINE - WEATHER -	- -		0
58366	LAKE WALES - WEST LAKE WALES CKT#1 69KV (WLLW-1)	7/29/2016 13:59	LINE - LIGHTNING -	- -		0

58383	LARGO - PALM HARBOR 230KV (LTL-1)	7/30/2016 11:30	LINE - LIGHTNING -	LINE - EQUIPMENT - CONDUCTOR/STATIC		0
58410	KATHLEEN 500KV (0285)	7/31/2016 19:59	SUB - EQUIPMENT - INSULATOR	SUB - EQUIPMENT - INSULATOR		0
58473	FORT GREEN #6 69KV (0437)	8/4/2016 8:39	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58484	CAMP LAKE - HOWEY BKR STA (SEC)69KV (CLL-1)	8/4/2016 18:18	LINE - LIGHTNING -	LINE - LIGHTNING -	0	2493.4
58574	EAST CLEARWATER 230KV (0127)	7/21/2016 16:52	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	81282	81282
58577	FORT GREEN #6 69KV (0437)	8/10/2016 16:13	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59478	PIEDMONT - WELCH ROAD 230KV (PS-1)	10/7/2016 11:54	LINE - WEATHER - MAJOR STORM - HURRICANE	- -		0
58969	CARRABELLE - CRAWFORDVILLE 69KV (JA-2)	9/2/2016 1:54	LINE - WEATHER - MAJOR STORM	LINE - TREE - NON-PREVENTABLE		0
58971	FOLEY 69KV (0247)	9/2/2016 2:13	LINE - WEATHER - MAJOR STORM	LINE - CUSTOMER - INDUSTRIAL		0
58985	JASPER - TWIN LAKES (GA PWR) 69KV (JV-1)	9/2/2016 6:00	LINE - WEATHER - MAJOR STORM	- -		0
59009	CRYSTAL RIVER PL - HOLDER CKT#2 230KV (CCF-5)	9/4/2016 16:20	LINE - LIGHTNING -	- -		0
59113	OCCIDENTAL #1 115KV (0177)	9/14/2016 12:02	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59155	LAKE TARPON - SHELDON ROAD CKT#2 (TECO) 230KV (LTX2-1)	9/17/2016 0:14	LINE - OPERATIONAL - EMERGENCY	LINE - NEIGHBORING UTILITY - EQUIPMENT		0
59158	BROOKRIDGE - LAKE TARPON 500KV (CLT-1)	9/18/2016 17:47	SUB - EQUIPMENT - BREAKER/TRANS - OTHER	SUB - EQUIPMENT - BREAKER/TRANS - OTHER		0
59202	AVALON 230KV (0421)	9/20/2016 14:42	SUB - UNKNOWN - INVESTIGATION COMPLETE	SUB - UNKNOWN - INVESTIGATION COMPLETE		0

59235	DESOTO CITY - PHILLIPS PL (TECO) 69KV (AD-2)	9/23/2016 16:43	LINE - WEATHER -	- -		0
59254	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	9/24/2016 7:06	LINE - CUSTOMER - INDUSTRIAL	RELAY - MISOPERATION -		0
59255	LAKE BRANCH 115KV (0475)	9/24/2016 9:45	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59286	MEADOW WOODS SOUTH - HUNTER CREEK 69KV (MSH-1)	9/26/2016 16:25	LINE - LIGHTNING -	- -		0
59329	FT GREEN SPRINGS - VANDOLAH #1 CKT 69KV (VFG-1)	9/28/2016 22:13	LINE - WEATHER -	- -		0
59331	FT MEADE - VANDOLAH 230KV (FV-1)	9/28/2016 22:28	LINE - LIGHTNING -	LINE - OPERATIONAL - OTHER		0
59346	SOUTH FORT MEADE 115KV (0360)	9/29/2016 16:14	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59431	DESOTO CITY - LAKE PLACID NORTH 69KV (DLP-1)	10/5/2016 15:07	LINE - WEATHER -	- -		0
59454	KELLY PARK - ZELLWOOD 69KV (EP-3)	10/7/2016 6:00	LINE - UNKNOWN -	- -		0
59457	KELLY PARK - ZELLWOOD 69KV (EP-3)	10/7/2016 6:13	LINE - WEATHER - MAJOR STORM - HURRICANE	- -		0
59460	KELLY PARK - ZELLWOOD 69KV (EP-3)	10/7/2016 6:31	LINE - WEATHER - MAJOR STORM - HURRICANE	- -		0
59667	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	10/15/2016 20:16	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
59847	FIFTY-FIRST STREET 230KV (0012)	10/21/2016 13:53	SUB - HUMAN ERROR - SWITCHING ERROR - TRANS	SUB - HUMAN ERROR - SWITCHING ERROR - TRANS	24246	24246
59489	NORTH LONGWOOD - SANFORD (FP&L) 230KV (NLSX-1)	10/7/2016 13:49	LINE - WEATHER - MAJOR STORM - HURRICANE	- -		0

59647	LAKEWOOD 69KV (0416)	10/2/2016 19:59	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	166860	166860
59689	WINTER PARK EAST 230KV (0133)	9/15/2016 17:07	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - NON PREVENTABLE	49176	49176
60125	TIMBER SW STA - TIMBER ENERGY 69KV RADIAL (JH-2)	11/29/2016 3:37	LINE - CUSTOMER - CUSTOMER REQUEST	- -		0
60240	OCCIDENTAL #1 115KV (0177)	12/5/2016 22:17	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60375	BARCOLA - PEBBLEDALE (TECO) 230KV (BPX-1)	12/20/2016 20:21	LINE - OPERATIONAL - EMERGENCY	LINE - OPERATIONAL - EMERGENCY		0
60408	PORT RICHEY WEST 115KV (0164)	12/6/2016 22:40	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER	133598	133598
58612	EAST LAKE WALES - INDIAN LAKES ESTATES 69KV RADIAL (ELX-AL-1)	8/12/2016 15:11	LINE - WEATHER -	- -		0
58613	DENHAM 69KV (0118)	8/12/2016 16:32	SUB - EQUIPMENT - BREAKER/TRANS - BUSHING	SUB - EQUIPMENT - BREAKER/TRANS - BUSHING	532951	532951
58623	BRADFORDVILLE WEST-HAVANA 115KV (BWH-1)	8/13/2016 10:22	LINE - WEATHER -	- -		0
58627	FT WHITE - JASPER WEST CKT 115KV (IJ-2)	8/13/2016 18:28	LINE - WEATHER -	- -		0
58650	FISHEATING CREEK - LAKE PLACID 69KV (ALP-2)	8/15/2016 6:47	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
58685	AVON PARK PL - WAUCHULA 69KV (APW-1)	8/16/2016 16:44	LINE - LIGHTNING -	- -		0
58941	DUNDEE - LAKE WALES 69KV (ICLW-3)	9/1/2016 1:34	LINE - WEATHER - MAJOR STORM	- -		0
58983	SUWANNEE RIVER - LIVE OAK (FP&L) 115KV (SF-1)	9/2/2016 5:02	LINE - WEATHER - MAJOR STORM	- -		0
59003	ANCLOTE PL - EAST CLEARWATER 230KV (ANEC-1)	9/2/2016 20:24	SUB - EQUIPMENT - CCPD	SUB - HUMAN ERROR - IMPROPER INSTALLATION		0

59006	VANDOLAH - MYAKKA PREC 69KV RADIAL (VHC-1)	9/3/2016 20:44	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
59077	FT WHITE - PERRY 69KV (FP-1)	9/12/2016 0:02	LINE - LIGHTNING -	- -		0
58302	MANLEY ROAD (CARGILL) 115KV (0004)	7/25/2016 20:00	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58331	FORT GREEN #11 69KV (0472)	7/27/2016 19:40	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58363	BROOKRIDGE - BROOKSVILLE WEST (BBW CKT) 115KV (BBW-1)	7/29/2016 11:55	LINE - LIGHTNING -	- -		0
58404	TURNER ? FP&L TIE (SANFORD-BARWICK) 115KV (TSX-1)	7/30/2016 23:18	LINE - EQUIPMENT - ARRESTER	LINE - EQUIPMENT - ARRESTER		0
58419	FORT GREEN #11 69KV (0472)	8/1/2016 6:50	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58555	BELLEAIR 69KV (0055)	7/22/2016 20:22	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	153216	153216
58568	MEADOW WOODS SOUTH 230KV (0378)	7/19/2016 4:18	LINE - CUSTOMER - DISTRIBUTION	LINE - EQUIPMENT - POLE FAILURE - NON PREVENTABLE	271896	271896
58991	FORT GREEN #10 69KV (0463)	9/2/2016 11:15	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59302	DESOTO CITY - PHILLIPS PL (TECO) 69KV (AD-2)	9/27/2016 17:40	LINE - WEATHER -	- -		0
59309	SOUTH FORT MEADE 115KV (0360)	9/28/2016 12:53	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59312	MANLEY ROAD 115KV (0004)	9/28/2016 13:50	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59321	OCCIDENTAL #1 115KV (0177)	9/28/2016 17:16	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59375	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	10/2/2016 9:47	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60071	DUNNELLON TOWN 69KV (0035)	11/21/2016 4:54	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - NON PREVENTABLE	128547	128547

58579	BROOKSVILLE - UNION HALL 69KV (BZ-1)	8/10/2016 18:56	LINE - LIGHTNING -	- -		0
58580	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	8/10/2016 19:41	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
58617	SOUTH POLK 230KV (0498)	8/12/2016 17:54	LINE - CUSTOMER - INDUSTRIAL	SUB - ANIMAL - OTHER		0
58620	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	8/13/2016 8:58	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58630	OCCIDENTAL #1 115KV (0177)	8/14/2016 7:47	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58632	FORT GREEN #11 69KV (0472)	8/14/2016 13:08	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58651	OCCIDENTAL #1 115KV (0177)	8/15/2016 8:24	LINE - CUSTOMER - INDUSTRIAL	- -		0
58677	DUNDEE - LAKE MARION 69KV (DLM-1)	8/16/2016 14:11	LINE - WEATHER -	- -		0
58724	MONTICELLO - BOSTON (GA PWR) 69KV (DB-2)	8/18/2016 2:50	LINE - WEATHER -	- -		0
58784	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	8/23/2016 7:28	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58802	CONWAY - NARCOOSEE 69KV (WR-3)	8/24/2016 11:30	LINE - LIGHTNING -	- -		0
58811	DINNER LAKE 69KV (0415)	8/11/2016 13:41	RELAY - HUMAN ERROR - SETTING ERROR	RELAY - HUMAN ERROR - SETTING ERROR	28369	28369
58986	BARCOLA - WEST SUB (CITY OF LAKELAND) 230KV (BLX)	9/2/2016 8:23	LINE - WEATHER - MAJOR STORM	- -		0
59109	REDDICK-WILLISTON 69KV (RDW-1)	9/14/2016 8:11	LINE - EQUIPMENT - SWITCH	LINE - EQUIPMENT - SWITCH	0	0
59141	DUNNELLON TOWN - HOLDER 69KV (HDU-1)	9/15/2016 20:13	LINE - WEATHER -	- -		0
59233	OCCIDENTAL #1 115KV (0177)	9/23/2016 6:52	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60092	AVON PARK PL - FISHEATING CREEK 230KV (AFC-1)	11/24/2016 5:18	LINE - ANIMAL - BIRD - CLEARANCE	- -		0

60146	ARCHER 230KV (0098)	11/29/2016 12:28	LINE - CUSTOMER - REA/EMC	- -		0
60285	SORRENTO (SEC) 69KV (6029)	12/11/2016 7:15	LINE - PLANNED -	- -		0
60327	FORT GREEN #11 69KV (0472)	12/15/2016 18:01	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60334	BARCOLA - PEBBLEDALE (TECO) 230KV (BPX-1)	12/16/2016 16:12	LINE - OTHER - WILDFIRE	RELAY - HUMAN ERROR - SETTING ERROR		0
60349	NORTH BARTOW - PEBBLEDALE (TECO) 230KV (WLXT-1)	12/19/2016 0:56	LINE - NEIGHBORING UTILITY - OTHER	- -		0
60350	OCCIDENTAL #1 115KV (0177)	12/19/2016 2:37	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60315	KENNETH 115KV (0174)	7/15/2016 3:02	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE	100503	100503
60326	WINTER PARK 69KV (0305)	12/15/2016 15:42	RELAY - HUMAN ERROR - INADVERTENT TRIP	RELAY - HUMAN ERROR - INADVERTENT TRIP	22716	22725
60361	TWIN COUNTY RANCH 115KV (0233)	11/1/2016 7:17	LINE - CUSTOMER - DISTRIBUTION	SUB - HUMAN ERROR - SWITCHING ERROR - TRANS	57648	57648
60382	FORT GREEN #6 69KV (0437)	12/22/2016 7:18	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60385	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	12/23/2016 0:45	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
60395	FT MEADE - SOUTH POLK 230KV (AF-2)	12/26/2016 4:59	LINE - ANIMAL - BIRD - CLEARANCE	- -		0
60431	OCCIDENTAL #1 115KV (0177)	12/29/2016 15:25	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58182	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	7/18/2016 15:00	LINE - LIGHTNING -	- -		0
58288	BROOKRIDGE - BROOKSVILLE WEST (BBW CKT) 115KV (BBW-1)	7/24/2016 15:47	LINE - LIGHTNING -	- -		0

58470	SOUTH FORT MEADE 115KV (0360)	8/3/2016 13:58	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58479	BARBERVILLE - DELAND WEST 69KV (DWB-1)	8/4/2016 15:38	LINE - WEATHER -	- -	0
58481	CRAWFORDVILLE - JACKSON BLUFF 69KV (JA-3)	8/4/2016 16:30	LINE - LIGHTNING -	LINE - LIGHTNING -	0
58896	SOUTH FORT MEADE 115KV (0360)	8/29/2016 12:52	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58909	LAKE BRANCH 115KV (0475)	8/30/2016 14:25	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58929	BROOKRIDGE - BROOKSVILLE WEST (BBW CKT) 115KV (BBW-1)	8/31/2016 12:28	LINE - WEATHER - MAJOR STORM	- -	0
58949	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	9/1/2016 17:57	LINE - WEATHER - MAJOR STORM	- -	0
58967	ARCHER - HULL ROAD 69KV (AUF-1)	9/2/2016 1:40	LINE - WEATHER - MAJOR STORM	- -	0
58998	FT WHITE - PERRY 69KV (FP-1)	9/2/2016 21:38	LINE - WEATHER - MAJOR STORM	- -	0
59332	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	9/29/2016 4:02	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
59403	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	10/3/2016 20:35	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
59780	LAKE BRANCH 115KV (0475)	10/24/2016 17:32	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
59867	OCCIDENTAL #1 115KV (0177)	11/3/2016 4:51	LINE - CUSTOMER - INDUSTRIAL	- -	0
58181	PORT ST. JOE 230KV (0113)	7/18/2016 14:52	LINE - WEATHER -	- -	0
58190	DESOTO CITY - LAKE PLACID NORTH 69KV (DLP-1)	7/19/2016 8:30	LINE - WEATHER -	- -	0
58195	VANDOLAH - MYAKKA PREC 69KV RADIAL (VHC-1)	7/19/2016 13:22	LINE - WEATHER -	- -	0
58256	OCCIDENTAL #1 115KV (0177)	7/22/2016 7:13	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0

58776	PEACOCK 69KV (0461)	8/22/2016 1:09	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58794	BROOKRIDGE - TWIN COUNTY RANCH 115KV - CLEARWATER (CRB-1)	8/23/2016 15:57	LINE - LIGHTNING -	- -		0
58961	DRIFTON 115KV (0095)	9/2/2016 0:18	LINE - WEATHER - MAJOR STORM	- -		0
59159	LAKE BRYAN - LAKE CECILE (CITY OF KISSIMMEE) 69KV (LBX-1)	9/18/2016 22:05	LINE - WEATHER -	SUB - CUSTOMER - MUNICIPALITY		0
59183	AVALON - LAKE LUNTZ 69KV (AH-1)	9/19/2016 18:37	LINE - WEATHER -	- -		0
59290	LAKE BRANCH 115KV (0475)	9/26/2016 16:47	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58290	FORT GREEN #6 69KV (0437)	7/24/2016 17:46	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58793	CRYSTAL RIVER PL - BRONSON 230KV - CREW88 (CF-1)	8/23/2016 14:42	LINE - EQUIPMENT - CONDUCTOR/STATIC	LINE - EQUIPMENT - CONDUCTOR/STATIC		0
58938	MAXIMO 115KV (0029)	5/26/2016 6:59	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	80528	80528
59179	CRAWFORDVILLE - JACKSON BLUFF 69KV (JA-3)	9/19/2016 14:49	LINE - LIGHTNING -	- -		0
59465	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	10/7/2016 8:24	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59507	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	10/8/2016 2:17	LINE - WEATHER - MAJOR STORM - HURRICANE	- -		0
59655	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	10/13/2016 6:42	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
59722	FORT GREEN #11 69KV (0472)	10/19/2016 12:22	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58243	ARCHER - HULL ROAD 69KV (AUF-1)	7/10/2016 15:29	LINE - EQUIPMENT - JUMPER	LINE - EQUIPMENT - JUMPER		0

58263	FORT GREEN #11 69KV (0472)	7/22/2016 17:24	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58264	NORTH BARTOW - ORANGE SWITCHING STA 69KV (FMB-3)	7/22/2016 17:39	LINE - WEATHER -	- -		0
58377	DINNER LAKE - PHILLIPS 69KV (PDL-1)	7/30/2016 9:12	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
58541	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	8/8/2016 11:46	LINE - CUSTOMER - INDUSTRIAL	- -		0
58974	FOLEY 69KV (0247)	9/2/2016 3:03	LINE - WEATHER - MAJOR STORM	LINE - CUSTOMER - INDUSTRIAL		0
58984	JASPER - OCC SWIFT CREEK #1 115KV (JS-1)	9/2/2016 5:16	LINE - WEATHER - MAJOR STORM	LINE - TREE - NON-PREVENTABLE		0
58987	LIBERTY 69KV (0466)	9/2/2016 8:35	LINE - WEATHER - MAJOR STORM	- -		0
59182	RIO PINAR PL - FLORIDA GAS TRANSMISSION EAST 69KV (RW-4)	9/19/2016 16:42	LINE - LIGHTNING -	- -		0
59284	MEADWDS EAST - MEADWDS SOUTH 69KV (MEMS-1)	9/26/2016 14:19	LINE - LIGHTNING -	- -		0
59349	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	9/29/2016 17:27	LINE - LIGHTNING -	- -		0
59355	FORT GREEN #4 69KV (0335)	9/30/2016 8:58	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59380	BEVERLY HILLS - LECANTO 115KV (CSB-2)	10/2/2016 17:47	LINE - LIGHTNING -	- -	129291	129291
59381	HIGH SPRINGS 69KV (0067)	10/2/2016 18:15	LINE - WEATHER -	- -		0
59419	HORSE CREEK 69KV (0006)	5/21/2016 0:00	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59802	RIO PINAR PL - ECON 230KV (NR-3)	10/26/2016 10:11	SUB - HUMAN ERROR - SELF INFLICTED	- -		0
59929	HUDSON - LAKE TARPON 230KV (CC-5)	11/9/2016 20:08	LINE - OPERATIONAL - EMERGENCY	- -		0
59941	LAKE TARPON 500KV (0179)	11/11/2016 1:57	SUB - EQUIPMENT - TRANSFORMER - OTHER	SUB - EQUIPMENT - TRANSFORMER - OTHER		0

59943	PEACOCK 69KV (0461)	11/11/2016 4:31	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59955	FORT GREEN #6 69KV (0437)	11/13/2016 9:19	LINE - OPERATIONAL - EMERGENCY	LINE - OPERATIONAL - EMERGENCY		0
58309	LAKE OF THE HILLS 69KV (0207)	7/2/2016 15:30	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	35211	35211
58369	DELAND - DELAND WEST 69KV (ED-1)	7/29/2016 16:54	LINE - LIGHTNING -	RELAY - HUMAN ERROR - INCORRECT SETTING APPLIED		0
58675	PIEDMONT - SPRING LAKE 69KV (PSL-1)	8/16/2016 13:06	LINE - WEATHER -	LINE - EQUIPMENT - GROUND/GUY		0
58684	AVON PARK PL - WAUCHULA 69KV (APW-1)	8/16/2016 16:28	LINE - LIGHTNING -	- -		0
59184	DAVENPORT - WEST DQVENPORT 69KV (DWD-1)	9/19/2016 19:23	LINE - LIGHTNING -	- -		0
59495	LAKE BRANCH 115KV (0475)	10/7/2016 14:35	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59504	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	10/7/2016 23:22	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59641	JASPER - TWIN LAKES (GA PWR) 69KV (JV-1)	10/11/2016 22:55	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
59687	OCC SWIFT CREEK #1 - SUWANNEE RIVER 115KV (SSC-1)	9/2/2016 5:16	RELAY - UNKNOWN - UNDER INVESTIGATION	- -		0
59690	FLORIDA GAS TRANSMISSION - ST MARKS EAST 230KV (CP-3)	9/28/2016 18:13	RELAY - EQUIPMENT - CARRIER	- -		0
59704	LAKE HELEN 115KV (0261)	10/17/2016 4:26	SUB - ANIMAL - RACCOON	- -	367293	367293
59763	LAKE WILSON 69KV (0156)	9/26/2016 14:15	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	87948	87948

58174	ARCHER - HULL ROAD 69KV (AUF-1)	7/18/2016 12:43	LINE - EQUIPMENT - JUMPER	LINE - EQUIPMENT - JUMPER	0	110129.4
59145	FLORIDA ROCK 69KV (0080)	9/16/2016 13:08	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59451	FLORIDA GAS TRANSMISSION EAST - WEWAHOOTEE 69KV (RW-3)	10/6/2016 16:24	LINE - WEATHER -	- -		0
59365	LAKE BRANCH 115KV (0475)	10/1/2016 9:25	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59382	CRYSTAL RIVER SOUTH 115KV - LECANTO (CSB-1)	10/2/2016 18:21	LINE - WEATHER -	- -		0
59413	FORT GREEN #6 69KV (0437)	10/4/2016 22:36	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59420	HORSE CREEK 69KV (0006)	6/6/2016 6:40	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59447	LAKE BRANCH 115KV (0475)	10/6/2016 14:07	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59456	PIEDMONT - PLYMOUTH 69KV (PP-1)	10/7/2016 6:00	RELAY - UNKNOWN - INVESTIGATION COMPLETE	- -		0
59458	KELLY PARK - ZELLWOOD 69KV (EP-3)	10/7/2016 5:58	LINE - WEATHER - MAJOR STORM - HURRICANE	- -		0
59508	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	10/8/2016 3:44	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59723	FORT GREEN #11 69KV (0472)	10/19/2016 12:38	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59750	HIGH SPRINGS - HULL ROAD 69KV (GH-1)	10/22/2016 14:52	LINE - UNKNOWN - UNDER INVESTIGATION	- -		0
59838	NORTH LONGWOOD 230KV (0066)	7/9/2016 18:18	SUB - WEATHER -	SUB - EQUIPMENT - BREAKER/DIST - PREVENTABLE		0
59471	EUSTIS SOUTH - TAVARES SEC 69KV (EST-1)	10/7/2016 11:09	LINE - WEATHER - MAJOR STORM - HURRICANE	- -		0
59503	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	10/7/2016 20:55	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

58598	FORT GREEN #11 69KV (0472)	8/11/2016 11:23	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
59934	HUDSON - LAKE TARPON 230KV (CC-5)	11/10/2016 9:28	LINE - OPERATIONAL - EMERGENCY	LINE - OPERATIONAL - EMERGENCY	0
59612	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	10/9/2016 17:23	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
59484	NORTH LONGWOOD - SANFORD (FP&L) 230KV (NLSX-1)	10/7/2016 12:23	LINE - WEATHER - MAJOR STORM - HURRICANE	- -	0
58175	LAKE BRYAN -VINELAND 69KV (LV-1)	7/18/2016 13:24	LINE - LIGHTNING -	- -	0
58197	AVALON - LAKE LUNTZ 69KV (AH-1)	7/19/2016 14:16	LINE - LIGHTNING -	- -	0
58200	EAST LAKE WALES - INDIAN LAKES ESTATES 69KV RADIAL (ELX-AL-1)	7/19/2016 15:22	LINE - LIGHTNING -	- -	0
58203	EAST LAKE WALES - INDIAN LAKES ESTATES 69KV RADIAL (ELX-AL-1)	7/19/2016 16:15	LINE - LIGHTNING -	- -	0
58212	AVON PARK PL - WAUCHULA 69KV (APW-1)	7/20/2016 9:44	LINE - WEATHER -	- -	0
58269	MULBERRY 69KV (0424)	7/22/2016 19:22	LINE - OPERATIONAL - EMERGENCY	- -	0
58275	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	7/23/2016 10:41	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58353	DENHAM - DALE MABRY (TECO) 69KV (DX-1)	7/28/2016 16:36	LINE - EQUIPMENT - CONNECTOR	LINE - EQUIPMENT - CONNECTOR	0
58405	FORT GREEN #4 69KV (0335)	7/31/2016 4:00	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58411	CRYSTAL RIVER SOUTH - TWIN COUNTY RANCH 115KV (CRB-4)	7/31/2016 21:34	LINE - LIGHTNING -	- -	0
58412	ANCLOTE PLANT 230KV (0183)	7/31/2016 21:42	SUB - UNKNOWN - INVESTIGATION COMPLETE	SUB - UNKNOWN - INVESTIGATION COMPLETE	0
58441	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	8/1/2016 14:47	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0

58498	BEVERLY HILLS - LECANTO 115KV (CSB-2)	8/6/2016 3:40	LINE - WEATHER -	LINE - EQUIPMENT - CONDUCTOR/STATIC		0
60051	NEW PORT RICHEY - PORT RICHEY WEST 115KV (NRPR-1)	11/20/2016 3:10	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
60059	DELTONA 115KV (0047)	11/6/2016 16:38	LINE - UNKNOWN - INVESTIGATION COMPLETE	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	16320	16320
60081	CASSELBERRY 69KV (0195)	11/23/2016 9:19	SUB - EQUIPMENT -	- -		0
60104	VANDOLAH - WAUCHULA 69KV (VW-1)	11/28/2016 7:32	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
60164	AVON PARK PL - SOUTH POLK 230KV (AF-1)	11/30/2016 2:25	LINE - ANIMAL - BIRD - EXCREMENT	- -		0
60168	OCCIDENTAL #1 115KV (0177)	11/30/2016 3:38	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60197	AVON PARK PL - FISHEATING CREEK 230KV (AFC-1)	11/30/2016 19:11	LINE - ANIMAL - BIRD - EXCREMENT	LINE - ANIMAL - BIRD - EXCREMENT		0
60206	FT GREEN SPRINGS - VANDOLAH #2 CKT 69KV (VFGS-1)	12/1/2016 0:13	SUB - EQUIPMENT - INSULATOR - CONTAMINATION	SUB - EQUIPMENT - INSULATOR - CONTAMINATION		0
60209	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	12/1/2016 1:18	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60239	OCCIDENTAL #1 115KV (0177)	12/5/2016 21:31	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58599	LAKE LOUISA SEC - CLERMONT EAST 69KV - HAINES CITY (CEB-3)	8/11/2016 17:01	LINE - WEATHER -	- -		0
58652	OCCIDENTAL #1 115KV (0177)	8/15/2016 9:10	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58679	FISHEATING CREEK - SUN N LAKES 69KV (ALP-SUC-1)	8/16/2016 14:42	LINE - LIGHTNING -	- -		0
58681	CLEARWATER - HIGHLANDS 69KV (HCL-1)	8/16/2016 16:28	LINE - LIGHTNING -	RELAY - EQUIPMENT - RELAY PROBLEM	89301	89301

58693	DINNER LAKE - PHILLIPS 69KV (PDL-1)	8/17/2016 4:19	LINE - WEATHER -	- -		0
58834	FORT GREEN #11 69KV (0472)	8/25/2016 11:35	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58839	SOUTH FORT MEADE 115KV (0360)	8/26/2016 8:16	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58900	HOLDER - INVERNESS 69KV (HB-3)	8/29/2016 15:09	LINE - LIGHTNING -	- -		0
58927	BARCOLA - PEBBLEDALE (TECO) 230KV (BPX-1)	8/31/2016 8:17	SUB - OPERATIONAL - EMERGENCY	SUB - OPERATIONAL - EMERGENCY		0
58928	FT WHITE - JASPER WEST CKT 115KV (IJ-2)	8/31/2016 8:39	LINE - WEATHER -	- -		0
58933	CLARCONA 69KV (0353)	8/29/2016 20:14	SUB - ANIMAL - OTHER	SUB - ANIMAL - OTHER		0
58948	ROSS PRAIRIE - SILVER SPRINGS 69KV (IO-4)	9/1/2016 15:36	LINE - WEATHER - MAJOR STORM	- -		0
58982	SUWANNEE RIVER - LIVE OAK (FP&L) 115KV (SF-1)	9/2/2016 3:50	LINE - WEATHER - MAJOR STORM	LINE - UNKNOWN - INVESTIGATION COMPLETE		0
59021	GATEWAY 115KV (0382)	9/6/2016 10:06	RELAY - HUMAN ERROR - OTHER	SUB - EQUIPMENT - BREAKER/DIST - NON PREVENTABLE	13362	13362
59055	FORT GREEN #11 69KV (0472)	9/10/2016 0:49	SUB - ANIMAL - BIRD - CLEARANCE	SUB - ANIMAL - BIRD - CLEARANCE		666
60299	BROOKSVILLE WEST - HUDSON 115KV (BWR-1)	11/25/2016 5:31	LINE - NEIGHBORING UTILITY - EQUIPMENT	RELAY - UNKNOWN - UNDER INVESTIGATION	0	0
60317	OCCIDENTAL #1 115KV (0177)	12/14/2016 18:49	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60429	ENOLA - HAINES CREEK 69KV (LE-1)	12/29/2016 8:29	LINE - PUBLIC INTERFERENCE - VEHICLE	LINE - PUBLIC INTERFERENCE - VEHICLE		0
58994	HUDSON 230KV (0273)	9/2/2016 17:10	LINE - WEATHER - MAJOR STORM	- -		0
59121	ZEPHYRHILLS NORTH - DADE CITY (TECO) 69KV (BZ-6)	9/14/2016 17:07	LINE - WEATHER -	- -		0

59124	MARTIN WEST - REDDICK 69KV (SI-4)	9/14/2016 18:39	LINE - LIGHTNING -	SUB - EQUIPMENT - BREAKER/TRANS - MECHANICAL	310536	310536
59152	LAKE TARPON - PALM HARBOR 230KV (CC-LTL-1)	9/16/2016 16:44	LINE - LIGHTNING -	- -		0
59206	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	9/21/2016 0:34	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
59306	OCCIDENTAL #1 115KV (0177)	9/28/2016 7:53	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59353	FORT GREEN #11 69KV (0472)	9/29/2016 23:30	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59371	DOUGLAS AVE - SPRING LAKE 69KV (ASL-2)	10/1/2016 19:14	LINE - UNKNOWN -	- -		0
59372	DOUGLAS AVE - SPRING LAKE 69KV (ASL-2)	10/1/2016 19:15	LINE - UNKNOWN -	- -		0
59418	HORSE CREEK 69KV (0006)	5/2/2016 5:59	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58214	INTERCESSION CITY - CITRUS CENTER 230KV CKT #1 (ICD-2)	7/20/2016 10:08	SUB - EQUIPMENT - CCPD	- -		0
58990	FORT GREEN #11 69KV (0472)	9/2/2016 9:02	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58196	HEMPLE - LAKE LUNTZ 69KV (AH-2)	7/19/2016 13:52	LINE - LIGHTNING -	- -		0
58198	AVON PARK PL - DESOTO CITY 69KV (AD-1)	7/19/2016 14:32	LINE - LIGHTNING -	- -		0
58224	NORTH BARTOW - PEBBLEDALE (TECO) 230KV (WLXT-1)	7/21/2016 5:57	LINE - ANIMAL - BIRD - CLEARANCE	- -		0
58267	NORTH BARTOW - ORANGE SWITCHING STA 69KV (FMB-3)	7/22/2016 17:51	LINE - WEATHER -	- -		0
58270	CURRY FORD 230KV (0453)	7/22/2016 20:47	LINE - LIGHTNING -	- -		0
58271	FT GREEN SPRINGS - VANDOLAH #2 CKT 69KV (VFGS-1)	7/22/2016 20:49	LINE - WEATHER -	- -		0

58276	UNIVERSITY OF FLORIDA 69KV (0091)	7/23/2016 16:26	SUB - EQUIPMENT - BREAKER/TRANS - BUSHING	SUB - EQUIPMENT - BREAKER/TRANS - BUSHING		70
58319	OCCIDENTAL #1 115KV (0177)	7/27/2016 0:20	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58324	OCCIDENTAL #1 115KV (0177)	7/27/2016 7:57	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58332	DENHAM - DALE MABRY (TECO) 69KV (DX-1)	7/27/2016 20:18	LINE - NEIGHBORING UTILITY - OTHER	- -		0
58378	BROOKRIDGE - TWIN COUNTY RANCH 115KV - CLEARWATER (CRB-1)	7/30/2016 10:04	LINE - LIGHTNING -	- -		0
58379	BEVERLY HILLS - HOLDER 115KV (HBH-1)	7/30/2016 10:58	LINE - EQUIPMENT - CONDUCTOR/STATIC	- -		0
58384	EAST CLEARWATER - HIGHLANDS 69KV (ECTW-3)	7/30/2016 11:40	LINE - LIGHTNING -	- -		0
58394	BRONSON - CHIEFLAND 69KV (BC)	7/30/2016 13:57	LINE - LIGHTNING -	- -		0
58395	ALAFAYA - OVIEDO 69KV (AO-1)	7/30/2016 16:53	LINE - LIGHTNING -	- -		0
58398	COUNTRY OAKS - EAST LAKE WALES 69KV (LEL-1)	7/30/2016 20:36	LINE - LIGHTNING -	- -		0
58415	JASPER -HOMERVILLE (GA. PWR) 115KV (JW2)	7/31/2016 23:04	LINE - WEATHER -	- -		0
58497	BEVERLY HILLS - LECANTO 115KV (CSB-2)	8/5/2016 23:24	LINE - WEATHER -	- -		0
58518	CARRABELLE - CRAWFORDVILLE 69KV (JA-2)	8/7/2016 16:00	LINE - LIGHTNING -	- -		0
58522	FOLEY 69KV (0247)	8/8/2016 3:30	LINE - LIGHTNING -	SUB - EQUIPMENT - BREAKER/TRANS - ELECTRICAL		279
58523	PERRY - PERRY TREC 69KV RADIAL (PC-1)	8/8/2016 3:30	LINE - LIGHTNING -	LINE - LIGHTNING -	0	3207.6
58614	BAY RIDGE - KELLY PK 69KV (BK-1)	8/12/2016 17:21	LINE - LIGHTNING -	- -		0

58626	FT WHITE - JASPER EAST CKT 115KV (IJ-1)	8/13/2016 18:28	LINE - WEATHER -	- -		0
58628	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	8/13/2016 19:41	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59786	DELAND WEST - ORANGE CITY 230KV (DDW-2)	10/25/2016 8:03	RELAY - EQUIPMENT - OTHER	- -		0
59804	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	10/26/2016 20:47	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60090	AVON PARK PL - FISHEATING CREEK 230KV (AFC-1)	11/24/2016 4:04	LINE - ANIMAL - BIRD - CLEARANCE	- -		0
60180	DESOTO CITY - PHILLIPS PL (TECO) 69KV (AD-2)	11/30/2016 10:38	LINE - EQUIPMENT - CONDUCTOR/STATIC	- -		0
60221	NARCOOSSEE 69KV (0221)	12/2/2016 7:28	SUB - ANIMAL - SQUIRREL	- -		0
60304	LAKE BRANCH 115KV (0475)	12/13/2016 17:44	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60328	OCCIDENTAL #1 115KV (0177)	12/15/2016 19:30	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60330	OCCIDENTAL #1 115KV (0177)	12/16/2016 9:17	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60374	VANDOLAH - MYAKKA PREC 69KV RADIAL (VHC-1)	12/20/2016 17:56	LINE - ANIMAL - BIRD - CLEARANCE	- -		0
60394	MANLEY ROAD 115KV (0004)	12/25/2016 17:51	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60409	CROSSROADS 115KV (0191)	11/20/2016 21:14	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	93870	93870
60416	OCCIDENTAL #1 115KV (0177)	12/28/2016 8:32	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58643	SUWANNEE RIVER - LIVE OAK (FP&L) 115KV (SF-1)	8/14/2016 18:18	LINE - WEATHER -	- -		0
58689	CRAWFORDVILLE - SUB #32 (CITY OF TALLAH) 230KV (CRAW-1)	8/16/2016 22:30	LINE - NEIGHBORING UTILITY - EQUIPMENT	- -		0
58764	DENHAM - CABBAGE HILL (TECO) 69KV (TZ-1)	8/20/2016 18:51	LINE - OPERATIONAL - EMERGENCY	LINE - OPERATIONAL - EMERGENCY		0

58770	BONNET CREEK 69KV (0244)	8/21/2016 12:20	SUB - EQUIPMENT - BREAKER/TRANS - OTHER	- -	0
58773	CLEARWATER 69KV (0082)	8/21/2016 20:03	SUB - EQUIPMENT - CT	- -	0
58795	EAST LAKE WALES - INDIAN LAKES ESTATES 69KV RADIAL (ELX-AL-1)	8/23/2016 16:21	LINE - WEATHER -	- -	0
58796	FOLEY 69KV (0247)	8/23/2016 17:15	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -	0
58803	VANDOLAH - WAUCHULA 69KV (VW-1)	8/24/2016 13:04	LINE - LIGHTNING -	- -	0
58881	SOUTH FORT MEADE 115KV (0360)	8/27/2016 21:24	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58901	LAKE LUNTZ 69KV (0419)	8/29/2016 18:28	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -	0
58918	MAXIMO - BAYWAY 115KV RADIAL (MT-1)	8/31/2016 5:39	LINE - LIGHTNING -	- -	0
58919	LARGO - PALM HARBOR 230KV (LTL-1)	8/31/2016 5:44	LINE - LIGHTNING -	- -	0
58945	DELAND EAST 115KV (0145)	8/22/2016 17:08	LINE - TREE - NON-PREVENTABLE	SUB - UNKNOWN - INVESTIGATION COMPLETE	0
58939	FORT GREEN #6 69KV (0437)	8/31/2016 19:04	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58940	PEACOCK 69KV (0461)	8/31/2016 19:47	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL	0
58959	GINNIE - TRENTON 69KV (IS-4)	9/2/2016 0:18	LINE - WEATHER - MAJOR STORM	- -	0
59007	DUNNELLON TOWN - INGLIS 69KV (IO-3)	9/4/2016 15:41	LINE - LIGHTNING -	- -	0
59008	CRYSTAL RIVER PL - HOLDER CKT#1 230KV (CCF-4)	9/4/2016 16:20	LINE - LIGHTNING -	- -	0
59015	VANDOLAH - MYAKKA PREC 69KV RADIAL (VHC-1)	9/6/2016 4:27	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -	0

58247	ODESSA - TARPON SPRINGS 69KV (TZ-2)	7/21/2016 17:15	LINE - LIGHTNING -	- -		0
58268	OCCIDENTAL #1 115KV (0177)	7/22/2016 18:45	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58287	FORT GREEN #11 69KV (0472)	7/24/2016 13:24	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58293	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	7/24/2016 18:07	LINE - CUSTOMER - INDUSTRIAL	- -		0
58314	ISLEWORTH -DISNEY WORLD NORTHWEST 69KV (WT-3)	7/26/2016 14:38	LINE - WEATHER -	- -		0
58346	BROOKSVILLE WEST - SILVERTHORNE WREC 115KV RADIAL (BWSX-1)	7/28/2016 11:50	LINE - EQUIPMENT - CONNECTOR	LINE - EQUIPMENT - CONNECTOR	136648	951989.8
58354	FORT GREEN #11 69KV (0472)	7/28/2016 16:55	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58385	DUNEDIN - HIGHLANDS 69KV (ECTW-1)	7/30/2016 11:30	LINE - LIGHTNING -	RELAY - EQUIPMENT - RTU FAILURE	688600	688600
58397	VANDOLAH - MYAKKA PREC 69KV RADIAL (VHC-1)	7/30/2016 18:12	LINE - LIGHTNING -	- -		0
58454	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	8/2/2016 7:54	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58477	CYPRESSWOOD - HAINES CITY 69KV (ICLW-2)	8/4/2016 14:42	LINE - LIGHTNING -	- -		0
58483	CAMP LAKE - HOWEY BKR STA (SEC)69KV (CLL-1)	8/4/2016 17:15	LINE - WEATHER -	- -		0
58521	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	8/8/2016 2:48	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58582	BROOKSVILLE - FLORIDA ROCK 69KV RADIAL (BFR-1)	8/10/2016 19:54	LINE - WEATHER -	- -		0
58629	HOLDER - INVERNESS 69KV (HB-3)	8/13/2016 21:23	LINE - LIGHTNING -	- -		0
60336	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	12/17/2016 8:12	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

60386	DESOTO CITY - LAKE PLACID NORTH 69KV (DLP-1)	12/23/2016 18:52	LINE - OPERATIONAL - EMERGENCY	LINE - OPERATIONAL - EMERGENCY	76984	76984
60432	FORT GREEN #4 69KV (0335)	12/29/2016 17:44	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58278	VANDOLAH - MYAKKA PREC 69KV RADIAL (VHC-1)	7/23/2016 20:08	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
58289	AVON PARK PL - DESOTO CITY 69KV (AD-1)	7/24/2016 16:40	LINE - LIGHTNING -	- -		0
58372	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	7/29/2016 20:48	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
58413	ANCLOTE PL - LARGO 230KV (ANL-1)	7/31/2016 21:42	RELAY - EQUIPMENT - CARRIER	- -		0
58524	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	8/8/2016 4:01	LINE - CUSTOMER - INDUSTRIAL	- -		0
58544	CASSELBERRY - WINTER PARK EAST 69KV (WA-2)	8/8/2016 12:51	LINE - WEATHER -	- -		0
58624	SUWANNEE RIVER - LIVE OAK (FP&L) 115KV (SF-1)	8/13/2016 16:57	LINE - WEATHER -	LINE - NEIGHBORING UTILITY - EQUIPMENT		0
58715	OCCIDENTAL #1 115KV (0177)	8/17/2016 18:31	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58898	AVON PARK PL - DESOTO CITY 69KV (AD-1)	8/29/2016 13:53	LINE - LIGHTNING -	- -		0
58957	HAVANA - TALLAHASSEE 69KV (TQ-HH-1)	9/1/2016 23:41	LINE - WEATHER - MAJOR STORM	- -		0
58963	QUINCY - GRETNA TEC 69KV RADIAL (QX-3)	9/2/2016 0:45	LINE - WEATHER - MAJOR STORM	LINE - NEIGHBORING UTILITY - EQUIPMENT		0
58973	SUWANNEE RIVER PL - HANSON 115KV (SW-JQ-1)	9/2/2016 3:02	LINE - WEATHER - MAJOR STORM	- -		0
59069	TRENTON 69KV (0076)	9/11/2016 4:47	LINE - CUSTOMER - REA/EMC	- -		0

60089	SUWANNEE RIVER PL - SUWANNEE RIVER 115KV (SF-3)	11/23/2016 16:30	RELAY - HUMAN ERROR - WIRING ERROR	RELAY - HUMAN ERROR - WIRING ERROR		0
60346	OCCIDENTAL #1 115KV (0177)	12/18/2016 12:43	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60354	OCCIDENTAL #1 115KV (0177)	12/19/2016 8:32	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58176	COUNTRY OAKS - DUNDEE 69KV (DCO-1)	7/18/2016 13:25	LINE - LIGHTNING -	- -		0
58180	PORT ST. JOE 230KV (0113)	7/18/2016 14:49	LINE - LIGHTNING -	- -		0
58272	BARCOLA - WEST SUB (CITY OF LAKELAND) 230KV (BLX)	7/22/2016 22:57	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
58396	FT GREEN SPRINGS - VANDOLAH #1 CKT 69KV (VFG-1)	7/30/2016 18:02	LINE - LIGHTNING -	- -		0
58414	INVERNESS 115KV (0028)	7/31/2016 21:50	LINE - WEATHER -	- -		0
58567	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	8/10/2016 13:31	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58573	CABBAGE ISLAND 69KV (0306)	5/31/2016 19:52	LINE - WEATHER -	SUB - EQUIPMENT - BREAKER	67894	67894
58618	FORT GREEN #11 69KV (0472)	8/12/2016 18:01	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58640	KELLY PARK - ZELLWOOD 69KV (EP-3)	8/14/2016 15:03	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - EQUIPMENT - CONDUCTOR/STATIC		0
58672	LAKE WALES 69KV (0318)	7/16/2016 7:51	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	17969	17969
58718	BROOKSVILLE - UNION HALL 69KV (BZ-1)	8/17/2016 21:13	LINE - LIGHTNING -	- -		0
58705	LARGO 230KV (0123)	8/17/2016 13:15	SUB - EQUIPMENT - TRANSFORMER - OTHER	RELAY - EQUIPMENT - SUDDEN PRESSURE RELAY FAILURE		0
58737	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	8/18/2016 20:40	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0

58753	CIRCLE SQUARE 69KV (0354)	8/19/2016 17:06	LINE - WEATHER -	- -		0
58786	FORT GREEN #6 69KV (0437)	8/23/2016 10:04	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58787	PORT RICHEY WEST 115KV (0164)	5/17/2016 20:22	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - PREVENTABLE	84000	84000
58804	AVON PARK PLANT 230KV (0503)	7/25/2016 3:40	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - ELECTRICAL	89600	89600
58809	COUNTRY OAKS - EAST LAKE WALES 69KV (LEL-1)	8/24/2016 15:36	LINE - LIGHTNING -	- -		0
58862	PASADENA - SEMINOLE 230KV (LSP-1)	8/26/2016 17:23	LINE - LIGHTNING -	LINE - EQUIPMENT - INSULATOR		0
58887	OCCIDENTAL #1 115KV (0177)	8/28/2016 13:55	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59951	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	11/12/2016 8:29	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59953	FORT GREEN #11 69KV (0472)	11/12/2016 20:27	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59954	BARCOLA - FT MEADE 69KV (BF-1)	11/13/2016 6:38	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
60072	DINNER LAKE 69KV (0415)	7/31/2016 11:35	LINE - UNKNOWN - INVESTIGATION COMPLETE	SUB - UNKNOWN - INVESTIGATION COMPLETE	23765	23765
60132	AVON PARK PL - SOUTH POLK 230KV (AF-1)	11/29/2016 5:52	LINE - ANIMAL - BIRD - EXCREMENT	- -		0
60179	TIGER BAY COGEN 230KV (0230)	11/30/2016 9:55	RELAY - HUMAN ERROR - INADVERTENT TRIP	RELAY - HUMAN ERROR - INADVERTENT TRIP		0
60195	AVON PARK PL - FISHEATING CREEK 230KV (AFC-1)	11/30/2016 18:00	LINE - WEATHER -	LINE - OTHER - CONTAMINATION		0
60245	VANDOLAH - MYAKKA PREC 69KV RADIAL (VHC-1)	12/6/2016 14:39	LINE - WEATHER -	- -		0

58216	AVON PARK PL - DESOTO CITY 69KV (AD-1)	7/20/2016 17:14	LINE - WEATHER -	- -		0
58251	CHIEFLAND CENTRAL FL CO-OP 69KV (6830)	7/21/2016 21:04	LINE - WEATHER -	- -		0
58312	MAITLAND 69KV (0023)	7/6/2016 6:55	LINE - WEATHER -	SUB - EQUIPMENT - BREAKER/TRANS - OTHER	52476	52476
58364	HERNANDO AIRPORT 115KV (0376)	7/28/2016 11:50	LINE - EQUIPMENT - CONNECTOR	RELAY - HUMAN ERROR - SETTING ERROR		0
58485	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	8/5/2016 3:58	LINE - UNKNOWN - INVESTIGATION COMPLETE	- -		0
58566	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	8/10/2016 11:30	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58686	CLEARWATER - HIGHLANDS 69KV (HCL-1)	8/16/2016 16:26	LINE - LIGHTNING -	- -		0
58756	CLEARWATER 69KV (0082)	8/20/2016 11:04	SUB - EQUIPMENT - CT	- -		0
58760	CLEARWATER 69KV (0082)	8/20/2016 16:57	SUB - EQUIPMENT - CT	- -	13344	13344
58761	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	8/20/2016 17:10	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59150	OCCIDENTAL #1 115KV (0177)	9/16/2016 15:43	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59154	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	9/16/2016 20:37	LINE - LIGHTNING -	- -		0
59156	ISLEWORTH -DISNEY WORLD NORTHWEST 69KV (WT-3)	9/18/2016 7:11	LINE - WEATHER -	RELAY - EQUIPMENT - OTHER	9184	9184
59160	HAINES CREEK - SORRENTO 230KV (CFS-2)	9/18/2016 22:32	LINE - LIGHTNING -	- -		0
59952	FORT GREEN #11 69KV (0472)	11/12/2016 18:31	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59976	HEMPLE 69KV (0340)	7/12/2016 18:47	LINE - WEATHER -	- -		0
60017	OCCIDENTAL SWIFT CREEK #2 115KV (0272)	11/18/2016 8:01	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

60074	MAXIMO 115KV (0029)	9/22/2016 10:07	SUB - HUMAN ERROR - SWITCHING ERROR - TRANS	SUB - HUMAN ERROR - SWITCHING ERROR - TRANS	20115	20115
60165	AVON PARK PL - SOUTH POLK 230KV (AF-1)	11/30/2016 2:37	LINE - ANIMAL - BIRD - EXCREMENT	- -		0
60170	AVON PARK PL - SOUTH POLK 230KV (AF-1)	11/30/2016 4:59	LINE - ANIMAL - BIRD - EXCREMENT	- -		0
60172	OCCIDENTAL #1 115KV (0177)	11/30/2016 6:27	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
60176	AVON PARK PL - SOUTH POLK 230KV (AF-1)	11/30/2016 5:19	LINE - ANIMAL - BIRD - EXCREMENT	- -		0
60196	FLORIDA GAS TRANSMISSION EAST - WEWAHOOTEE 69KV (RW-3)	11/30/2016 18:29	LINE - WEATHER -	- -		0
60210	SUN N LAKES - DINNER LAKE (TECO) 69KV (ALP-3)	12/1/2016 5:58	LINE - WEATHER -	- -		0
58644	JASPER -HOMERVILLE (GA. PWR) 115KV (JW2)	8/14/2016 18:54	LINE - WEATHER -	- -		0
58757	CLEARWATER 69KV (0082)	8/20/2016 11:09	SUB - EQUIPMENT - CT	- -		0
58763	HAVANA - TALLAHASSEE 69KV (TQ-HH-1)	8/20/2016 18:15	LINE - WEATHER -	- -		0
58805	HAINES CITY 69KV (0317)	6/15/2016 0:07	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - OTHER	203422	203422
58931	BARCOLA - WEST SUB (CITY OF LAKELAND) 230KV (BLX)	8/31/2016 14:08	SUB - OPERATIONAL - EMERGENCY	- -		0
58932	FISHEATING CREEK - SUN N LAKES 69KV (ALP-SUC-1)	8/31/2016 14:30	LINE - ANIMAL - BIRD - DAMAGE	LINE - EQUIPMENT - POLE FAILURE - NON PREVENTABLE	22200	29774
58936	CURLEW 115KV (0149)	5/1/2016 17:25	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	47034	47034
58937	FORT GREEN #6 69KV (0437)	8/31/2016 18:00	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

58975	JASPER 115KV (0074)	9/2/2016 3:11	LINE - WEATHER - MAJOR STORM	- -		0
58979	ARCHER - HULL ROAD 69KV (AUF-1)	9/2/2016 3:29	LINE - WEATHER - MAJOR STORM	- -		0
58989	FORT GREEN #10 69KV (0463)	9/2/2016 8:53	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59022	KENNETH 115KV (0174)	7/13/2016 13:57	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	15166	15166
59061	OCCIDENTAL #1 115KV (0177)	9/10/2016 9:37	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59063	ALAFAYA - UCF 69KV (AUCF-1)	9/10/2016 16:58	LINE - OTHER - POLE FIRE	LINE - OTHER - POLE FIRE		0
59084	CITRUS HILLS 115KV (0393)	9/9/2016 7:24	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - PREVENTABLE	86129	86129
59098	TAVARES 69KV (0479)	9/13/2016 17:18	LINE - WEATHER -	- -		0
59787	EAST CLEARWATER 230KV (0127)	5/26/2016 22:48	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	12296	12296
59848	FIFTY-FIRST STREET 230KV (0012)	10/27/2016 8:18	SUB - ANIMAL - SQUIRREL	SUB - ANIMAL - SQUIRREL	225196	225196
60173	FORT GREEN #11 69KV (0472)	11/30/2016 7:11	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58313	MAITLAND 69KV (0023)	7/6/2016 20:00	LINE - WEATHER -	SUB - EQUIPMENT - BREAKER/TRANS - OTHER	72105	72105
58788	DUNDEE 230KV (0083)	6/5/2016 17:19	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - PREVENTABLE	58465	58465
58808	COUNTRY OAKS - EAST LAKE WALES 69KV (LEL-1)	8/24/2016 15:34	LINE - LIGHTNING -	- -		0
59282	LAKE BRYAN - LAKE CECILE (CITY OF KISSIMMEE) 69KV (LBX-1)	9/26/2016 13:58	LINE - LIGHTNING -	SUB - CUSTOMER - MUNICIPALITY		0

59285	INTERCESSION CITY PL - CABBAGE ISLAND 69KV (ICP-1)	9/26/2016 14:39	LINE - LIGHTNING -	- -		0
59315	CRYSTAL RIVER PL - BRONSON 230KV - CREW88 (CF-1)	9/28/2016 14:21	LINE - LIGHTNING -	- -		0
59326	BROOKSVILLE - BROOKSVILLE WEST CKT#1 115KV (BWB-1)	9/28/2016 19:49	LINE - WEATHER -	- -		0
59336	HUDSON - NEW PORT RICHEY 115KV (BWR-HPNR-2)	9/29/2016 9:24	LINE - OPERATIONAL - EMERGENCY	RELAY - EQUIPMENT - RELAY PROBLEM		0
59373	FT GREEN SPRINGS - DUETTE PREC 69KV RADIAL (FSD-1)	10/1/2016 19:50	LINE - WEATHER -	- -		0
59950	FORT GREEN #11 69KV (0472)	11/12/2016 7:25	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59970	HEMPLE 69KV (0340)	7/12/2016 19:01	LINE - WEATHER -	RELAY - EQUIPMENT - RELAY PROBLEM	38170	38170
60133	AVON PARK PL - SOUTH POLK 230KV (AF-1)	11/29/2016 6:04	LINE - ANIMAL - BIRD - EXCREMENT	- -		0
58911	FORT GREEN #6 69KV (0437)	8/30/2016 16:02	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59157	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	9/18/2016 17:29	LINE - LIGHTNING -	- -		0
59171	WILLISTON 69KV (0096)	9/19/2016 10:40	SUB - HUMAN ERROR - SWITCHING ERROR - TRANS	SUB - HUMAN ERROR - SWITCHING ERROR - TRANS	3446	7457.8
59257	DESOTO CITY - LAKE PLACID NORTH 69KV (DLP-1)	9/24/2016 18:35	LINE - LIGHTNING -	- -		0
59258	HAINES CITY EAST - PONICIAN 69KV (HP-2)	9/24/2016 18:52	LINE - WEATHER -	- -		0
59259	DESOTO CITY - LAKE PLACID NORTH 69KV (DLP-1)	9/24/2016 18:52	LINE - LIGHTNING -	- -		0

59260	BARCOLA - FT MEADE 69KV (BF-1)	9/24/2016 19:24	LINE - LIGHTNING -	LINE - OPERATIONAL - OTHER		0
59264	FROSTPROOF - LAKE WALES 69KV (AL-3)	9/25/2016 15:43	LINE - LIGHTNING -	- -		0
59267	BROOKRIDGE - BROOKSVILLE WEST (BBW CKT) 115KV (BBW-1)	9/25/2016 22:47	LINE - WEATHER -	- -		0
59268	BROOKSVILLE - INVERNESS 69KV - CLEARWATER (HB-1)	9/26/2016 3:18	LINE - LIGHTNING -	- -		0
59291	Lake Marion - Midway 69KV (LMP-1)	9/26/2016 17:16	LINE - WEATHER -	- -		0
59325	CRAWFORDVILLE - SUB #32 (CITY OF TALLAH) 230KV (CRAW-1)	9/28/2016 18:13	LINE - LIGHTNING -	- -		0
59327	BROOKSVILLE - BROOKSVILLE WEST CKT#2 115KV (BWB-2)	9/28/2016 19:49	RELAY - HUMAN ERROR - WIRING ERROR	- -		0
59343	HIGGINS PL - GRIFFIN 115KV (HG-1)	9/29/2016 13:22	LINE - LIGHTNING -	- -		0
59362	OCCIDENTAL #1 115KV (0177)	10/1/2016 7:34	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
59846	MYRTLE LAKE - NORTH LONGWOOD 230KV (NLP-1)	11/1/2016 15:57	SUB - HUMAN ERROR - CONTRACTOR - CONSTRUCTION	RELAY - HUMAN ERROR - INCORRECT SETTING APPLIED		0
60043	OCCIDENTAL SWIFT CREEK #1 115KV (0260)	11/19/2016 7:51	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58184	SOUTH FORT MEADE 115KV (0360)	7/18/2016 15:58	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0
58201	LAKE ALOMA - WINTER PARK EAST 69KV (WL-1)	7/19/2016 15:25	LINE - WEATHER -	LINE - EQUIPMENT - CONDUCTOR/STATIC	59226	59226
58442	HOLDER - DUNNELLON 69KV (HDT-1)	8/1/2016 15:10	LINE - WEATHER -	- -		0
59435	OCCIDENTAL #1 115KV (0177)	10/6/2016 0:25	LINE - CUSTOMER - INDUSTRIAL	LINE - CUSTOMER - INDUSTRIAL		0

59455	KELLY PARK - ZELLWOOD 69KV (EP-3)	10/7/2016 6:04	LINE - WEATHER - MAJOR STORM - HURRICANE	- -	0

ATTACHMENT B

DEF Transmission Outages-Major Events Only

For Reporting Year **2016**

OUTAGE_ID	LOCATION	OUTAGE_START_TIME	INITIATING CAUSE	SUSTAINEDCAUSE	RETAIL_CMI	GRID_CMI
57304	FT GREEN SPRINGS - FT MEADE 69KV (FFG-1)	6/6/2016 8:40	LINE - UNKNOWN - INVESTIGATION COMPLETE	LINE - UNKNOWN - INVESTIGATION COMPLETE	0	0
57314	FT GREEN SPRINGS - VANDOLAH #1 CKT 69KV (VFG-1)	6/6/2016 13:19	LINE - ANIMAL - BIRD - CLEARANCE	LINE - ANIMAL - BIRD - CLEARANCE	284	284
57319	JASPER 115KV (0074)	6/6/2016 16:35	LINE - TREE - NON-PREVENTABLE	SUB - EQUIPMENT - BREAKER/TRANS - MECHANICAL	44492	173716.7
57324	OCCIDENTAL SWIFT CREEK #1 - OCCIDENTAL METERING 115KV (JS-3)	6/6/2016 21:48	LINE - WEATHER -	SUB - EQUIPMENT - BREAKER/TRANS - MECHANICAL	1977	1977
57444	OVIEDO 69KV (0303)	6/7/2016 14:48	LINE - CUSTOMER - DISTRIBUTION	SUB - EQUIPMENT - BREAKER/DIST - ELECTRICAL	30248	30248
57449	KENNETH 115KV (0174)	6/6/2016 15:24	LINE - CUSTOMER - DISTRIBUTION	RELAY - EQUIPMENT - RECLOSING	87550	87550
59483	HIGH SPRINGS - HULL ROAD 69KV (GH-1)	10/7/2016 12:18	LINE - WEATHER - MAJOR STORM	LINE - EQUIPMENT - CROSSARM	0	50534.4
59010	TAFT INDUSTRIAL 69KV (0350)	9/4/2016 22:28	SUB - EQUIPMENT - BREAKER/DIST - OTHER	SUB - EQUIPMENT - BREAKER/DIST - OTHER		682
58951	ZEPHYRHILLS NORTH - DADE CITY (TECO) 69KV (BZ-6)	9/1/2016 19:58	LINE - WEATHER - MAJOR STORM	- -	0	5392.4

59448	WINDERMERE 230KV (0310)	10/6/2016 15:05	LINE - WEATHER - MAJOR STORM - HURRICANE	SUB - EQUIPMENT - BREAKER/DIST - MECHANICAL	82431	82431
59005	HUDSON - NEW PORT RICHEY 115KV (BWR-HPNR-2)	9/3/2016 11:53	LINE - EQUIPMENT - POLE FAILURE - PREVENTABLE	LINE - EQUIPMENT - POLE FAILURE - PREVENTABLE	0	267291.7
59477	DELAND - DELTONA 69KV (TD-1)	10/7/2016 12:00	LINE - WEATHER - MAJOR STORM - HURRICANE	LINE - EQUIPMENT - CONDUCTOR/STATIC	5001728	5001728

ATTACHMENT C

Summary of Severe Weather Dates 2016

a Include in the discussion, the type of weather event, strength (wind speeds/surge-flood levels), locations affected, source of meteorological information, and the performance of overhead and underground systems

Dates	Type of Weather Event	Strength (Wind Speeds/surge-flood levels)	Locations affected	Source of Metrological Information	Performance of Overhead and Underground Systems
4/7/2016	Tornado	Unknown Wind Speed	Clearwater	National Weather Service	See response to
					Section (d) - pg. 10 of
					Reliability Report
6/6/16 to 6/7/16	Tropical Storm Colin	35 to 70 mph	Apopka	National Weather Service	See response to
			Deland		Section (d) - pg. 10 of
			Jamestown		Reliability Report
			Longwood		
			Inverness		
			Monticello		
			Ocala		
			Buena Vista		
			Clermont		
			Highlands		
			Lake Wales		
			SE Orlando		
			Winter Garden		
			Clearwater		
			Seven Springs		
			St. Petersburg		
			Walsingham		
			Zephyrhills		
9/1/16 to 9/6/16	Hurricane Hermine	75 to 80 mph	Apopka	National Weather Service	See response to
		Category 1 Storm	Deland		Section (d) - pg. 10 of
			Jamestown		Reliability Report
			Longwood		
			Inverness		
			Monticello		
			Ocala		
			Buena Vista		
			Clermont		
			Highlands		
			Lake Wales		
			SE Orlando		
			Winter Garden		
			Clearwater		
			Seven Springs		
			St. Petersburg		
			Walsingham		
			Zephyrhills		
9/14/2016	Tropical Storm Julia	35 to 70 mph	Apopka	National Weather Service	See response to
			Deland		Section (d) - pg. 10 of
			Jamestown		Reliability Report
			Longwood		
			Inverness		
			Monticello		
			Ocala		
			Buena Vista		
			Clermont		
			Highlands		
			Lake Wales		
			SE Orlando		
			Winter Garden		
			Clearwater		
			Seven Springs		
			St. Petersburg		
			Walsingham		
			Zephyrhills		
10/6/16 to 10/10/16	Hurricane Matthew	131 to 155 mph	Apopka	National Weather Service	See response to
		Category 4 Storm	Deland		Section (d) - pg. 10 of
			Jamestown		Reliability Report
			Longwood		
			Inverness		
			Monticello		
			Ocala		
			Buena Vista		
			Clermont		
			Highlands		
			Lake Wales		
			SE Orlando		
			Winter Garden		

b. Describe the Company's efforts to avoid or minimize in terms of costs incurred and outage duration any similar events in the future.
(Example: Reference specific storm hardening activity.)

Item b: Please see response to Storm Hardening Facilities (I)

c. If the method of deriving the weather exclusion is different from the method used for 2015, please explain the changes and provide the CMI and CI for 2016 using the prior method.

c. The exclusion method used is the same since 2005.

d. (Appendix) Provide the 2016 service reliability data for each extreme weather outage event that is excluded from your Company's 2016 Annual Distribution Reliability Report pursuant to Rule 25-6 0455.

i. A Table

ii. Electronic File

iii. Overhead and Underground statistics & forensics. (C, CMI, CI, L-Bar, repair cost, etc.)

Dates	Overhead vs. Underground	C	CMI	CI	Duration	L-Bar	N
4/7/2016	Overhead	142,294	113,260	1,445	464	232 2	2
6/6/16 to 6/7/16	Overhead	1,748,864	15,144,473	100,316	401,299	273 0	1,470
	Underground		561,890	2,464	41,655	205 2	203
9/1/16 to 9/6/16	Overhead	1,748,864	141,399,754	262,559	3,919,974	1,066.1	3,677
	Underground		3,467,842	4,422	296,874	519 9	571
9/14/2016	Overhead	1,748,864	870,542	9,088	17,823	124 6	143
	Underground		52,695	240	10,969	199.4	55
10/6/16 to 10/10/16	Overhead	1,071,609	293,228,950	262,129	8,660,538	1,547.1	5,598
	Underground		11,921,451	9,256	790,357	1,093 2	723

Distribution
Exclusion Summary - 2016

Cause Code Types		C	CMI	CI	Duration	L-Bar	N
Reported Actual Data		1,748,864	648,346,110	3,090,598	20,565,120	327.9	62,721
Exclusions:							
Severe Weather (Distribution)	(Tornados & Named Storms)		457,809,543	605,992	14,034,271	1,164.1	12,056
Distribution (Non Severe Weather)			10,236	25,295	7,873	1.7	4,593
Transmission (Severe Weather)			562,301	10,927	736	49.1	15
Transmission (Non Severe Weather)			14,908,632	316,232	14,500	72.1	201
Emergency Shutdowns (Severe Weather)	(DEF/Govt/Customer Decisions)		8,015,140	34,014	71,721	243.1	295
Emergency Shutdowns (Non Severe Weather	(DEF/Govt/Customer Decisions)		9,589,057	328,327	278,786	96.0	2,903
Prearranged (Severe Weather)			373,873	986	33,226	437.2	76
Prearranged (Non Severe Weather)			8,400,427	48,402	871,956	172.9	5,042
Adjusted Data		1,748,864	148,676,901	1,720,423	5,252,052	139.9	37,540

Actual Data: Customer Minutes of Interruption (CMI), Customer Interruptions (CI) and Documented Exclusions

Year	Customer minutes of Interruption (CMI)		Customer Interruptions (CI)	
	Value	% of Actual	Value	% of Actual
Reported Actual Data	648,346,110	100%	3,090,598	100%
Documented Exclusions				
Planned Service Interruptions	17,999,720	2.78%	402,024	13.01%
Named Storm	466,647,597	71.98%	650,474	21.05%
Tornadoes	113,260	0.02%	1,445	0.05%
Ice on Lines	-	0.00%	-	0.00%
Planned Load Management Events	-	0.00%	-	0.00%
Generation/Transmission Events	14,908,632	2.30%	316,232	10.23%
Extreme Weather (EOC Activation/Fire)	-	0.00%	-	0.00%
Reported Adjusted Data	148,676,901	22.93%	1,720,423	55.67%

ATTACHMENT D

CAUSES OF OUTAGE EVENTS – ADJUSTED

Utility Name: Duke Energy Florida Years: **2012 to 2016**

	2016			2015			2014			2013			2012		
Cause (a)	Number of Outage Events(N) (b)	Average Duration (L-Bar) (c)	Average Restoration Time (CAIDI) (d)	Number of Outage Events(N) (b)	Average Duration (L-Bar) (c)	Average Restoration Time (CAIDI) (d)	Number of Outage Events(N) (b)	Average Duration (L-Bar) (c)	Average Restoration Time (CAIDI) (d)	Number of Outage Events(N) (b)	Average Duration (L-Bar) (c)	Average Restoration Time (CAIDI) (d)	Number of Outage Events(N) (b)	Average Duration (L-Bar) (c)	Average Restoration Time (CAIDI) (d)
1. Animals	5,369	80.3	63.1	5,321	74.7	63.6	5,020	75.4	64.7	5,967	73.0	62.9	6,637	71.0	58.6
2. Vegetation	7,879	144.8	99.8	8,240	136.1	83.1	9,816	137.0	85.4	9,143	140.7	86.9	7,667	137.7	82.8
3. Lightning	1,216	150.3	85.8	1,201	144.5	80.7	1,647	166.3	69.3	1,344	178.4	82.8	980	191.5	78.7
4. Other Weather	4,965	133.7	97.2	7,141	133.6	88.7	5,875	107.5	76.8	4,920	116.2	104.5	3,994	104.1	86.5
5. Vehicle	429	235.2	102.0	412	227.2	100.2	420	240.9	88.8	392	222.0	88.7	303	239.2	84.6
6. Defective Equipment	9,195	146.7	82.4	8,572	141.6	76.7	7,221	150.3	76.7	6,536	145.0	73.9	6,185	147.0	81.4
7. Unknown	1,097	90.3	63.1	1,224	77.2	57.9	2,867	81.5	65.6	3,333	83.6	71.4	2,909	80.1	56.4
All Other Causes	7,390	173.8	72.6	7,900	166.6	79.8	8,073	170.3	73.6	8,232	176.0	75.1	7,845	175.5	69.2
System Totals:	37,540	139.9	86.4	40,011	134.1	81.0	40,939	132.5	78.4	39,867	132.8	81.6	36,520	129.3	76.8

ATTACHMENT E

DUKE ENERGY.

2017 PROGRAM PROJECTION

CAPITAL													
	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Annual
AUTO TRANS SWITCH-CAP	2,801	79,144	79,144	155,486	2,801	79,144	2,801	2,801	155,486	2,801	2,801	2,801	568,011
AUTOMATION	11,293	11,293	11,293	3,857	55,907	48,472	18,729	41,036	33,600	26,164	55,907	3,857	321,408
CAPACITOR REPLACEMENT	60,456	124,308	140,301	149,840	124,305	95,575	114,730	130,690	162,651	153,040	153,037	98,765	1,507,698
CAPACITOR NEW	368	368	47,545	368	368	368	368	368	368	368	368	368	
DISC SWITCH	5,203	8,932	14,568	16,566	22,292	10,929	5,203	18,386	10,840	8,932	5,203	3,295	130,349
ELECTRONIC RECLOSER NEW	2,570	2,570	159,460	120,230	2,570	2,570	2,570	2,570	2,605	2,570	2,570	2,572	305,427
ELECTRONIC RECLOSER REPLACE	3,935	47,486	47,794	25,711	3,935	25,711	91,038	25,711	4,242	25,711	69,262	47,505	418,041
FEEDER STANDARDIZATION	379,068	337,722	255,030	250,895	114,454	48,301	48,301	40,031	197,146	312,914	31,762	6,955	2,022,579
HYDRAULIC RECLOSER REPLACE	223,388	274,469	287,247	274,472	287,244	300,019	287,244	300,019	274,474	300,014	287,244	210,610	3,306,444
IR SCAN MAINT	12,212	15,966	12,212	8,457	947	947	947	15,966	12,212	15,966	8,457	947	105,236
NETWORK REPLACEMENT	275,209	274,390	285,080	213,193	207,096	145,342	146,375	168,269	161,912	148,734	214,716	185,430	2,425,746
PADMOUNT 1PHMODEF	104,953	130,731	117,847	117,831	122,146	122,135	156,520	178,011	152,227	96,346	104,947	100,644	1,504,338
PADMOUNT 3PHMODEF	141,011	77,192	141,142	128,247	102,719	128,247	166,538	179,302	77,323	179,302	102,719	115,491	1,539,233
PADMOUNT REPL 1PH-CAP	130,563	187,750	121,985	193,469	147,719	144,860	107,688	96,251	216,344	173,454	173,454	41,923	1,735,460
PADMOUNT REPL 3PH-CAP	8,618	100,980	114,208	153,759	140,531	8,618	8,618	8,618	232,926	140,542	87,786	8,620	1,013,824
POLE REINFORCEMENTS				220,000				160,000				220,000	600,000
POLE REPLACEMENTS	2,128,464	2,128,872	2,373,570	2,369,932	2,370,716	2,371,891	2,370,379	2,363,247	2,331,618	2,333,935	2,330,424	2,330,041	27,803,089
SMALL WIRE UPGRADE	545,256	678,060	398,482	222,247	146,631	6,380	6,380	343,417	494,184	456,819	6,380	6,380	3,310,616
STORM HARDENING	766,341	892,075	1,246,952	906,410	653,133	305,908	317,439	535,819	965,591	803,116	587,094	21,315	8,001,193
SUBAQUEOUS CABLE	5,841	5,841	5,841	1,474,607	5,841	5,841	5,841	1,474,607	5,841	5,841	5,841	5,841	3,007,624
TARGETRELIABILITY	98,247	229,643	222,333	90,958	10,683	3,386	69,059	39,871	120,171	25,277	25,277	25,277	960,182
TRANSFORMER RETROFIT FL	602	602	602	29,702	29,702	29,702	29,702	29,702	29,702	29,702	20,002	602	230,324
UG CABLE LG-CAP	537,867	356,512	376,716	497,263	421,556	311,760	562,272	356,530	376,627	497,121	401,975	311,636	5,007,835
UG CABLE SM-CAP	970,759	970,997	972,683	970,544	970,953	971,579	970,707	971,262	971,672	973,051	970,998	970,725	11,655,930
UG CABLE TEST/REHAB	255,268	255,268	255,268	255,268	255,268	8,010	8,010	8,010	172,849	172,849	172,849	172,849	1,991,766
UG SWITCHGEAR REPL	50,999	170,511	200,381	290,015	290,024	170,503	170,511	200,390	319,894	290,024	140,633	170,511	2,464,396
VOLTAGE REGULATORS	8,749	60,963	139,283	165,390	139,283	217,604	139,283	165,390	139,283	139,283	87,070	8,749	1,410,330
Sum:	6,730,041	7,422,645	8,026,967	9,304,717	6,628,824	5,563,802	5,807,253	7,856,274	7,621,788	7,313,876	6,048,776	5,073,709	83,347,079

O&M													
	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Sum:
ATS INSPECTIONS	7,383	10,734	11,355	11,648	11,937	12,861	9,524	9,830	10,741	9,823	9,211	9,519	124,562
AUTOMATION	17,089	18,582	21,070	23,060	21,070	18,582	22,562	20,572	19,080	26,543	34,006	35,001	277,217
CAP INSPECT/MAINT-O&M	33,201	31,387	28,122	24,131	45,173	41,908	42,271	49,889	61,862	57,145	42,996	41,908	499,993
ENV-ENVIRONMENTAL	108,594	108,594	108,594	108,594	108,594	108,594	108,594	112,840	108,594	108,594	108,594	108,594	1,307,374
FAULT INDICATOR	11,742	14,862	15,171	15,380	16,421	14,858	12,989	13,091	12,678	9,350	7,791	8,205	152,534
FEEDER STANDARIZATION OM	11,413	16,629	14,020	12,978	10,371	15,585	16,629	16,621	15,062	10,371	11,413	9,848	160,936
IR SCAN INSP/MAINT-O&M	25,299	19,120	24,065	22,829	26,534	16,650	12,941	17,884	16,650	25,300	29,012	16,648	252,932
NETWORK MAINT-O&M	25,346	51,845	38,595	51,845	48,595	48,595	52,381	54,273	48,595	48,059	59,416	49,952	577,497
PADMOUNT1PHREMED-O&M	44,448	47,317	45,883	51,611	50,183	55,916	61,645	64,517	48,747	43,013	47,320	38,720	599,320
PADMOUNT3PHREMED-O&M	72,977	72,977	81,024	104,918	112,865	88,956	136,825	232,529	65,112	72,994	112,865	57,038	1,211,080
POLE INSPECT&TREAT-O&M	262,419	262,419	262,419	262,419	262,419	262,419	262,419	262,419	262,419	262,629	262,699	262,910	3,150,005
RECLOSR MAINT-O&M	12,834	12,272	11,711	15,079	12,272	10,027	10,588	12,834	13,395	12,834	16,763	11,150	151,763
SUBAQUEOUS CABLE OM													-
SWITCHGEAR INSP/MAINT	411	507	1,324	1,324	1,565	796	1,036	1,372	1,805	1,853	1,997	1,901	15,891
TRANSFORMER PAINT/REPAIR	-	-	-	52,903	-	-	-	-	52,097	-	-	-	105,000
VOLTAGE REG INSP	1,244	2,397	2,974	3,551	4,704	2,974	2,109	2,109	956	956	956	956	25,890
Sum:	634,399	669,641	666,326	762,269	732,702	698,720	752,512	870,779	737,792	689,463	745,038	652,349	8,611,994

ATTACHMENT F

SYSTEM RELIABILITY INDICES – ADJUSTED

Utility Name: Duke Energy Florida Year: **2012 to 2016**

	2016					**2015**					**2014**					**2013**				
District or Service Area (a)	SAIDI (b)	CAIDI (c)	SAIFI (d)	MAIFIe (e)	CEMI5 (f)	SAIDI (b)	CAIDI (c)	SAIFI (d)	MAIFIe (e)	CEMI5 (f)	SAIDI (b)	CAIDI (c)	SAIFI (d)	MAIFIe (e)	CEMI5 (f)	SAIDI (b)	CAIDI (c)	SAIFI (d)	MAIFIe (e)	CEMI5 (f)
North Coastal Region	154.8	111.3	1.39	7.8	4.00%	144.9	98.9	1.47	7.1	3.96%	159.3	101.4	1.57	10.0	3.47%	147.3	97.4	1.51	8.1	4.13%
South Coastal Region	72.7	81.1	0.90	7.3	0.68%	71.5	73.7	0.97	11.2	0.43%	65.5	68.4	0.96	10.8	1.36%	71.2	68.7	1.04	9.9	0.38%
North Central Region	78.1	87.0	0.90	8.6	0.36%	71.5	84.1	0.85	8.3	0.32%	83.8	75.5	1.11	10.8	1.07%	91.1	82.3	1.11	8.9	1.53%
South Central Region	78.8	78.2	1.01	7.0	1.06%	70.7	77.3	0.91	8.1	0.64%	82.8	79.6	1.04	10.3	1.04%	88.2	90.6	0.97	7.8	0.80%
System Averages	85.0	86.4	0.98	7.6	1.09%	79.7	81.0	0.98	9.2	0.87%	85.1	78.4	1.09	10.6	1.45%	89.1	81.6	1.09	8.9	1.19%

ATTACHMENT G

2016 Feeder Specific on CD

2016 Summer Feeder Peaks

Load Area	NAME	BANK	FEEDER NAME	PLANNER PEAK MVA
SOUTH COASTAL	ALDERMAN	1	C5000	7.3
SOUTH COASTAL	ALDERMAN	1	C5001	5.2
SOUTH COASTAL	ALDERMAN	1	C5003	7.4
SOUTH COASTAL	ALDERMAN	2	C5008	8.2
SOUTH COASTAL	ALDERMAN	2	C5009	9.3
SOUTH COASTAL	ALDERMAN	2	C5013	7.9
SOUTH COASTAL	ALDERMAN	3	C5010	4.4
SOUTH COASTAL	ALDERMAN	3	C5011	6.0
SOUTH COASTAL	ALDERMAN	3	C5012	10.9
SOUTH COASTAL	ANCLOTE	7	C4206	5.2
SOUTH COASTAL	ANCLOTE	7	C4207	10.8
SOUTH COASTAL	ANCLOTE	7	C4208	7.2
SOUTH COASTAL	ANCLOTE	8	C4201	8.9
SOUTH COASTAL	ANCLOTE	8	C4202	7.8
SOUTH COASTAL	ANCLOTE	8	C4203	9.4
SOUTH COASTAL	ANCLOTE	8	C4204	7.2
SOUTH COASTAL	BAYBORO	1	X10	1.4
SOUTH COASTAL	BAYBORO	1	X12	0.0
SOUTH COASTAL	BAYBORO	1	X15	3.6
SOUTH COASTAL	BAYBORO	1	X17	3.5
SOUTH COASTAL	BAYBORO	1	X19	6.5
SOUTH COASTAL	BAYBORO	1	X20	6.7
SOUTH COASTAL	BAYBORO	2	X13	3.2
SOUTH COASTAL	BAYBORO	2	X14	0.0
SOUTH COASTAL	BAYBORO	2	X16	9.5
SOUTH COASTAL	BAYBORO	2	X18	6.1
SOUTH COASTAL	BAYBORO	2	X21	6.5
SOUTH COASTAL	BAYBORO	2	X9	6.8
SOUTH COASTAL	BAYVIEW	1	C651	11.7
SOUTH COASTAL	BAYVIEW	1	C652	9.3
SOUTH COASTAL	BAYVIEW	1	C653	9.1
SOUTH COASTAL	BAYVIEW	1	C654	10.6
SOUTH COASTAL	BAYVIEW	2	C655	7.6
SOUTH COASTAL	BAYVIEW	2	C656	9.6
SOUTH COASTAL	BAYVIEW	2	C657	10.3
SOUTH COASTAL	BAYVIEW	2	C658	6.9
SOUTH COASTAL	BAYWAY	2	X100	3.0
SOUTH COASTAL	BAYWAY	2	X96	8.6
SOUTH COASTAL	BAYWAY	2	X97	10.8

SOUTH COASTAL	BAYWAY	2	X99	10.9
SOUTH COASTAL	BELLEAIR	1	C1002	9.0
SOUTH COASTAL	BELLEAIR	1	C1003	9.2
SOUTH COASTAL	BELLEAIR	1	C1004	2.0
SOUTH COASTAL	BELLEAIR	1	J1001	8.6
SOUTH COASTAL	BELLEAIR	2	C1005	10.6
SOUTH COASTAL	BELLEAIR	2	C1007	6.9
SOUTH COASTAL	BELLEAIR	2	C1008	11.1
SOUTH COASTAL	BROOKER CREEK	1	C5400	9.0
SOUTH COASTAL	BROOKER CREEK	1	C5401	3.7
SOUTH COASTAL	BROOKER CREEK	1	C5402	7.0
SOUTH COASTAL	BROOKER CREEK	2	C5404	7.9
SOUTH COASTAL	BROOKER CREEK	2	C5405	11.1
SOUTH COASTAL	BROOKER CREEK	2	C5406	10.4
SOUTH COASTAL	CENTRAL PLAZA	1	X262	10.0
SOUTH COASTAL	CENTRAL PLAZA	1	X264	0.0
SOUTH COASTAL	CENTRAL PLAZA	1	X266	1.3
SOUTH COASTAL	CENTRAL PLAZA	1	X268	10.4
SOUTH COASTAL	CENTRAL PLAZA	2	X263	0.9
SOUTH COASTAL	CENTRAL PLAZA	2	X265	5.1
SOUTH COASTAL	CENTRAL PLAZA	2	X267	10.1
SOUTH COASTAL	CLEARWATER	1	C4	7.0
SOUTH COASTAL	CLEARWATER	1	C5	11.3
SOUTH COASTAL	CLEARWATER	1	C6	2.6
SOUTH COASTAL	CLEARWATER	1	C7	5.3
SOUTH COASTAL	CLEARWATER	2	C10	9.0
SOUTH COASTAL	CLEARWATER	2	C11	8.0
SOUTH COASTAL	CLEARWATER	2	C8	0.0
SOUTH COASTAL	CLEARWATER	2	C9	3.0
SOUTH COASTAL	CLEARWATER	3	C12	9.3
SOUTH COASTAL	CLEARWATER	3	C13	4.0
SOUTH COASTAL	CLEARWATER	3	C14	6.1
SOUTH COASTAL	CLEARWATER	3	C15	6.2
SOUTH COASTAL	CLEARWATER	4	C16	8.9
SOUTH COASTAL	CLEARWATER	4	C17	9.4
SOUTH COASTAL	CLEARWATER	4	C18	6.3
SOUTH COASTAL	CLEARWATER	4	C19	4.7
SOUTH COASTAL	CROSS BAYOU	1	J142	11.7
SOUTH COASTAL	CROSS BAYOU	1	J143	9.7
SOUTH COASTAL	CROSS BAYOU	1	J144	2.6
SOUTH COASTAL	CROSS BAYOU	1	J145	8.2
SOUTH COASTAL	CROSS BAYOU	2	J146	8.3
SOUTH COASTAL	CROSS BAYOU	2	J147	10.6
SOUTH COASTAL	CROSS BAYOU	2	J148	10.1

SOUTH COASTAL	CROSS BAYOU	3	J140	6.2
SOUTH COASTAL	CROSS BAYOU	3	J141	11.8
SOUTH COASTAL	CROSS BAYOU	3	J150	9.7
SOUTH COASTAL	CROSSROADS	1	X132	9.1
SOUTH COASTAL	CROSSROADS	1	X133	8.7
SOUTH COASTAL	CROSSROADS	1	X134	7.6
SOUTH COASTAL	CROSSROADS	2	X135	9.6
SOUTH COASTAL	CROSSROADS	2	X136	2.4
SOUTH COASTAL	CROSSROADS	2	X137	3.4
SOUTH COASTAL	CROSSROADS	2	X138	6.6
SOUTH COASTAL	CURLEW	1	C4989	8.8
SOUTH COASTAL	CURLEW	1	C4990	9.0
SOUTH COASTAL	CURLEW	1	C4991	11.2
SOUTH COASTAL	CURLEW	2	C4976	5.9
SOUTH COASTAL	CURLEW	2	C4985	5.2
SOUTH COASTAL	CURLEW	2	C4986	10.9
SOUTH COASTAL	CURLEW	3	C4972	7.7
SOUTH COASTAL	CURLEW	3	C4973	8.3
SOUTH COASTAL	CURLEW	3	C4987	5.9
SOUTH COASTAL	CURLEW	3	C4988	8.9
SOUTH COASTAL	DENHAM	1	C151	9.1
SOUTH COASTAL	DENHAM	1	C152	8.3
SOUTH COASTAL	DENHAM	1	C159	10.2
SOUTH COASTAL	DENHAM	2	C153	9.6
SOUTH COASTAL	DENHAM	2	C154	6.6
SOUTH COASTAL	DENHAM	2	C155	8.7
SOUTH COASTAL	DENHAM	3	C156	10.2
SOUTH COASTAL	DENHAM	3	C157	10.0
SOUTH COASTAL	DENHAM	3	C158	12.0
SOUTH COASTAL	DISSTON	1	X60	10.3
SOUTH COASTAL	DISSTON	1	X61	4.3
SOUTH COASTAL	DISSTON	1	X62	11.1
SOUTH COASTAL	DISSTON	1	X63	10.3
SOUTH COASTAL	DISSTON	2	X64	9.3
SOUTH COASTAL	DISSTON	2	X65	2.6
SOUTH COASTAL	DISSTON	2	X66	11.2
SOUTH COASTAL	DISSTON	2	X67	8.6
SOUTH COASTAL	DUNEDIN	1	C102	8.4
SOUTH COASTAL	DUNEDIN	1	C103	8.7
SOUTH COASTAL	DUNEDIN	2	C104	8.2
SOUTH COASTAL	DUNEDIN	2	C106	5.8
SOUTH COASTAL	DUNEDIN	3	C107	9.7
SOUTH COASTAL	DUNEDIN	3	C108	8.2
SOUTH COASTAL	EAST CLEARWATER	1	C900	10.3

SOUTH COASTAL	EAST CLEARWATER	1	C901	6.5
SOUTH COASTAL	EAST CLEARWATER	1	C902	9.7
SOUTH COASTAL	EAST CLEARWATER	1	C903	6.8
SOUTH COASTAL	EAST CLEARWATER	2	C904	10.1
SOUTH COASTAL	EAST CLEARWATER	2	C905	8.0
SOUTH COASTAL	EAST CLEARWATER	2	C906	10.3
SOUTH COASTAL	EAST CLEARWATER	2	C907	10.1
SOUTH COASTAL	EAST CLEARWATER	3	C908	7.8
SOUTH COASTAL	EAST CLEARWATER	3	C909	8.3
SOUTH COASTAL	EAST CLEARWATER	3	C910	9.2
SOUTH COASTAL	EAST CLEARWATER	3	C911	8.1
SOUTH COASTAL	ELFERS	1	C954	4.7
SOUTH COASTAL	ELFERS	1	C955	9.6
SOUTH COASTAL	ELFERS	1	C956	9.8
SOUTH COASTAL	ELFERS	1	C957	9.0
SOUTH COASTAL	ELFERS	2	C950	7.6
SOUTH COASTAL	ELFERS	2	C951	6.4
SOUTH COASTAL	ELFERS	2	C952	6.5
SOUTH COASTAL	ELFERS	2	C953	6.7
SOUTH COASTAL	FIFTY FIRST STREET	1	X102	8.2
SOUTH COASTAL	FIFTY FIRST STREET	1	X104	5.7
SOUTH COASTAL	FIFTY FIRST STREET	1	X106	4.0
SOUTH COASTAL	FIFTY FIRST STREET	1	X108	6.3
SOUTH COASTAL	FIFTY FIRST STREET	2	X101	6.1
SOUTH COASTAL	FIFTY FIRST STREET	2	X103	9.6
SOUTH COASTAL	FIFTY FIRST STREET	2	X105	7.3
SOUTH COASTAL	FIFTY FIRST STREET	2	X107	7.3
SOUTH COASTAL	FLORA MAR	1	C4000	7.8
SOUTH COASTAL	FLORA MAR	1	C4001	8.3
SOUTH COASTAL	FLORA MAR	1	C4002	9.5
SOUTH COASTAL	FLORA MAR	1	C4003	8.5
SOUTH COASTAL	FLORA MAR	2	C4006	9.8
SOUTH COASTAL	FLORA MAR	2	C4007	7.9
SOUTH COASTAL	FLORA MAR	2	C4008	7.0
SOUTH COASTAL	FLORA MAR	2	C4009	8.7
SOUTH COASTAL	FORTIETH STREET	1	X81	5.1
SOUTH COASTAL	FORTIETH STREET	1	X82	8.4
SOUTH COASTAL	FORTIETH STREET	2	X83	7.2
SOUTH COASTAL	FORTIETH STREET	2	X84	7.8
SOUTH COASTAL	FORTIETH STREET	2	X85	6.9
SOUTH COASTAL	GATEWAY	1	X111	12.2
SOUTH COASTAL	GATEWAY	1	X112	7.1
SOUTH COASTAL	GATEWAY	1	X113	8.7
SOUTH COASTAL	GATEWAY	1	X114	3.4

SOUTH COASTAL	GATEWAY	2	X118	8.2
SOUTH COASTAL	GATEWAY	2	X119	8.1
SOUTH COASTAL	GATEWAY	2	X120	7.6
SOUTH COASTAL	GATEWAY	3	X121	9.3
SOUTH COASTAL	GATEWAY	3	X122	0.0
SOUTH COASTAL	GATEWAY	3	X123	6.7
SOUTH COASTAL	GATEWAY	3	X125	6.4
SOUTH COASTAL	GE PINELLAS	1	J231	2.1
SOUTH COASTAL	GE PINELLAS	2	J234	1.3
SOUTH COASTAL	GE PINELLAS	2	J235	1.3
SOUTH COASTAL	HIGHLANDS	1	C2805	8.8
SOUTH COASTAL	HIGHLANDS	1	C2806	10.9
SOUTH COASTAL	HIGHLANDS	1	C2807	7.8
SOUTH COASTAL	HIGHLANDS	2	C2802	8.8
SOUTH COASTAL	HIGHLANDS	2	C2803	5.8
SOUTH COASTAL	HIGHLANDS	2	C2804	7.1
SOUTH COASTAL	HIGHLANDS	2	C2808	6.8
SOUTH COASTAL	KENNETH CITY	1	X50	10.6
SOUTH COASTAL	KENNETH CITY	1	X51	4.9
SOUTH COASTAL	KENNETH CITY	1	X52	0.4
SOUTH COASTAL	KENNETH CITY	1	X53	10.8
SOUTH COASTAL	KENNETH CITY	2	X54	0.4
SOUTH COASTAL	KENNETH CITY	2	X55	6.1
SOUTH COASTAL	KENNETH CITY	2	X56	9.1
SOUTH COASTAL	KENNETH CITY	2	X57	10.4
SOUTH COASTAL	LAND O'LAKES	1	C140	11.0
SOUTH COASTAL	LAND O'LAKES	1	C141	6.9
SOUTH COASTAL	LAND O'LAKES	1	C143	11.7
SOUTH COASTAL	LAND O'LAKES	2	C146	10.3
SOUTH COASTAL	LARGO	1	J402	3.3
SOUTH COASTAL	LARGO	1	J403	8.2
SOUTH COASTAL	LARGO	1	J404	8.3
SOUTH COASTAL	LARGO	1	J405	6.8
SOUTH COASTAL	LARGO	2	J406	6.3
SOUTH COASTAL	LARGO	2	J407	11.3
SOUTH COASTAL	LARGO	2	J408	4.9
SOUTH COASTAL	LARGO	2	J409	6.4
SOUTH COASTAL	MAXIMO	1	X143	10.7
SOUTH COASTAL	MAXIMO	1	X144	0.1
SOUTH COASTAL	MAXIMO	1	X146	6.8
SOUTH COASTAL	MAXIMO	1	X147	10.2
SOUTH COASTAL	MAXIMO	2	X149	10.2
SOUTH COASTAL	MAXIMO	2	X150	8.4
SOUTH COASTAL	MAXIMO	2	X151	10.9

SOUTH COASTAL	MAXIMO	2	X152	0.3
SOUTH COASTAL	MAXIMO	3	X140	9.5
SOUTH COASTAL	MAXIMO	3	X141	8.8
SOUTH COASTAL	MAXIMO	3	X142	9.0
SOUTH COASTAL	NEW PORT RICHEY	1	C441	7.2
SOUTH COASTAL	NEW PORT RICHEY	1	C442	6.3
SOUTH COASTAL	NEW PORT RICHEY	2	C443	9.5
SOUTH COASTAL	NEW PORT RICHEY	2	C444	7.1
SOUTH COASTAL	NORTHEAST	1	X282	6.6
SOUTH COASTAL	NORTHEAST	1	X283	5.0
SOUTH COASTAL	NORTHEAST	1	X284	11.6
SOUTH COASTAL	NORTHEAST	1	X285	8.5
SOUTH COASTAL	NORTHEAST	1	X286	8.5
SOUTH COASTAL	NORTHEAST	2	X287	10.3
SOUTH COASTAL	NORTHEAST	2	X288	7.8
SOUTH COASTAL	NORTHEAST	2	X289	9.2
SOUTH COASTAL	NORTHEAST	2	X290	6.6
SOUTH COASTAL	NORTHEAST	2	X291	3.6
SOUTH COASTAL	OAKHURST	1	J221	8.3
SOUTH COASTAL	OAKHURST	1	J228	9.8
SOUTH COASTAL	OAKHURST	1	J229	8.4
SOUTH COASTAL	OAKHURST	2	J226	10.9
SOUTH COASTAL	OAKHURST	2	J227	9.3
SOUTH COASTAL	OAKHURST	3	J223	8.9
SOUTH COASTAL	OAKHURST	3	J224	9.7
SOUTH COASTAL	ODESSA	1	C4322	10.9
SOUTH COASTAL	ODESSA	1	C4329	7.0
SOUTH COASTAL	ODESSA	2	C4320	13.2
SOUTH COASTAL	ODESSA	2	C4323	9.6
SOUTH COASTAL	OLDSMAR	1	C603	0.4
SOUTH COASTAL	OLDSMAR	2	C604	1.4
SOUTH COASTAL	PALM HARBOR	1	C752	7.4
SOUTH COASTAL	PALM HARBOR	1	C753	8.4
SOUTH COASTAL	PALM HARBOR	2	C755	8.8
SOUTH COASTAL	PALM HARBOR	2	C756	7.5
SOUTH COASTAL	PALM HARBOR	2	C757	10.1
SOUTH COASTAL	PASADENA	1	X216	6.0
SOUTH COASTAL	PASADENA	1	X217	4.3
SOUTH COASTAL	PASADENA	1	X219	8.8
SOUTH COASTAL	PASADENA	1	X220	6.0
SOUTH COASTAL	PASADENA	2	X211	10.2
SOUTH COASTAL	PASADENA	2	X212	5.6
SOUTH COASTAL	PASADENA	2	X213	5.7
SOUTH COASTAL	PASADENA	2	X214	8.9

SOUTH COASTAL	PASADENA	2	X215	3.4
SOUTH COASTAL	PILSBURY	1	X252	11.4
SOUTH COASTAL	PILSBURY	1	X253	10.6
SOUTH COASTAL	PILSBURY	1	X254	9.8
SOUTH COASTAL	PILSBURY	1	X255	9.1
SOUTH COASTAL	PILSBURY	2	X256	11.0
SOUTH COASTAL	PILSBURY	2	X257	10.3
SOUTH COASTAL	PILSBURY	2	X258	9.8
SOUTH COASTAL	PILSBURY	2	X259	12.6
SOUTH COASTAL	PINELLAS WELL FIELD	1	C801	1.2
SOUTH COASTAL	PINELLAS WELL FIELD	1	C802	0.0
SOUTH COASTAL	PORT RICHEY WEST	1	C205	4.9
SOUTH COASTAL	PORT RICHEY WEST	1	C206	10.4
SOUTH COASTAL	PORT RICHEY WEST	1	C207	6.9
SOUTH COASTAL	PORT RICHEY WEST	2	C202	8.9
SOUTH COASTAL	PORT RICHEY WEST	2	C203	7.9
SOUTH COASTAL	PORT RICHEY WEST	3	C208	6.9
SOUTH COASTAL	PORT RICHEY WEST	3	C209	9.9
SOUTH COASTAL	PORT RICHEY WEST	3	C210	8.1
SOUTH COASTAL	SAFETY HARBOR	1	C3518	6.4
SOUTH COASTAL	SAFETY HARBOR	1	C3525	9.1
SOUTH COASTAL	SAFETY HARBOR	1	C3527	9.2
SOUTH COASTAL	SAFETY HARBOR	1	C3528	7.6
SOUTH COASTAL	SAFETY HARBOR	2	C3521	8.7
SOUTH COASTAL	SAFETY HARBOR	2	C3523	7.5
SOUTH COASTAL	SAFETY HARBOR	2	C3524	7.6
SOUTH COASTAL	SEMINOLE	1	J892	10.0
SOUTH COASTAL	SEMINOLE	1	J893	6.4
SOUTH COASTAL	SEMINOLE	1	J894	12.1
SOUTH COASTAL	SEMINOLE	1	J895	11.2
SOUTH COASTAL	SEMINOLE	2	J888	5.8
SOUTH COASTAL	SEMINOLE	2	J889	10.7
SOUTH COASTAL	SEMINOLE	2	J890	9.2
SOUTH COASTAL	SEMINOLE	2	J891	7.4
SOUTH COASTAL	SEVEN SPRINGS	4	C4500	6.8
SOUTH COASTAL	SEVEN SPRINGS	4	C4501	9.5
SOUTH COASTAL	SEVEN SPRINGS	4	C4510	7.2
SOUTH COASTAL	SEVEN SPRINGS	5	C4507	7.5
SOUTH COASTAL	SEVEN SPRINGS	5	C4508	12.5
SOUTH COASTAL	SEVEN SPRINGS	5	C4509	8.0
SOUTH COASTAL	SEVEN SPRINGS	6	C4502	6.9
SOUTH COASTAL	SEVEN SPRINGS	6	C4512	7.6
SOUTH COASTAL	SIXTEENTH STREET	1	X31	10.5
SOUTH COASTAL	SIXTEENTH STREET	1	X33	3.7

SOUTH COASTAL	SIXTEENTH STREET	1	X35	3.6
SOUTH COASTAL	SIXTEENTH STREET	1	X43	4.6
SOUTH COASTAL	SIXTEENTH STREET	1	X45	9.1
SOUTH COASTAL	SIXTEENTH STREET	2	X32	0.0
SOUTH COASTAL	SIXTEENTH STREET	2	X34	8.0
SOUTH COASTAL	SIXTEENTH STREET	2	X36	7.4
SOUTH COASTAL	SIXTEENTH STREET	2	X42	6.8
SOUTH COASTAL	SIXTEENTH STREET	2	X46	7.3
SOUTH COASTAL	STARKEY	1	J112	7.8
SOUTH COASTAL	STARKEY	1	J113	6.8
SOUTH COASTAL	STARKEY	1	J114	7.5
SOUTH COASTAL	STARKEY	2	J115	8.1
SOUTH COASTAL	STARKEY	2	J116	11.1
SOUTH COASTAL	STARKEY	2	J117	4.0
SOUTH COASTAL	STARKEY	2	J118	9.3
SOUTH COASTAL	TARPON SPRINGS	1	C301	6.5
SOUTH COASTAL	TARPON SPRINGS	1	C302	8.2
SOUTH COASTAL	TARPON SPRINGS	1	C303	8.6
SOUTH COASTAL	TARPON SPRINGS	1	C304	9.4
SOUTH COASTAL	TARPON SPRINGS	2	C305	9.5
SOUTH COASTAL	TARPON SPRINGS	2	C306	6.4
SOUTH COASTAL	TARPON SPRINGS	2	C307	10.0
SOUTH COASTAL	TARPON SPRINGS	2	C308	8.8
SOUTH COASTAL	TAYLOR AVENUE	1	J2905	8.5
SOUTH COASTAL	TAYLOR AVENUE	1	J2906	8.7
SOUTH COASTAL	TAYLOR AVENUE	1	J2907	10.9
SOUTH COASTAL	TAYLOR AVENUE	2	J2902	8.1
SOUTH COASTAL	TAYLOR AVENUE	2	J2903	9.1
SOUTH COASTAL	TAYLOR AVENUE	2	J2904	9.0
SOUTH COASTAL	THIRTY SECOND STREET	1	X22	9.4
SOUTH COASTAL	THIRTY SECOND STREET	1	X23	5.1
SOUTH COASTAL	THIRTY SECOND STREET	1	X24	5.0
SOUTH COASTAL	THIRTY SECOND STREET	1	X25	7.9
SOUTH COASTAL	THIRTY SECOND STREET	2	X26	7.6
SOUTH COASTAL	THIRTY SECOND STREET	2	X27	11.5
SOUTH COASTAL	THIRTY SECOND STREET	2	X28	8.8
SOUTH COASTAL	TRI-CITY	2	J5034	8.9
SOUTH COASTAL	TRI-CITY	2	J5036	4.4
SOUTH COASTAL	TRI-CITY	2	J5038	7.7
SOUTH COASTAL	TRI-CITY	3	J5030	7.2
SOUTH COASTAL	TRI-CITY	3	J5032	9.4
SOUTH COASTAL	TRI-CITY	3	J5040	7.7
SOUTH COASTAL	ULMERTON	1	J240	8.5
SOUTH COASTAL	ULMERTON	1	J241	8.5

SOUTH COASTAL	ULMERTON	1	J242	6.1
SOUTH COASTAL	ULMERTON	1	J243	9.2
SOUTH COASTAL	ULMERTON	1	J248	0.0
SOUTH COASTAL	ULMERTON	2	J244	6.2
SOUTH COASTAL	ULMERTON	2	J245	9.9
SOUTH COASTAL	ULMERTON	2	J246	4.9
SOUTH COASTAL	ULMERTON	2	J247	8.0
SOUTH COASTAL	ULMERTON WEST	1	J680	5.7
SOUTH COASTAL	ULMERTON WEST	1	J682	10.1
SOUTH COASTAL	ULMERTON WEST	1	J684	8.7
SOUTH COASTAL	ULMERTON WEST	2	J689	5.3
SOUTH COASTAL	ULMERTON WEST	2	J690	8.6
SOUTH COASTAL	ULMERTON WEST	2	J691	8.3
SOUTH COASTAL	ULMERTON WEST	2	J692	6.3
SOUTH COASTAL	VINOY	1	X70	9.8
SOUTH COASTAL	VINOY	1	X76	4.0
SOUTH COASTAL	VINOY	1	X77	5.3
SOUTH COASTAL	VINOY	1	X78	11.3
SOUTH COASTAL	VINOY	1	X79	3.1
SOUTH COASTAL	VINOY	1	X80	6.6
SOUTH COASTAL	VINOY	2	X71	6.2
SOUTH COASTAL	VINOY	2	X72	10.6
SOUTH COASTAL	VINOY	2	X73	3.2
SOUTH COASTAL	VINOY	2	X74	3.2
SOUTH COASTAL	VINOY	2	X75	1.4
SOUTH COASTAL	WALSINGHAM	1	J555	7.5
SOUTH COASTAL	WALSINGHAM	1	J556	9.0
SOUTH COASTAL	WALSINGHAM	1	J557	10.6
SOUTH COASTAL	WALSINGHAM	1	J558	8.0
SOUTH COASTAL	WALSINGHAM	2	J551	10.7
SOUTH COASTAL	WALSINGHAM	2	J552	9.7
SOUTH COASTAL	WALSINGHAM	2	J553	7.3
SOUTH COASTAL	WALSINGHAM	2	J554	10.7
SOUTH COASTAL	ZEPHYRHILLS	1	C854	4.7
SOUTH COASTAL	ZEPHYRHILLS	1	C855	9.5
SOUTH COASTAL	ZEPHYRHILLS	1	C856	7.8
SOUTH COASTAL	ZEPHYRHILLS	1	C857	3.6
SOUTH COASTAL	ZEPHYRHILLS	2	C851	9.4
SOUTH COASTAL	ZEPHYRHILLS	2	C852	7.8
SOUTH COASTAL	ZEPHYRHILLS	2	C853	4.0
SOUTH COASTAL	ZEPHYRHILLS NORTH	1	C342	7.3
SOUTH COASTAL	ZEPHYRHILLS NORTH	1	C343	11.0
SOUTH COASTAL	ZEPHYRHILLS NORTH	1	C344	7.0
SOUTH COASTAL	ZEPHYRHILLS NORTH	2	C340	3.2

SOUTH COASTAL	ZEPHYRHILLS NORTH	2	C341	7.9
SOUTH COASTAL	ZEPHYRHILLS NORTH	2	C345	3.7
SOUTH CENTRAL	ARBUCKLE CREEK	1	K1361	3.8
SOUTH CENTRAL	AVON PARK	4	K118	5.2
SOUTH CENTRAL	AVON PARK	4	K119	7.0
SOUTH CENTRAL	AVON PARK	5	K116	4.9
SOUTH CENTRAL	AVON PARK	5	K117	5.0
SOUTH CENTRAL	AVON PARK NORTH	1	K893	7.1
SOUTH CENTRAL	AVON PARK NORTH	1	K894	5.2
SOUTH CENTRAL	AVON PARK NORTH	2	K891	5.8
SOUTH CENTRAL	AVON PARK NORTH	2	K892	2.3
SOUTH CENTRAL	BABSON PARK	1	K1195	3.5
SOUTH CENTRAL	BABSON PARK	1	K1196	3.8
SOUTH CENTRAL	BARNUM CITY	1	K1501	5.7
SOUTH CENTRAL	BARNUM CITY	1	K3360	10.4
SOUTH CENTRAL	BARNUM CITY	1	K3364	1.8
SOUTH CENTRAL	BARNUM CITY	2	K1503	9.2
SOUTH CENTRAL	BARNUM CITY	2	K3362	11.6
SOUTH CENTRAL	BAY HILL	1	K72	7.2
SOUTH CENTRAL	BAY HILL	1	K73	11.3
SOUTH CENTRAL	BAY HILL	1	K74	8.0
SOUTH CENTRAL	BAY HILL	2	K75	6.4
SOUTH CENTRAL	BAY HILL	2	K76	8.6
SOUTH CENTRAL	BAY HILL	2	K77	3.2
SOUTH CENTRAL	BAY HILL	3	K67	8.4
SOUTH CENTRAL	BAY HILL	3	K68	10.0
SOUTH CENTRAL	BAY HILL	3	K79	9.2
SOUTH CENTRAL	BOGGY MARSH	1	K958	8.0
SOUTH CENTRAL	BOGGY MARSH	1	K959	6.6
SOUTH CENTRAL	BOGGY MARSH	1	K964	7.4
SOUTH CENTRAL	BOGGY MARSH	2	K957	8.5
SOUTH CENTRAL	BOGGY MARSH	2	K960	8.2
SOUTH CENTRAL	BOGGY MARSH	2	K961	9.9
SOUTH CENTRAL	BONNET CREEK	1	K973	3.3
SOUTH CENTRAL	BONNET CREEK	1	K974	2.5
SOUTH CENTRAL	BONNET CREEK	1	K975	7.1
SOUTH CENTRAL	BONNET CREEK	1	K976	7.3
SOUTH CENTRAL	BONNET CREEK	2	K1230	2.2
SOUTH CENTRAL	BONNET CREEK	2	K1231	7.5
SOUTH CENTRAL	BONNET CREEK	2	K1232	5.0
SOUTH CENTRAL	BONNET CREEK	2	K1234	4.5
SOUTH CENTRAL	CABBAGE ISLAND	2	K1614	6.2
SOUTH CENTRAL	CABBAGE ISLAND	2	K1616	6.8
SOUTH CENTRAL	CABBAGE ISLAND	2	K1618	4.3

SOUTH CENTRAL	CABBAGE ISLAND	3	K1613	5.5
SOUTH CENTRAL	CABBAGE ISLAND	3	K1615	1.9
SOUTH CENTRAL	CANOE CREEK	1	W0105	3.7
SOUTH CENTRAL	CELEBRATION	2	K2701	8.0
SOUTH CENTRAL	CELEBRATION	2	K2704	3.7
SOUTH CENTRAL	CELEBRATION	3	K2703	6.8
SOUTH CENTRAL	CELEBRATION	3	K2706	10.5
SOUTH CENTRAL	CENTRAL PARK	1	K495	5.8
SOUTH CENTRAL	CENTRAL PARK	1	W0493	9.8
SOUTH CENTRAL	CENTRAL PARK	1	W0494	5.7
SOUTH CENTRAL	CENTRAL PARK	2	K499	10.9
SOUTH CENTRAL	CENTRAL PARK	2	W0496	5.8
SOUTH CENTRAL	CENTRAL PARK	2	W0497	8.6
SOUTH CENTRAL	CENTRAL PARK	2	W0498	6.7
SOUTH CENTRAL	CENTRAL PARK	3	K800	8.0
SOUTH CENTRAL	CENTRAL PARK	3	W0500	9.2
SOUTH CENTRAL	CENTRAL PARK	3	W0501	6.0
SOUTH CENTRAL	CHAMPIONS GATE	1	K1762	11.8
SOUTH CENTRAL	CHAMPIONS GATE	1	K1764	5.7
SOUTH CENTRAL	CHAMPIONS GATE	2	K1761	1.2
SOUTH CENTRAL	CHAMPIONS GATE	2	K1763	8.0
SOUTH CENTRAL	CITRUSVILLE	1	K35	5.8
SOUTH CENTRAL	CITRUSVILLE	1	K61	8.9
SOUTH CENTRAL	CITRUSVILLE	1	K62	5.5
SOUTH CENTRAL	CLARCONA	1	M337	8.9
SOUTH CENTRAL	CLARCONA	1	M343	8.0
SOUTH CENTRAL	CLARCONA	2	M339	2.8
SOUTH CENTRAL	CLARCONA	2	M340	5.8
SOUTH CENTRAL	CLARCONA	2	M346	7.5
SOUTH CENTRAL	CLARCONA	3	M342	9.0
SOUTH CENTRAL	CLARCONA	3	M348	6.2
SOUTH CENTRAL	CLARCONA	3	M351	5.2
SOUTH CENTRAL	CLERMONT	1	K601	11.0
SOUTH CENTRAL	CLERMONT	1	K602	7.9
SOUTH CENTRAL	CLERMONT	1	K603	9.3
SOUTH CENTRAL	CLERMONT	2	K605	6.9
SOUTH CENTRAL	CLERMONT	2	K606	9.3
SOUTH CENTRAL	CLERMONT	2	K607	7.8
SOUTH CENTRAL	COLONIAL	1	K2476	10.1
SOUTH CENTRAL	COLONIAL	1	K2477	5.2
SOUTH CENTRAL	CONWAY	1	W0407	7.1
SOUTH CENTRAL	CONWAY	1	W0408	9.3
SOUTH CENTRAL	CONWAY	2	W0404	7.8
SOUTH CENTRAL	CONWAY	2	W0405	8.3

SOUTH CENTRAL	COUNTRY OAKS	1	K1443	4.2
SOUTH CENTRAL	COUNTRY OAKS	1	K1446	1.9
SOUTH CENTRAL	COUNTRY OAKS	2	K1447	8.8
SOUTH CENTRAL	CROOKED LAKE	1	K1772	8.5
SOUTH CENTRAL	CROWN POINT	1	K278	7.1
SOUTH CENTRAL	CROWN POINT	1	K279	5.1
SOUTH CENTRAL	CURRY FORD	1	W0595	3.8
SOUTH CENTRAL	CURRY FORD	1	W0597	9.5
SOUTH CENTRAL	CURRY FORD	1	W0601	12.3
SOUTH CENTRAL	CURRY FORD	2	W0596	9.0
SOUTH CENTRAL	CURRY FORD	2	W0598	7.2
SOUTH CENTRAL	CYPRESSWOOD	1	K317	3.7
SOUTH CENTRAL	CYPRESSWOOD	1	K563	5.5
SOUTH CENTRAL	CYPRESSWOOD	2	K561	3.3
SOUTH CENTRAL	CYPRESSWOOD	2	K562	9.0
SOUTH CENTRAL	DAVENPORT	1	K7	3.3
SOUTH CENTRAL	DAVENPORT	1	K8	4.8
SOUTH CENTRAL	DAVENPORT	1	K9	7.0
SOUTH CENTRAL	DESOTO CITY	1	K3220	5.6
SOUTH CENTRAL	DESOTO CITY	1	K3221	1.0
SOUTH CENTRAL	DESOTO CITY	2	K3222	2.0
SOUTH CENTRAL	DINNER LAKE	1	K1690	6.9
SOUTH CENTRAL	DINNER LAKE	1	K1691	7.9
SOUTH CENTRAL	DINNER LAKE	2	K1684	1.7
SOUTH CENTRAL	DINNER LAKE	2	K1685	7.0
SOUTH CENTRAL	DINNER LAKE	2	K1687	2.1
SOUTH CENTRAL	DINNER LAKE	2	K1688	4.3
SOUTH CENTRAL	DINNER LAKE	2	K1689	5.1
SOUTH CENTRAL	DUNDEE	2	K3244	7.5
SOUTH CENTRAL	DUNDEE	2	K3245	6.7
SOUTH CENTRAL	DUNDEE	2	K3246	1.7
SOUTH CENTRAL	EAST LAKE WALES	1	K1030	6.4
SOUTH CENTRAL	EAST LAKE WALES	1	K1032	4.0
SOUTH CENTRAL	EAST LAKE WALES	2	K1031	3.2
SOUTH CENTRAL	EAST ORANGE	2	W0271	9.9
SOUTH CENTRAL	EAST ORANGE	3	W0252	8.6
SOUTH CENTRAL	EAST ORANGE	3	W0255	6.1
SOUTH CENTRAL	FISHEATING CREEK	1	K1560	8.9
SOUTH CENTRAL	FORT MEADE	3	K170	0.0
SOUTH CENTRAL	FORT MEADE	3	K171	2.2
SOUTH CENTRAL	FOUR CORNERS	1	K1404	8.8
SOUTH CENTRAL	FOUR CORNERS	1	K1407	7.4
SOUTH CENTRAL	FOUR CORNERS	2	K1406	6.7
SOUTH CENTRAL	FOUR CORNERS	2	K1409	4.6

SOUTH CENTRAL	FOUR CORNERS	3	K1411	8.0
SOUTH CENTRAL	FOUR CORNERS	3	K1414	5.0
SOUTH CENTRAL	FOUR CORNERS	3	K1416	7.0
SOUTH CENTRAL	FROSTPROOF	1	K100	4.6
SOUTH CENTRAL	FROSTPROOF	1	K101	4.7
SOUTH CENTRAL	FROSTPROOF	1	K102	5.3
SOUTH CENTRAL	FROSTPROOF	2	K103	1.8
SOUTH CENTRAL	FROSTPROOF	2	K104	4.6
SOUTH CENTRAL	GROVELAND	1	K673	4.8
SOUTH CENTRAL	GROVELAND	1	K674	8.2
SOUTH CENTRAL	GROVELAND	2	K675	7.1
SOUTH CENTRAL	HAINES CITY	1	K18	10.9
SOUTH CENTRAL	HAINES CITY	1	K19	5.2
SOUTH CENTRAL	HAINES CITY	1	K21	8.8
SOUTH CENTRAL	HAINES CITY	1	K22	7.2
SOUTH CENTRAL	HAINES CITY	2	K16	9.9
SOUTH CENTRAL	HAINES CITY	2	K17	8.5
SOUTH CENTRAL	HAINES CITY	2	K20	6.5
SOUTH CENTRAL	HEMPLE	1	K2250	10.3
SOUTH CENTRAL	HEMPLE	1	K2255	9.9
SOUTH CENTRAL	HEMPLE	2	K2244	6.6
SOUTH CENTRAL	HEMPLE	2	K2247	9.2
SOUTH CENTRAL	HEMPLE	2	K2252	2.4
SOUTH CENTRAL	HEMPLE	3	K2246	6.6
SOUTH CENTRAL	HEMPLE	3	K2249	7.1
SOUTH CENTRAL	HEMPLE	3	K2253	8.3
SOUTH CENTRAL	HOLOPAW	1	W0630	4.8
SOUTH CENTRAL	HOLOPAW	2	W0629	7.6
SOUTH CENTRAL	HOWEY	1	K564	6.0
SOUTH CENTRAL	HOWEY	1	K565	6.1
SOUTH CENTRAL	HUNTERS CREEK	1	K40	11.4
SOUTH CENTRAL	HUNTERS CREEK	1	K51	8.6
SOUTH CENTRAL	HUNTERS CREEK	2	K42	11.2
SOUTH CENTRAL	HUNTERS CREEK	2	K43	9.6
SOUTH CENTRAL	HUNTERS CREEK	3	K45	10.4
SOUTH CENTRAL	HUNTERS CREEK	3	K48	7.1
SOUTH CENTRAL	HUNTERS CREEK	3	K49	6.3
SOUTH CENTRAL	INTERCESSION CITY	1	K966	10.5
SOUTH CENTRAL	INTERCESSION CITY	1	K967	9.5
SOUTH CENTRAL	INTERNATIONAL DRIVE	2	K4817	6.3
SOUTH CENTRAL	INTERNATIONAL DRIVE	2	K4820	5.9
SOUTH CENTRAL	INTERNATIONAL DRIVE	3	K4815	6.3
SOUTH CENTRAL	INTERNATIONAL DRIVE	3	K4818	8.1
SOUTH CENTRAL	ISLESWORTH	2	K779	10.8

SOUTH CENTRAL	ISLESWORTH	2	K784	8.3
SOUTH CENTRAL	ISLESWORTH	2	K792	9.2
SOUTH CENTRAL	ISLESWORTH	3	K781	8.8
SOUTH CENTRAL	ISLESWORTH	3	K782	8.2
SOUTH CENTRAL	ISLESWORTH	3	K789	9.6
SOUTH CENTRAL	LAKE BRYAN	1	K240	1.7
SOUTH CENTRAL	LAKE BRYAN	1	K242	3.3
SOUTH CENTRAL	LAKE BRYAN	2	K238	11.2
SOUTH CENTRAL	LAKE BRYAN	2	K239	3.9
SOUTH CENTRAL	LAKE BRYAN	2	K244	9.2
SOUTH CENTRAL	LAKE BRYAN	3	K230	8.9
SOUTH CENTRAL	LAKE BRYAN	3	K231	6.3
SOUTH CENTRAL	LAKE BRYAN	3	K232	9.4
SOUTH CENTRAL	LAKE LUNTZ	1	K3282	11.6
SOUTH CENTRAL	LAKE LUNTZ	1	K3284	9.5
SOUTH CENTRAL	LAKE LUNTZ	1	K3287	6.1
SOUTH CENTRAL	LAKE LUNTZ	2	K3283	6.7
SOUTH CENTRAL	LAKE LUNTZ	2	K3285	11.2
SOUTH CENTRAL	LAKE LUNTZ	2	K3286	12.7
SOUTH CENTRAL	LAKE MARION	1	K1286	6.5
SOUTH CENTRAL	LAKE MARION	1	K1288	5.2
SOUTH CENTRAL	LAKE MARION	2	K1287	11.4
SOUTH CENTRAL	LAKE OF THE HILLS	1	K1884	8.4
SOUTH CENTRAL	LAKE OF THE HILLS	1	K1885	4.3
SOUTH CENTRAL	LAKE PLACID	1	K757	3.2
SOUTH CENTRAL	LAKE PLACID	1	K758	4.8
SOUTH CENTRAL	LAKE PLACID	2	K1066	7.4
SOUTH CENTRAL	LAKE PLACID	2	K1320	5.4
SOUTH CENTRAL	LAKE PLACID NORTH	1	K24	3.7
SOUTH CENTRAL	LAKE PLACID NORTH	2	K27	2.2
SOUTH CENTRAL	LAKE WALES	1	K53	4.9
SOUTH CENTRAL	LAKE WALES	1	K54	7.7
SOUTH CENTRAL	LAKE WALES	1	K55	7.1
SOUTH CENTRAL	LAKE WALES	2	K56	2.5
SOUTH CENTRAL	LAKE WALES	2	K57	4.2
SOUTH CENTRAL	LAKE WALES	2	K58	7.1
SOUTH CENTRAL	LAKE WILSON	1	K881	5.7
SOUTH CENTRAL	LAKE WILSON	1	K882	8.1
SOUTH CENTRAL	LAKE WILSON	2	K883	9.1
SOUTH CENTRAL	LAKE WILSON	2	K884	7.8
SOUTH CENTRAL	LAKEWOOD	1	K1693	6.8
SOUTH CENTRAL	LAKEWOOD	1	K1694	4.7
SOUTH CENTRAL	LAKEWOOD	1	K1695	6.4
SOUTH CENTRAL	LAKEWOOD	2	K1705	5.6

SOUTH CENTRAL	LAKEWOOD	2	K1706	7.5
SOUTH CENTRAL	LEISURE LAKES	1	K1415	6.1
SOUTH CENTRAL	LOCKHART	2	M408	4.0
SOUTH CENTRAL	LOCKHART	2	M414	5.1
SOUTH CENTRAL	LOUGHMAN	1	K5078	0.0
SOUTH CENTRAL	LOUGHMAN	1	K5079	0.0
SOUTH CENTRAL	MAGNOLIA RANCH	1	W0504	8.8
SOUTH CENTRAL	MAGNOLIA RANCH	2	W0502	7.3
SOUTH CENTRAL	MAGNOLIA RANCH	2	W0503	6.3
SOUTH CENTRAL	MARLEY ROAD	1	K120	8.0
SOUTH CENTRAL	MEADOW WOODS EAST	1	K1060	8.1
SOUTH CENTRAL	MEADOW WOODS EAST	1	K1061	9.6
SOUTH CENTRAL	MEADOW WOODS SOUTH	1	K1783	9.0
SOUTH CENTRAL	MEADOW WOODS SOUTH	1	K1789	3.3
SOUTH CENTRAL	MEADOW WOODS SOUTH	2	K1775	8.9
SOUTH CENTRAL	MEADOW WOODS SOUTH	2	K1778	8.0
SOUTH CENTRAL	MEADOW WOODS SOUTH	2	K1781	10.3
SOUTH CENTRAL	MEADOW WOODS SOUTH	3	K1777	7.2
SOUTH CENTRAL	MEADOW WOODS SOUTH	3	K1780	5.5
SOUTH CENTRAL	MIDWAY	1	K1472	7.1
SOUTH CENTRAL	MIDWAY	1	K1473	9.5
SOUTH CENTRAL	MIDWAY	1	K1475	4.8
SOUTH CENTRAL	MINNEOLA	1	K946	4.9
SOUTH CENTRAL	MINNEOLA	1	K949	6.7
SOUTH CENTRAL	MINNEOLA	2	K948	7.2
SOUTH CENTRAL	MONTVERDE	1	K4831	6.7
SOUTH CENTRAL	MONTVERDE	1	K4834	5.3
SOUTH CENTRAL	MONTVERDE	1	K4837	7.2
SOUTH CENTRAL	MONTVERDE	1	K4841	8.9
SOUTH CENTRAL	MONTVERDE	2	K4833	5.5
SOUTH CENTRAL	MONTVERDE	2	K4836	7.9
SOUTH CENTRAL	MONTVERDE	2	K4840	10.4
SOUTH CENTRAL	MONTVERDE	2	K4845	6.1
SOUTH CENTRAL	NARCOOSSEE	1	W0212	10.7
SOUTH CENTRAL	NARCOOSSEE	1	W0213	10.4
SOUTH CENTRAL	NARCOOSSEE	1	W0214	6.4
SOUTH CENTRAL	NARCOOSSEE	2	W0215	9.3
SOUTH CENTRAL	NARCOOSSEE	2	W0216	0.0
SOUTH CENTRAL	NARCOOSSEE	2	W0217	9.1
SOUTH CENTRAL	NARCOOSSEE	3	W0219	11.1
SOUTH CENTRAL	NARCOOSSEE	3	W0220	8.4
SOUTH CENTRAL	NORTHRIDGE	1	K1822	6.6
SOUTH CENTRAL	NORTHRIDGE	1	K1825	5.5
SOUTH CENTRAL	OCOEE	1	M1090	9.9

SOUTH CENTRAL	OCOEE	1	M1091	5.9
SOUTH CENTRAL	OCOEE	1	M1092	9.7
SOUTH CENTRAL	OCOEE	2	M1094	8.2
SOUTH CENTRAL	OCOEE	2	M1095	4.2
SOUTH CENTRAL	OCOEE	2	M1096	9.9
SOUTH CENTRAL	OCOEE	3	M1086	3.3
SOUTH CENTRAL	OCOEE	3	M1087	7.1
SOUTH CENTRAL	OCOEE	3	M1088	9.6
SOUTH CENTRAL	OKAHUMPKA	1	K284	6.4
SOUTH CENTRAL	OKAHUMPKA	2	K285	5.8
SOUTH CENTRAL	OKAHUMPKA	2	K286	1.8
SOUTH CENTRAL	ORANGEWOOD	1	K217	3.8
SOUTH CENTRAL	ORANGEWOOD	1	K220	2.8
SOUTH CENTRAL	ORANGEWOOD	1	K221	5.0
SOUTH CENTRAL	ORANGEWOOD	1	K222	10.1
SOUTH CENTRAL	ORANGEWOOD	1	K223	3.7
SOUTH CENTRAL	ORANGEWOOD	1	K224	3.5
SOUTH CENTRAL	ORANGEWOOD	2	K218	4.0
SOUTH CENTRAL	ORANGEWOOD	2	K225	4.0
SOUTH CENTRAL	ORANGEWOOD	2	K226	7.5
SOUTH CENTRAL	ORANGEWOOD	2	K227	3.4
SOUTH CENTRAL	ORANGEWOOD	2	K228	8.7
SOUTH CENTRAL	ORANGEWOOD	2	K229	2.8
SOUTH CENTRAL	PARKWAY	1	K408	0.0
SOUTH CENTRAL	PARKWAY	1	K409	0.0
SOUTH CENTRAL	PEMBROKE	1	K3205	0.0
SOUTH CENTRAL	PINECASTLE	1	W0391	3.1
SOUTH CENTRAL	PINECASTLE	1	W0392	9.2
SOUTH CENTRAL	PINECASTLE	2	K396	8.2
SOUTH CENTRAL	PINECASTLE	2	W0395	10.6
SOUTH CENTRAL	POINCIANA	1	K1236	10.5
SOUTH CENTRAL	POINCIANA	1	K1237	9.7
SOUTH CENTRAL	POINCIANA	1	K1558	9.9
SOUTH CENTRAL	POINCIANA	2	K1508	9.9
SOUTH CENTRAL	POINCIANA	2	K1509	6.5
SOUTH CENTRAL	POINCIANA	2	K1556	10.6
SOUTH CENTRAL	POINCIANA	2	K1561	11.0
SOUTH CENTRAL	POINCIANA NORTH	3	K629	6.3
SOUTH CENTRAL	POINCIANA NORTH	3	K631	9.9
SOUTH CENTRAL	REEDY LAKE	1	K1104	5.0
SOUTH CENTRAL	REEDY LAKE	1	K1110	10.0
SOUTH CENTRAL	REEDY LAKE	2	K1102	8.3
SOUTH CENTRAL	REEDY LAKE	2	K1108	1.7
SOUTH CENTRAL	REEDY LAKE		K1111	0.0

SOUTH CENTRAL	RIO PINAR	1	W0968	9.4
SOUTH CENTRAL	RIO PINAR	1	W0969	6.3
SOUTH CENTRAL	RIO PINAR	1	W0970	11.6
SOUTH CENTRAL	RIO PINAR	1	W0975	8.6
SOUTH CENTRAL	RIO PINAR	4	W0971	5.0
SOUTH CENTRAL	RIO PINAR	4	W0972	10.8
SOUTH CENTRAL	RIO PINAR	4	W0973	8.9
SOUTH CENTRAL	RIO PINAR	4	W0974	10.0
SOUTH CENTRAL	SAND LAKE	1	K920	3.4
SOUTH CENTRAL	SAND LAKE	1	K925	4.5
SOUTH CENTRAL	SAND LAKE	1	K926	4.1
SOUTH CENTRAL	SAND LAKE	1	K931	3.7
SOUTH CENTRAL	SAND LAKE	1	K932	3.6
SOUTH CENTRAL	SAND LAKE	2	K922	5.4
SOUTH CENTRAL	SAND LAKE	2	K923	2.6
SOUTH CENTRAL	SAND LAKE	2	K928	4.7
SOUTH CENTRAL	SAND LAKE	2	K929	6.5
SOUTH CENTRAL	SAND LAKE	2	K934	6.9
SOUTH CENTRAL	SAND MOUNTAIN	1	K3201	0.3
SOUTH CENTRAL	SEBRING EAST	1	K541	2.5
SOUTH CENTRAL	SEBRING EAST	1	K542	6.0
SOUTH CENTRAL	SHINGLE CREEK	1	K857	9.4
SOUTH CENTRAL	SHINGLE CREEK	1	K860	7.8
SOUTH CENTRAL	SHINGLE CREEK	1	K861	8.0
SOUTH CENTRAL	SHINGLE CREEK	2	K855	8.3
SOUTH CENTRAL	SHINGLE CREEK	2	K858	6.8
SOUTH CENTRAL	SHINGLE CREEK	2	K863	8.4
SOUTH CENTRAL	SHINGLE CREEK	2	K868	9.2
SOUTH CENTRAL	SKY LAKE	1	W0362	6.9
SOUTH CENTRAL	SKY LAKE	1	W0363	10.6
SOUTH CENTRAL	SKY LAKE	1	W0364	7.3
SOUTH CENTRAL	SKY LAKE	2	W0365	8.9
SOUTH CENTRAL	SKY LAKE	2	W0366	6.4
SOUTH CENTRAL	SKY LAKE	3	W0367	8.7
SOUTH CENTRAL	SKY LAKE	3	W0368	7.0
SOUTH CENTRAL	SKY LAKE	3	W0369	9.7
SOUTH CENTRAL	SOUTH BARTOW	1	K154	0.0
SOUTH CENTRAL	SUN'N LAKES	1	K1296	9.4
SOUTH CENTRAL	SUN'N LAKES	1	K1297	5.5
SOUTH CENTRAL	SUN'N LAKES	1	K1300	7.0
SOUTH CENTRAL	SUN'N LAKES	2	K1135	5.9
SOUTH CENTRAL	SUN'N LAKES	2	K1136	5.8
SOUTH CENTRAL	SUN'N LAKES	2	K1137	3.3
SOUTH CENTRAL	TAFT	1	K1026	7.7

SOUTH CENTRAL	TAFT	1	K1027	5.9
SOUTH CENTRAL	TAFT	1	K1028	8.0
SOUTH CENTRAL	TAFT	2	K1023	2.3
SOUTH CENTRAL	TAFT	2	K1024	10.3
SOUTH CENTRAL	TAFT	2	K1025	6.6
SOUTH CENTRAL	TAUNTON ROAD	1	K1081	5.1
SOUTH CENTRAL	TAUNTON ROAD	1	K1083	3.0
SOUTH CENTRAL	VINELAND	1	K901	5.9
SOUTH CENTRAL	VINELAND	1	K907	5.0
SOUTH CENTRAL	VINELAND	1	K913	6.9
SOUTH CENTRAL	VINELAND	2	K903	11.4
SOUTH CENTRAL	VINELAND	2	K904	10.8
SOUTH CENTRAL	VINELAND	2	K909	3.5
SOUTH CENTRAL	VINELAND	2	K910	7.8
SOUTH CENTRAL	VINELAND	3	K906	9.1
SOUTH CENTRAL	VINELAND	3	K912	9.3
SOUTH CENTRAL	VINELAND	3	K915	7.3
SOUTH CENTRAL	VINELAND		K917	0.0
SOUTH CENTRAL	WAUCHULA	1	K245	4.0
SOUTH CENTRAL	WAUCHULA	2	K246	5.8
SOUTH CENTRAL	WEST DAVENPORT	1	K1523	6.4
SOUTH CENTRAL	WEST DAVENPORT	1	K1524	5.0
SOUTH CENTRAL	WEST DAVENPORT	2	K1521	10.0
SOUTH CENTRAL	WEST DAVENPORT	2	K1526	7.9
SOUTH CENTRAL	WEST LAKE WALES	2	K866	4.3
SOUTH CENTRAL	WESTRIDGE	1	K420	9.3
SOUTH CENTRAL	WESTRIDGE	1	K425	6.0
SOUTH CENTRAL	WESTRIDGE	2	K421	7.4
SOUTH CENTRAL	WESTRIDGE	2	K426	8.8
SOUTH CENTRAL	WESTRIDGE	2	K428	4.9
SOUTH CENTRAL	WEWAHOOTEE	1	W1197	1.5
SOUTH CENTRAL	WEWAHOOTEE	1	W1198	1.2
SOUTH CENTRAL	WINDERMERE	1	K303	8.2
SOUTH CENTRAL	WINDERMERE	1	K304	4.8
SOUTH CENTRAL	WINDERMERE	3	K302	7.0
SOUTH CENTRAL	WINTER GARDEN	1	K204	10.7
SOUTH CENTRAL	WINTER GARDEN	1	K205	8.3
SOUTH CENTRAL	WINTER GARDEN	1	K206	10.0
SOUTH CENTRAL	WINTER GARDEN	1	K207	9.7
SOUTH CENTRAL	WINTER GARDEN	2	K201	10.7
SOUTH CENTRAL	WINTER GARDEN	2	K202	8.3
SOUTH CENTRAL	WINTER GARDEN	2	K203	7.8
SOUTH CENTRAL	WOODSMERE	3	M252	5.8
SOUTH CENTRAL	WOODSMERE	3	M253	4.0

SOUTH CENTRAL	WOODSMERE	4	M255	6.8
SOUTH CENTRAL	WOODSMERE	4	M256	8.1
SOUTH CENTRAL	WORLD GATEWAY	1	K187	7.1
SOUTH CENTRAL	WORLD GATEWAY	1	K189	7.5
NORTH COASTAL	ADAMS	1	A199	5.5
NORTH COASTAL	ADAMS	1	A200	3.9
NORTH COASTAL	ALACHUA	1	A143	1.4
NORTH COASTAL	ALACHUA	1	A144	3.0
NORTH COASTAL	APALACHICOLA	1	N58	5.2
NORTH COASTAL	APALACHICOLA	1	N59	6.3
NORTH COASTAL	ARCHER	1	A195	1.5
NORTH COASTAL	ARCHER	2	A196	5.2
NORTH COASTAL	BEACON HILL	1	N516	7.2
NORTH COASTAL	BEACON HILL	2	N515	2.1
NORTH COASTAL	BEACON HILL	2	N527	5.3
NORTH COASTAL	BELLEVIEW	1	A1	8.6
NORTH COASTAL	BELLEVIEW	1	A3	10.1
NORTH COASTAL	BELLEVIEW	2	A2	9.9
NORTH COASTAL	BELLEVIEW	2	A4	6.7
NORTH COASTAL	BELLEVIEW	2	A6	10.2
NORTH COASTAL	BEVERLY HILLS	1	A74	7.0
NORTH COASTAL	BEVERLY HILLS	1	A75	6.4
NORTH COASTAL	BEVERLY HILLS	2	A72	5.7
NORTH COASTAL	BEVERLY HILLS	2	A73	4.5
NORTH COASTAL	BEVILLES CORNER	1	A561	1.9
NORTH COASTAL	BEVILLES CORNER	1	A562	3.8
NORTH COASTAL	BROOKSVILLE	2	A97	5.4
NORTH COASTAL	BROOKSVILLE	2	A98	5.6
NORTH COASTAL	BROOKSVILLE	3	A95	6.1
NORTH COASTAL	BROOKSVILLE	3	A96	8.6
NORTH COASTAL	BUSHNELL EAST	1	A170	6.8
NORTH COASTAL	CARRABELLE	1	N42	2.2
NORTH COASTAL	CARRABELLE	1	N43	6.3
NORTH COASTAL	CARRABELLE BEACH	1	N48	2.5
NORTH COASTAL	CIRCLE SQUARE	1	A251	6.1
NORTH COASTAL	Circle Square	1	A253	4.4
NORTH COASTAL	CIRCLE SQUARE	2	A250	5.7
NORTH COASTAL	CITRUS HILLS	2	A282	6.0
NORTH COASTAL	CITRUS HILLS	2	A284	7.3
NORTH COASTAL	CITRUS HILLS	2	A286	4.4
NORTH COASTAL	CITRUS HILLS	3	A283	4.0
NORTH COASTAL	CITRUS HILLS	3	A285	4.8
NORTH COASTAL	COLEMAN	1	A105	2.0
NORTH COASTAL	COLEMAN	1	A106	4.2

NORTH COASTAL	COLEMAN	2	A107	5.3
NORTH COASTAL	CRAWFORDVILLE	2	N36	5.1
NORTH COASTAL	CRAWFORDVILLE	3	N35	6.1
NORTH COASTAL	CROSS CITY	1	A118	4.5
NORTH COASTAL	CROSS CITY	1	A119	7.0
NORTH COASTAL	CROSS CITY INDUSTRIAL	1	A46	4.2
NORTH COASTAL	CRYSTAL RIVER NORTH	1	A161	6.7
NORTH COASTAL	CRYSTAL RIVER NORTH	1	A162	7.5
NORTH COASTAL	CRYSTAL RIVER PLANT	11	A300	0.0
NORTH COASTAL	CRYSTAL RIVER PLANT	11	A308	0.0
NORTH COASTAL	CRYSTAL RIVER SOUTH	1	A158	0.0
NORTH COASTAL	CRYSTAL RIVER SOUTH	1	A159	5.2
NORTH COASTAL	DUNNELLON TOWN	1	A70	5.6
NORTH COASTAL	DUNNELLON TOWN	1	A71	4.8
NORTH COASTAL	DUNNELLON TOWN	2	A68	7.0
NORTH COASTAL	DUNNELLON TOWN	2	A69	5.3
NORTH COASTAL	EAGLES NEST	1	A228	6.3
NORTH COASTAL	EAGLES NEST	2	A224	6.2
NORTH COASTAL	EAST POINT	1	N230	2.8
NORTH COASTAL	EAST POINT	1	N231	4.9
NORTH COASTAL	FLORAL CITY	1	A87	3.0
NORTH COASTAL	FLORAL CITY	1	A88	2.8
NORTH COASTAL	FORT WHITE	2	A20	4.0
NORTH COASTAL	GE ALACHUA	1	A185	0.7
NORTH COASTAL	GE ALACHUA	1	A186	2.5
NORTH COASTAL	GEORGIA PACIFIC	1	A45	5.7
NORTH COASTAL	HERNANDO AIRPORT	1	A430	9.3
NORTH COASTAL	HERNANDO AIRPORT	1	A431	8.3
NORTH COASTAL	HIGH SPRINGS	1	A15	8.6
NORTH COASTAL	HIGH SPRINGS	2	A16	5.3
NORTH COASTAL	HOLDER	1	A47	5.7
NORTH COASTAL	HOLDER	1	A49	4.2
NORTH COASTAL	HOLDER	2	A48	7.2
NORTH COASTAL	HOMOSASSA	3	A271	7.6
NORTH COASTAL	HOMOSASSA	3	A272	6.0
NORTH COASTAL	INDIAN PASS	1	N556	10.4
NORTH COASTAL	INGLIS	2	A78	4.5
NORTH COASTAL	INGLIS	2	A79	0.0
NORTH COASTAL	INVERNESS	1	A81	6.3
NORTH COASTAL	INVERNESS	1	A82	7.5
NORTH COASTAL	INVERNESS	1	A83	8.0
NORTH COASTAL	INVERNESS	2	A84	8.4
NORTH COASTAL	INVERNESS	2	A85	10.4
NORTH COASTAL	JASPER	2	N191	4.7

NORTH COASTAL	JASPER	2	N192	4.6
NORTH COASTAL	JENNINGS	1	N195	2.4
NORTH COASTAL	LADY LAKE	1	A243	8.2
NORTH COASTAL	LADY LAKE	1	A246	9.0
NORTH COASTAL	LADY LAKE	2	A244	5.2
NORTH COASTAL	LADY LAKE	2	A245	6.8
NORTH COASTAL	LAKE WEIR	1	A61	5.2
NORTH COASTAL	LAKE WEIR	2	A64	6.9
NORTH COASTAL	LEBANON	1	A132	4.8
NORTH COASTAL	LURAVILLE	1	A192	4.5
NORTH COASTAL	MADISON	1	N3	7.4
NORTH COASTAL	MADISON	1	N4	3.5
NORTH COASTAL	MADISON	2	N1	4.5
NORTH COASTAL	MADISON	2	N2	5.8
NORTH COASTAL	MARICAMP	1	A333	9.4
NORTH COASTAL	MARICAMP	1	A335	6.7
NORTH COASTAL	MARICAMP	2	A334	8.4
NORTH COASTAL	MARICAMP	2	A336	7.8
NORTH COASTAL	MARTIN	1	A38	10.2
NORTH COASTAL	MARTIN	1	A39	5.9
NORTH COASTAL	MCINTOSH	1	A50	3.5
NORTH COASTAL	MCINTOSH	2	A51	5.1
NORTH COASTAL	MONTICELLO	1	N66	3.6
NORTH COASTAL	MONTICELLO	1	N67	6.0
NORTH COASTAL	MONTICELLO	2	N68	2.4
NORTH COASTAL	MONTICELLO	2	N69	6.0
NORTH COASTAL	NEWBERRY	1	A94	8.9
NORTH COASTAL	O' BRIEN	1	A379	4.6
NORTH COASTAL	OCHLOCKNEE	1	N38	4.4
NORTH COASTAL	OCHLOCKNEE	2	N37	4.8
NORTH COASTAL	ORANGE BLOSSOM	1	A310	8.9
NORTH COASTAL	ORANGE BLOSSOM	1	A389	6.7
NORTH COASTAL	ORANGE BLOSSOM	1	A392	7.2
NORTH COASTAL	ORANGE BLOSSOM	2	A309	5.4
NORTH COASTAL	ORANGE BLOSSOM	2	A388	7.4
NORTH COASTAL	ORANGE BLOSSOM	2	A394	8.1
NORTH COASTAL	PERRY	1	N7	5.6
NORTH COASTAL	PERRY	1	N8	2.3
NORTH COASTAL	PERRY	2	N10	7.0
NORTH COASTAL	PERRY	2	N9	5.9
NORTH COASTAL	PERRY NORTH	1	N14	7.4
NORTH COASTAL	PERRY NORTH	1	N15	9.1
NORTH COASTAL	PINE RIDGE	1	A422	7.5
NORTH COASTAL	PINE RIDGE	1	A423	7.2

NORTH COASTAL	Pine Ridge	1	A425	5.2
NORTH COASTAL	PORT ST. JOE	2	N52	3.8
NORTH COASTAL	PORT ST. JOE	2	N53	4.9
NORTH COASTAL	PORT ST. JOE	2	N54	4.7
NORTH COASTAL	PORT ST. JOE	2	N55	0.2
NORTH COASTAL	PORT ST. JOE INDUSTRIAL	1	N201	2.8
NORTH COASTAL	PORT ST. JOE INDUSTRIAL	1	N202	2.2
NORTH COASTAL	PORT ST. JOE INDUSTRIAL	1	N203	1.0
NORTH COASTAL	RAINBOW SPRINGS	1	A368	5.3
NORTH COASTAL	RAINBOW SPRINGS	2	A369	3.9
NORTH COASTAL	REDDICK	1	A36	5.3
NORTH COASTAL	REDDICK	2	A34	4.9
NORTH COASTAL	REDDICK	2	A35	5.4
NORTH COASTAL	Ross Prairie	3	A112	4.9
NORTH COASTAL	SANTOS	1	A230	6.2
NORTH COASTAL	SANTOS	1	A233	3.8
NORTH COASTAL	SANTOS	2	A231	8.3
NORTH COASTAL	SILVER SPRINGS	3	A153	9.5
NORTH COASTAL	SILVER SPRINGS	3	A154	6.4
NORTH COASTAL	SILVER SPRINGS SHORES	1	A129	8.8
NORTH COASTAL	SILVER SPRINGS SHORES	1	A130	5.9
NORTH COASTAL	SILVER SPRINGS SHORES	2	A128	5.5
NORTH COASTAL	SILVER SPRINGS SHORES	2	A131	9.9
NORTH COASTAL	SOPCHOPPY	1	N327	5.0
NORTH COASTAL	ST. GEORGE ISLAND	1	N233	8.6
NORTH COASTAL	ST. GEORGE ISLAND	1	N234	4.0
NORTH COASTAL	ST. MARKS WEST	1	N332	0.0
NORTH COASTAL	ST. MARKS WEST	2	N331	0.0
NORTH COASTAL	ST. MARKS WEST	2	N336	3.3
NORTH COASTAL	SUWANNEE RIVER PLANT	4	N323	5.7
NORTH COASTAL	SUWANNEE RIVER PLANT	5	N324	4.0
NORTH COASTAL	SUWANNEE RIVER PLANT	5	N325	5.5
NORTH COASTAL	TANGERINE	3	A262	10.7
NORTH COASTAL	TANGERINE	3	A263	4.9
NORTH COASTAL	TANGERINE	3	A264	4.4
NORTH COASTAL	TRENTON	1	A90	6.0
NORTH COASTAL	TRENTON	1	A91	2.0
NORTH COASTAL	TROPIC TERRACE	1	A212	6.8
NORTH COASTAL	TROPIC TERRACE	2	A207	6.0
NORTH COASTAL	TROPIC TERRACE	2	A208	3.0
NORTH COASTAL	TWIN COUNTY RANCH	1	A216	5.2
NORTH COASTAL	TWIN COUNTY RANCH	1	A221	5.0
NORTH COASTAL	TWIN COUNTY RANCH	2	A218	5.5
NORTH COASTAL	TWIN COUNTY RANCH	2	A219	4.0

NORTH COASTAL	WAUKEENAH	1	N64	2.4
NORTH COASTAL	WAUKEENAH	1	N65	2.1
NORTH COASTAL	WEIRSDALE	1	A321	6.4
NORTH COASTAL	WEIRSDALE	2	A322	5.7
NORTH COASTAL	WHITE SPRINGS	2	N375	2.7
NORTH COASTAL	WILDWOOD CITY	1	A395	8.4
NORTH COASTAL	WILDWOOD CITY	1	A396	6.7
NORTH COASTAL	WILDWOOD CITY		A397	0.0
NORTH COASTAL	WILDWOOD CITY		A398	0.0
NORTH COASTAL	WILLISTON	1	A124	5.3
NORTH COASTAL	WILLISTON	2	A125	8.6
NORTH COASTAL	ZUBER	1	A202	9.5
NORTH COASTAL	ZUBER	1	A203	4.9
NORTH COASTAL	ZUBER	2	A204	6.8
NORTH COASTAL	ZUBER	2	A205	7.6
NORTH CENTRAL	ALAFAYA	2	W0289	9.1
NORTH CENTRAL	ALAFAYA	2	W0290	8.7
NORTH CENTRAL	ALAFAYA	3	W0297	9.7
NORTH CENTRAL	ALAFAYA	3	W0298	10.4
NORTH CENTRAL	ALTAMONTE	1	M571	5.0
NORTH CENTRAL	ALTAMONTE	1	M572	9.0
NORTH CENTRAL	ALTAMONTE	1	M573	2.9
NORTH CENTRAL	ALTAMONTE	1	M574	5.9
NORTH CENTRAL	ALTAMONTE	2	M575	6.5
NORTH CENTRAL	ALTAMONTE	2	M576	8.3
NORTH CENTRAL	ALTAMONTE	2	M578	9.0
NORTH CENTRAL	ALTAMONTE	2	M579	9.0
NORTH CENTRAL	APOPKA SOUTH	1	M723	7.0
NORTH CENTRAL	APOPKA SOUTH	1	M724	4.6
NORTH CENTRAL	APOPKA SOUTH	2	M725	9.5
NORTH CENTRAL	APOPKA SOUTH	2	M726	6.7
NORTH CENTRAL	APOPKA SOUTH	2	M727	5.2
NORTH CENTRAL	APOPKA SOUTH	3	M720	9.5
NORTH CENTRAL	APOPKA SOUTH	3	M721	9.9
NORTH CENTRAL	BARBERVILLE	1	W0902	6.2
NORTH CENTRAL	BARBERVILLE	2	W0903	1.7
NORTH CENTRAL	BARBERVILLE	2	W0904	4.0
NORTH CENTRAL	BAY RIDGE	1	M447	7.2
NORTH CENTRAL	BAY RIDGE	1	M453	6.5
NORTH CENTRAL	BAY RIDGE	2	M445	3.3
NORTH CENTRAL	BAY RIDGE	2	M451	8.2
NORTH CENTRAL	BITHLO	1	W0951	9.5
NORTH CENTRAL	BITHLO	1	W0952	4.4
NORTH CENTRAL	BITHLO	1	W0953	9.9

NORTH CENTRAL	BITHLO	2	W0954	8.8
NORTH CENTRAL	BITHLO	2	W0955	8.9
NORTH CENTRAL	BITHLO	2	W0956	8.6
NORTH CENTRAL	CASSADAGA	2	W0523	4.4
NORTH CENTRAL	CASSADAGA	2	W0524	7.5
NORTH CENTRAL	CASSADAGA	3	W0515	4.8
NORTH CENTRAL	CASSADAGA	3	W0516	7.3
NORTH CENTRAL	CASSADAGA	3	W0517	5.3
NORTH CENTRAL	CASSELBERRY	1	W0017	6.3
NORTH CENTRAL	CASSELBERRY	1	W0018	4.5
NORTH CENTRAL	CASSELBERRY	1	W0019	8.1
NORTH CENTRAL	CASSELBERRY	1	W0020	9.3
NORTH CENTRAL	CASSELBERRY	2	W0021	4.8
NORTH CENTRAL	CASSELBERRY	2	W0022	9.9
NORTH CENTRAL	CASSELBERRY	2	W0025	5.7
NORTH CENTRAL	CASSELBERRY	2	W0026	9.2
NORTH CENTRAL	CASSELBERRY	3	W0027	10.7
NORTH CENTRAL	CASSELBERRY	3	W0028	4.7
NORTH CENTRAL	CASSELBERRY	3	W0029	4.6
NORTH CENTRAL	CLARCONA	2	M345	9.1
NORTH CENTRAL	DELAND	1	W0803	7.1
NORTH CENTRAL	DELAND	1	W0804	5.5
NORTH CENTRAL	DELAND	1	W0805	6.4
NORTH CENTRAL	DELAND	2	W0806	7.5
NORTH CENTRAL	DELAND	2	W0807	7.0
NORTH CENTRAL	DELAND	2	W0808	6.8
NORTH CENTRAL	DELAND	2	W0809	9.2
NORTH CENTRAL	DELAND EAST	1	W1108	8.3
NORTH CENTRAL	DELAND EAST	1	W1109	4.6
NORTH CENTRAL	DELAND EAST	1	W1110	9.0
NORTH CENTRAL	DELAND EAST	2	W1105	5.8
NORTH CENTRAL	DELAND EAST	2	W1106	5.4
NORTH CENTRAL	DELAND EAST	2	W1107	7.2
NORTH CENTRAL	DELAND EAST	3	W1102	6.4
NORTH CENTRAL	DELAND EAST	3	W1103	6.8
NORTH CENTRAL	DELAND EAST	3	W1104	6.2
NORTH CENTRAL	DELEON SPRINGS	1	W0032	7.6
NORTH CENTRAL	DELEON SPRINGS	1	W0034	4.9
NORTH CENTRAL	DELTONA	1	W4555	6.7
NORTH CENTRAL	DELTONA	1	W4561	4.3
NORTH CENTRAL	DELTONA	1	W4567	6.7
NORTH CENTRAL	DELTONA	2	W4558	7.6
NORTH CENTRAL	DELTONA	2	W4564	9.5
NORTH CENTRAL	DELTONA	2	W4565	5.8

NORTH CENTRAL	DELTONA	3	W4550	9.2
NORTH CENTRAL	DELTONA	3	W4553	7.3
NORTH CENTRAL	DELTONA	3	W4556	8.0
NORTH CENTRAL	DELTONA	3	W4562	9.0
NORTH CENTRAL	DELTONA EAST	2	W0123	7.2
NORTH CENTRAL	DELTONA EAST	2	W0126	5.0
NORTH CENTRAL	DELTONA EAST	2	W0132	7.7
NORTH CENTRAL	DELTONA EAST	3	W0121	7.0
NORTH CENTRAL	DELTONA EAST	3	W0124	9.2
NORTH CENTRAL	DELTONA EAST	3	W0130	8.4
NORTH CENTRAL	DOUGLAS AVENUE	1	M1704	5.0
NORTH CENTRAL	DOUGLAS AVENUE	1	M1707	5.5
NORTH CENTRAL	DOUGLAS AVENUE	2	M1706	6.6
NORTH CENTRAL	DOUGLAS AVENUE	2	M1709	6.4
NORTH CENTRAL	DOUGLAS AVENUE	2	M1712	6.4
NORTH CENTRAL	EAST ORANGE	1	W0273	3.3
NORTH CENTRAL	EAST ORANGE	1	W0276	3.9
NORTH CENTRAL	EAST ORANGE	2	W0250	12.6
NORTH CENTRAL	EAST ORANGE	2	W0253	8.1
NORTH CENTRAL	EAST ORANGE	2	W0265	7.7
NORTH CENTRAL	EAST ORANGE	3	W0274	10.4
NORTH CENTRAL	EAST ORANGE	3	W0281	11.7
NORTH CENTRAL	EATONVILLE	1	M1131	5.2
NORTH CENTRAL	EATONVILLE	1	M1132	9.4
NORTH CENTRAL	EATONVILLE	1	M1133	5.1
NORTH CENTRAL	EATONVILLE	2	M1135	9.6
NORTH CENTRAL	EATONVILLE	2	M1136	8.8
NORTH CENTRAL	EATONVILLE	2	M1137	7.4
NORTH CENTRAL	EATONVILLE	3	M1138	6.3
NORTH CENTRAL	EATONVILLE	3	M1139	8.4
NORTH CENTRAL	ECON	1	W0320	8.9
NORTH CENTRAL	ECON	1	W0326	9.5
NORTH CENTRAL	ECON	1	W0329	10.0
NORTH CENTRAL	ECON	2	W0318	5.5
NORTH CENTRAL	ECON	2	W0321	8.1
NORTH CENTRAL	ECON	2	W0324	8.5
NORTH CENTRAL	ECON	2	W0327	9.0
NORTH CENTRAL	EUSTIS	1	M503	5.5
NORTH CENTRAL	EUSTIS	1	M504	9.4
NORTH CENTRAL	EUSTIS	2	M499	6.5
NORTH CENTRAL	EUSTIS	2	M500	4.7
NORTH CENTRAL	EUSTIS	2	M501	3.9
NORTH CENTRAL	EUSTIS SOUTH	1	M1057	6.2
NORTH CENTRAL	EUSTIS SOUTH	1	M1058	7.3

NORTH CENTRAL	EUSTIS SOUTH	1	M1059	6.3
NORTH CENTRAL	EUSTIS SOUTH	2	M1054	4.8
NORTH CENTRAL	EUSTIS SOUTH	2	M1055	8.7
NORTH CENTRAL	EUSTIS SOUTH	2	M1056	6.2
NORTH CENTRAL	FERN PARK	1	M907	6.2
NORTH CENTRAL	FERN PARK	1	M908	5.2
NORTH CENTRAL	FERN PARK	1	M909	5.6
NORTH CENTRAL	KELLER ROAD	1	M1	9.0
NORTH CENTRAL	KELLER ROAD	1	M3	9.3
NORTH CENTRAL	KELLER ROAD	2	M2	2.4
NORTH CENTRAL	KELLER ROAD	2	M4	7.8
NORTH CENTRAL	KELLY PARK	2	M821	4.9
NORTH CENTRAL	KELLY PARK	2	M822	4.2
NORTH CENTRAL	LAKE ALOMA	1	W0151	6.0
NORTH CENTRAL	LAKE ALOMA	1	W0153	7.0
NORTH CENTRAL	LAKE ALOMA	2	W0158	3.5
NORTH CENTRAL	LAKE ALOMA	2	W0161	9.0
NORTH CENTRAL	LAKE EMMA	1	M425	3.6
NORTH CENTRAL	LAKE EMMA	1	M426	6.2
NORTH CENTRAL	LAKE EMMA	1	M427	5.4
NORTH CENTRAL	LAKE EMMA	1	M428	7.5
NORTH CENTRAL	LAKE EMMA	2	M421	6.0
NORTH CENTRAL	LAKE EMMA	2	M422	6.1
NORTH CENTRAL	LAKE EMMA	2	M423	4.1
NORTH CENTRAL	LAKE EMMA	2	M424	4.3
NORTH CENTRAL	LAKE HELEN	1	W1700	7.6
NORTH CENTRAL	LAKE HELEN	1	W1703	6.7
NORTH CENTRAL	LAKE HELEN	2	W1701	5.0
NORTH CENTRAL	LAKE HELEN	2	W1704	7.3
NORTH CENTRAL	LISBON	1	M1518	5.7
NORTH CENTRAL	LISBON	1	M1520	5.8
NORTH CENTRAL	LISBON	2	M1517	8.2
NORTH CENTRAL	LISBON	2	M1519	6.5
NORTH CENTRAL	LOCKHART	1	M400	8.0
NORTH CENTRAL	LOCKHART	1	M406	7.7
NORTH CENTRAL	LOCKHART	1	M412	9.2
NORTH CENTRAL	LOCKHART	2	M402	10.5
NORTH CENTRAL	LOCKHART	2	M417	8.5
NORTH CENTRAL	LOCKWOOD	1	W0480	8.3
NORTH CENTRAL	LOCKWOOD	1	W0481	7.6
NORTH CENTRAL	LOCKWOOD	1	W0482	8.1
NORTH CENTRAL	LOCKWOOD		W0483	0.0
NORTH CENTRAL	LONGWOOD	1	M142	8.6
NORTH CENTRAL	LONGWOOD	1	M143	7.1

NORTH CENTRAL	LONGWOOD	2	M144	7.0
NORTH CENTRAL	LONGWOOD	2	M145	6.7
NORTH CENTRAL	MAITLAND	1	M81	6.1
NORTH CENTRAL	MAITLAND	1	M82	8.2
NORTH CENTRAL	MAITLAND	1	M84	3.5
NORTH CENTRAL	MAITLAND	2	M85	6.0
NORTH CENTRAL	MAITLAND	2	W0086	5.4
NORTH CENTRAL	MAITLAND	2	W0087	9.6
NORTH CENTRAL	MAITLAND	3	M80	9.2
NORTH CENTRAL	MAITLAND	3	W0079	6.0
NORTH CENTRAL	MONASTERY	1	W0201	5.7
NORTH CENTRAL	MONASTERY	1	W0202	6.5
NORTH CENTRAL	MONASTERY	1	W0203	8.2
NORTH CENTRAL	MYRTLE LAKE	2	M648	8.1
NORTH CENTRAL	MYRTLE LAKE	2	M649	9.0
NORTH CENTRAL	MYRTLE LAKE	2	M650	6.5
NORTH CENTRAL	MYRTLE LAKE	2	M651	7.4
NORTH CENTRAL	MYRTLE LAKE	3	M657	8.4
NORTH CENTRAL	MYRTLE LAKE	3	M658	6.0
NORTH CENTRAL	MYRTLE LAKE	3	M659	7.8
NORTH CENTRAL	NORTH LONGWOOD	6	M1749	8.1
NORTH CENTRAL	NORTH LONGWOOD	6	M1755	6.2
NORTH CENTRAL	NORTH LONGWOOD	6	M1758	5.6
NORTH CENTRAL	NORTH LONGWOOD	6	M1761	12.3
NORTH CENTRAL	NORTH LONGWOOD	7	M1751	9.8
NORTH CENTRAL	NORTH LONGWOOD	7	M1757	5.8
NORTH CENTRAL	NORTH LONGWOOD	7	M1760	5.8
NORTH CENTRAL	NORTH LONGWOOD	7	M1763	8.7
NORTH CENTRAL	ORANGE CITY	2	W0372	7.6
NORTH CENTRAL	ORANGE CITY	2	W0378	3.8
NORTH CENTRAL	ORANGE CITY	3	W0370	6.8
NORTH CENTRAL	ORANGE CITY	3	W0376	8.5
NORTH CENTRAL	ORANGE CITY	3	W0382	6.8
NORTH CENTRAL	OVIEDO	1	W0171	7.5
NORTH CENTRAL	OVIEDO	1	W0172	8.9
NORTH CENTRAL	OVIEDO	2	W0174	8.0
NORTH CENTRAL	OVIEDO	2	W0175	5.6
NORTH CENTRAL	OVIEDO	3	W0176	8.7
NORTH CENTRAL	OVIEDO	3	W0181	6.2
NORTH CENTRAL	PIEDMONT	1	M475	8.3
NORTH CENTRAL	PIEDMONT	1	M476	6.1
NORTH CENTRAL	PIEDMONT	1	M477	8.5
NORTH CENTRAL	PIEDMONT	1	M478	9.3
NORTH CENTRAL	PIEDMONT	2	M471	9.0

NORTH CENTRAL	PIEDMONT	2	M472	7.7
NORTH CENTRAL	PIEDMONT	2	M473	10.5
NORTH CENTRAL	PIEDMONT	2	M474	9.6
NORTH CENTRAL	PLYMOUTH	1	M702	0.5
NORTH CENTRAL	PLYMOUTH	1	M704	9.7
NORTH CENTRAL	PLYMOUTH	2	M706	3.1
NORTH CENTRAL	PLYMOUTH	2	M707	5.6
NORTH CENTRAL	PLYMOUTH SOUTH	1	M702_NEW	0.0
NORTH CENTRAL	PLYMOUTH SOUTH	1	M704_NEW	0.0
NORTH CENTRAL	PLYMOUTH SOUTH	2	M706_NEW	0.0
NORTH CENTRAL	PLYMOUTH SOUTH	2	M707_NEW	0.0
NORTH CENTRAL	SPRING LAKE	1	M666	4.8
NORTH CENTRAL	SPRING LAKE	1	M667	5.8
NORTH CENTRAL	SPRING LAKE	1	M668	9.7
NORTH CENTRAL	SPRING LAKE	2	M662	6.7
NORTH CENTRAL	SPRING LAKE	2	M663	5.8
NORTH CENTRAL	SPRING LAKE	2	M664	9.3
NORTH CENTRAL	SPRING LAKE	3	M669	7.1
NORTH CENTRAL	SPRING LAKE	3	M670	7.1
NORTH CENTRAL	SUNFLOWER	1	W0469	4.6
NORTH CENTRAL	SUNFLOWER	1	W0470	10.3
NORTH CENTRAL	SUNFLOWER	1	W0471	8.2
NORTH CENTRAL	SUNFLOWER	2	W0472	11.6
NORTH CENTRAL	SUNFLOWER	2	W0473	9.3
NORTH CENTRAL	SUNFLOWER	2	W0474	9.8
NORTH CENTRAL	SUNFLOWER		W0475	0.0
NORTH CENTRAL	SUNFLOWER		W0476	0.0
NORTH CENTRAL	TAVARES EAST	1	M580	5.5
NORTH CENTRAL	TAVARES EAST	1	M581	5.0
NORTH CENTRAL	TURNER PLANT	8	W0761	7.9
NORTH CENTRAL	TURNER PLANT	8	W0762	6.1
NORTH CENTRAL	TURNER PLANT	10	W0763	6.5
NORTH CENTRAL	TURNER PLANT	10	W0764	5.2
NORTH CENTRAL	UCF	1	W1012	9.0
NORTH CENTRAL	UCF	1	W1013	7.3
NORTH CENTRAL	UCF	1	W1014	2.2
NORTH CENTRAL	UCF	2	W1015	7.7
NORTH CENTRAL	UCF	2	W1016	12.0
NORTH CENTRAL	UCF	2	W1017	10.0
NORTH CENTRAL	UCF	2	W1018	7.4
NORTH CENTRAL	UCF NORTH	1	W0942	2.5
NORTH CENTRAL	UCF NORTH	1	W0980	9.0
NORTH CENTRAL	UCF NORTH	1	W0983	6.0
NORTH CENTRAL	UCF NORTH	1	W0989	0.4

NORTH CENTRAL	UCF NORTH	2	W0981	8.6
NORTH CENTRAL	UCF NORTH	2	W0982	7.1
NORTH CENTRAL	UCF NORTH	2	W0992	11.4
NORTH CENTRAL	UCF NORTH	3	W0940	0.2
NORTH CENTRAL	UCF NORTH	3	W0988	2.8
NORTH CENTRAL	UCF NORTH	3	W0994	9.8
NORTH CENTRAL	UMATILLA	1	M4407	7.0
NORTH CENTRAL	UMATILLA	1	M4408	4.5
NORTH CENTRAL	UMATILLA	2	M4405	6.2
NORTH CENTRAL	WEKIVA	1	M101	5.2
NORTH CENTRAL	WEKIVA	1	M106	6.6
NORTH CENTRAL	WEKIVA	1	M107	6.9
NORTH CENTRAL	WEKIVA	1	M112	5.4
NORTH CENTRAL	WEKIVA	1	M115	4.9
NORTH CENTRAL	WEKIVA	2	M103	4.7
NORTH CENTRAL	WEKIVA	2	M104	5.0
NORTH CENTRAL	WEKIVA	2	M109	4.9
NORTH CENTRAL	WEKIVA	2	M110	7.8
NORTH CENTRAL	WEKIVA	2	M113	6.9
NORTH CENTRAL	WELCH ROAD	1	M542	8.9
NORTH CENTRAL	WELCH ROAD	1	M543	4.8
NORTH CENTRAL	WELCH ROAD	1	M550	8.3
NORTH CENTRAL	WELCH ROAD	1	M552	5.3
NORTH CENTRAL	WELCH ROAD	3	M545	10.2
NORTH CENTRAL	WELCH ROAD	3	M548	6.7
NORTH CENTRAL	WELCH ROAD	3	M554	7.1
NORTH CENTRAL	WEST CHAPMAN	2	W0702	5.5
NORTH CENTRAL	WEST CHAPMAN	2	W0705	4.3
NORTH CENTRAL	WEST CHAPMAN	3	W0700	9.1
NORTH CENTRAL	WEST CHAPMAN	3	W0703	8.2
NORTH CENTRAL	WEST CHAPMAN	3	W0708	9.4
NORTH CENTRAL	WINTER PARK	4	W0014	2.2
NORTH CENTRAL	WINTER PARK	4	W0015	7.2
NORTH CENTRAL	WINTER PARK	4	W0016	5.0
NORTH CENTRAL	WINTER PARK EAST	1	W0924	9.6
NORTH CENTRAL	WINTER PARK EAST	1	W0925	11.0
NORTH CENTRAL	WINTER PARK EAST	1	W0926	8.9
NORTH CENTRAL	WINTER PARK EAST	1	W0927	8.3
NORTH CENTRAL	WINTER PARK EAST	3	W0928	9.1
NORTH CENTRAL	WINTER PARK EAST	3	W0929	10.4
NORTH CENTRAL	WINTER PARK EAST	3	W0930	5.9
NORTH CENTRAL	WINTER PARK EAST	3	W0931	10.3
NORTH CENTRAL	WINTER SPRINGS	1	W0192	8.4
NORTH CENTRAL	WINTER SPRINGS	1	W0194	7.1

NORTH CENTRAL	WINTER SPRINGS	2	W0195	9.0
NORTH CENTRAL	WINTER SPRINGS	2	W0196	8.7
NORTH CENTRAL	WINTER SPRINGS	3	W0187	7.5
NORTH CENTRAL	WINTER SPRINGS	3	W0188	7.9
NORTH CENTRAL	WINTER SPRINGS	3	W0189	8.1
NORTH CENTRAL	WOLF LAKE	1	M563	0.0
NORTH CENTRAL	WOLF LAKE	1	M564	0.0
NORTH CENTRAL	WOODSMERE	3	M254	5.0
NORTH CENTRAL	ZELLWOOD	1	M31	7.6
NORTH CENTRAL	ZELLWOOD	1	M32	9.0
NORTH CENTRAL	ZELLWOOD	2	M33	7.8
NORTH CENTRAL	ZELLWOOD	2	M34	7.6

ATTACHMENT H

Received Jan 1 to Dec 31, 2016

70 Complaints

DEF logged as Power Quality & Reliability

Date Received	PSC Complaint #	DEF Category	PSC Ruling	PSC Closure Code
1/8/2016	1201537E	Voltage Problems	Non-Infraction	GI-11 Repair Service
1/11/2016	1201581E	Equipment/Facilities Issues	Non-Infraction	GI-11 Repair Service
1/26/2016	1203575E	Vegetation Management	Non-Infraction	GI-18 Tree Trimming
2/15/2016	1205362E	Outage	Non-Infraction	GI-15 Outages
2/16/2016	1205486E	Outage	Non-Infraction	GI-15 Outages
2/24/2016	1206316E	Vegetation Management	Non-Infraction	GI-18 Tree Trimming
3/8/2016	1207227E	Lighting	Non-Infraction	GI-11 Repair Service
3/21/2016	1208169E	Outage	Non-Infraction	GI-15 Outages
3/28/2016	1208597E	Outage	Non-Infraction	GI-15 Outages
3/28/2016	1208658E	Outage	Non-Infraction	GI-15 Outages
4/27/2016	1211104E	Outage	Non-Infraction	GI-15 Outages
4/27/2016	1211152E	Voltage Problems	Non-Infraction	GI-11 Repair Service
5/2/2016	1211388E	Equipment/Facilities Issues	Non-Infraction	GI-25 Improper Billing
5/5/2016	1211791E	Outage	Non-Infraction	GI-15 Outages
5/10/2016	1212055E	Outage	Non-Infraction	GI-15 Outages
5/16/2016	1212524E	Vegetation Management	Non-Infraction	GI-17 Safety Issues
5/17/2016	1212681E	Outage	Non-Infraction	GI-30 Quality of Service
5/25/2016	1213278E	Outage	Non-Infraction	GI-15 Outages
5/25/2016	1213289E	Outage	Non-Infraction	GI-15 Outages
5/31/2016	1213525E	Outage	Non-Infraction	GI-15 Outages
6/1/2016	1213715E	Vegetation Management	Non-Infraction	GI-18 Tree Trimming
6/2/2016	1213767E	Outage	Non-Infraction	GI-15 Outages
6/2/2016	1213799E	Outage	Non-Infraction	GI-15 Outages
6/3/2016	1213906E	Outage	Non-Infraction	GI-15 Outages
6/3/2016	1213908E	Outage	Non-Infraction	GI-15 Outages
6/7/2016	1214069E	Outage	Non-Infraction	GI-11 Repair Service
6/7/2016	1214098E	Outage	Non-Infraction	GI-15 Outages
6/8/2016	1214150E	Outage	Non-Infraction	GI-11 Repair Service
6/8/2016	1214160E	Outage	Non-Infraction	GI-15 Outages
6/9/2016	1214273E	Outage	Non-Infraction	GI-15 Outages
6/20/2016	1214933E	Outage	Non-Infraction	GI-15 Outages
6/21/2016	1215108E	Equipment/Facilities Issues	Non-Infraction	GI-17 Safety Issues
6/22/2016	1215278E	Outage	Non-Infraction	GI-15 Outages
6/23/2016	1215359E	Outage	Infraction	ES-50 Failure to Provide Response to Customer in 15 Working Days
6/24/2016	1215398E	Outage	Non-Infraction	GI-19 Momentary Electric Outages
6/28/2016	1215641E	Voltage Problems	Non-Infraction	GI-11 Repair Service
6/30/2016	1215897E	Outage	Non-Infraction	GI-15 Outages
7/15/2016	1217349E	Outage	Non-Infraction	GI-15 Outages
7/19/2016	1217626E	Outage	Non-Infraction	GI-15 Outages
7/20/2016	1217772E	Outage	Non-Infraction	GI-15 Outages
7/28/2016	1218488E	Voltage Problems	Non-Infraction	GI-30 Quality of Service
7/29/2016	1218636E	Outage	Non-Infraction	GI-15 Outages
8/10/2016	1219706E	Outage	Non-Infraction	GI-15 Outages
8/11/2016	1219820E	Outage	Non-Infraction	GI-15 Outages
8/15/2016	1220058E	Outage	Non-Infraction	GI-15 Outages
8/16/2016	1220118E	Outage	Non-Infraction	GI-15 Outages
8/18/2016	1220344E	Outage	Non-Infraction	GI-15 Outages
8/25/2016	1221110E	Outage	Non-Infraction	GI-15 Outages

8/29/2016	1221265E	Outage	Non-Infraction	GI-15 Outages
9/6/2016	1221681E	Outage	Non-Infraction	GI-15 Outages
9/6/2016	1221691E	Outage	Non-Infraction	GI-15 Outages
9/6/2016	1221722E	Outage	Non-Infraction	GI-15 Outages
9/6/2016	1221757E	Outage	Non-Infraction	GI-15 Outages
9/13/2016	1222343E	Vegetation Management	Non-Infraction	GI-18 Tree Trimming
9/19/2016	1222801E	Lighting	Non-Infraction	GI-11 Repair Service
10/3/2016	1224135E	Outage	Non-Infraction	GI-15 Outages
10/5/2016	1224349E	Outage	Non-Infraction	GI-15 Outages
10/10/2016	1224523E	Outage	Non-Infraction	GI-15 Outages
10/10/2016	1224547E	Outage	Non-Infraction	GI-15 Outages
10/10/2016	1224624E	Outage	-	-
10/10/2016	1224709E	Outage	Non-Infraction	GI-15 Outages
10/10/2016	1224711E	Outage	Non-Infraction	GI-15 Outages
10/14/2016	1225228E	Outage	Non-Infraction	GI-15 Outages
10/17/2016	1225308E	Outage	Non-Infraction	GI-15 Outages
10/24/2016	1225994E	Outage	Non-Infraction	GI-15 Outages
11/14/2016	1227664E	Vegetation Management	Non-Infraction	GI-30 Quality of Service
12/9/2016	1227823E	Voltage Problems	Non-Infraction	GI-17 Safety Issues
12/6/2016	1230052E	Equipment/Facilities Issues	Non-Infraction	GI-17 Safety Issues
12/6/2016	1230072E	Outage	Non-Infraction	GI-15 Outages
12/13/2016	1230704E	Lighting	Non-Infraction	GI-17 Safety Issues

Received Jan 1 to Dec 31, 2016

67 Complaints

PSC Service Reliability Only Closure Codes

Date Received	PSC Complaint #	DEF Category	PSC Closure Code
1/8/2016	1201537E	Voltage Problems	GI-11 Repair Service
1/11/2016	1201581E	Equipment/Facilities Issues	GI-11 Repair Service
1/26/2016	1203575E	Vegetation Management	GI-18 Tree Trimming
2/15/2016	1205362E	Outage	GI-15 Outages
2/16/2016	1205486E	Outage	GI-15 Outages
2/18/2016	1205740E	Claims	GI-15 Outages
2/24/2016	1206316E	Vegetation Management	GI-18 Tree Trimming
3/8/2016	1207227E	Lighting	GI-11 Repair Service
3/21/2016	1208169E	Outage	GI-15 Outages
3/28/2016	1208597E	Outage	GI-15 Outages
3/28/2016	1208658E	Outage	GI-15 Outages
4/27/2016	1211104E	Outage	GI-15 Outages
4/27/2016	1211152E	Voltage Problems	GI-11 Repair Service
5/5/2016	1211791E	Outage	GI-15 Outages
5/10/2016	1212055E	Outage	GI-15 Outages
5/16/2016	1212524E	Vegetation Management	GI-17 Safety Issues
5/25/2016	1213278E	Outage	GI-15 Outages
5/25/2016	1213289E	Outage	GI-15 Outages
5/31/2016	1213525E	Outage	GI-15 Outages
6/1/2016	1213715E	Vegetation Management	GI-18 Tree Trimming
6/2/2016	1213767E	Outage	GI-15 Outages
6/2/2016	1213799E	Outage	GI-15 Outages
6/3/2016	1213906E	Outage	GI-15 Outages
6/3/2016	1213908E	Outage	GI-15 Outages
6/7/2016	1214069E	Outage	GI-11 Repair Service
6/7/2016	1214098E	Outage	GI-15 Outages
6/8/2016	1214150E	Outage	GI-11 Repair Service
6/8/2016	1214160E	Outage	GI-15 Outages
6/9/2016	1214273E	Outage	GI-15 Outages
6/20/2016	1214933E	Outage	GI-15 Outages
6/21/2016	1215108E	Equipment/Facilities Issues	GI-17 Safety Issues
6/22/2016	1215278E	Outage	GI-15 Outages
6/24/2016	1215398E	Outage	GI-19 Momentary Electric Outages
6/28/2016	1215641E	Voltage Problems	GI-11 Repair Service
6/30/2016	1215897E	Outage	GI-15 Outages
7/15/2016	1217349E	Outage	GI-15 Outages
7/19/2016	1217626E	Outage	GI-15 Outages
7/20/2016	1217772E	Outage	GI-15 Outages
7/29/2016	1218636E	Outage	GI-15 Outages
8/10/2016	1219706E	Outage	GI-15 Outages
8/11/2016	1219820E	Outage	GI-15 Outages
8/15/2016	1220058E	Outage	GI-15 Outages
8/16/2016	1220118E	Outage	GI-15 Outages
8/18/2016	1220344E	Outage	GI-15 Outages
8/25/2016	1221110E	Outage	GI-15 Outages
8/29/2016	1221265E	Outage	GI-15 Outages
9/6/2016	1221681E	Outage	GI-15 Outages
9/6/2016	1221691E	Outage	GI-15 Outages

9/6/2016	1221722E	Outage	GI-15 Outages
9/6/2016	1221757E	Outage	GI-15 Outages
9/13/2016	1222343E	Vegetation Management	GI-18 Tree Trimming
9/19/2016	1222801E	Lighting	GI-11 Repair Service
10/3/2016	1224135E	Outage	GI-15 Outages
10/5/2016	1224349E	Outage	GI-15 Outages
10/10/2016	1224523E	Outage	GI-15 Outages
10/10/2016	1224547E	Outage	GI-15 Outages
10/10/2016	1224709E	Outage	GI-15 Outages
10/10/2016	1224711E	Outage	GI-15 Outages
10/14/2016	1225228E	Outage	GI-15 Outages
10/17/2016	1225308E	Outage	GI-15 Outages
10/24/2016	1225994E	Outage	GI-15 Outages
12/7/2016	1226929E	Claims	GI-11 Repair Service
11/21/2016	1228488E	High Bills	GI-11 Repair Service
12/6/2016	1230052E	Equipment/Facilities Issues	GI-17 Safety Issues
12/6/2016	1230072E	Outage	GI-15 Outages
12/9/2016	1227823E	Voltage Problems	GI-17 Safety Issues
12/13/2016	1230704E	Lighting	GI-17 Safety Issues

DUKE ENERGY.

FPSC Formal (15 day/logged) complaints																									
Complaint Category													**2016 Month End Total**												**2016 YR End**
	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**		**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Total**
Outages - Momentary	22	16	14	21	24	18	10	27	15	12	8				1		1	2	1	1		2			8
Outages - Frequent	46	44	62	35	46	21	29	35	53	38	39			2	2		4	12	3	5	3	7		1	39
Outages - Delay in Restoring	1	0	7	7	4	12	2	2	5	5	2									1	1				2
Voltage	7	8	3	9	2	4	0	3	2	3	5		1			1		1	1					1	5
Equipment/Facilities	18	18	13	15	7	12	9	6	5	4	4		1				1	1						1	4
Tree Trimming	5	7	9	11	10	11	8	9	9	6	6		1	1			1	1			1		1		6
Safety	12	4	9	1	2	1	0	2	1	0	0														0
Total	**111**	**97**	**117**	**99**	**95**	**79**	**58**	**84**	**90**	**68**	**64**		**3**	**3**	**3**	**1**	**7**	**17**	**5**	**7**	**5**	**9**	**1**	**3**	**64**

ATTACHMENT I

Storm Hardening Projects - 2016 - 2018 Plan

Op Center	Project Name	Sub Category	Status	Region
Saint Petersburg	15th Ave S Feeder Tie between 37th St S and 49th St S	Feeder Tie	Planned 2018 Completion	South Coastal
Lake Wales	6358879 off TS Wilson Road	Small Wire	Planned 2017 Completion	South Central
Highlands	Airport Rd 2/3	Feeder Tie	Planned 2017 Completion	South Central
Highlands	Airport Rd 3/3	Feeder Tie	Planned 2017 Completion	South Central
Monticello	Apalachicola N58 - Feeder upgrade	Feeder Tie	Planned 2017 Completion	North Coastal
Clearwater	Belleair C1005 Brookhill Terrace Subdivision	Small Wire	Planned 2019 Completion	South Coastal
Clearwater	C4 Clearwater Beach Reconductor	Small Wire	Planned 2019 Completion	South Coastal
St Petersburg	City of St Pete Beach - Pass a Grille - Phase 1	Submersible UG	Planned 2017 Completion	South Coastal
Jamestown	Cleburne Rd	Small Wire	Planned 2017 Completion	North Central
Deland	Feeder tie Deltona east W0124 to W0123	Feeder Tie	Planned 2017 Completion	North Central
Apopka	Feeder tie Lockhart M408-M412 to Eatonville M1137	Feeder Tie	Planned 2017 Completion	North Central
Apopka	Feeder tie Zellwood M31-M32	Feeder Tie	Planned 2018 Completion	North Central
Inverness	Floral City Reconductor	Feeder Tie	Planned 2018 Completion	North Coastal
Monticello	Indian Pass N556 Reconductor - Phase 1	Feeder Tie	Planned 2017 Completion	North Coastal
Monticello	Indian Pass N556 Reconductor - Phase 2 Extreme Wind	Alternative NESC Construction Standards (Extreme Wind)	Planned 2018 Completion	North Coastal
Winter Garden	Ingram Road Reconductor	Feeder Tie	Planned 2018 Completion	South Central
Buena Vista	K4426 on Bay Hill K74	Feeder Tie	Planned 2018 Completion	South Central
Lake Wales	K55 Reconductor	Feeder Tie	Planned 2018 Completion	South Central
Longwood	Lake Maitland Terrace Reliability- UG Conversion	OH-to-UG Conversion	Planned 2017 Completion	North Central
Highlands	Lakeview Dr. Reconductor	Feeder Tie	Planned 2017 Completion	South Central
Ocala	Martin - Recond #6 cu on NW 100th St.	Small Wire	Planned 2017 Completion	North Coastal
Ocala	Micanopy - Recond #4 Al along SE 199th Ave	Small Wire	Planned 2017 Completion	North Coastal
Ocala	NW 63rd St., Kendric reconductor #4 to 1/0 AAAC	Small Wire	Planned 2017 Completion	North Coastal
Ocala	Oklawaha - CR 464C reconductor	Small Wire	Planned 2017 Completion	North Coastal
Ocala	Reddick A35 - Phase 1	Feeder Tie	Planned 2017 Completion	North Coastal
Ocala	Reddick A35 - Phase 2	Feeder Tie	Planned 2018 Completion	North Coastal
Ocala	Reddick A35 - Phase 3 Extreme Wind	Alternative NESC Construction Standards (Extreme Wind)	Planned 2018 Completion	North Coastal
Clermont	Suburban Terrace Small Wire Reconductor	Small Wire	Planned 2018 Completion	South Central
Winter Garden	Tilden to Stoneybrook Feeder Tie	Feeder Tie	Planned 2017 Completion	South Central
Ocala	Weirsdale - Recond SE 175th St	Small Wire	Planned 2018 Completion	North Coastal

ATTACHMENT J

I. **Introduction:**

Rule 25-6.0342, Florida Administrative Code ("F.A.C"), requires investor-owned electric utilities in Florida to file a Storm Hardening Plan with the Florida Public Service Commission ("FPSC") on or before May 7, 2007 and every three years thereafter as a matter of course. Rule 25-6.0342 specifies what must be included in utility storm hardening plans, and Duke Energy Florida, LLC ("DEF") has tracked those rule provisions in its Storm Hardening Plan below:

25-6.0342(3): *Each utility storm hardening plan shall contain a detailed description of the construction standards, policies, practices and procedures employed to enhance the reliability of overhead and underground electrical transmission and distribution facilities.*

DEF's construction standards, policies, practices, and procedures related to storm hardening issues are listed below and are attached hereto as **Attachment A**:

Distribution OH Construction Manual

i. Cover page
   1. *Addresses NESC adherence standards.*
ii. General Overhead section
   1. *Discusses company policy on extreme wind.*
   2. *Details Florida's extreme wind contour lines.*
   3. *Discusses the use of the Pole Foreman program.*
iii. Poles, Guys and Anchors Section
   1. *Discusses DEF's standard pole strengths, sizes, and limitations.*
iv. Primary Construction section
   1. *Discusses corporate practices for primary line construction.*
v. Coastal and Contaminated area section
   1. *Discusses corporate practices for primary line construction in coastal areas.*

Distribution UG Construction Manual

vi. Cover page
   1. *Addresses NESC adherence standards.*
vii. Underground General Section
   1. *Discusses location of UG facilities in accessible locations.*
viii. OH-UG Transition section
   1. *Discusses corporate practices for primary framing on dip poles.*
ix. Trenching and Conduit section
   1. *Discusses corporate practices for trenching and use of conduit on primary UG circuits.*
x. Flooding and Storm Surge Requirements
   1. *Discusses corporate procedures for the installation of UG equipment in areas targeted for storm surge hardening.*

Distribution Engineering Manual

xi. Overhead Design guide section
   1. *Addresses line location in accessible location.*
   2. *Addresses NESC compliance.*
   3. *Discusses Pole Foreman program.*
xii. Underground Design guide section
   1. *Addresses line location in accessible location.*
   2. *Addresses NESC compliance.*

Transmission - Extreme Wind Loading Design Criteria Guideline for Overhead Transmission Line Structures

xiii. Standards Position Statement
   1. *Addresses NESC compliance.*
   2. *Addresses American Society of Civil Engineer's Manual 74 (ACSE 74).*
   3. *Discusses transmission line importance for reliability.*

4. *Details Florida's extreme wind contour lines.*

Transmission - Line Engineering Design Philosophy

xiv. Overhead Line Design philosophy

1. *Addresses NESC compliance.*
2. *Addresses insulator loading criteria.*
3. *Addresses guy / anchor capacity ratings.*
4. *Addresses design load cases.*
5. *Addresses extreme wind guidelines.*
6. *Addresses structural guidelines.*

Joint Use – Pole Attachment Guidelines and Clearances

xv. Pole Attachment Guidelines

1. *Addresses Pole Attachment and Overlash Procedures.*
2. *Addresses Joint Use Construction.*
3. *Addresses Guys and Anchors.*

xvi. Joint Use Clearances

1. *Addresses Line Clearances.*
2. *Addresses Joint Use Clearances.*

In addition to the standards, practices, policies, and procedures identified above, DEF's Wood Pole Inspection Plan, Storm Hardening Plan, as noted in the 2015 PSC Reliability Report Excerpts, all contain standards, practices, policies, and procedures that address system reliability and issues related to extreme weather events. These plans are included herewith as **Attachment B**.

25-6.0342(3)(a): *Each filing shall, at a minimum, address the extent to which the utility's storm hardening plan complies, at a minimum, with the National Electric Safety Code that is applicable pursuant to subsection 25-6.0345(2), F.A.C.*

All standards, practices, policies, and procedures in the manuals and plans listed above are based on accepted industry practices designed to meet or exceed the requirements of the National Electric Safety Code (NESC). These standards, practices, policies, and procedures are followed on all new construction and all rebuilding and relocations of existing facilities.

<u>25-6.0342(3)(b)</u>: *Each filing shall, at a minimum, address the extent to which the utility's storm hardening plan adopts the extreme wind loading standards specified by Figure 250-2(d) of the 2007 edition of the NESC for new construction, major planned work, and critical infrastructure.*

<u>New Construction</u>:

With respect to new construction for transmission poles, DEF's transmission department is building all new construction with either steel or concrete pole material. Virtually all new transmission structures exceed a height of sixty feet above ground and therefore will be constructed using the NESC Extreme Wind Loading criteria.

DEF's design standards can be summarized as: 1) quality construction in adherence with current NESC requirements, 2) well defined and consistently executed maintenance plans, and 3) prudent end-of-life equipment replacement programs. When these elements are coupled with a sound and practiced emergency response plan, construction grades as defined by the NESC provide the best balance between cost and performance.

DEF has extensive experience with the performance of Grade C and Grade B construction standards as defined by the NESC. That experience, which includes several hurricane seasons and other severe weather events, indicates that properly constructed and maintained distribution lines meeting all provisions of the NESC perform satisfactorily and provide a prudent and responsible balance between cost and performance.

DEF has not adopted extreme wind standards for all new distribution construction because of the following reasons:

1. Section 250C of the 2012 version of the NESC does not call for the extreme wind design standard for distribution poles which are less than sixty feet in height. Based on the fact that DEF's distribution poles are less than sixty feet, the extreme wind standard outlined in figure 250-2(d) do not apply.
2. All credible research, which includes extensive studies by the NESC rules committee, demonstrates that applying extreme winds standards would not benefit distribution poles. See Exhibit 4 filed in Docket No. 060172-EU, August 31, 2006 Workshop.
3. Utility experience from around the country further indicates that electrical distribution structures less than sixty feet in height are damaged in extreme wind events by trees, tree limbs, and other flying debris. Thus, applying the extreme wind standard to distribution poles would result in large increases in cost and design complexity without a commensurate benefit.
4. DEF's experience was consistent with that of the other utilities around the nation who found that vegetation and flying debris were the main causes of distribution pole damage, a condition that the extreme wind standard will not address. In 2004, approximately 96% of DEF's pole failures were attributable to flying debris and/or super extreme wind events such as tornadoes and micro-bursts.

Major planned work:

Consistent with NESC Rule 250C, DEF will use the extreme wind standard for all major planned transmission work, including expansions, rebuilds, and relocations of existing facilities. For the reasons discussed in the new construction section above, DEF has not adopted the extreme wind standard for major planned distribution work, including expansions, rebuilds, or relocations of existing facilities.

Critical infrastructure:

With respect to transmission, virtually all new transmission structures exceed a height of sixty feet above ground and therefore are constructed using the NESC extreme wind loading criteria. Accordingly, DEF will use the extreme wind standard for all major planned transmission work, including expansions, rebuilds, and relocations of existing facilities, irrespective of whether they can be classified as “critical” or “major.”

DEF, for the reasons discussed in the new construction section above, has not adopted the extreme wind standard for any of its distribution level critical infrastructure. Placing distribution poles constructed to extreme wind standards around facilities such as hospitals and police stations in DEF’s service territory would unnecessarily increase costs and restoration time if those poles are knocked down by falling trees or flying debris such as roofs or signs. DEF’s current level of construction, around critical facilities and around all other facilities, has performed well during weather events and any pole failures due solely to wind impact were caused by “super extreme” wind events such as tornados and “micro bursts,” conditions that would have caused and did cause extreme wind construction to fail as well.

While no current data or research supports the application of the extreme wind standard to distribution pole construction, DEF is analyzing the extreme wind standard by using its prioritization model for implementation purposes in selected locations throughout DEF’s service territory. Since the submittal of the 2007 Storm Hardening plan, DEF constructed several pilot projects using the extreme wind standard. To date, there has not been a significant weather event that allowed DEF to assess the performance of these projects. In conjunction with wind measuring devices, DEF will study the performance of the extreme wind standard at these various sites when a weather event allows for such analysis. From this process, DEF expects to continue to learn and adjust its extreme weather strategy based on information that it will collect and gather from other utilities in Florida and throughout the nation as new standards and applications are applied and tested.

<u>25-6.0342(3)(c)</u>: *Each filing shall, at a minimum, address the extent to which the utility’s storm hardening plan is designed to mitigate damage to underground and supporting overhead transmission and distribution facilities due to flooding and storm surges.*

Based on DEF’s experience in the 2004 and 2005 hurricane seasons, along with the experiences of other utilities in Florida reported to the FPSC after those seasons, DEF has concluded that underground applications may not be best suited for all areas. DEF has identified areas in its service territory where current underground equipment should be replaced with overhead due to the fact that those areas are subject to frequent and prolonged flooding resulting in damage from water intrusion on underground equipment. Thus, one of DEF's most effective tools in its hardening arsenal is to identify areas where underground equipment should and should not be used.

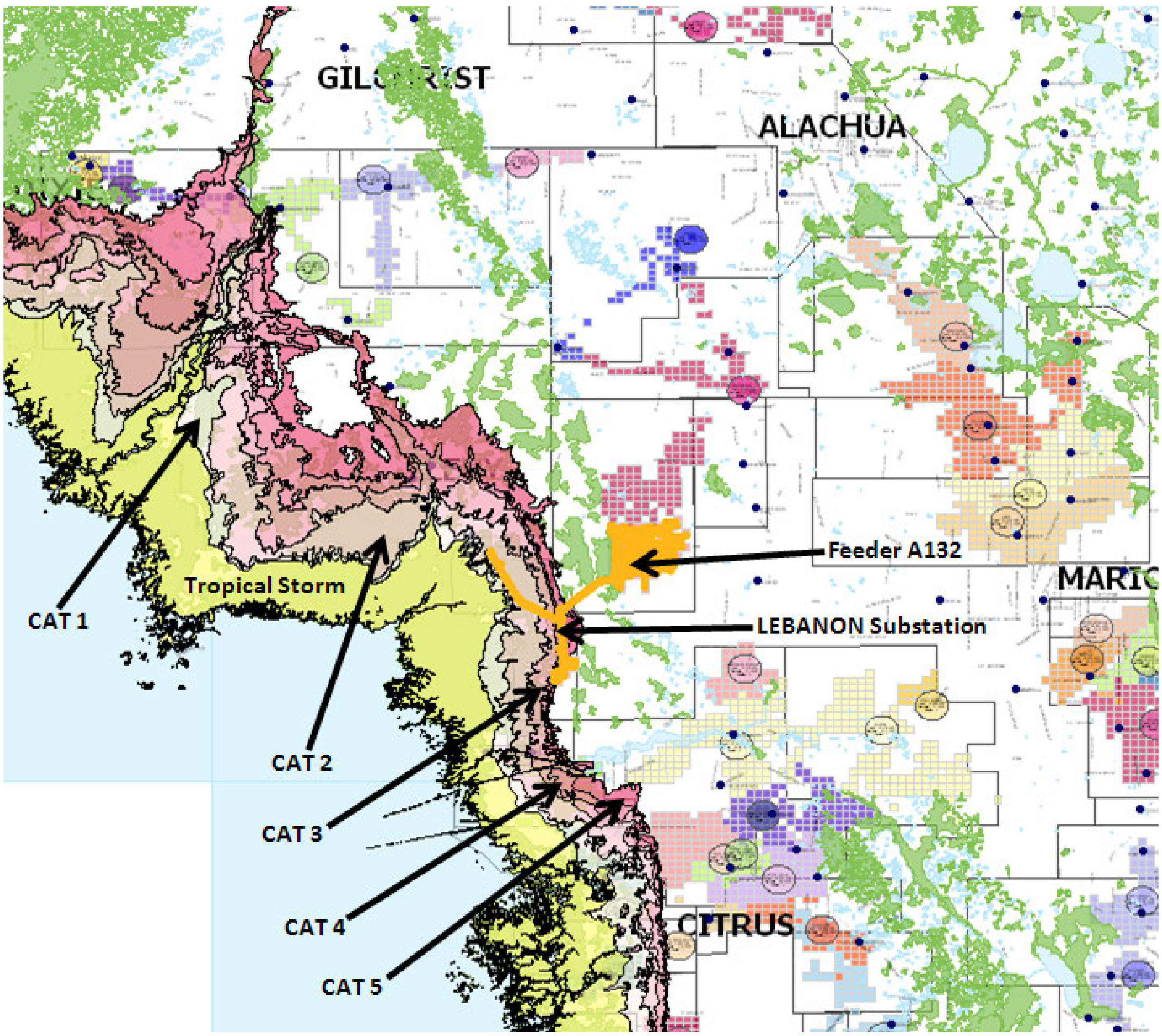
In areas where underground equipment may be exposed to minor storm surge and/or shorter term water intrusion, DEF has used its prioritization model (discussed in detail below) to identify areas where certain mitigation projects will be put into place to test whether flood mitigation techniques and devices can be used to protect equipment such as switchgears, padmounted transformers and pedestals. In these selected project sites, DEF will test:

- Stainless steel equipment;
- Submersible connectors;
- Raised mounting boxes;
- Cold shrink sealing tubes; and
- Submersible secondary blocks.

Throughout the year after a significant weather event, DEF will monitor these installations to collect and analyze data to determine how this equipment performs relative to DEF's current design with respect to outage prevention, reduced maintenance, and reduced restoration times. From this process, DEF will continue to learn and will adapt its flood and storm surge strategies based on information that it will collect and based on the information gathered by other utilities in Florida and throughout the nation as new standards and applications are applied and tested.

St. George Island in Franklin County was one of the areas where DEF used its submersible underground strategy to retrofit its existing facilities using the submersible standards listed above. St George Island is a good example of an area that would be susceptible to surges during a severe storm. The project was completed in 2007 and subsequent construction has conformed to the design standard for areas susceptible to storm surge.

DEF also utilizes ESRI's ArcGIS software to determine the optimum location for submersible underground facilities. The flood zones were provided by the state and overlaid onto DEF's land base computer system along with other facilities. This method allows DEF to visually determine which geographic areas would most benefit from submersible facilities. See example below.



In addition to the actions discussed above, during major storm events, substations that are in the forecast strike zone will have sandbags placed in strategic areas to attempt to eliminate water intrusion into control houses. In the event of water intrusion causing extensive damage requiring prolonged repair, DEF will employ mobile substations to affected areas, where possible, in order to restore power.

25-6.0342(3)(d): *Each filing shall, at a minimum, address the extent to which the utility's storm hardening plan provides for the placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance pursuant to Rule 25-6.0341, F.A.C.*

DEF will continue to use front lot construction for all new distribution facilities and all replacement distribution facilities unless a specific operational, safety, or other site-specific reason exists for not using such construction at a given location. See Distribution Engineering Manual, Page 3.

25-6.0342(4): *Each utility storm hardening plan shall explain the systematic approach the utility will follow to achieve the desired objectives of enhancing reliability and reducing restoration costs and outage times associated with extreme weather events.*

As part of its systematic approach to storm hardening for the 2007-2009 Storm Hardening plan, DEF engaged industry expert Davies Consulting ("DCI") in developing a comprehensive prioritization model that has helped DEF identify potential hardening projects, procedures, and strategies. DCI has worked with a number of utilities nationally to evaluate their respective power delivery system major storm preparedness. They have also evaluated options for infrastructure hardening to improve performance and reliability not only day-to-day, but also during major storms. Collaborating with DCI, DEF created an evaluation framework for various hardening options and prioritization of potential alternatives. Since 2007, the model has been improved and enhanced to better reflect the changes in DEF's overall storm hardening strategy. The structure of the model was adjusted to use more consistent scoring criteria to evaluate the pilot projects. New software technology such as ESRI's ArcGIS will be incorporated into the model. As more data becomes available, DEF will continue to adjust its prioritization model as appropriate.

Using a similar evaluation framework for the 2016-2018 Storm Hardening plan, DEF will prioritize its proposed projects based on various components that will be discussed in more details below.

Under the foregoing components of the evaluation framework, the prioritization model is set up to analyze the following hardening alternatives for DEF:

- OH-to-UG Conversions
    - Taking existing overhead (OH) electric lines and facilities and placing them underground (UG) via the use of specialized UG equipment and materials. The primary purpose of this hardening activity is to attempt to eliminate tree and debris related outages in the area of exposure. When applied to crossings on major highways, this hardening activity can also mitigate potential interference with first responders and other emergency response personnel caused by fallen lines.
- Small Wire Upgrade
    - The conversion of an existing overhead line currently with either #4 AL or #6 Cu conductor to a thicker gauge conductor of 1/0 or greater. The primary purpose of this hardening activity is to attempt to utilize stronger conductor that may be better able to resist breakage from falling tree branches and debris.
- Backlot to Frontlot Conversion
    - Taking an existing overhead line located in the rear of a customer's property and relocating it to the front of the customers property. This involves the removal of the existing line in the rear of the property and construction of a new line in the front of the property along with re-

routing service drops to individual customer meters. The primary purpose of this hardening activity is to minimize the number of tree exposures to the line to prevent outages and to expedite the restoration process by allowing faster access in the event an outage occurs.

- Submersible UG
  - Taking an existing UG line and equipment and hardening it to withstand a storm surge via the use of the current DEF storm surge standards. This involves the use of specialized stainless steel equipment and submersible connections. The primary purpose of this hardening activity is to attempt to minimize the damage caused by a storm surge to the equipment and thus expedite the restoration after the storm surge has receded.

- Alternative NESC Construction Standards
  - Building OH line and equipment segments to the extreme wind standard as shown in the NESC extreme wind contour lines of figure 250-2(d). This will be done via the use of the current extreme wind standards which call for the use of the industry accepted Pole Foreman program to calculate the necessary changes. Typical changes include shorter span lengths and higher class (stronger) poles. The primary purpose of this hardening activity is to attempt to reduce the damage caused by elevated winds during a major storm. Locations have been chosen to provide contrasting performance data between open coastal and inland heavily treed environments.

- Feeder ties
  - Tying radial feeders together to provide switching capabilities to reduce outage duration. This hardening alternative will mitigate long outages that would have otherwise occurred as a result of the inability

to transfer load/customers to an alternate source.

Although the concept of storm hardening is generally thought of as outage prevention, it is inevitable that outages will still occur during a severe storm (e.g., as a result of vegetation and flying debris). Feeder ties will help mitigate the duration of such outages. Tying multiple feeders together will give DEF the ability to minimize duration by serving customers from an alternate source while repairs are being made on the affected segment. Based on DEF's experience in the 2004-2005 hurricane seasons as well as more recent tropical storms, feeder ties are crucial for a distribution system as it provides the opportunity to maximize the number of customers restored in the shortest timeframe possible. Regardless of what caused the outage during a severe storm, a radial feeder will be out for as long as it takes to make the necessary repairs. On the other hand, a feeder tie would allow DEF to restore as many customers as possible, thereby minimizing the number of customers that are without power for the length of the repair.

The development of the prioritization model begins with compiling a list of desired projects submitted by engineers and field personnel most familiar with the specific region. Each project is then evaluated based on the following criteria:

- Major Storm Outage Reduction Impact
  - Determines the potential benefits that the project provides during a major storm based on reduced damages or the ability to restore power more rapidly.
- Community Storm Impact
  - Evaluates the potential benefits that the proposed project will have on a community's ability to cope with damage.
- Third Party Impact
  - Captures complexities of proposed projects in terms of coordination with third parties such as telecommunication, Cable TV, permitting, easements, costs, etc.
- Overall Reliability
  - Captures the overall potential reliability benefits that the project

provides on a day to day basis in terms of reduced customer interruptions and outage duration.

- Financial Cost
    - Provides the financial value of the proposed project based on cost per customer and cost per foot of newly installed wire/cable.

The prioritization model is set up to address the following hardening project questions:

- How many customers are served from the upstream protective device?
- What will be the impact of this project on the restoration time during a major storm?
- At what level of hurricane will the area served by this feeder flood due to storm surges?
- What is the tree density in the area served by this feeder or section?
- What level of tree damage will this project mitigate during a major storm?
- How many critical infrastructure components (lift stations, shelters, hospitals, police, etc…) does this project address?
- How valuable will the project be perceived by the community?
- What are the major obstacles/risks for completing the project, i.e. easements, permits, etc. ?
- What type of investment is required by joint users (telecoms and cable) to complete this project?
- What is the 3-year average number of CEMI4 customers on this feeder?
- What is the 3-year average number of CMI on this feeder?
- What is the change in the annual CAIDI that this project will result in (on the feeder or section)?
- Will this project reduce the number of momentary customer interruptions on this section?
- What is the 3-year average number of CELID CI on this feeder?
- What is the construction Cost per customer?

Each answer to the questions listed above is assigned a numerical value and subsequently weighted to produce an overall rating for each specific hardening project. The prioritization model is based on a structured methodology for evaluating the benefits associated with various hardening options. The model allows for the ranking of the overall list of projects. It enables DEF to strategically determine the order in which these projects are constructed, based on their order of ranking.

DEF is using the prioritization model to ensure a systematic and analytical approach to deploying storm hardening options within its service territory. For proven hardening options that DEF is already using as part of its construction standards and policies, the prioritization model will help DEF best locate and prioritize areas within its system where those options should be used. For unproven or experimental hardening options, such as the extreme wind standard for distribution pole construction, DEF is using its prioritization model to identify areas within its service territory where analytical data collection projects can be used to evaluate the performance and results of such hardening options. Examples of specific projects that took place between 2007 and 2015 are discussed later.

25-6.0342(4)(a): *A description of the facilities affected, including technical design specifications, construction standards, and construction methodologies employed.*

All of DEF's facilities are affected to some degree by the standards, policies, procedures, practices, and applications discussed throughout this document. Specific facilities are also addressed herein in detail (e.g., upgrading all transmission poles to concrete and steel, using front lot construction for all new distribution lines where possible). Technical design specifications, construction standards, and construction methodologies are specifically discussed at pages 1 through 3 of this plan and are included in **Attachments A** and **B**.

25-6.0342(4)(b): *The communities and areas within the utility's service area where the electric infrastructure improvements are to be made.*

As discussed above, all of DEF's facilities are affected to some degree by the standards, policies, procedures, practices, and applications discussed throughout this document. As a result, all areas of DEF's service territory are impacted by DEF's storm hardening efforts. Based on DEF's recent storm experience and/or through the prioritization model a number of projects were identified, please see **Attachment D** for the Distribution Projects completed between 2007 and 2015.

Distribution:

The list below is a sampling of the proposed 2016-2018 Storm Hardening projects:

Op Center	Project Name	Sub Category
Saint Petersburg	15th Ave S Feeder Tie between 37th St S and 49th St S	Feeder Tie
Highlands	Lakeview Dr. Reconductor	Feeder Tie
Buena Vista	K4426 on Bay Hill K74	Feeder Tie
Highlands	Airport Rd 2/3	Feeder Tie
Highlands	Airport Rd 3/3	Feeder Tie
Lake Wales	K55 Reconductor	Feeder Tie
Clermont	Suburban Terrace Small Wire Reconductor	Small Wire
Winter Garden	Tilden to Stoneybrook Feeder Tie	Feeder Tie
Winter Garden	Ingram Road Reconductor	Feeder Tie
Longwood	Lake Maitland Terrace Reliability- UG Conversion	OH-to-UG Conversion
Jamestown	Cleburne Rd	Small Wire
Apopka	Feeder tie Lockhart M408-M412 to Eatonville M1137	Feeder Tie
Deland	Feeder tie Deltona east W0124 to W0123	Feeder Tie
Apopka	Feeder tie Zellwood M31-M32	Feeder Tie
Monticello	Indian Pass N556 Reconductor - Phase 1	Feeder Tie
Monticello	Indian Pass N556 Reconductor - Phase 2 Extreme Wind	Alternative NESC Construction Standards (Extreme Wind)
Ocala	Reddick A35 - Phase 1	Feeder Tie
Ocala	Reddick A35 - Phase 2	Feeder Tie

Ocala	Reddick A35 - Phase 3 Extreme Wind	Alternative NESC Construction Standards (Extreme Wind)
Ocala	Micanopy - Recond #4 Al along SE 199th Ave	Small Wire
Ocala	NW 63rd St., Kendric reconductor #4 to 1/0 AAAC	Small Wire
Ocala	Oklawaha - CR 464C reconductor	Small Wire
Ocala	Martin - Record #6 cu on NW 100th St.	Small Wire
Ocala	Weirsdale - Record SE 175th St	Small Wire
Lake Wales	6358879 off TS Wilson Road	Small Wire
Monticello	Apalachicola N58 - Feeder upgrade	Feeder Tie
Inverness	Floral City Reconductor	Feeder Tie
Clearwater	C4 Clearwater Beach Reconductor	Small Wire
Clearwater	Belleair C1005 Brookhill Terrace Subdivision	Small Wire
Clearwater	City of St Pete Beach - Pass a Grille - Phase 1	Submersible UG

With regard to system hardening projects in general, DEF's approach is to consider the unique circumstances of each potential location considered for hardening by taking into account variables such as:

- operating history and environment;
- community impact and customer input;
- exposure to storm surge and flooding;
- equipment condition;
- historical and forecast storm experience; and
- potential impacts on third parties;

This surgical approach leads to the best solution for each discrete segment of the delivery system.

For example, Pasadena Feeder X220 was selected as a storm hardening candidate for 2009. X220 is a mainly an overhead feeder along Pasadena Avenue running from the substation south to the Palms of Pasadena Hospital. Engineering was initiated, and pole foreman was used for pole size selection and pole spacing. It was calculated that a 100 foot spacing and pole classes H1, 0, 1, and 2 would be required to meet the extreme wind loading criteria. Class H poles are normally transmission poles, and have a large ground or butt circumference. The general distribution guidelines for pole spacing are between 175 to 220 feet.

The Town of Pasadena was contacted by our Public Affairs Department, given the project scope information, and was made aware of the positive impacts of the project. The city was adamantly opposed to the storm hardening of X220 due to the larger class poles, closer pole spacing, and the perceived overall aesthetic impact. Due to the overwhelming negative reaction of the town, this project was cancelled. On the other hand, the San Blass Extreme wind project in Monticello was well received by the community. The project was discussed with the County Manager and the County Commissioner for the District. This project was also discussed with a local civic club where many of the members were residents in the project area. This project was completed in 2009. This is a real life example of why "one size does not fit all" when it comes to storm hardening.

In areas like Gulf Boulevard and other coastal communities in Pinellas County, local governments have worked with DEF to identify areas where overhead facilities have been or will be placed underground, and this option will help to mitigate storm outages caused by vegetation and flying debris. DEF is also working in these areas to evaluate upgrading portions of those facilities to the surge-resistant design discussed above. Again, these hardening options may work well in these communities, but may not be ideal or desirable in others.

Transmission:

The Transmission Department is employing a system-based approach to changing out wood poles to either concrete or steel poles based upon the inspection cycle and condition of pole. These projects are identified during the transmission pole inspection cycles. Specific new, rebuilt or relocated projects that are planned over the next three years are listed below:

NORTH FLORIDA AREA	**Project Type**	**County**	**Third Party Impact**

Alachua to GE Alachua (GH-2, 4.37mi) 69kV Line Rebuild	Rebuild	Alachua	Likely
Alachua Tap to Alachua (GH-3, 2.31mi) 69kV Line Rebuild	Rebuild	Alachua	Likely
Nobleton Tap - Floral City Tap 69 kV line rebuild	Rebuild	Citrus	Possible
QX 115kV 10.85 mile rebuild (Atwater - Quincy (QX-1))	Rebuild	Gadsden	Unlikely
Jackson Bluff to Brickyard Tap	Rebuild	Hamilton	Unlikely
JQ 1.7 West Lake-Burnham Tap 115 kV rebuild; 1.53 mi	Rebuild	Madison	Unlikely
Lake Bryan to Vineland (LV) - 69 kV Line Rebuild	Rebuild	Orange	Possible
Plymouth South Sub - Relocation of PP, WP & EP Lines	Rebuild	Orange	Likely
JF-3 Ft White - Live Oak 69kV rebuild, 25.45 miles	Rebuild	Suwannee	Unlikely
PC line; Rebuild Line-Replace 132 Wood Poles w/ Steel[PRG]	Rebuild	Taylor	Possible
Bell Tap - Neals Tap (IS-8) 69 kV Line Rebuild	Rebuild	Gilchrist	Unlikely
Central Florida to Picciola Tap - Rebuild 69 kV (OCF) Line	Rebuild	Lake	Likely
Deleon Springs to Barberville - 115/69 kV Line Rebuild	Rebuild	Volusia	Possible
DF - Zuber - Loop in MS 69kV to Rebuilt Sub	Rebuild	Marion	Unlikely
Dunnellon Tn -Rainbow Spgs Tp 69kV Rbld Phase 1	Rebuild	Marion	Likely

Dunnellon Tn -Rainbow Spgs Tp 69kV Rbld Phase 2	Rebuild	Marion	Likely
Eustis-Dona Vista 69 kV (EU) Line Rebuild	Rebuild	Lake	Likely
GE Alachua to Hull Road (GH-1, 16.5) 69kV Line Rebuild	Rebuild	Alachua	Likely
Ginnie - Neals Tap (IS-8B) 69 kV Line Rebuild	Rebuild	Gilchrist	Unlikely
Havana-OakCty (TQ) 69kV: rbld as dbl ckt 115 and 69kV	Rebuild	Leon	Unlikely
Hemple to Ocoee - 69 kV Line Rebuild	Rebuild	Orange	Likely
Hinson (TEC DP) - TEC will rebuild the station	Rebuild	Madison	Possible
Idylwild - Wacahoota Tap (SI) - Rebuild 11.62 mi 69 kV line	Rebuild	Alachua	Possible
JA-4 Ochlockonee Tap to Carrabelle Sub line Rebuild	Rebuild	Franklin	Possible
Lake Bryan to Vineland (LV) - 69 kV Line Rebuild	Rebuild	Orange	Possible
Myrtle Lake to Wekiva (NLP-2) - 230 kV Line Rebuild	Rebuild	Seminole	Likely
NLongwood to FPL Sylvan (NLSX Double-Circuit)- 230kV Rebuild	Rebuild	Seminole	Likely
NLongwood to FPL Sylvan (NLSX Single-Circuit)- 230kV Rebuild	Rebuild	Seminole	Likely
NLongwood to Myrtle Lake (NLP Double-Circuit)- 230kV Rebuild	Rebuild	Seminole	Likely
Nobleton Tap - Floral City Tap (HB)69 kV line rebuild	Rebuild	Citrus	Possible

OakCty-Tall (TQ) 69kV: rbld as dbl ckt 115 and 69kV	Rebuild	Leon	Unlikely
Oviedo to Winter Springs - 69 kV Rebuild	Rebuild	Seminole	Likely
Piedmont to Wekiva (NLP-3) - 230 kV Line Rebuild	Rebuild	Seminole	Likely
Rio Pinar to Econ - 230 kV Line Rebuild & Add Fiber	Rebuild	Orange	Likely
Ross Prairie-Marion Oaks Tap (RPMX) 69 kV Rebuild	Rebuild	Marion	Likely
Silver Springs - Maricamp 69 kV Line Rebuild	Rebuild	Marion	Possible
West Chapman to Winter Park East - 69 kV Line Rebuild	Rebuild	Seminole	Likely
Williston-Wacahoota Tap (SI-3B) - Rebuild 6.02 mi 69 kV line	Rebuild	Levy	Possible
GUF Alachua Archer Rd frm SW16th -SW13th City of Gainesville	Governmental	Alachua	Likely
HCR-12 115kV; 405822-2-52-01; SR 55 (US 19) from N of West Green Acres St to N of West Jump Ct; Road Widening, Improvements & Drainage	Governmental	Citrus	Unlikely
OLR-69kV-CR. 470 widening Lake Co. PWDED	Governmental	Lake	Possible
LC ## 238395-5-52-01 Lake SR500 Lake Ella to Avenida Central	Governmental	Lake	Unlikely
DR-90 to DR-98 238720-1-52-01 Marion SR40; SR45/US41 to CR328	Governmental	Marion	Unlikely
DR-36 to DR-94 238648-1 Marion SR45	Governmental	Marion	Unlikely

410674-3-52-01;SR 40 East of CR 314 to east of CR 314A;	Governmental	Marion	Possible
WO 69kV Underground Relocation on Fairbanks Avenue	Governmental	Orange	Yes
SLE 69kV relocation for Kennedy Blvd widening (Orange Cnty)	Governmental	Orange	Likely
SLM 69kV relocations for Kennedy Blvd widening (Orange Cnty)	Governmental	Orange	Likely
WO 69kV relocation for Kennedy Blvd widening (Orange Cnty)	Governmental	Orange	Likely
69kV BK 431081 Wekiva Pkwy at the Y interchange	Governmental	Orange	Unlikely
230kV PS-94 431081 Wekiva Pkwy at the Y interchange	Governmental	Orange	Yes
69kV EP 431081 Wekiva Pkwy at US441 and SR 46	Governmental	Orange	Unlikely
WR and RW 69kV Relocation for Econ Trail	Governmental	Orange	Likely
FTO FTO-141 415030-1-38-01 SEMINOLE CO. SR426/CR419 WIDENING	Governmental	Seminole	Unlikely
WEWC-WF 417545-1-52-01, SEMINOLE, SR417 BRIDGE MOD @ SR426	Governmental	Seminole	Unlikely
WF 69kV & WEWC 69kV CIP 001981-01; Dean Road widening;	Governmental	Seminole	Possible
230kV DA, DL & DWS 431081 Wekiva Pkwy at I-4 and SR 46/SR 417	Governmental	Seminole	Unlikely
DWB,410251-1-52-01, Volusia Co, SR 15/US 17	Governmental	Volusia	Possible
WO 69kV Underground Relocation on Fairbanks Avenue	Governmental	Orange	Possible

WF- 63-77 69kV, Dean Rd Widening. 00198-31 Orange County	Governmental	Orange	Possible
HCR-12 115kV SR- 55 CITRUS.405822-2-52-01	Governmental	Citrus	Possible
GH-37 to 38_61st ST. @ 20th Ave.INTER. IMPROV. ALACHUA	Governmental	Alachua	Possible
WO-230 to WO-232_Galloway Dr Improvement Seminole PW2012-009	Governmental	Seminole	Possible
SLE 69kV relocation for Kennedy Blvd widening (Orange Cnty)	Governmental	Orange	Possible
SLM 69kV relocations for Kennedy Blvd widening (Orange Cnty)	Governmental	Orange	Possible
WO 69kV relocation for Kennedy Blvd widening (Orange Cnty)	Governmental	Orange	Possible
WO 69kV Underground Relocation on Fairbanks Avenue	Governmental	Orange	Possible
BK 69kV Wekiva Pkwy_OOCEA 431081-1-32-01 OrangeCo	Governmental	Orange	Possible
PS 230kV Wekiva Pkwy_OOCEA 431081-1-32-01 OrangeCo	Governmental	Orange	Possible
BK (non-comp) 69kV Wekiva Pkwy_OOCEA 431081-1-32-01 OrangeCo	Governmental	Orange	Possible
BK Removal 69kV Wekiva Pkwy OOCEA 431081-1-32-01 Orange Cnty	Governmental	Orange	Possible
BK Removal (non-comp) 69kV Wekiva Pkwy OOCEA (CFX)	Governmental	Orange	Possible

SOUTH FLORIDA AREA	**Project Type**	**County**	**Third Party Impact**

HCR-12 115kV SR- 55 CITRUS.405822-2-52-01	Rebuild	Citrus	Possible
FV124-128 230kv 5mi Relocation for CF Industries	Rebuild	Hardee	Likely
Denham to Morgan Rd Line #1	Rebuild	Pasco	Possible
Land O Lakes - Denham line reroute to Morgan Road substation	Rebuild	Pinellas	Possible
Denham - Tampa Downs line reroute to Morgan Road substation	Rebuild	Pinellas	Possible
Oakhurst - Seminole - Rebuild 69kV Line	Rebuild	Pinellas	Possible
WLLW 69kV 4.52 mile rebuild (West Lk Wales-LkWales #1)	Rebuild	Polk	Possible
40th Street to 16th Street (BFE-2) - 115 kV Line Rebuild	Rebuild	Pinellas	Likely
Bayview to East Clearwater (HD-3) - 115 kV Line Rebuild	Rebuild	Pinellas	Possible
Belleair to Largo (LECW-1) - 69 kV Line Rebuild	Rebuild	Pinellas	Possible
Bithlo to UCF (FTR) 69 kV Rebuild	Rebuild	Orange	Possible
Brooksville to Tangerine - 115 kV Line Rebuilds	Rebuild	Hernando	Likely
Davenport to West Davenport (DWD) - 69 kV Rebuild	Rebuild	Polk	Likely

Denham to Sunlake (DX-1.3) - 69 kV Line Rebuild	Rebuild	Pasco	Likely
Desoto City to Desoto City Tap 69 kV Rebuild of Last Spans	Rebuild	Highlands	Possible
Fort Meade to West Lake Wales Line Rebuild	Rebuild	Polk	Possible
Gateway to 32nd Street (HD-7) - 115 kV Line Rebuild	Rebuild	Pinellas	Likely
Gateway to Ulmerton (HD-6) - 115 kV Line Rebuild	Rebuild	Pinellas	Likely
Hudson Tp - New Port Richey 115kV Line Rebuild	Rebuild	Pasco	Likely
Keller Road to Spring Lake - 69 kV Line Rebuild	Rebuild	Seminole	Possible
Largo to Taylor Ave (LTW-1) - 69 kV Line Rebuild	Rebuild	Pinellas	Likely
Largo to Taylor Ave (LTW-1) - 69 kV Line Rebuild	Rebuild	Pinellas	Possible
Oakhurst to Seminole (DLW-3) - 69 kV Line Rebuild	Rebuild	Pinellas	Possible

Rio Pinar to Curry Ford (RX) - 230 kV Rebuild	Rebuild	Orange	Likely
Rio Pinar to Fla Gas Transmission East (RW) - 69 kV Rebuild	Rebuild	Orange	Likely
SYS-Hexam Tap-Weeki Wachee Sw 115kV Line Rebuild (BBW-1)	Rebuild	Hernando	Unlikely
HT-39, -40 & -42; 405822-3-52-01 SR 55 from Jump Ct to W Fort Island Trail (SR 44)	Governmental	Citrus	Unlikely
CLT-175 TO CLT-178_257298-6-52-01 HERNANDO CR578	Governmental	Hernando	Unlikely
WR and RW 69kV Relocation for Econ Trail	Governmental	Orange	Possible
TMS 69kV Relocation Taft-Vineland Rd from SOBT to Orange Ave	Governmental	Orange	Possible
69kV TMS-89 & -90 412994; Sunrail Phase II, Meadow Woods Park and Ride Station	Governmental	Orange	Yes
ZNR 44, 57, 58 CIP 6360 Pasco Co Zephyrhills Bypass West Gap	Governmental	Pasco	Likely
416561-2-52-01; SR 54 from eo CR 577 to eo CR 579 (Morris Bridge Rd)	Governmental	Pasco	Likely
LSP LSP-12 922252 PINELLAS CO. STARKEY ROAD	Governmental	Pinellas	Unlikely
LSP-71-74 PID921321 PINELLAS TRAIL 97TH WAY	Governmental	Pinellas	Unlikely
413622-2-52-01 - CR-296 (118TH AVE.)	Governmental	Pinellas	Unlikely

ZNR 115kV-SR 54 Pasco County-Fin # 416561-2-52-01	Governmental	Pasco	Possible
GW- NC 230kV, HD115kV PINELLAS CO SR690 FPID#413622-2-52-01	Governmental	Pinellas	Possible
0600010_ICLW-61to63_ERNIE CALDWELL BLVD._POLK	Governmental	Polk	Possible
Desoto City Sub to Desoto City Tap Permit T-316 Tractor Rd	Governmental	Highlands	Possible
TZ 69KV Rel. 256339-2-52-01,SR 54-Meadowbrook to US 41,Pasco	Governmental	Pinellas	Possible
238422-1-52-01 US 27 Boggy Marsh Rd to Lake Louisa Rd	Governmental	Lake	Possible
RW-87 to RW91_ALL ABOARD FLA._ORANGE	Governmental	Orange	Possible
CR-468 / US301 TO CR 505 WIDENING	Governmental	Sumter	Possible
432586-1-52-01_ANL-137 to ANL-139_LANE&INTER IMPROV_PINELLAS	Governmental	Pinellas	Possible
WR 69kV Landstreet SR 528 bxout Orange Cnty FN437156-1-52-01	Governmental	Orange	Possible

CRB & CSB- Suncoast Pkwy 2 -CR 490 Cross Over -FPID 405270-4	Governmental	Citrus	Possible
BCF-353 to BCF-355, CR 468 / US301 Widening, Sumter	Governmental	Hernando	Possible

25-6.0342(4)(c): *The extent to which the electric infrastructure improvements involve joint use facilities on which third-party attachments exist.*

In the description of specific hardening projects above, DEF has provided information as to whether the projects involve joint use facilities on which third-party attachments exist. Since 2009, all joint use poles changed out in support of Rule 25-6.0342(6) are scheduled within the company FMDR system. Communication carriers are notified at the time of the pole change out that transfers are needed. This process is in line with the other company pole maintenance programs and the cost to the communication carriers is minimized. DEF completed the required inspection of every joint use pole on the system in the yearend of 2013. We are currently in the 3rd year of the second round of inspections and anticipate completing the cycle by yearend of 2020.

25-6.0342(4)(d): *An estimate of the costs and benefits to the utility of making the electric infrastructure improvements, including the effect on reducing storm restoration costs and customer outages.*

With respect to system-wide storm and extreme weather applications identified in **Attachment B**, DEF has provided any available cost/benefit information within the documents in **Attachment B**. Additionally, please see the following chart for money that DEF has spent in 2013, 2014 and 2015 on storm hardening and maintenance:

Duke Energy Florida Storm Hardening and Maintenance Costs

Description	2013 Actuals	2014 Actuals	2015 Actuals
Vegetation Management (Distribution & Transmission)	$39,881,024.87	$42,263,966.70	$44,493,393.01
Joint Use Pole Inspection Audit	$430,282	$433,069	$516,587
Transmission Pole Inspections	$2,711,308	$3,480,621	$3,269,495
Other Transmission Inspections and Maintenance	$15,023,532	$13,267,395	$11,735,877
Transmission Hardening Projects	$140,278,933	$134,800,155	$142,992,995
Distribution Pole Inspections & Treatments	$2,679,895	$2,659,514	$2,895,478
Distribution Hardening Projects	$31,091,153	$39,097,831	$58,759,175
Total	**$232,096,127.87**	**$236,002,551.70**	**$264,663,000.01**

25-6.0342(4)(e): *An estimate of the costs and benefits, obtained pursuant to Rule 25-6.0342(6), provided to third-party attachers affected by the electric infrastructure improvements, including the effect on reducing storm restoration costs and customer outages realized by the third-party attachers.*

With respect to system-wide storm and extreme weather applications identified in **Attachments A** and **B**, DEF believes that any entity jointly attached to DEF's equipment would enjoy any benefit that DEF would enjoy from that same application, and DEF has provided any available cost/benefit information within the documents in those attachments.

25-6.0342(5): *Each utility shall maintain written safety, reliability, pole loading capacity, and engineering standards and procedures for attachments by others.*

Please see **Attachment A** and **Attachment C**.

<u>**25-6.0342(5)**</u>: *The attachment standards and procedures shall meet or exceed the NESC so as to assure that third-party facilities do not impair electric safety, adequacy, or pole reliability; do not exceed pole loading capacity; and are constructed, installed, maintained, and operated in accordance with generally accepted engineering practices for the utility's service territory.*

All third-party joint use attachments on DEF's distribution and transmission poles are engineered and designed to meet or exceed current NESC clearance and wind loading standards. New attachment requests are field inspected before and after attachments to assure company construction standards are being met. All entities proposing to attach joint use attachments to DEF's distribution and transmission poles are given a copy of the company-prepared "Joint Use Attachment Guidelines." Attached hereto as **Attachment C**. These guidelines are a comprehensive collection of information spelling out the company's joint use process, construction standards, timelines, financial responsibilities, and key company contacts responsible for the completing permit requests. All newly proposed joint use attachments are field checked and designed using generally accepted engineering practices to assure the new attachments do not overload the pole or impact safety or reliability of the electric or other attachments. Additionally, annual and full-system audits are performed as detailed in DEF's annual March 1 comprehensive reliability report. For details on this activity, please see **Attachment B**.

<u>**25-6.0342(6)**</u>: *Each utility shall seek input from and attempt in good faith to accommodate concerns raised by other entities with existing agreements to share the use of its electric facilities.*

Since 2009, DEF has continued to communicate with the telecommunications carriers regarding the pole loading project. DEF has diligently cut cost for carriers by suggesting make ready solutions for over loaded pole conditions that do not include pole change outs. Additional guying and attachment rearrangement solutions have saved the communications carriers thousands of dollars annually. DEF continues to answer any questions and address concerns expressed verbally by joint attachers. DEF has taken all input received into consideration in the development and finalization of this storm hardening plan.

2016 Storm Hardening Plan Attachment List

Attachment A:

1. Distribution Overhead Construction Manual
2. Distribution Underground Construction Manual
3. Distribution Engineering Manual
4. Transmission Extreme Winds Loading Design Criteria Guideline for Overhead Transmission Line Structures
5. Transmission Line Engineering Design Philosophy
6. Joint Use-Pole Attachment Guidelines and Clearances

Attachment B:

1. Distribution Standards
2. Pole Inspection Plan
3. 2015 PSC Reliability Report, pages 39-42, 44-64

Attachment C:

1. Joint Use Pole Guidelines

Attachment D:

1. Completed Distribution Storm Hardening Projects 2007 through 2015

ATTACHMENT K

Purpose and Intent of the Plan:

To implement and update a wood pole inspection program that complies with FPSC Order No. PSC-06-0144-PAA-EI issued February 27, 2006 (the "Plan"). The Plan concerns inspection of wooden transmission and distribution poles, as well as pole inspections for strength requirements related to pole attachments. The Plan is based on the requirements of the National Electric Safety Code ("NESC") and an average eight-year inspection cycle. The Plan provides a detailed program for gathering pole-specific data, pole inspection enforcement, co-located pole inspection, and estimated program funding. This Plan also sets forth pole inspection standards utilized by Duke Energy Florida ("DEF") that meet or exceed the requirements of the NESC.

The Plan includes the following specific sub-plans:

- Transmission Wood Pole Inspection Plan ("Transmission Plan").
- Distribution Wood Pole Inspection Plan ("Distribution Plan").
- Joint Use Wood Pole Inspection Plan ("Joint Use Plan").

These three inspection sub-plans are outlined and described below. All of these sub-plans will be evaluated on an ongoing basis to address trends, external factors beyond the Company's control (such as storms and other weather events), and cost effectiveness.

1) Transmission Wood Pole Inspection Plan

A. Introduction

Ground-line inspection and treatment programs detect and treat decay and mechanical damage of in-service wood poles. DEF's Transmission Department accomplishes this by identifying poles that are 8 years of age or older and treating these poles as necessary in order to extend their useful life. As required, DEF also assesses poles and structures for incremental attachments that may create additional loads. Poles that can no longer maintain the safety margins required by the NESC (ANSI C2-2002) will be remediated. These inspections result in one of four or a combination of the following actions: (1) No action required; (2) Application of treatment; (3) Repaired; (4) Replaced.

B. General Plan Provisions

(i). Pole Inspection Selection Criteria

Transmission performs ground patrols to inspect transmission system line assets to allow for the planning, scheduling, and prioritization of corrective and preventative maintenance work. These patrols assess the overall condition of the assets including insulators, connections, grounding, and signs, as well as an assessment of pole integrity. These patrols are done on a three-year cycle and the assessment data and reports generated from these patrols are used to plan the ground-line inspections set forth in Section 1B(ii) below. The ground patrol inspections categorize wood poles into four conditions or states (State 2-5). DEF conducts ground-line inspections of State 2 and 3 poles. State 3 poles are given priority for ground-line inspection scheduling. DEF replaces State 4 and 5 poles. DEF no longer utilizes the State 1 category.

In performing inspection and patrols, the following Transmission Line Wood Poles Inspection State Categories shall apply:

State 2 : Meeting all of the criteria listed below:

- No woodpecker holes or woodpecker holes have been repaired.
- A pole that has been cut and capped.
- Checks/cracks show no decay or insect damage.
- Ground-line inspected/treated with no data in the remarks field of the report and no noted reduction in effective pole diameter.
- Hammer test indicates a hard pole.
- No pole top deflection noted.

State 3 : Meeting one or more of the criteria listed below:

- Checks/cracks show decay or insect damage, or the presence of minimal shell cracking.
- Ground-line inspected/treated with decay noted in the remarks field of the report and a noted reduction in effective pole diameter.
- Hammer test indicates a minimal amount of ground-line decay.
- Pole has been repaired (e.g., C-truss).
- Poles with a wood bayonet or a pole that needs to be cut and capped.
- Pole can be partially hollow but with no less than 3 – 4 inches of shell thickness and cannot be caved during a hammer test.
- Pole top deflection is less than 3 feet.

State 4 : Meeting one or more of the criteria listed below and should be scheduled to be replaced:

- Woodpecker holes which have deep cavities and are not repairable.
- Checks/cracks show significant decay or insect damage, or the presence of substantial shell cracking.
- Decay in the pole top is extensive such that the pole cannot be cut and capped nor is the pole top section a candidate for a bayonet.
- Ground-line inspected/treated and identified as rejected/restorable or rejected/non-restorable.
- When hammer tested, ground-line decay pockets are found and are greater than 5 inches wide and 2 inches deep.
- Pole is hollow with less than 3 – 4 inches of shell thickness extending over more than one-quarter of the pole circumference, determined by hammer test and/or a screw driver.

• Pole top deflection is between 3 to 5 feet.

State 5 : Meeting one or more of the criteria listed below. (This pole should be scheduled to be replaced as soon as possible):

• Woodpecker holes which have deep cavities and are not repairable, severely affecting the integrity of the pole.
• Ground-line inspection indicates the pole as “priority.”
• When hammer tested, ground-line decay pockets are found and are greater than 8 inches wide by 3 inches deep.
• Pole is hollow with less than 2 inches of shell thickness extending over more than one-third of the pole circumference.
• Pole deflection exceeds 5 feet.

(ii). Ground-Line Inspections

Ground-line inspections of wood transmission poles are conducted by qualified pole inspectors on an average 8-year cycle. This results in, on average, approximately 12.5% of the remaining population of wood poles receiving this type of inspection on an annual basis. Treatment and inspection work shall be done or supervised by a foreman with a minimum of six months experience and who is certified as g qualified for this work.

For poles without an existing inspection hole, the pole will be bored at a 45 degree angle below the ground line to a depth that extends past the center of the pole. For previously inspected poles, the original ground-line inspection plug shall be bored out and the depth of the inspection hole measured to ensure that the pole has been bored to the required depth. Treatment application plug(s) will be bored out and the depth of these holes measured to ensure compliance. Hammer marks should be evident to show that the pole has been adequately sounded.

All work done, materials used, and materials disposed of shall be in compliance and accordance with all local, municipal, county, state, and federal laws and regulations applicable to said work. Preservatives used shall conform to the minimum requirements as set forth in this Transmission Plan.

The inspection method used is a sound and bore inspection that will include the following components:

- Above Ground Observations - Visual inspection of the exterior condition of the pole and visual inspection of components hanging from the pole.
- Sound with Hammer – The exterior of the pole is tested with a hammer and the inspector listens for “hollowness” of the pole.

- Bore at Ground Line – The pole is bored at a 45 degree angle below the ground line. This inspection method helps to determine internal decay at the base as well as measure the amount of "good wood" left on the interior of the pole.
- Excavate to 18 inches (Full Ground Line Inspection) – The soil is removed 18 inches below ground line. Decay pockets are identified and bored to determine the extent of decay.
- Removal of Surface Decay – Identified areas of decay are removed down to "good wood" using a sharp pick.
- Assessment of Remaining Strength – All data collected from the inspection will be used to determine effective circumference and remaining strength of the pole. In evaluating pole conditions, deductions shall be made from the original ground line circumference of a pole to account for hollow heart, internal decay pockets, and removal of external decay. The measured effective critical circumference shall be at the point of greatest decay removal in the vicinity of the ground line taking into account the above applicable deductions. A pole circumference calculator shall be used to determine the measured effective critical circumference. To remain in service "as-is," the pole shall meet minimum NESC strength requirements. The measured effective critical circumference will be compared to the minimum acceptable circumference for the applicable class pole listed in the latest version of ANSI 05.1-1992, American National Standard for Wood Poles and NESC-C2-1990(1). Poles below the minimum acceptable circumference shall be rejected and will be marked in the field for replacement as either a State 4 or State 5 pole.
- Where excavation at the ground line cannot be achieved due to concrete or similar barriers, pole integrity will be assessed using a drilling resistance measuring device. These devices are now available on the market and are able to accurately detect voids and decay in poles at and below the ground where excavation is not possible.

(iii) Structural Integrity Evaluation

As part of the visual inspection of the poles, the inspector will note and record the type and location of non-native utility pole attachments to the pole or structure. This information will be used by the Joint Use Department to perform a loading analysis on certain poles or structures, where necessary, as more fully described in the Joint Use section of this Plan. In such cases, the loading information obtained from this analysis will be used along with the strength determined in the ground-line inspection. If the loads exceed: a) the strength of the structure when new and b) the strength of the existing structure exceeds the strength required at replacement, according to the NESC, the structure will either be braced to the required strength or will be replaced with a pole of sufficient strength. Specific information on this process is contained in the Joint Use section of this Plan.

(iv). Records and Reporting

A pole inspection report will be filed with the Florida Public Service Commission by March 1st of each year. The report shall contain the following information:

1) A description of the methods used for structural analysis and pole inspection.

2) A description of the selection criteria that was used to determine which poles would be inspected.

3) A summary report of the inspection data including the following:

   a. Total number of wood poles in Company inventory.
   b. Number of pole inspections planned.
   c. Number of poles inspected.
   d. Number of poles failing inspection.
   e. Pole failure rate (%) of poles inspected.
   f. Number of poles designated for replacement.
   g. Total number of poles replaced.
   h. Number of poles requiring minor follow-up.
   i. Number of poles overloaded.
   j. Methods of inspection used.
   k. Number of pole inspections planned for next annual inspection cycle.
   l. Total number of poles inspected (cumulative) in the 8-year cycle to date.
   m. Percentage of poles inspected (cumulative) in the 8-year cycle to date.

4) A pole inspection report that contains the following detailed information:

   a. Transmission circuit name.
   b. Pole identification number.
   c. Inspection results.
   d. Remediation recommendation.
   e. Status of remediation.

C. <u>Program Cost and Funding</u>

- DEF continues to meet the obligations set forth in Order No. PCS-06-0144-PAA-EI. The number of poles inspected per year will start at approximately 3,800 poles, but may vary from year to year depending on previous years' accomplishments.

DEF is currently on track to meet the 8-year cycle requirements. The number of poles inspected may vary year to year depending on the previous year's accomplishments with the intent to complete inspections in the required timeframe. The estimated figures in the chart below are "best estimates," given information and facts known at this time and are subject to change or modification.

<u>Wood Pole Program Cost Estimates</u>

Annual Unit & Cost Estimate		
Cycle		
Years per cycle	8	
Poles inspected per year	3,800	On average; may vary year to year
Assumed poles replaced*	5%	Current future projections
O&M Cost		
GL Inspection & Treatment	$250,000	On average; may vary year to year
Capital Cost		
Pole & Insulator Replacements	$6,000,000	On average; may vary year to year
Hurricane Hardening	$7,000,000	On average; may vary year to year

* Assumption is made that approximately 5% of the poles inspected will be identified for replacement.

2) Distribution Wood Pole Inspection Plan

A. Introduction

In accordance with FPSC Order No. PSC-06-0144-PAA-EI, DEF's Distribution Department inspects Company-owned wood poles on an average 8-year cycle. These inspections determine the extent of pole decay and any associated loss of strength. The information gathered from these inspections is used to determine pole replacements and to effectuate the extension of pole life through treatment and reinforcement. Additionally, information collected from the wood pole inspections is used to populate regulatory reporting requirements, provide data for loading analyses, identify other equipment maintenance issues, and used to track the results of the inspection program over time.

B. General Plan Provisions

(i). Ground-line Inspection Purpose

- The ground-line inspection process is the industry standard for determining the existing condition of wood pole assets. This inspection helps to determine extent of decay and the remaining strength of a pole. Ground-line inspections also provide insight into the remaining life of a wood pole.

- The ground-line inspection is performed at the base of the pole because the base is the location of the largest "bending moment," as well as the area subject to the most fungal decay and insect attack. Assessing the condition of the pole at the base is the most efficient way to effectively treat and restore a wood pole.

(ii). Pole Inspection Process

When a wood distribution pole, other than a CCA pole, is inspected, the tasks listed below will be performed. For a CCA type wood distribution pole less than 16 years of age, the inspection will consist of a visual above ground inspection and sounding with hammer, both procedures are described below. For CCA poles 16 years of age and greater, all inspection methods described below are used. Boring at Ground Line is also performed on type CCA poles when decay is present.

- Above Ground Observations - Visual inspection of the exterior condition of the pole and visual inspection of components hanging from the pole.
- Partial Excavation – The soil is removed around the base of the pole and the pole is inspected for signs of decay.
- Sound with Hammer – The exterior of the pole is tested with a hammer and the inspector listens for "hollowness" of the pole.
- Bore at Ground Line – The pole is bored at a 45 degree angle below the ground line. This inspection method helps to determine internal decay at the base as well as measure the amount of "good wood" left on the interior of the pole.
- Excavate to 18 Inches (Full Ground Line Inspection) – If significant decay is found during the full excavation, the soil is removed 18 inches below ground line. Decay pockets are identified and bored to determine the extent of decay.
- Removal of Surface Decay – Identified areas of decay are removed down to "good wood" using a sharp pick.
- Prioritization of rejected poles – rejected poles shall be assessed on their overall condition and then prioritized accordingly. Generally these poles will then be replaced in order of priority, from highest to lowest.
- For poles where obstructions, such as concrete encasement, make full excavation impractical DEF will utilize the best economical inspection process in accordance with Order No. PSC-08-0644-PAA-EI issued October 6, 2008.

(iii) Data Collection

All data collected through the inspection process will be submitted to DEF's Distribution Department in electronic format by inspection personnel. This data will be used to determine effective circumference and remaining strength of the pole. In evaluating pole conditions, deductions shall be made from the original ground line circumference of a pole to account for hollow heart, internal decay pockets, and removal of external decay. The measured effective critical circumference shall be at the point of greatest decay removal in the vicinity of the ground line taking into account the above applicable deductions. A pole circumference calculator shall be used to determine the measured effective critical circumference. To remain in service "as-is," the pole shall meet minimum NESC strength requirements. The measured effective critical circumference will be compared to the applicable minimum acceptable circumference listed in the most current versions of ANSI 05.1-1992, American National Standard for Wood Poles, and

NESC-C2-1990(1). Poles below the minimum acceptable circumference shall be rejected and will be marked in the field for replacement.

(iv). Structural Integrity Evaluation

- See Joint Use Pole Inspection Plan, section B, paragraph (i).

(v). Records and Reporting

A pole inspection report will be filed with the Florida Public Service Commission by March 1st of each year. The report shall contain the following information:

1) A description of the methods used for structural analysis and pole inspection.

2) A description of the selection criteria that was used to determine which poles would be inspected.

3) A summary report of the inspection data including the following:

   a. Total number of wood poles in Company inventory.
   b. Number of pole inspections planned.
   c. Number of poles inspected.
   d. Number of poles failing inspection.
   e. Pole failure rate (%) of poles inspected.
   f. Number of poles designated for replacement.
   g. Total number of poles replaced.
   h. Number of poles requiring minor follow-up.
   i. Number of poles overloaded.
   j. Methods of inspection used.
   k. Number of pole inspections planned for next annual inspection cycle.
   l. Total number of poles inspected (cumulative) in the 8-year cycle to date.
   m. Percentage of poles inspected (cumulative) in the 8-year cycle to date.

4) A pole inspection report that contains the following detailed information:

   a. Distribution circuit name.
   b. Pole identification number.
   c. Inspection results.
   d. Remediation recommendation.
   e. Status of remediation.

C. Program Cost and Funding

(i). Poles Program Cost Estimates

DEF continues to successfully meet the obligations set forth in Order No. PSC-06-0144-PAA-EI and continues to inspect poles based on the 8-year cycle as mandated by the FPSC. The number of poles inspected per year is expected to be approximately 96,000 poles, but may vary from year to year depending on previous years' accomplishments with the intent to complete inspections in the required timeframe. Funding requirements to meet all aspects of this program will be adjusted from year to year, as well. DEF is currently on track to meet the 8-year cycle requirements.

The estimated figures in the charts below are "best estimates," given information and facts known at this time and are subject to change or modification.

Annual Unit Estimate				
Years per Cycle	# of Wood Poles to be inspected per year	Replacements	Bracing	Treatments
8	96,000	7,000	368	25,600

Annual Cost Estimate							
Years per Cycle	O&M Costs		Capital		O&M Total	Capital Total	Program Total Cost
	Inspections (S&B + Excavation)	Treatments (add'l to inspection)	Replacements	Braces			
8	$ 1,800,000	$ 200,000	$ 28,000,000	$ 422,000	$ 2,000,000	$ 28,422,000	$ 30,000,000

3) Joint Use Pole Inspection Plan

A. Introduction

DEF currently has approximately 774,000 joint use attachments on distribution poles and approximately 7,400 joint use attachments on transmission poles. On average, DEF receives approximately 3,000 new attachment requests per year. All new attachment requests are reviewed in the field to assure the new attachments meet NESC and company clearance and structural guidelines. The information provided below outlines DEF's attachment permitting process and how DEF intends to gather structural information on certain existing joint use poles over an average 8-year inspection cycle to meet the obligations set forth in Order No. PCS-06-0144-PAA-EI.

B. General Plan Provisions

(i). Structural Analysis for a Distribution Pole New Joint Use Attachment

When the Joint Use Department receives a request to attach a new communication line to a distribution pole, the following is done to ensure that NESC clearance and loading requirements are met before permitting the new attachment:

- Each pole is field inspected, and the attachment heights of all electric and communication cables and equipment are collected. The pole number, pole size and class (type) are noted as well as span lengths of cables and wires on all sides of the pole.
- For each group of poles in a tangent line, the pole that has the most visible loading, line angle and longest or uneven span length is selected to be modeled for wind loading analysis.
- The selected pole's information is loaded into a software program called "SPIDA CALC" from IJUS. The pole information is analyzed and modeled under the NESC Light District settings of 9psf, no ice, 30° F, at 60 MPH winds to determine current loading percentages.
- If that one pole fails, the next worst case pole in that group of tangent poles is analyzed as well.
- Each pole is analyzed to determine existing pole loading and the proposed loading with the new attachment.
- If the existing analysis determines the pole is overloaded, a work order is issued to correct the overload. The remedy may include replacing the pole with a larger class pole. If the pole fails only when the new attachment is considered, a work order estimate is made and presented to the communication company wishing to attach.

(ii). Structural Analysis for a Transmission Pole New Joint Use Attachment

When the Joint Use Department receives a request to attach a new communication line to a transmission pole with distribution underbuild, the following will be done to ensure that NESC clearance and loading requirements are met before permitting the new attachment:

- Each pole is field inspected, and the attachment heights of all electric and communication cables and equipment are collected. The pole number, pole size and class (type) are noted as well as span lengths of cables and wires on all sides of the pole.
- All pole information including structural plan and profiles are sent to the engineering company, Stantec, to be modeled in PLS-CADD/LITE and PLS-POLE for structural analysis.
- Stantec engineers determine the worst case structures in a tangent line and request the structural drawings and attachment information on those selected poles. Typically, transmission poles with line angle and uneven span lengths are the poles considered for wind loading analysis.
- The selected pole information is loaded into the PLS-CADD and PLS-POLE software. Depending on the pole location per the NESC wind charts, one of the following load cases is run. NESC Light District: 9psf, no ice, 30° F, 60mph; NESC Extreme: 3 sec gust for the specific county, no ice, 60° F (Ex: Orange County is 110 mph); or DEF Extreme at 36psf, 75° F, wind chart mph

- If that one pole fails, the next worst case pole in that group of tangent poles is analyzed as well.
- Each pole is analyzed to determine existing pole loading and the proposed loading with the new attachment.
- If the existing analysis determines the pole is overloaded, a work order is issued to correct the overload. The remedy may include replacing the pole with a larger class pole. If the pole fails only when the new attachment is considered, a work order estimate is made and presented to the communication company wishing to attach.

(iii). Analysis of Existing Joint Use Attachments On Distribution Poles

There are approximately 774,000 joint use attachments on approximately 450,000 distribution poles in the DEF system. All distribution poles with joint use attachments will be inspected on an average 8-year audit cycle to determine existing structural analysis for wind loading. These audits will start at the sub-station where the feeder originates. For each group of poles in a tangent line, the pole that has the most visible loading, line angle, and longest or uneven span length will be selected to be modeled for wind loading analysis. Each pole modeled will be field inspected. The attachment heights of all electric and communication cables and equipment will be collected. The pole age, pole type, pole number, pole size / class, span lengths of cables and wires, and the size of all cables and wires on all sides of the pole will be collected.

The selected pole's information will then be loaded into a software program called "SPIDA CALC" from IJUS. The pole information will be analyzed and modeled under the NESC Light District settings of 9psf, no ice, 30° F, at 60 MPH winds to determine current loading percentages. If that one pole fails, the next worst case pole in that group of tangent poles will be analyzed as well. Each pole analyzed will determine the existing pole loading of all electric and communication attachments on that pole. If the existing analysis determines the pole is overloaded, a work order will be issued to correct the overload. The remedy may include replacing the pole with a larger class pole. Should the original pole analyzed meet the NESC loading requirements, all similar poles in that tangent line of poles will be noted as structurally sound and entered into the database as "PASSED" structural analysis. Poles rated at 100% or lower will be designated as "PASSED." Poles that are analyzed and determined to be more than 100% loaded will be designated as "FAILED," and corrected. If the pole is changed out, the GIS database will be updated to reflect the date the new pole was installed.

(iv). Analysis of Existing Joint Use Attachments On Transmission Poles

There are approximately 7,400 joint use attachments on approximately 5,600 transmission poles in the DEF system. All transmission poles with joint use attachments will be inspected on an average 8-year audit cycle to determine existing structural analysis for wind loading. Audits will start at the sub-station where the feeder originates. All pole information (pole size, class, type, age, pole number, cable, wire, equipment attachment heights, span lengths) including structural plan and profiles will be sent to the engineering company, Stantec, to be modeled in PLS-CADD/LITE and PLS-POLE for structural analysis. Stantec engineers will determine the worst case structures in a tangent line and request the structural drawings and attachment information on those selected poles. Typically, transmission poles with line angle and uneven span lengths are the poles considered for wind loading analysis.

The selected pole information will be loaded into the PLS-CADD and PLS-POLE software. Depending on the pole location per the NESC wind charts, one of the following load cases is run. **NESC Light District:** 9psf, no ice, 30° F, 60mph; **NESC Extreme:** 3 sec gust for the specific county, no ice, 60° F (Ex: Orange County is 110 mph); or **DEF Extreme** at 36psf, 75° F, wind chart mph. If that one transmission pole fails, the next worst case pole in that group of tangent poles will be analyzed as well. Each transmission pole analyzed will determine the existing pole loading of all electric and communication attachments on that pole. If the existing analysis determines the transmission pole is overloaded, a work order will be issued to correct the overload. The remedy may include replacing the pole with a larger class pole. Should the original pole analyzed meet the NESC loading requirements, all similar poles in that tangent line of poles will be noted as structurally sound and entered into the database as "PASSED" structural analysis.

Transmission poles rated at 100% or lower will be designated as "PASSED." Transmission poles that are analyzed and determined to be more than 100% loaded will be designated as "FAILED," and corrected. If the transmission pole is changed out, the GIS database will be updated to reflect the date the new pole was installed.

(v). <u>Records and Reporting</u>

A pole inspection report will be filed with the Florida Public Service Commission by March 1st of each year. The report shall contain the following information:

1) A description of the methods used for structural analysis and pole inspection.

2) A description of the selection criteria that was used to determine which poles would be inspected.

3) A summary report of the inspection data including the following:

   a. Number of poles inspected.
   b. Number of poles not requiring remediation.
   c. Number of poles requiring remedial action.
   d. Number of pole requiring minor follow up.
   e. Number of poles requiring a change in inspection cycle.
   f. Number of poles that were overloaded.
   g. Number of inspections planned.

C. Program Cost and Funding

(i). Pole Analysis Funding

As stated above, there are currently approximately 774,000 joint use attachments on approximately 450,000 distribution poles and approximately 7,400 joint use attachments on approximately 5,600 transmission poles. DEF will analyze the "worst case" poles in a tangent line of similar poles as deemed appropriate during field inspections.

In order to meet the obligations set forth in Order No. PCS-06-0144-PAA-EI, DEF requires incremental funding annually to successfully gather data and enter it into the required reporting format. See calculation that follows. The estimated figures in these charts are "best estimates," given information and facts known at this time and are subject to change or modification.

Annual Unit & Cost Estimate

Distribution poles with joint use	Annual inspected (8-yr cycle)	10% of Distribution poles analyzed	1% of Distribution poles replaced	Transmission poles with joint use	Annual inspected (8-yr cycle)	30% of Transmission poles analyzed	10% of Transmission poles replaced	Total cost to analyze poles (O&M)	Total cost to replace poles (capital)
450,000	56,000	5,600	56	5,600	700	210	21	$551,950	$585,000

ATTACHMENT L

Major Conversions Historical Data

		WRs Completed															
		All Years	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
No. of WRs		353	4	1	-	3	6	9	57	10	42	42	40	43	26	51	19
Manhour Estimate		186,942	5,657	302	-	1,582	6,214	2,732	16,655	2,517	41,151	27,719	25,415	37,511	10,558	7,711	1,218
Manhours Charged		170,309	1,113	-	-	45	2,098	2,185	10,057	2,528	41,167	27,994	25,527	38,080	10,571	7,720	1,223
No. of Units (Ft)		418,098	34,094	5,422	-	6,852	16,196	7,124	85,920	4,961	74,467	48,197	52,807	55,108	11,121	14,117	1,712
No. of Units (Miles)		79	6.46	1.03	-	1.30	3.07	1.35	16.27	0.94	14.10	9.13	10.00	10.44	2.11	2.67	0.32
Estimated Cost		21,906,736	1,522,620	41,459	-	225,660	1,135,639	363,620	2,079,768	391,373	$ 4,824,690	$ 3,734,020	$ 2,934,875	$ 2,686,765	$ 882,087	$ 914,825	$ 169,334
CIAC		16,991,146	1,160,019	39,958	-	230,187	649,801	662,461	2,376,753	462,338	$ 2,681,567	$ 3,866,787	$ 2,045,350	$ 1,649,664	$ 710,797	$ 377,393	$ 78,071
No of WRs with CIAC Paid (in STORMS/WMIS)	59%	207	1	1	-	3	6	7	18	9	31	29	27	23	17	24	11
Est. Cost of those WRs with no CIAC Paid	30%	6,611,660	334,203	-	-	-	-	$ 17,845	$ 954,068	$ 30,904	$ 1,172,514	$ 1,363,212	$ 717,415	$ 1,467,711	$ 165,739	$ 336,120	$ 51,929
Est Cost of those WRs with CIAC Paid	70%	15,295,075	1,188,417	41,459	-	225,660	1,135,639	$ 345,775	$ 1,125,700	$ 360,469	$ 3,652,176	$ 2,370,808	$ 2,217,460	$ 1,219,054	$ 716,348	$ 578,705	$ 117,405
CIAC Ratio of those with CIAC Paid		111%	98%	96%	0%	102%	57%	192%	211%	128%	73%	163%	92%	135%	99%	65%	66%
CIAC Ratio Overall		78%	76%	96%	0%	102%	57%	182%	114%	118%	56%	104%	70%	61%	81%	41%	46%
Based on Units >50																	
No of WRs with >50 Units	59%	208	2	1	0	2	6	6	36	9	30	32	32	23	13	14	2
Est Cost of WRs with >50 units	89%	$ 19,488,422	$ 1,448,823	$ 41,459	$ -	$ 224,134	$ 1,135,639	$ 344,147	$ 1,809,600	$ 380,285	$ 4,390,458	$ 3,177,390	$ 2,895,514	$ 2,563,259	$ 627,324	$ 400,182	$ 50,208
Manhours Est of WRs with >50 Units	96%	163,527	4,914	302	-	1,575	6,214	2,592	14,737	2,452	37,109	22,737	24,383	35,633	6,703	3,936	241
No of Units (Ft) for WRs with >50 Units	100%	417,948	34,094	5,422	-	6,852	16,196	7,122	85,913	4,959	74,440	48,194	52,775	55,068	11,115	14,094	1,704
No of Units (Miles) for WRs with >50 Units		79.16	6.46	1.03	-	1.30	3.07	1.35	16.27	0.94	14.10	9.13	10.00	10.43	2.11	2.67	0.32
Cost per manhour of WRs with >50 Units		$ 119.18	$ 294.85	$ 137.27	$ -	$ 142.34	$ 182.77	$ 132.79	$ 122.79	$ 155.09	$ 118.31	$ 139.75	$ 118.75	$ 71.93	$ 93.59	$ 101.67	$ 208.33
Cost per manhour of All WRs		$ 128.63	$ 1,368.03	$ -	$ -	$ 4,981.47	$ 541.19	$ 166.42	$ 206.80	$ 154.82	$ 117.20	$ 133.39	$ 114.97	$ 70.56	$ 83.44	$ 118.50	$ 138.46
Cost per Unit (Ft) of WRs with >50 Units		$ 46.63	$ 42.49	$ 7.65	$ -	$ 32.71	$ 70.12	$ 48.32	$ 21.06	$ 76.69	$ 58.98	$ 65.93	$ 54.87	$ 46.55	$ 56.44	$ 28.39	$ 29.46
Cost per Unit (Ft) of All WRs		$ 52.40	$ 44.66	$ 7.65	$ -	$ 32.93	$ 70.12	$ 51.04	$ 24.21	$ 78.89	$ 64.79	$ 77.47	$ 55.58	$ 48.75	$ 79.32	$ 64.80	$ 98.91
Cost per Unit (Mile) of WRs with >50 Units		$ 246,200	$ 224,373	$ 40,374	$ -	$ 172,713	$ 370,226	$ 255,139	$ 111,214	$ 404,901	$ 311,413	$ 348,106	$ 289,689	$ 245,769	$ 298,000	$ 149,919	$ 155,574
Cost per Unit (Mile) of All WRs		$ 276,652	$ 235,802	$ 40,374	$ -	$ 173,889	$ 370,226	$ 269,500	$ 127,807	$ 416,539	$ 342,089	$ 409,063	$ 293,449	$ 257,424	$ 418,795	$ 342,160	$ 522,245
Manhour per Unit (Ft) of WRs with >50 Units		0.39	0.14	0.06	0.00	0.23	0.38	0.36	0.17	0.49	0.50	0.47	0.46	0.65	0.60	0.28	0.14
Manhour per Unit (Ft) of All WRs		0.41	0.03	0.00	0.00	0.01	0.13	0.31	0.12	0.51	0.55	0.58	0.48	0.69	0.95	0.55	0.71
Manhour per Unit (Mile) of WRs with >50 Units		2,066	761	294	-	1,213	2,026	1,921	906	2,611	2,632	2,491	2,439	3,417	3,184	1,475	747
Manhour per Unit (Mile) of All WRs		2,151	172	-	-	35	684	1,619	618	2,691	2,919	3,067	2,552	3,649	5,019	2,887	3,772

Note: Data is from STORMS/WMIS and only those WRs that are completed.

	2002	2003	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
No. of Units (Miles)	0.32	2.67	2.67	2.11	10.43	10.00	9.13	14.10	0.94	16.27	1.35	3.07	1.30	-	1.03	6.46
Estimated Cost	$ 169,334	$ 914,825	$ 914,825	$ 882,087	$ 2,686,765	$ 2,934,875	$ 3,734,020	$ 4,824,690	$ 391,373	$ 2,079,768	$ 363,620	$ 1,135,639	$ 225,660	$ -	$ 41,459	$ 1,522,620
Cost per Unit (Ft) of WRs with >50 Units	$ 29.46	$ 28.39	$ 28.39	$ 56.44	$ 46.55	$ 54.87	$ 65.93	$ 58.98	$ 76.69	$ 21.06	$ 48.32	$ 70.12	$ 32.71	$ -	$ 7.65	$ 42.49

ATTACHMENT M

Document title:	Document number:
Transmission Line Material Condition Assessment Procedure; Ground Patrols	TECP-MIM-TRM-00026
	Revision No.: 002
Keywords: TEEM-EE; transmission, line patrols, inspections	Applies to: Transmission – All Regions

1.0 Introduction

1.1 The material condition of the transmission line structures must be periodically inspected to ensure the assets are in optimum condition. The primary goal of the line assessment is to inspect transmission line structures and components to document material deficiencies so corrective repair/replacement work orders are written.

1.2 All structures on a line are to be inspected during a ground patrol, regardless of the pole material, inspections should extend from substation to substation, and are to include structures on any connected taps. A variety of materials, including wood, steel, concrete, and lattice towers are often present on a line. This document covers all types, but a separate inspection procedure document will be used for detailed lattice tower steel inspections outside the scope of this document.

1.2.1 All wood poles inspected by the Duke Energy contractors shall utilize inspection techniques as detailed on other procedures included in the bid documentation including sound & bore, excavation, and treatment requirements.

1.2.2 The definitions contained herein are not only to be utilized by contractors but are also a useful guide for Duke Energy line technicians, field supervision, and other field personnel. This procedure is also intended to be used as a reference for aerial helicopter patrols; (GDLP-MNT-TRM-00008)

1.2.3 In some Duke Energy jurisdictions regulatory requirements are more stringent than what is contained in this document; when that is the case the regulatory criteria shall be followed.

1.2.4 Inspection of ALL transmission structure components on a line, including poles, insulators, crossarms, guying, bonding, conductors, statics, and grounding systems is expected. Any attached distribution underbuild is also to be inspected for signs of obvious defects.

1.2.5 The intent of this guidance procedure is to capture component deficiencies in a consistent manner acrosse the entire Duke Energy System. Included are conditions that necessitate Priority 1 and 2 component replacements and some Priority 3 repairs. These conditions will be used to create corrective work orders using Duke Energy software.

2.0 Component Assessment Definitions

2.1 **PRIORITY 0** is a condition that poses an immediate threat to either safety or system integrity. When this condition is encountered, a phone call to field supervision shall be immediately made and the contractor must stay on site until Duke Energy personnel arrives and the area is secured.

2.2 **PRIORITY 1** components are deteriorated and require attention, but does not pose an immediate threat to safety or the system. Depending on specific regional instuctions, a phone call may be required to the field supervison when this condition is found (expectations vary between regions). A Priority 1 corrective work order will be written when this condition is reported and replacement/repairs completed within 12 weeks.

2.3 **PRIORITY 2** components are deteriorated and in need of replacement. A Priority 2 corrective work order will be written when this condition is reported.

2.4 **PRIORITY 9** has some maintenance issues requiring repair, consisting of non-critical work, but the component is in otherwise good condition.

3.0 Structure Components & Priority Codes

3.1 Transmission Wood Poles

3.1.1 **Priority 9** is described as meeting ANY of the conditions listed below and should have a repair work order writtten:

- Woodpecker holes are present but can be patched and repaired
- Woodpecker holes are not located in critical pole locations
- Woodpecker holes are limited to “baseball” size in diameter, they do not extend into the pole more than 4 inches, and will not hold water
- Earth washout at pole base requires mitigation

Priority 9 Woodpecker Holes
(Not in critical locations)

Priority 9 Woodpecker Hole
(Does not hold water & can be repaired)

3.1.2 **Priority 2** is described as meeting ANY of the conditions listed below and should have a replacement work order written:

- Hammer reveals significant groundline decay pockets that are greater than 6 inches wide and 3 inches deep extending over more than one-quarter of the pole circumference
- Pole is hollow with less than 4 inches of shell thickness extending over more than one-quarter of the pole circumference
- Hammer reveals significant shell cracking or soft wood, indicated by sound or caving of the wood
- Woodpecker holes are extensive and generally at least “softball” sized or greater and extend to the pole center, severely affecting the pole integrity
- Woodpecker holes contain extensive nesting cavities in critical locations. including vicinity of crossarm, plankarm, crossbrace, guy, or insulator connections
- Woodpecker holes contain nesting cavities, or can be seen to hold water
- Pole checks reveal significant evidence of decay, insect damage, or shell seperation, as indicated by caving the pole, sawdust, or sound
- Longitudinal pole top deflection is between 3 to 5 feet
- Transverse pole deflection of more than 20 degrees
- Earth washout at pole base is so substantial it requires replacement
- Pole top decay shall be identified as a pole replacement **ONLY** if the hardware supporting the static has moved or has been jeopardized, the pole top has a significant split, or woodpecker holes are evaluated to be extensive. ***Duke Energy employees are responsible for accessing pole top decay during routine aerial inspections.***

Priority 2 Split Pole Top & Vertical Woodpecker Holes

Priority 2 Woodpecker Holes
(located in critical spots)

Priority 2 Woodpecker Holes
(Quantity and orientation indicates significant pole decay)

3.1.3 **Priority 1** is described as meeting ANY of the conditions listed below. This pole should have a replacement work order written:

- Hammer and probing reveals decay extending towards the polel center
- Pole is hollow with less than 2 inches of shell thickness extending over more than one-quarter of the pole circumference
- Woodpecker holes extend through the pole and daylight is visible.
- Longitudinal pole deflection exceeds 5 feet
- Extensive longitudinal cracking exists through critical attachments of the pole
- Earth washout at pole base possibly compromises the structure integrity

Priority 1 Internal Decay
(Shell thickness less than 1 inch)

Priority 1 Internal Decay
(Deep decay pocket)

Green Growth
(May be an indicator of substantial pole decay)

Priority 1 Groundline Pole Decay
(with large internal cavity)

Priority 1 WoodPecker Holes

3.2 Transmission Line Crossarms, Plankarms, Crossbraces, & Kneebraces

3.2.1 **Priority 9** is described as meeting one or more of the conditions listed below. Repairs work orders will be written.

- Hardware is missing or is visually seen to be loose

3.2.2 **Priority 2** is described as meeting ANY of the conditions listed below and should be scheduled to be replaced:

- Member has wide (> 1 inch) cracks that can hold water
- When hammer tested member can be caved
- Separation exists between laminate sections of crossbraces
- Woodpecker holes are present
- Crossarm out of plumb or rolled by more than 45 degrees
- Crossarm supporting brace is broken

Priority 2 Rolled Pin Type Insulator Mounted above Wood Arm

3.2.3 **Priority 1** is described as meeting ANY of the conditions listed below and should be scheduled to be replaced:

- Member is either split or broken

3.3 **Transmission Line Porcelain Insulators**

3.3.1 **Priority 9** is described as meeting the condition listed below. A repair work order will be written.

- Insulator units with significant bird contamination

3.3.2 **Priority 2** is described as meeting one or more of the conditions listed below and should be replaced:

- Suspension type insulators have pin rust with some loss of material and/or swelling of the pin base
- Suspension type insulators with two or more significantly broken insulators or in a string at 44 kV, three or more at 69/115 kV, and four or more at 230/345/500 kV. NOTE: Chipped Insulators do not meet the definition of broken.
- Insulators with significant signs of flashing or burn. ***Duke Energy employees are responsible for accessing flashed insulators during routine aerial inspections.***
- Pin type insulators mounted above crossarms have broken 2 or more broken skirts or the top skirt is broken
- Pin type insulators mounted above crossarms are rolled more than 30 degrees from vertical

3.3.3 **Priority 1** is described as meeting ANY of the conditions listed below and should be scheduled to be replaced:

- Suspension type insulators have advanced pin rust with significant loss of material and/or swelling of the pin base
- Suspension type insulators have more than half of their bells broken.
- Pin type insulators mounted above crossarms have more than half of their skirts broken

Priority 1 Porcelain Spark Erosion
These can be difficult to see/evaluate

Typical Priority 1 "Ball & Socket" Insulator

3.4 Transmission Line Polymer Insulators

3.4.1 **Priority 9** is described as meeting any of the conditions listed below. A repair work order will be written.

- Polymer deadend or suspension insulator has either a missing or incorrectly installed corona ring at 138 kV or above (does not apply to line post insulators)

3.4.2 **Priority 2** is described as meeting one or more of the conditions listed below and should be replaced:

- Polymer has an exposed fiberglass rod
- Polymer has open splits or gaps in the rubber housing
- Polymer displays evidence of electrical tracking or leaking interface compound

Priority 2 Polymer Insulator
Exposed Fiberglass Rod (Ohio Brass)

Priority 2 Polymer Insulator
Split Housing (Ohio Brass)

3.4.3 **Priority 1** is described as meeting ANY of the conditions listed below and should be scheduled to be replaced:

- Polymer displays severe damage due to mechanical or electrical reasons

3.5 Transmission Line Conductors

3.5.1 **Priority 2** is described as meeting the condition listed below and should be repaired:

- Conductor has been shot through any of the aluminum strands
- Conductor aluminum strands are unraveled

3.5.2 **Priority 1** is described as meeting ANY of the conditions listed below and should be scheduled to be repaired or replaced:

- Conductor has been shot through any of the steel strands
- Conductor splice has high infrared readings
- Ohm-stick conductor splice resistance guidelines recommend an immediate replacement

3.6 Transmission Line Overhead Ground Wires (Statics, OHGW, OHG, OPGW)

3.6.1 **Priority 2** is described as meeting ANY of the conditions listed below and should be repaired or replaced:

- Any broken strands
- Static is significantly rusted, corroded, or deeply pitted
- Static is dark brown or black in color
- Static is missing between spans

3.6.2 **Priority 1** is described as meeting ANY of the conditions listed below and should be scheduled to be repaired or replaced:

- Static is broken, detached, on the ground, or laying on a crossarm.

3.7 Transmission Line Switches

3.7.1 **Priority 2** is described as meeting ANY of the conditions listed below and should be repaired:

- Mechanical gas targets for interrupter SF6 gas levels are present or SF6 gas gauges are in the red zone
- Switch has known mechanical issues
- Infrared readings are high and require adjustment of blade/jaw interface or replacement
- The switch is tagged out of service with the ECC due to mechanical or operational problems
- Electrical testing indicates that a vacuum interrupter has lost dielectric strength, i.e. vacuum is not present
- Manual operator has been vandalized or Duke Energy lock is missing

SF6 Gas Level on Southern States must be in the Green Region

S&C Target is Normally White Red Target Indicates Low Gas

3.8 Transmission Line Lattice Towers, Steel & Concrete Poles

3.8.1 **Priority 9** is described as meeting ANY of the conditions listed below. Repairs or replacement may be necessary.

- Concrete poles has rust stains originating from inside the crack from the reinforcing steel or cracks more than ¼ inch wide
- Galvanized or painted steel pole or towers have rust and needs painting
- Groundline treatment on steel poles or tower is cracked, or peeled, but rusting has not yet occurred
- Earth washout at pole base requires mitigation

3.8.2 **Priority 2** is described as meeting ANY of the conditions listed below. Repairs or replacement may be necessary

- Galvanized or painted steel pole or towers have deep rust, needs cleaning, priming, & painting
- Weathering steel poles or towers exhibit heavy pack-out including deformed or missing members or bolts
- Groundline treatment on steel pole or tower is peeled or missing, and pole is actively rusting
- Aluminum towers exhibit deformed or missing members or bolts
- Earth washout at pole base is so substantial it requires replacement

3.8.3 **Priority 1** is described as meeting ANY of the conditions listed below and should be scheduled to be replaced:

- Lattice Tower, Steel or Concrete poles have significant damage requiring they be replaced
- Earth washout at pole base possibly compromises the structure integrity

3.9 Transmission Minor Components

3.9.1 **Aerial Marker Balls**; Inspect for partially detached or broken marker balls.

3.9.2 **Arrestors;** Inspect for loose hardware, detached jumpers, cracks, signs of being burned, or with high infrared readings.

3.9.3 **Bird Contamination;** Inspect for bird droppings on porcelain or polymer insulator strings. Significant activity may warrant the installation of protective bird guards or insulator replacement

3.9.4 **Conductor Splices;** Inspect for rusted strands or a discharge of the conductive grease at the splice ends. The color will normally be black. Elevated infrared readings will indicate if the splice is in a critical state. The “Ohmstick” is an effective means of evaluating a splices’ integrity.

3.9.5 **Connections;** Inspect for bent, cracked, or missing hardware, and loose or missing bolts.

3.9.6 **Dampers;** Inspect for bent, cracked, or missing nuts. Look for signs of being broken loose and sliding away from the insulator.

3.9.7 **Distribution Underbuild**; Inspect for obious hazards and safety concerns such as crossarm integrity, signs of transformer oil spillage, blown insulators, or loose grounds adjacent to primary conductors.

3.9.8 **Grounding;** Inspect for broken or deteriorated pole grounds and for unattached flying taps or bonding straps to the overhead ground wire.

3.9.9 **Guy Strain Insulators;** Inspect coatings for cracking and chipping as they protect the fiberglass insulator rod from ultraviolet radiation. Inspect end fittings for deterioration. Insulators with significantly frayed glass or splintering should be replaced.

3.9.10 **Hairpin Type Conductor Phase Spacers**; Inspect for overall integrity, any broken strands, and signs of collapsing.

3.9.11 **Line Traps;** Inspect missing nylon nuts that are UV sensitive.

3.9.12 **Pole Bands;** Inspect for broken thru bolts and pulled out lag screws, particularly on conductor deadends.

3.9.13 **ROW Condition;** Inspect for any leaning tree that may come in contact with the line.

3.9.14 **U-bolts used on steel crossarms;** Inspect for broken U-bolts on large conductor. Particular attention should be given to rusting nuts and washers on 5/8” diameter weathering U-bolts.

3.9.15 **Warning Signs/Marker Balls;** Inspect for faded, detached or missing signs. Insure signs used for helicopter patrols are present at all crossings.

ATTACHMENT N

1 Distribution Force - DEF

Hurricane Hermine and Matthew

Storm Review

Hurricane Hermine – Distribution Overview

Restoration Performance

- 239,409 Customers Restored
  - (SCOZ) 130,822 Customers Restored and 1,929 events
  - (NCOZ) 108,587 Customers Restored and 2,349 events
- All County Level ETRs Set and Achieved
- Outage Level ETR Performance: 93.9%
- Approximately 2,380 Total Resources
  - 1,820 Line Techs
  - 560 Vegetation

Customer

- Priority was given to restoration of critical service infrastructure - hospitals, emergency shelters, correctional institutions, radio stations, rural convenience stores.
- On the 3rd day of restoration an “aged outage” process was enacted to move the oldest outages to the top of dispatch order.
- Operations centers worked closely with EOCs in areas de-energized due to flooding.
- Duke Energy State President participated in daily calls facilitated by Florida Governor Rick Scott.
- A 84% service level was achieved by Customer Care Operations for outage calls

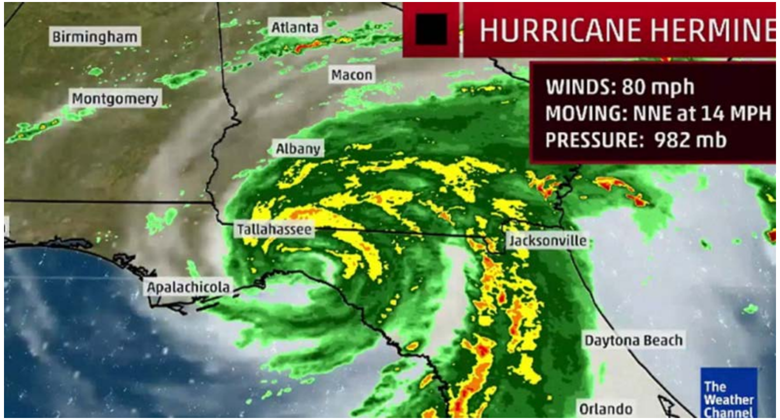
Hurricane Hermine - Weather

Hermine made landfall as a Category 1 hurricane just east of St Marks, Florida near the Big Bend around 1:30 AM Friday morning (9/2). Maximum sustained winds were near 80 mph, making Hermine the first hurricane to hit Florida since Wilma in 2005. Damaging winds and rain caused power outages in the North and South Coastal zones.

<u>Impact:</u>

Wind

- North Coastal
  - St George Island, Keaton Beach and the FSU Campus reported widespread wind gust of 58-67 mph
- South Coastal
  - Coastal Pinellas County, South Coastal Zone, reported widespread 65-75 mph wind gusts.
  - Strongest gust was 78 mph reported in Indian Shores Beach, Pinellas County.



Rainfall

- South Coastal experienced 22.36" rainfall
- St Marks River, Aucilla River and Suwanee River reached flood stage and the Anclote River crested at 25' (8th highest in history)

Tornadoes

- Three tornadoes were confirmed during Hermine, all were in the North Coastal zone

Storm Surge

- Storm Surge was 8-9 feet in Dixie County, along the North Coast coastline

Hurricane Hermine – Restoration Performance - Communications

- Email communications were distributed before the storm educating customers on storm preparedness
- Duke Energy provided communications to approximately 1200 medical essential customers
- DEF launched a storm web page that aggregates all of our news releases and other communications in one location. Customers can access this page when they log on to duke-energy.com, choose their state and then click on the promo box.
- DEF completed outbound call campaigns to customers in Florida
- JIC and FL Corp Communication teams were activated and coordinated external communications
  - Conducted interviews with TV and Radio stations including the Weather Channel
  - Created videos on social media which included the DEF State President broadcasting from the DCC
  - Captured photos and videos of resources performing restoration in the field
  - Created media releases throughout the event to keep customers informed - with an audience reach of nearly 90 million
- Staffing plans were developed to support State and County EOCs
- County and State EOC representatives coordinated emergent and priority issues with the local operations centers
- Food and water was provided to 5 North Florida counties for distribution to customers without power
- Duke Energy Florida State President participated in daily round table calls with the Gov Scott and the other IOU's. Upon completion of restoration, DEF Line and VM resources were offered to neighboring utilities.
- ETR Communication
  - System ETRs established and communicated after completion of damage assessment and customers were provided updates through the VRU, specialists and Duke Energy website
  - As crews arrived on site they updated outages with a more accurate ETR
- Flooding protocol was executed during Hermine
- At conclusion of restoration, Duke Energy published thank you ads in nearly 20 newspapers and sent thank you emails to 500,00 residential and small business customers

Hurricane Hermine – Key Metrics

	North Coastal	South Coastal
% Customer Base with Outages	33.5%	24.5%
# Customers Impacted	108,587	130,822
# Staging Sites	5	2

Florida Total	
Total Outage Events	4,278
Total Customers Impacted	239,409

	Line	Veg	DA	Total
Resources Per Outage Event	0.425	0.13	0.05	.6
Resources Per Customer	0.007	0.003	0.0009	0.0109

Hurricane Hermine – Asset Performance

Assets and automation performed well for weather conditions

- North Coastal experienced category 1 hurricane
- South Coastal experienced strong tropical storm

Wood Pole Forensics

- Site investigation performed on 6 broken poles (8% of poles issued by Stores)
- Falling trees/limbs contributed to 83%
- 50% failed near top of pole
- 50% failed near joint use attachment

Asset Performance (Material Charged to the Storm)

	Storm Damage	% of Population Damaged in affected zones
Poles	75*	0.0004%
Primary	79,567	0.03%
Secondary	26,263	0.11%
Transformers PMTX	20	0.04%
Transformer OHTX	154	0.13%

*Poles Issued during event

Hurricane Matthew – Distribution Overview

<u>Restoration Performance</u>

- 316,600 Customers Restored
  - 165,300 Peak Customers Out
  - 8,094 Outage Events
- 2,665 Total Resources
  - 1,968 Line Techs
  - 427 Vegetation
  - 270 Damage Assessment
- All County Level ETRs Set and Achieved
- Outage Level ETR Performance: 98.8%

<u>Customer</u>

- Priority given to restoration of critical service infrastructure - hospitals, emergency shelters, schools and water & sewer facilities
- Operations centers worked closely with EOCs on emergent issues and activated our Road Clearing/Make It Safe
- Duke Energy State President participated in daily round table calls facilitated by Florida Governor Rick Scott
- A 92% service level was achieved by Customer Care Operations for outage calls during Matthew
- Customers were kept informed through emails, external, outage maps, TV and radio releases and social media

Hurricane Matthew was the first major Category 5 hurricane in the Caribbean and Atlantic basins since Felix in 2007. It was the first major hurricane to interact with the Florida Atlantic coast since Hurricane Jeanne in 2004 and, to a lesser extent, Hurricane Katrina in 2005. The center of Matthew tracked just east of Florida's Atlantic coast on Friday, October 7th. Despite causing extensive damage and power outages to the eastern Florida Peninsula, Matthew never officially made landfall on the Florida Peninsula.

<u>Impact:</u>

Wind

The strongest, hurricane-strength winds and gusts were registered along and near the east coast, and tropical storm-force sustained winds and gusts were generally observed at stations throughout the eastern half of the Peninsula from near Miami northward.

- Deland- 62 mph sustained winds
- Orlando-61mph sustained winds
- North and south central zones-30-40 mph sustained winds
- Pinellas County and neighboring counties-40-50 mph wind gust

Rainfall

The highest totals generally ranged 5 – 7" in the North and South Central zones.

- Sanford-8.99"
- Lake Mary-6.81'
- Deland-6.61"

Storm Surge

- Matthew paralleled Florida's east coast, which did not pose a storm surge threat to the Florida Service Area; however, near record-breaking storm surge was recorded, most notably at beaches in Brevard, Flagler, Duval, St. Johns and Nassau counties. The highest storm surge of 6.91' was recorded at Fernandina Beach, FL, severely eroding beaches and dunes and, in some cases, compromised structures and roadways.

Hurricane Matthew - Restoration Performance - Communications

- 1 million customers were reached through email communications prior to the storm educating customers on preparedness
- Duke Energy provided communications to approximately 1,800 medical essential customers
- DEF completed outbound call campaigns to customers in Florida, reaching over 521,000 customers
  - JIC and FL Corp Communication teams were activated and coordinated external communications
  - Customers were kept informed:
    - 8.7 million views of social media content (136 original posts)
    - 2.4 million views of outage maps
    - 3.0 million customer communication emails sent
  - Conducted interviews with TV and Radio stations providing storm updates, preparations and restoration updates
  - Produced 2 Storm Director videos and promoted via Social Media
  - Captured photos and videos of resources performing restoration in the field
  - Created media releases throughout the event to keep customers informed - with an audience reach of nearly 90 million
- Staffing plans were developed to support State and County EOCs
- County and State EOC representatives coordinated emergent and priority issues with the local operations centers
- Duke Energy Florida State President participated in daily round table calls with the Gov Scott and the other IOU's
- ETR Communication
  - System ETRs established and communicated after completion of damage assessment and customers were provided updates through the VRU, specialists and Duke Energy website
  - As crews arrived on site they updated outages with a more accurate ETR
- At conclusion of restoration, Duke Energy published thank you ads in nearly 6 newspapers and sent thank you emails to 500,000 residential and small business customers

Hurricane Matthew - Key Metrics

	North Central	Other Zones
% Customer Base with Outages	53.3%	7.6%
# Customers Impacted	213,114	103,486
# Staging Sites	2	1*

* Dunnellon Airport activated to onboard off-system resources

Florida Total	
Total Outage Events	8,094
Total Customers Impacted	316,600

	Line	Veg	DA	Total
Resources Per Outage Event	0.236	0.052	0.033	.321
Resources Per Customer	0.006	0.001	0.001	0.008

Hurricane Matthew - Asset Performance

Assets and automation performed well for weather conditions

- North Central experienced sustained winds approaching a category 1 hurricane
- South Central and Ocala experienced strong tropical storm winds

Asset Performance (Material Charged to the Storm)			
	Storm Damage	% of Population Damaged (NCR/SCR)	% of Population Damaged (System)
Poles	213	.037%	.027%
Primary	134,855	.053%	.029%
Secondary	42,654	.241%	.107%
Transformers PMTX	15	.016%	.011%
Transformer OHTX	140	.088%	.065%

Wood Pole Forensics

- Site investigation performed on 21 broken poles (10% of poles issued by Stores)
- Falling trees/limbs contributed to 90%
- 24% failed near top of pole
- 52% failed near joint use attachment

Hurricane Hermine & Matthew – Asset Performance – Self Healing Teams

Hermine Self-Healing Event Results:

Major Event	Total Operations	Successful	Failed	Percent Successful	Customer Outages Saved	Customer Minutes Saved
Hurricane Hermine	19	18	1	95%	25,233	3,076,134

- During Hurricane Hermine, self-healing teams operated at a high success rate
- SCO Zone area of impact contains largest concentration of Self Healing Teams
- NCR and SCR Zones only had a handful of Self Healing Teams in service during the time Hurricane Matthew impacted those areas

Matthew Self-Healing Event Results:

Major Event	Total Operations	Successful	Failed	Percent Successful	Customer Outages Saved	Customer Minutes Saved
Hurricane Matthew	2	2	0	100%	1,639	159,467

ATTACHMENT O

Matthew R. Bernier
Senior Counsel
Duke Energy Florida, LLC

March 1, 2017

VIA ELECTRONIC FILING

Ms. Carlotta Stauffer, Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: *2016 Annual Wood Pole Inspection Report; Undocketed*

Dear Ms. Stauffer:

Pursuant to Order Nos. PSC-06-0144-PAA-EI and PSC-07-0918-PAA-PU, enclosed is Duke Energy Florida, LLC's ("DEF") Annual Wood Pole Inspection Report for CY 2016. This information is also contained in DEF's 2016 Annual Service Reliability Report dated March 1, 2017.

Thank you for your assistance in this matter. Please feel free to call me at (850) 521-1428 should you have any questions concerning this filing.

Respectfully,

s/Matthew R. Bernier
Matthew R. Bernier
Senior Counsel
Matthew.Bernier@duke-energy.com

MRB/mw
Enclosures
cc: Tom Ballinger, Director of Engineering, FPSC

Duke Energy Florida (Distribution)
Annual Wood Pole Inspection Report
(Reporting Year 2016)

a	b	c	d	e	f	g	h	i	j	k	l	m
Total # of Wooden Poles in the Company Inventory	# of Pole Inspections Planned this Annual Inspection	# of Poles Inspected this Annual Inspection	# of Poles Failing Inspection this Annual Inspection	Pole Failure Rate (%) this Annual Inspection	# of Poles Designated for Replacement this Annual Inspection	Total # of Poles Replaced this Annual Inspection	# of Poles Requiring Minor Follow-up this Annual Inspection	# of Poles Overloaded this Annual Inspection	Method(s) V = Visual E = Excavation P= Prod S = Sound B= Bore	# of Pole Inspections Planned for Next Annual Inspection Cycle	Total # of Poles Inspected (Cumulative) in the 8-Year Cycle To Date	% of Poles Inspected (Cumulative) in the 8-Year Cycle To Date
802,113	100,000	103,684	2,781	2.68%	1,095	4,429	9,445	N/A	V, E, S, B, P	100,000	295,258	36.8%

If b - c > 0, provide explanation	N/A
If d - g > 0, provide explanation	Poles are prioritized for replacement with the worst priority poles replaced first. In addition, where possible poles are re-enforced to restore the pole to better than original strength.
Description of selection criteria for inspections	Poles for inspection in 2016 were chosen based on geographic location to continue cycle 2.
	Poles noted in column d are for ground line rejects only. Additional poles are replaced based on pole top issues, but are not included in this number. Failure rate in column e is for ground line rejects only.

Duke Energy Florida (Transmission)
Annual Wood Pole Inspection Report
(Reporting Year 2016)

a	b	c	d	e	f	g	h	i	j	k	l	m
Total # of Wooden Poles in the Company Inventory	# of Pole Inspections Planned this Annual Inspection	# of Poles Inspected this Annual Inspection	# of Poles Failing Inspection this Annual Inspection	Pole Failure Rate (%) this Annual Inspection	# of Poles Designated for Replacement this Annual Inspection	Total # of Poles Replaced this annual Inspection	# of Poles Requiring Minor Follow-up this Annual Inspection	# of Poles Overloaded this Annual Inspection	Methods(s) V=Visual E=Excavation P= Prod S=Sound B=Bore R=Resistograph	# of Poles Inspections Planned for Next Annual Inspection Cycle	Total # of Poles Inspected (cumulative in the 8-Year Cycle to Date	% of Poles Inspected (Cumulative) in the 8-Year Cycle to Date
23,567 Wood Poles	7,500	15,761	1,306	8.29%	983	698	429	0	V= 7075 S&B= 8686 Total= 15,761	7,500	~~Inspected 06 = 15,161~~ ~~Inspected 07 = 12,287~~ ~~Inspected 08 = 10,520~~ Inspected 09 = 4,585 Inspected 10 = 5,375 Inspected 11=11,687 Inspected 12=13,914 Inspected 13=14,999 Inspected 14=4,891 Inspected 15=5,856 Inspected 16 = 15,761 Total = 77,068	100.00%
If b - c > 0, Provide Explaination												
If d - g > 0, provide explanation	Inspections were completed thru the end of the year. Some poles found to be defective in 2015 were replaced in 2015 while others were prioritized and worked into schedule for 2016. Defective poles found in late 2016 will be prioritized and worked into schedule for 2017.											
Description of Selection Criteria for Inspections	DEF Transmission Inspects transmission lines with wood poles on a 3 year cycle. DEF also inspects Transmission lines with Steel or Concrete Poles and Lattice Towers on a 5 year cycle. Reliablity Report Inspection criteria is included in Attachment K, GDLP-MNT-TRM-000010 and Attachment M,TECP-MIM-TRM-00026 contained in DEF's Annual Service											

Attachment B

Duke Energy Florida

CCA Pole Sampling Results (Less than 16 Years of Age)

(Reporting Year 2016)

a	b	c	d	e	f	g	h	i	j	k	l	m
Total # of CCA Poles Less than 16 Years of Age in the Company Inventory	Total # of Pole Inspections Planned this Annual Inspection	# of CCA Poles Less than 16 years of age Inspected this Annual Inspection	# of CCA Poles Less than 16 years of age sampled this Annual Inspection	# of CCA Poles Less than 16 Years of Age Failing Inspection this Annual Inspection	CCA Poles Less than 16 Years of Age Failure Rate (%) this Annual Inspection	# of CCA Poles Less than 16 Years of Age Designated for Replacement this Annual Inspection	Total # of Poles Replaced this Annual Inspection	# of CCA Poles Less than 16 Years of Age Requiring Minor Follow-up this Annual Inspection	# of Poles Overloaded this Annual Inspection	Method(s) V = Visual E = Excavation P= Prod S = Sound B= Bore	# of Pole Inspections Planned for Next Annual Inspection Cycle	Total # of Poles Inspected (Cumulative) in the 8-Year Cycle To Date
64,006	100,000	22,681	497	9	0.04%	7	N/A	136	N/A	V, E, S, B, P	N/A	N/A

If b - c > 0, provide explanation	N/A
If d - g > 0, provide explanation	N/A
Description of selection criteria for inspections	CCA poles to experience full inspection are randomly selected to represent a quantity of 1% or more of the total CCA poles less than 16 years of age in the inspection zone.

ATTACHMENT P

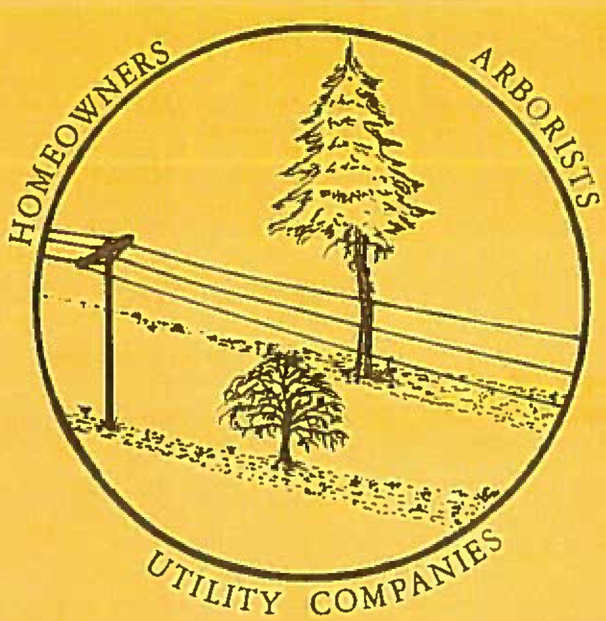
on CD

ATTACHMENT Q

on CD

ATTACHMENT R

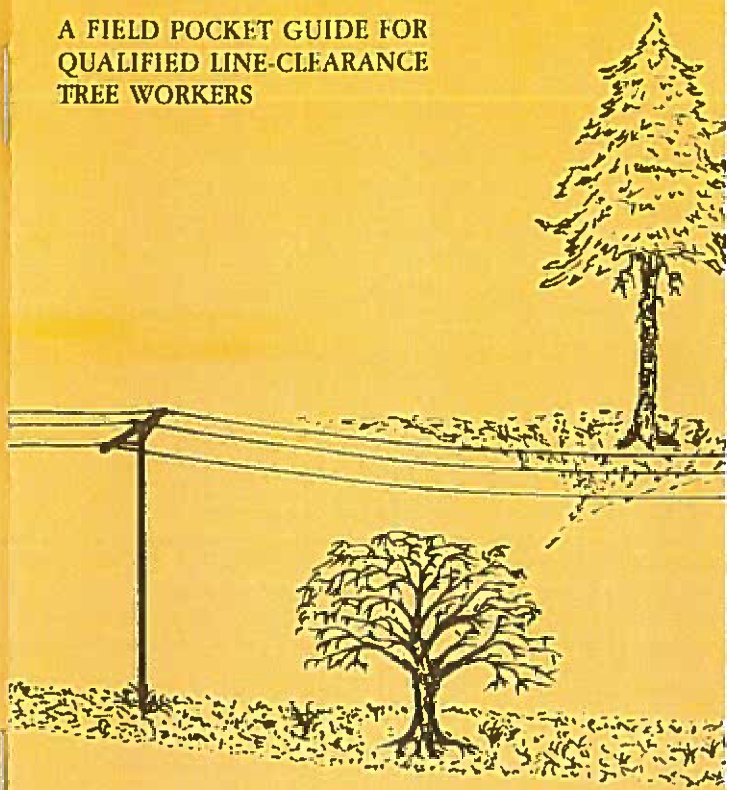
TREES AND ELECTRIC UTILITY LINES
CAN EXIST TOGETHER



IF WE ALL WORK TOGETHER

PRUNING TREES
NEAR ELECTRIC UTILITY LINES

A FIELD POCKET GUIDE FOR
QUALIFIED LINE-CLEARANCE
TREE WORKERS



DR. ALEX L. SHIGO

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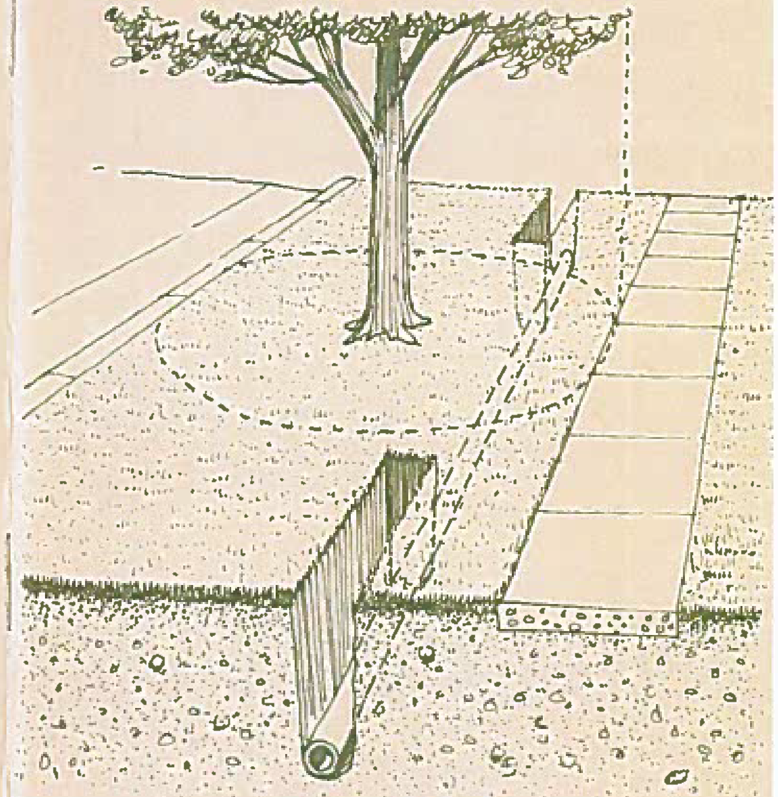
Trenching & Tunneling Near Trees

A Field Pocket Guide For Qualified Utility Workers



Dr. James R. Fazio

Remote / Rural Environments

In rural/remote locations utilities often utilize mechanical equipment to increase efficiency and improve worker safety. Large saws are mounted on high-reaching booms to prune the sides of right-of-way corridors. In some instances, saws are suspended from helicopters. When using this equipment, it is understood that the cuts made can be of lesser quality than those obtained when cutting by hand. Nevertheless, efforts are made to make cuts outside the branch bark ridge and branch collar to avoid damage to the bark of the parent tree.

Chemical side pruning is a method where specific herbicides are applied to the foliage of selected branches growing into the right-of-way corridor. The treated branches eventually die and are shed by the tree. This is an effective method to control growth on the edge of rights-of-way in remote and rural areas when falling branches will not threaten personal property or utility facilities.

In rural locations some typical arboricultural practices may prove impractical. An example would be the use of climbing spurs. While rarely used in an urban setting, they may be acceptable in remote areas.

The Right Tree in the Right Place

Planting the right tree in the right place can increase property value and energy efficiency of your home, and minimize property damage and power outages caused when trees come into contact with power lines. When planting a new tree, consider where you are placing it and what the tree will look like in 10 or 20 years. Look up from the proposed planting site and see if there are wires overhead or nearby. Also, don't forget to check for underground utilities prior to planting.

Additional Information

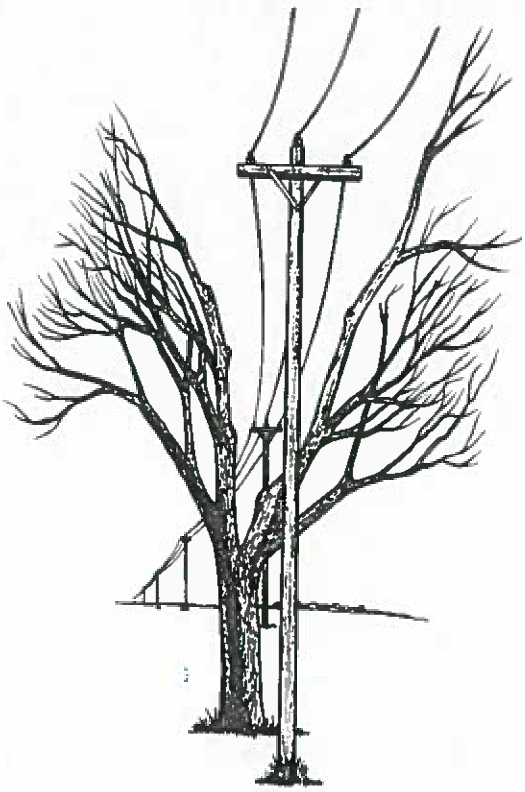
For additional information, contact:

- American National Standards Institute, www.ANSI.org
- Trees Are Good, www.treesaregood.org
- Tree Vitalize, www.treevitalize.com
- International Society of Arboriculture, www.isa-arbor.com
- Arbor Day Foundation,
- www.arborday.org/utility
- Utility Arborist Association, www.utilityarborist.org

Special Thanks: Drawings in this publication courtesy of International Society of Arboriculture and ECI.

Utility Pruning of Trees

Best Management Practices



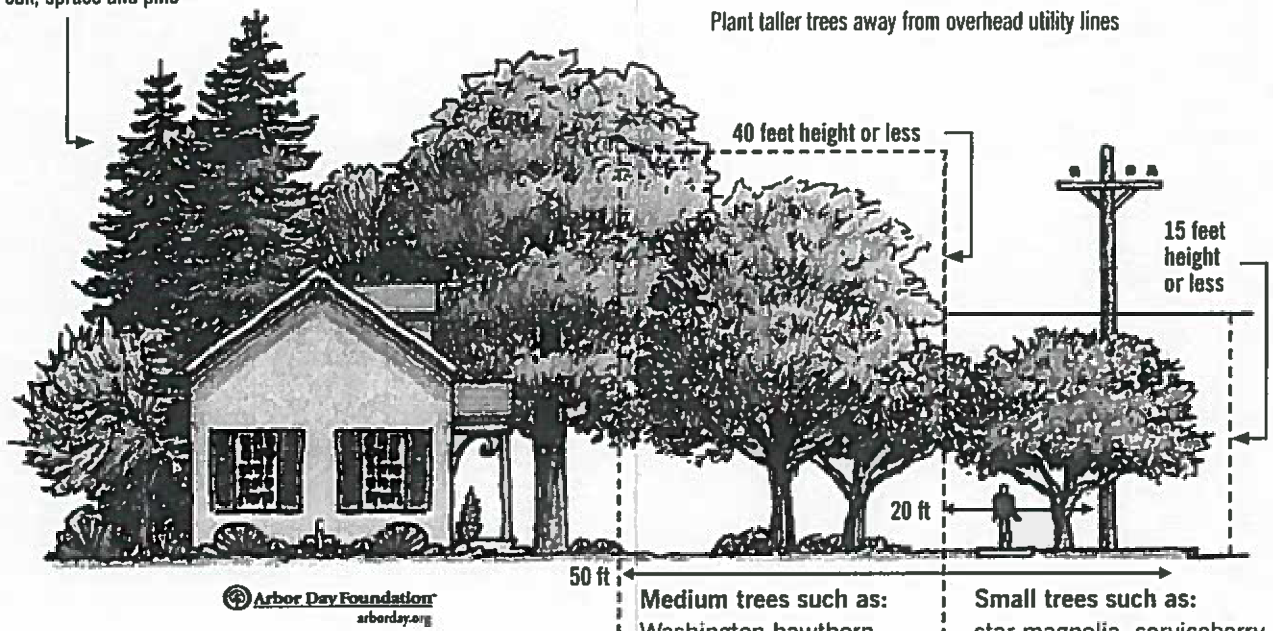
Utility Arborist Association

CAUTION: Do not attempt to prune or remove trees in contact or near electric lines unless OSHA line clearance certified. Contact your local electric utility before pruning near overhead electric wires.

Plant the right tree in the right place.

Plant taller trees away from overhead utility lines

Large trees such as: maple, oak, spruce and pine



Medium trees such as: Washington hawthorn, golden raintree and redbud

Small trees such as: star magnolia, serviceberry, Japanese maple and Kousa dogwood

Selecting a Tree

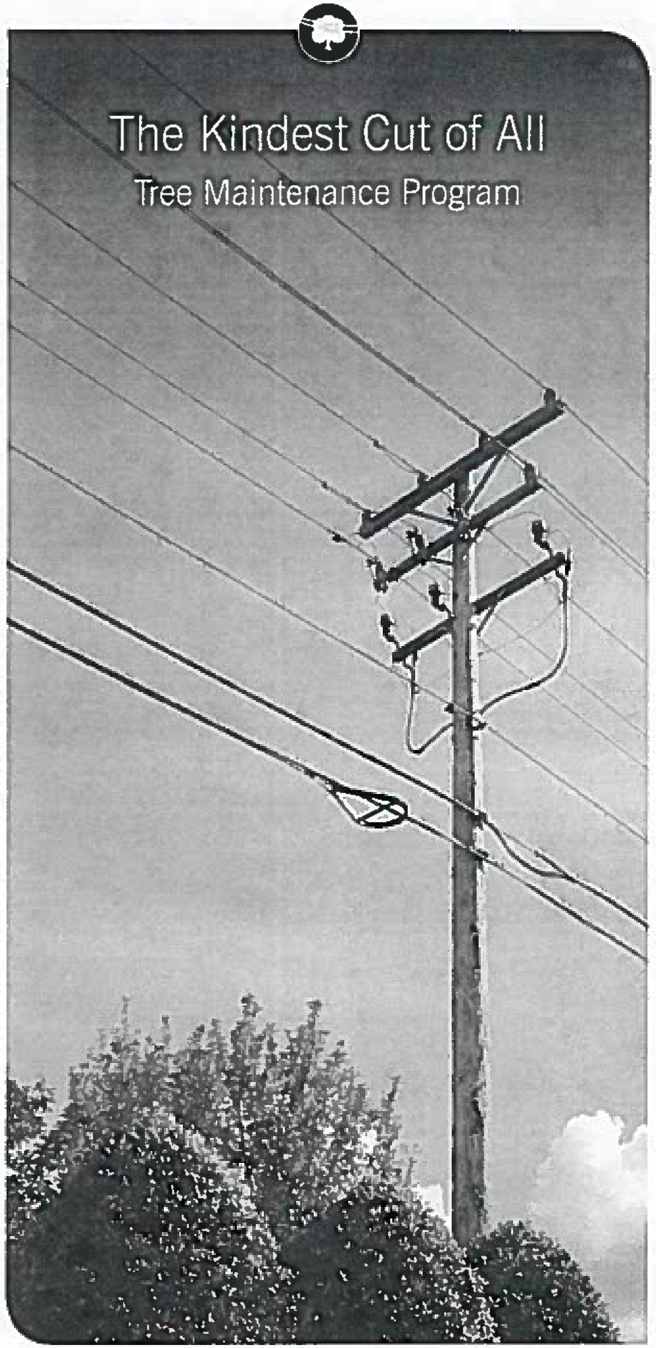
Proper spacing is important to the growth and health of trees. A good rule of thumb is trees should be planted no closer together than the height they will become at maturity. The following trees thrive in Florida:

- Small trees (trees that can be easily maintained below 20 feet): crape myrtle (certain varieties), flowering crabapple (certain varieties), Amur maple, Japanese maple, flowering dogwood, saucer magnolia, Kousa dogwood, redbud, wax myrtle, fringetree, yaupon holly
- Medium trees (grow 25 to 40 feet and should be planted 25 to 40 feet from power lines): flowering Yoshino cherry, littleleaf linden, aristocrat callery pear, American hornbeam, trident maple, Washington hawthorn
- Large trees (grow over 40 feet and should be planted at least 40 feet from power lines): willow oak, red oak, white oak, sugar maple, red maple, southern magnolia, ginkgo

Call Before You Dig

When digging in your yard, be careful where you dig. If you have underground electrical service, you could hit an underground power line and be seriously or fatally injured.

Always call an underground line locating service before you dig. There is no charge for the service, and the call is toll-free.



DUKE ENERGY.

Delivering Power to Millions Daily

Duke Energy provides, reliable electricity by maintaining high standards for the power lines serving your home or business. These standards include constantly inspecting and clearing electrical lines through a scheduled tree pruning and right-of-way management program. Each day, we deliver, dependable electricity to millions of customers. We contract professional tree crews to provide healthy pruning for the trees along thousands of miles of overhead power lines.

To help ensure uninterrupted service, trees already growing close to power lines must be pruned or taken down. When trees grow near or into overhead power lines, they can become a source of danger. The high winds of a sudden summer thunderstorm or a winter ice storm can send limbs crashing to the ground, bringing power lines with them. Even mild breezes can cause limbs to brush power lines and possibly disrupt electric service to an entire neighborhood.

Duke Energy's pruning techniques were developed by international experts in tree care and tree health maintenance. These techniques are in accordance with the guidelines outlined in the American National Standards Institute (ANSI) A300 Pruning Standards document.

Duke Energy's Pruning Philosophy

Trees and plants with shorter heights at maturity can be planted under neighborhood power lines and may never need pruning. However, tall or spreading trees, when planted under or near power lines, inevitably will require pruning or taking down.

It is a matter of safety and reliability. When our professional tree crews prune trees near power lines, they follow these guidelines:

- Use a combination of natural and directional pruning to minimize potential damage to trees.
- Prune to ensure reliable electric service to the customer for several years.
- Make an effort to contact customers prior to taking down a tree, except during emergencies.

By using these guidelines, tree crews are able to make decisions about pruning a particular tree based on its:

- natural shape
- average annual growth rate
- approximate height at maturity

These factors help determine the most suitable pruning required to achieve proper line clearance and the accelerated rate of re-growth caused by pruning.

Making a Healthy Cut

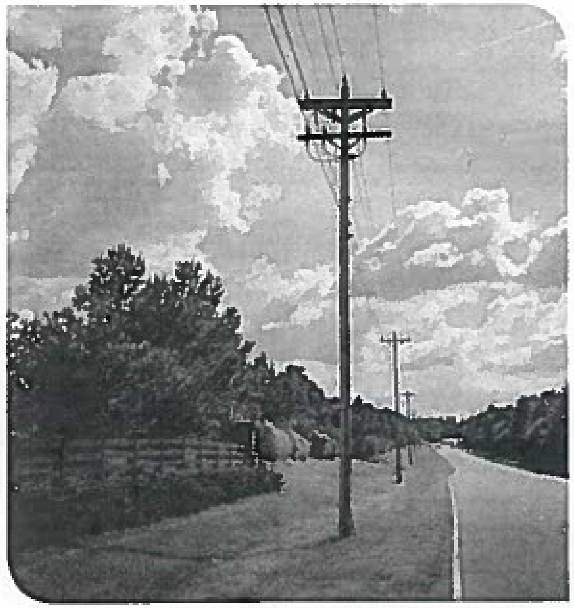
Natural pruning refers to the removal of limbs from the trunk or parent limb without damaging the trunk or leaving a protruding stub. Most pruning jobs incorporate one or more of these three types: height reduction pruning, side pruning and directional pruning.

Whenever a tree's height is reduced, the upper portion of the tree is cut back to provide proper clearance. Height reduction is most often required when a tree is growing directly under a power line. Sometimes a crown is reduced through a technique known as a "v-cut." Regardless of the type of pruning, the objective of the pruning crews is to leave as much foliage and limbs on the tree as possible while obtaining the proper and reliable clearances.

Side pruning involves removing side limbs near power lines. Limbs overhanging power lines also are removed. A tree limb properly pruned will form a "doughnut" at the point of the cut about a year after the pruning. The "doughnut" is a callus formation of wood that develops around proper tree cuts and will eventually grow over the entire surface where the limb was removed.

Directional pruning means cutting lateral limbs that are growing away from power lines.

For more information visit our website at duke-energy.com.



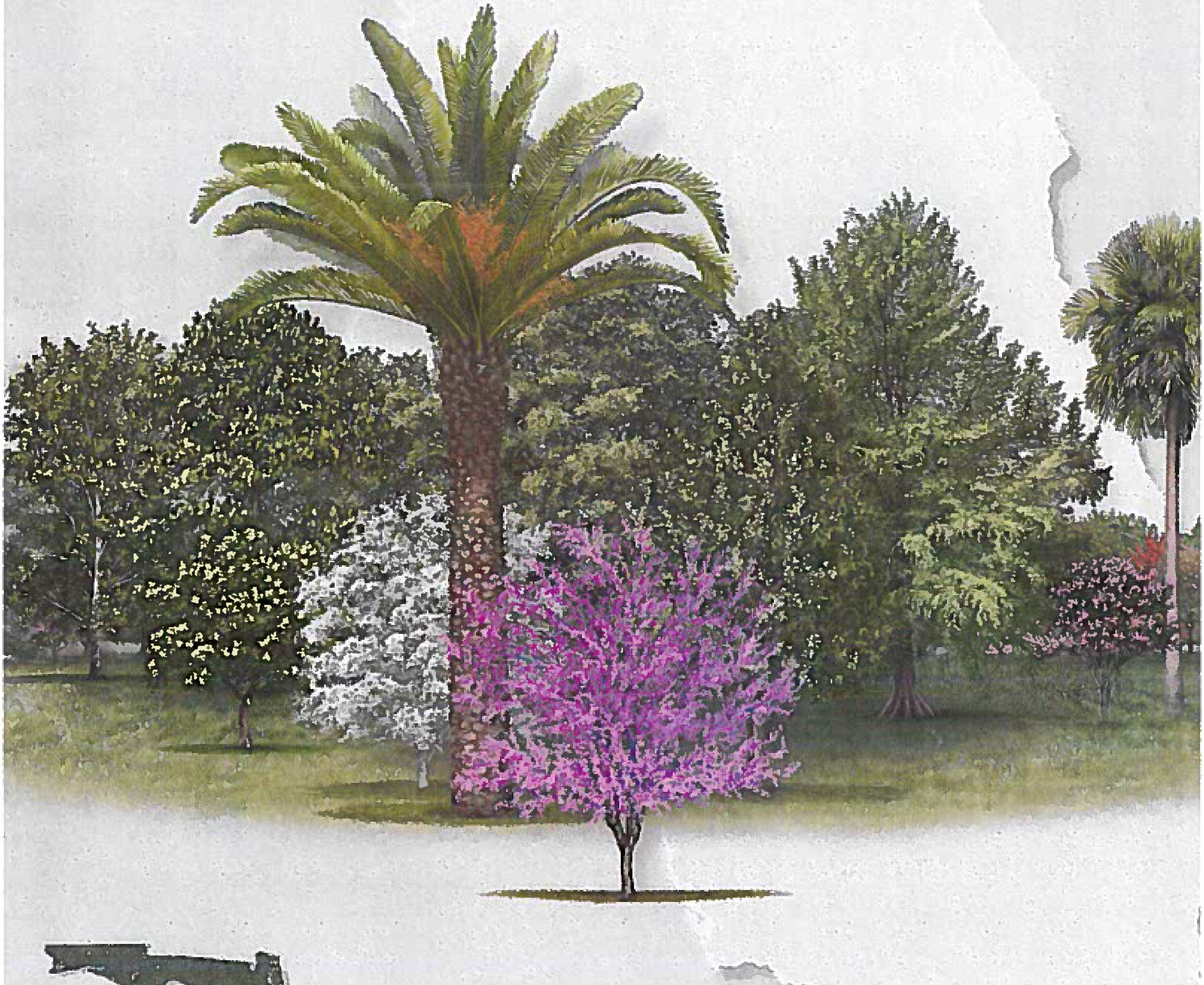
Plan Before You Plant

Customers need to plan carefully when planting near power lines. Homeowners should avoid planting a row of trees that will mature to a large size along a property line. Property lines also are frequently the area where power lines are placed, which means years later when the trees mature, they have to be pruned to ensure, reliable electric service. Planning ahead of time is important:

- Tall-growing trees should be planted at least 40 feet from power lines.
- Choose shrubs or low-growing trees if you plant in the vicinity of a power line.
- If you're uncertain about how large a tree will be at maturity, consult a landscaping expert.

RIGHT TREE / RIGHT PLACE

SELECTING & PLANTING Trees for the Central Florida URBAN FOREST



Florida Urban Forestry Council

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Duke Energy Florida (DEF) Distribution Technical Specifications

Applicable to all Vegetation Management Activity, Including Time and Equipment and Planned Vegetation Maintenance

2015 to 2017

Duke Energy Vegetation Management Services

DUKE ENERGY

Rev: 07-30-14

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1 Definitions

Note: This is a comprehensive list of definitions for all areas. Some definitions may not apply to all areas.

Area: The Duke Energy Vegetation Management Specialist area of responsibility.

Base Location or Designated Starting Point: Location where Contractor production equipment is assembled as a complete work unit at a designated starting point as mutually agreed with the Owner.

Brush: A perennial woody stem that is less than or equal to 6 in. in diameter, measured at breast height (DBH).

Circuit Miles (for reference and reporting purposes): The distance, in miles, of primary voltage electric lines from the substation to the end of the circuit, including single phase, two-phase and three-phase configurations. The distance is measured to the nearest one-tenth of a mile.

Circuit Miles (for scope of work purposes): All lines miles of the circuit, including primary, secondary and service conductors that may or may not be shown on the circuit maps. Conductors that are represented as secondary or service wires are not considered additional miles.

Close Overhang: Overhang that is within the 10 ft space above the primary conductors and extends at least 5 ft past the vertical plane formed by the primary conductor on single-phase lines and the outside primary conductors on three-phase lines.

Customer: A person, household, business or other entity that receives electric service from the Owner. Customers may or may not also be property owners.

Danger Tree: Any tree inside or outside of the right-of-way that is tall enough to strike electrical lines or distribution system equipment.

DBH: Abbreviation for diameter at breast height; tree diameter measured outside bark, typically at 4.5 ft.

Duke Energy Carolinas: The Duke Energy operating company in North Carolina and South Carolina known as Duke Energy Carolinas (abbreviated as DEC). Duke Energy Carolinas is sometimes referred to as Carolinas West.

Duke Energy Florida: The Duke Energy operating company in Florida (abbreviated as DEF).

Duke Energy Mid-West: The Duke Energy operating companies in Indiana, Ohio and Kentucky, collectively referred to as DEM.

Duke Energy Progress: The Duke Energy operating company in North Carolina and South Carolina known as Duke Energy Progress (abbreviated as DEP). Duke Energy Progress is sometimes referred to as Carolinas East.

Hazard tree: A tree that is dead, structurally unsound, dying, diseased, leaning or damaged, whether on or off the right-of-way, and that could strike electrical lines or distribution system equipment if it falls or is cut.

Hinge Point: The point at which a hinged limb could break and fall clear of the conductor.

Maintained Area: An area where cut brush cannot be left on-site. Maintained areas are considered improved areas. Examples of maintained areas include but are not limited to yards, landscaped areas, pastures, agricultural crops, fields and nurseries.

Multi-Stem Tree: A tree that has multiple trunks that are supported by a common root system. All stems of a multi-stem tree make up one tree for billing and record keeping purposes.

Non-Maintained Area: Any area where cut brush can be left on-site. Non-maintained areas are considered unimproved areas. Examples of non-maintained areas include but are not limited to rural areas, wood lots and natural areas.

Open Wire Secondary (OWS): A distribution line configuration that uses three or four uninsulated conductors stacked vertically with 12-in. spacing between conductors and that is used to deliver secondary voltages ranging from 120 to 600V to customers.

Owner: Representative of Duke Energy. The Owner should be, but is not limited to, the Vegetation Management Specialists, Division Vegetation Management Specialists or Contract Representative.

Overbuild: A type of electric power line construction, refers specifically to conductors and equipment that are built over primary distribution lines (usually transmission voltage power lines).

Primary Conductor: An electric conductor energized at more than 600V electricity.

Property Owner: Person or entity that retains legal ownership of land.

Reactive Work: Work that is unplanned or any work that is not considered planned maintenance work. Examples of reactive work include (but are not limited to) emergency work and work that results from ground and aerial patrols and property owner requests.

Region: Duke Energy Carolinas, Duke Energy Florida, Duke Energy Progress and Duke Energy Midwest.

ROW: Abbreviation for right-of-way.

Secondary Conductor: An electric conductor energized at 600V electricity or less.

Service Triplex or Multiplex Line: Electric conductors energized at 600V electricity or less and that terminate at a service delivery point. Triplex and multiplex lines are bundles of three or four conductors that are commonly used to provide aerial service to homes and businesses and have three or four polyethylene-coated conductors wrapped around a bare, aluminum conductor.

Sharpened Stub: The remaining portion of a tree left in place after being topped with a mechanical trimmer.

Single-Phase Primary: A type of electric power line construction that contains one conductor energized at primary voltage.

Span: A unit of primary conductor line between two poles.

Three-Phase Primary: A type of electric power line construction that contains three conductors energized at primary voltage.

Tree: A perennial woody stem that is more than 6 in. in diameter, measured at breast height (DBH).

Two-Phase or Open Wye: A type of electric power line construction that contains two conductors energized at primary voltage.

Unit-Mile: A mile within a circuit that must be or has been trimmed according to Contract specifications.

Work Plan (Annual Work Plan): Work that is identified to be performed during a particular year.

2 DEF Maintenance Specifications

2.1 General

2.1.1 All work must be performed in conformance to requirements of the Owner, the Occupational Safety and Health Administration (OSHA) and the American National Standards Institute (ANSI) A300 and Z133, as well as other federal, state, county and local ordinances that may apply.

2.2 Annual Work Plan

2.2.1 Work identified to be managed for the year may be selected based on circuits using a cycle-based approach in conjunction with a reliability-based prioritization model. Actual circuits to be worked shall be provided to the Contractor by the Owner.

2.3 Reactive, Revenue and Maintenance Resource Planning

2.3.1 The Contractor shall provide a qualified workforce of sufficient size and type to support all assigned tasks, including but not limited to minor storm, reactive, revenue and maintenance tree work. The Contractor shall also be responsible for managing all work associated with the work types. If there is insufficient work of a given type to support a crew, the Contractor shall work with the Owner to use crews in the most efficient manner on other work types.

2.3.2 If the Owner determines that the Contractor is in jeopardy of not meeting maintenance, reactive or revenue work plan goals, the Owner will notify the Contractor in writing and instruct the Contractor to add resources. The Owner will offer the Contractor the opportunity to address the concerns and the Contractor shall be required to provide the Owner with a written plan to address the concerns. If the Contractor does not satisfactorily address the concerns within a mutually agreed period, the Owner may offer the work to other Contractors. The Contractor shall be responsible for any additional costs or premiums the Owner incurs due to hiring another Contractor to complete the work in the timeframe necessary to meet Owner expectations.

2.4 Business Plan

2.4.1 At the beginning of each year, if requested by the Owner, the Contractor will be required to provide a business plan that includes at least the number, size and types of crews to be used to perform maintenance work for the year.

2.4.2 Maintenance work will include all necessary work on overhead primary, open wire secondary and guy wires, as well as insulated secondary, including street light circuits. The Owners expectations for clearances are defined in this document.

2.5 Contractor Work Scope Tracking

2.5.1 The Contractor shall be responsible for tracking all costs, customer/property owner notification documentation and work scope progress for maintenance, reactive, revenue, mowing, herbicide and other types of vegetation work. If requested by the Owner, Contractor management shall be required to meet with the Owner as needed to formally present this information.

2.5.2 Contractor presentation material shall include (but not be limited to) information by region and area, unless otherwise specified by the Owner. Data will include (but not be limited to) maintenance or herbicide miles in the work scope assigned, completed and remaining; units worked; average cost per mile; percentages for revenue, reactive and maintenance work; and safety status.

3 Process Specifications

3.1 Proactive Customer Notification

3.1.1 The Contractor shall install a door hanger on the customer/property owner premise or use other Owner-approved method of notice in advance of performing any maintenance work on the customer/property owner's property. The notification process is to be carried out by the Contractor's General Foreperson or designee so that routine maintenance is not negatively affected. The Contractor shall install door hangers a minimum of 3 calendar days, but not more than 14 calendar days, prior to commencement of the work (or according to other advance notice requirements approved by the Owner). Reactive crews are exempt from leaving door hangers unless they cannot make contact with the customer/property owner prior to completing the work. In such cases, the Contractor shall leave a door hanger letting the customer/property owner know that the Owner was on site performing work. Maintenance work or other planned vegetation work shall follow Owner-approved documentation procedures. Customer notification logs shall be maintained by the Contractor as specified by Owner and shall be available at the Owner's request.

3.1.2 Removal of trees in maintained areas above 6 in. DBH shall require the Contractor to obtain customer/property owner consent before work takes place. The need for signed permissions for tree and/or brush removal(s) is at the Contractor's discretion. The Owner strongly recommends signed permissions for maintained areas.

3.2 Maintenance

3.2.1 The Contractor, with input and agreement from Owner, shall determine the number, type and composition of maintenance crews. A workforce sufficient to complete 100% of the assigned maintenance work plan is expected in each area. Work shall be performed so that all work scheduled for each quarter is completed in each area.

3.2.2 Circuit miles in the annual plan may be selected using a cycle-based approach in conjunction with a reliability-based prioritization model to support the Owner's annual strategic vegetation management goals. The plan may contain work information by area, circuit and the year last trimmed. The actual plan and circuits are subject to change based on factors such as but not limited to weather, availability of Contractor resources, system reliability and funding levels. After the circuits are selected and the annual maintenance work plan is developed, the Owner shall provide the work plan to the Contractor.

3.2.3 The Owner and the Contractor will jointly review (inventory) and evaluate each circuit to identify the quantity of work units (by span) needed to complete line clearing activities This inventory should generally occur between 30 and 60 days prior to starting any work.

3.3 Reactive Work

3.3.1 The Contractor will be responsible for providing a reactive workforce suitable in size and qualifications to complete work requests within the time allotted by the Owner's work request assignment system or the work order preparer. Reactive crews may or may not actually be assigned to a specific operations center, but one reactive crew will be available for use by each center. Daily management of the reactive crews will be by the Contractor, with concurrence from the Owner. The Contractor shall be responsible for completing reactive work assigned by the Owner. Both parties will mutually agree on the timeframe for reactive work completion. Reactive work consists of internal and external customer requests, which may include but are not limited to small storms and non-scheduled emergencies.

3.3.2 Reactive work requests will be field-evaluated, approved and assigned by the Owner. If approved by the Owner, the work with instructions will be assigned to the Contractor for distribution to a reactive crew. Payment for reactive crews will be time and equipment (T&E) through the Owner's invoicing system at the contracted rates.

3.3.3 The Owner reserves the right to make changes to resource levels based on workload and other considerations. In addition, the Owner reserves the right to make changes to resource composition and/or Contractor personnel if work performance is not satisfactory.

3.4 Pruning Work Specifications

3.4.1 Primary conductors: at a minimum, primary conductors shall be cleared by the Contractor to the previously established ROW. All trees will be pruned back to the full width of the established ROW, typically 15 ft on each side of the center point of the line, or to the greatest extent possible in Florida. Unspecified ROW widths will be cleared to 30 ft (15 ft on each side of the center point of the line) unless prohibited by federal regulations, state statutes and/or local ordinances. Every effort shall be made to make cuts at or beyond the old cuts. Other exceptions may include, but are not limited to:

- The proper cut based on ANSI A300 standards is not exactly 15 ft from the center line.
- The trunk of a mature tree is established within 15 ft of the center line.
- The trees are inhabited by an endangered species, such as Indiana bats or red cockaded woodpeckers.
- The tree is a slow-growing species (section 7 Appendix).
- There is a Department of Transportation encroachment.

Overhang: Where not limited by government regulations, minimum accepted clearance above the conductor will be the height that can be reached with a 55- to 60-ft lift and a 10- to 12-ft pruner or the hinge point whichever is greater. The only exception is that in some urban areas, there may be large mature overhang that the Owner has allowed to remain for various reasons. If the Owner specifies that this mature overhang must be removed, obtaining the permission to remove the overhang shall be the responsibility of the Owner. Payment for such removal shall be made using T&E rates. Backlot lines that are not accessible by standard street-buckets will be cleared ground-to-sky of all dead, diseased, dying or incipient growth as part of the unit to avoid letting new overhang become established in inaccessible areas. The Owner may grant other exceptions on a case-by-case basis in areas where overhang within the hinge point has been established for years. In any case where overhang is allowed to remain, all hazardous overhang (e.g., dead, dying, diseased, structurally unsound) shall be removed.

3.4.2 The Contractor shall ensure that a column consisting of an 8-ft radius (or the greatest extent possible, if less than 8 ft) around the pole shall be cleared from the ground to the hinge point when pruning around primary device/switch poles, including but not limited to oil switches, manual switches, air break switches, capacitor banks, regulators and fused cutouts (not including transformer poles), to ensure that switches can be operated safely.

3.4.3 The Contractor shall obtain a minimum of 6 ft clearance below the neutral conductor (or the full extent possible, if less than 6 ft clearance) using proper arboricultural techniques. If the appropriate clearance cannot be obtained using ANSI A300 standards, the Contractor should contact the Owner for approval to remove the trees with the appropriate tree removal unit. Trees shall not be topped under any circumstances.

3.4.4 All circuit work shall start at the substation and proceed to the end of the circuit, unless otherwise directed or approved by the Owner.

3.4.5 Mechanical trimming performed with a mechanical trimmer or similar equipment shall be done in a manner that does not increase the likelihood of the tree dying and creating a threat to the Owner's facilities or to the public's safety.

- Trees shall be side-trimmed according to approved standards.
- Under no circumstances should a substantial portion of the live crown be removed from species such as pine, which will likely result in the demise of the tree and require costly follow-up to address hazard tree removals in the future.
- Cuts shall not be made that top trees low to the ground, leaving sharpened stubs in place. When removing trees and cutting underbrush, make all cuts as close to the ground as practical and preferably no more than 2 in. above the ground. All cuts will be made parallel to the ground.
- Any tree that would require topping, such as a leaning pine, should be left such that it cannot strike the line if it falls.

3.4.6 Open wire secondary shall be pruned back from the established ROW to a distance of 20 ft (10 ft on either side of the center line). The floor shall be maintained to the full width of the ROW.

3.4.7 Multiplex cables and guy wires shall be pruned if limbs are in direct contact and are load bearing on the conductors. Load bearing refers to limbs that are in contact with conductors and have a size and weight that causes tension on the conductor or interference with the normal sag or alignment of the conductor. The Contractor shall exercise prudent judgment and special consideration during winter months, when the weights of leaves may be off of the limbs. This work shall be considered part of the span unit.

3.5 Debris

3.5.1 In areas with customer/property owner impact (e.g., landscaped areas, maintained areas, urban areas, high-use areas) brush and debris shall be chipped, captured and removed from site. No brush is to be left overnight in maintained areas without the consent of the customer/property owner or their agent. Debris shall be removed daily by the Contractor as required by local ordinances or as instructed by the Owner. Our policy is for the Contractor to cut the wood into manageable pieces (18-24 in.) and leave on site. In certain circumstances, at the Owner's direction, wood that cannot be chipped may be removed from site in areas where community requirements or past operational practices exist. Lawn areas and hardscapes (e.g., patios, sidewalks, driveways) shall be cleaned up and returned to their condition prior to work at the time of entry on the property.

3.5.2 In non-maintained areas, every effort shall be made to hash down the debris in a timely manner so is it not readily visible to the public and does not create complaints. Typically, the mowing/hand-cutting should take place no more than 1 week after the trimming was performed. Storm debris shall not be removed or chipped from any location. The Contractor should consider public safety and the potential to cause property damage when leaving debris under any circumstances.

3.6 Underbrush

3.6.1 All brush (typically less than 6 in. DBH), limbs and other vegetation underneath the primary within the floor of the ROW should be cleared appropriately as dictated by the line's location and customer/property owner circumstances. As a general rule, all brush, understory stems and side growth shall be cleared from underneath the conductors as part of the unit when performing maintenance work. Palm and Brazilian pepper trees that are 12 ft or less in height will be removed as part of the span or floor unit if located within the ROW. Palm trees will be measured at the palm head and not the frond when determining their heights.

3.7 Vines

3.7.1 All vines growing on the Owner's facilities (poles, conductors, guys) shall be cut and treated with approved herbicides as they are encountered during maintenance work by the Contractor. For safety purposes, vines that are cut shall have a noticeable section (12 in.) of vine removed so they can be clearly identified as cut vines. Vines that are missed while performing maintenance work shall be the responsibility of the Contractor as rework at no additional expense to Owner. This work shall be considered part of the span unit.

3.8 Underneath the Primary

- Brush, limbs and other vegetation shall be cleared as appropriately dictated by line location and customer/property owner circumstances. As a general rule, all vegetation 6 in. DBH or less, understory stems and side growth shall be cleared from underneath the conductors as part of the unit during maintenance work. The widths of the ROWs in Florida may vary for many reasons. Therefore, the amount of brush removed will be dictated by the width of the aerial corridor being maintained (i.e., tree line to tree line). Customer/property owner consent shall be required for all removals of trees greater than 6 in. DBH in maintained areas.

Exceptions include the following:

- Low-growing species may be left. Species are considered low-growing when they mature at typically less than 15 ft. (for example wax myrtles)
- Shelf limbs may be left where necessary on front-lot construction.
- For shelf limbs on the switch side of the primary device/switch poles, including but not limited to oil switches, manual switches, air break switches, capacitor banks, regulators or fused cutouts, the Contractor shall ensure that a column consisting of a radius of 8 ft (or the greatest extent possible, if less than 8 ft) around the pole shall be cleared from the ground to the hinge point to allow safe operation of the device.

3.9 Removals

3.9.1 Maintenance inside ROW (O&M expense):

- If conditions permit, the Contractor shall remove all trees within the ROW that are 6 in. DBH or less as part of the trim or brush unit price.
- Live healthy trees within the ROW that are more than 6 in. DBH shall require

approval from the Owner before being removed.

- Brazilian pepper trees that are 12 ft or less in height will be included in the routine span or floor unit. All trees that are more than 12 ft in height will be exempt from the 6 in. DBH requirement for floor work and removed with approval from the Owner using the Removal and Chip 12 in. DBH to 24 in. DBH unit.
- Palm trees will be measured at the palm head and not the frond when determining the height for removal. Palms that are 12 ft. or less in height will be included in the trim or floor unit. All trees greater than 12 ft will be exempt from the 6 in. DBH requirement for floor work and removed with approval from the Owner using the Removal and Chip 8 in. DBH to 12 in. DBH unit.
- Danger and hazard trees inside the ROW up to 12 in. DBH shall be removed as part of the trim or floor unit price.

- Hazard trees inside the ROW that are more than 12 in. DBH require approval from the Owner before being removed and shall be billed using the appropriate removal unit.

3.9.2 Maintenance outside ROW (Capital expense):

- Hazard trees up to 30 in. DBH shall be removed if they are within 45 ft of the center line and billed using the appropriate tree removal unit.
- Hazard trees greater than 30 in. DBH shall be removed on a T&E basis with Owner approval.
- Non-hazard trees outside the ROW should not be removed.
- No hazard tree removals outside the existing ROW are included in the maintenance unit.
- Maintenance circuits that have a substantial number of dead trees (such as fire kills, beetle damage, drought kills and beaver swamps) shall be considered reactive work and worked as directed by the Owner. Brazilian pepper trees that are more than 12 ft in height shall be removed using a Removal and Chip 12 in. DBH to 24 in. DBH unit.
- Palm trees typically require much less labor for removal and will be removed using a removal unit applicable for the time and equipment required for the removal. All palm trees that are more than 12 ft in height shall be removed using the Removal and Chip 8 in. DBH to 12 in. DBH unit. Palms that are 12 ft or less in height will be measured at the palm head and not the frond.

3.10 Stumps

3.10.1 Stumps shall be treated with herbicides approved by the Owner. These applications are required where future foliar treatments will not be appropriate (e.g., landscapes, beddings and fence rows). The Contractor will procure and store herbicides to be used in such areas. Treatment will be included in the appropriate removal unit or equipment and/or labor rates and shall not be billed separately.

3.10.2 When removing trees and cutting underbrush, make all cuts as close to the ground as practical and preferably no more than 2 in. above the ground. All cuts will be made parallel to the ground.

4 Quality of Work

4.1 General

4.1.1 The Contractor shall adhere to the specifications set forth in this document. All work performed by the Contractor shall be field-checked by the Contractor. The Contractor shall be expected to map the crews' completed work on the circuit map (or using a method approved by the Owner). The Contractor shall make special note of any temporary skips or refusals to document locations that require follow up prior to completion of the circuit. The Owner expects that when the Contractor reports their circuit map as complete, all segments of the represented circuit shall comply with the Owner's specifications. If the work is complete and acceptable, the Owner will approve processing of the final invoicing for the work. If the Owner identifies and documents certain trees, taps and/or other line segments that do not meet Owner's specifications during the Owner's quality assessment of the circuit, the Owner shall return deficiencies to the Contractor for correction. The Contractor may be required to correct such work quality deficiencies at no cost to the Owner. In addition, such deficiencies may result in a work stoppage under the contract and a termination for cause.

4.1.2 The Owner shall have 30 working days to inspect for conformance or rejection of the work completed after the Owner acknowledges notice by a Contractor representative that the work is ready for inspection.

4.1.3 Any work that is identified during Owner inspections as not meeting Owner specifications shall be forwarded to the Contractor for rework at the Contractor's expense. The Contractor will have 5 business days to respond to the Owner about the rework notification. The Contractor shall complete all rework within 10 business days of the Contractor's response to Owner. After the Contractor completes the rework, the Contractor shall notify the Owner of completion. The Owner shall re-inspect the work/rework. If quality is again unacceptable, the Owner reserves the right to invoice the Contractor for all labor and equipment costs for the re-inspection and any subsequent inspection costs until the work meets the Owner's specifications.

4.1.4 If line segments were skipped (regardless of segment length) or improperly maintained and it is determined that the work was in flagrant violation of the Owner's specifications, the Owner will return the map to the Contractor with no assessment details. It will be the Contractor's responsibility to revisit the area and ensure that all spans have been maintained properly.

4.1.5 If Owner and Contractor field representatives do not agree on the findings of the quality assessment, they will jointly evaluate the work in question to make a mutually agreeable determination. If a determination cannot be made, the issue shall be referred to the Owner's and Contractor's managements for resolution.

5 Maintenance Units

5.1 Line Clearing Units

Applicable for distribution circuit maintenance tree pruning and removals.

Type	Cleanup	Sides	Complexity	Unit Name	Unit of Measurement
Conventional	Chip	1-sided	Standard	C-C1S	$/Span
	Chip	1-sided	Complex	C-C1C	$/Span
	Chip	2-sided	Standard	C-C2S	$/Span
	Chip	2-sided	Complex	C-C2C	$/Span
	No-chip	1-sided	Standard	C-N1S	$/Span
	No-chip	1-sided	Complex	C-N1C	$/Span
	No-chip	2-sided	Standard	C-N2S	$/Span
	No-chip	2-sided	Complex	C-N2C	$/Span
	Single Tree Prune			C-1TP	$/Unit
Bucket	Chip	1-sided	Standard	B-C1S	$/Span
	Chip	1-sided	Complex	B-C1C	$/Span
	Chip	2-sided	Standard	B-C2S	$/Span
	Chip	2-sided	Complex	B-C2C	$/Span
	No-chip	1-sided	Standard	B-N1S	$/Span
	No-chip	1-sided	Complex	B-N1C	$/Span
	No-chip	2-sided	Standard	B-N2S	$/Span
	No-chip	2-sided	Complex	B-N2C	$/Span
	Single Tree Prune			B-1TP	$/Unit

5.2 Brush Clearing Units

Applicable for floor clearing when trimming work is not required.

Type	Cleanup	Unit Name	Unit of Measurement
Brush mowing		BH	$/Span
Hand cutting	Chip	HC	$/Span
	No-chip	HN	$/Span
Pole clearing	Chip	PC	$/Unit
	No-chip	PN	$/Unit

5.3 Tree Removals

Applicable when removals are necessary but are not included in another unit.

Type	Cleanup	Unit Name	Unit of Measurement
Removal 5-8 in. DBH	Chip	R5-8C	$/Unit
	No-chip	R5-8NC	$/Unit
Removal 8-12 in. DBH	Chip	R8-12C	$/Unit
	No-chip	R8-12NC	$/Unit
Removal 12-24 in. DBH	Chip	R12-24C	$/Unit
	No-chip	R12-24NC	$/Unit
Removal 24-30 in. DBH	Chip	R24-30C	$/Unit
	No-chip	R24-30NC	$/Unit

5.1 General

5.1.1 The unit costs shall include any and all costs required to complete the work.

5.1.2 Removal of trees 30 in. DBH or more will be paid on a T&E basis at the applicable labor and equipment rates. Removal of trees 30 in. DBH or more must be approved by the Owner.

5.2 Maintenance Unit Descriptions

5.2.1 Type

- Conventional units: spans that are not accessible by standard street buckets.
- Bucket units: spans that are accessible by standard street buckets.

5.2.2 Cleanup

- Chip units: units in which it is reasonable to assume that cleanup of debris and chipping of brush will be necessary. Typically, chip are located in urban or maintained areas with neighborhoods and landscaped settings.
- No-chip units: units in which it is reasonable to assume that cleanup of debris and limbs will NOT be necessary. Typically, no-chip units are located in rural or unmaintained areas.

5.2.3 Sides

- 1-sided: spans that require pruning along only one side of the ROW. Typically, 1-sided units are located along streets and highways.
- 2-sided: spans with trees that require maintenance on both sides of the ROW. Typically, 2-sided units are located in backlot and cross-country lines.

5.2.4 Complex

- Standard units: spans that are not exceptionally overgrown. Typically, in standard units, side growth has not grown to the point of breaking the vertical plane of the primary conductors, and underbrush has not grown up through the primary conductors. Overhang situations may occur, but not close overhang.

- Complex units: spans that are severely overgrown from underneath or severely overgrown from side growth. Underbrush must be grown up through the primary conductors such that it cannot be cut from the base, and the brush must have upper portions of the stem removed prior to felling. Side growth must have at least grown into lines such that the vertical plane of the primary conductor has been breached. Close overhang will qualify a span as a complex unit. A minimum of 50% of the span's length must be affected for a span to qualify as a complex unit.

5.2.5 Other

- Removals: conditions permitting, the Contractor will remove all trees within the utility ROWs according to the region-specified DBH as part of the trim or brush unit price. As indicated within the Owner's specifications, tree removals may not constitute separate units. Where specified, removals shall be included within the particular unit estimated for a given span.
- Span: a span must be at least 50 ft in length to qualify as a unit. Multiple primary poles clustered together in a 50-ft measured length or less for the sole purpose of regulators, underground cable exits and/or other overhead equipment will not constitute an additional span and will be treated as a single pole location and calculated in the previous span.
- Single tree prune: One single tree prune unit will be used per span in two situations: where only one tree within a span requires pruning and typically requires 45 minutes or less to complete the work, or for spans shorter than 50 ft that require trimming.

5.2.6 Brush Floor Clearing Units

- Brush mowing: a span of line that only requires brush to be cut (no trees to prune alongside of ROW). Brush mowing units are located in areas that would be considered appropriate for brush mowing work.
- Hand cutting: a span of line that only requires brush to be cut (no trees to prune alongside of ROW). Hand cutting units are located in areas that would be considered inappropriate for brush mowing or may be inaccessible to mechanical equipment due to geography, remoteness or terrain.
- Pole clear: a unit that provides clearing of vegetation around a pole that has no other tree pruning or floor work.

5.3 Unit Application Business Rules

5.3.1 Conditions permitting, the Contractor will remove all trees and brush within the utility ROWs according to the region-specified DBH as part of the trim or brush unit price. As indicated within the Owner's specifications, tree removals above the region-specified DBH constitute separate removal units.

5.3.2 All unit rates will include necessary work zone and/or flagging costs.

5.3.3 Spans with a tree located directly underneath the line such that V-trimming is required shall be considered a 1-sided unit.

5.3.4 Spans with a tree located directly underneath the line such that V-trimming is required and additional side pruning is required on trees that are not directly underneath the line but are limited to only one side of the ROW shall be considered a 1-sided unit.

5.3.5 A tree whose trunk resides within a given span and whose limbs encroach upon adjacent spans will not justify payment of an additional span or unit.

5.3.6 Perpendicular spans, with a tree located near poles such that limbs affect both spans will not justify payment of an additional span or unit.

5.3.7 Spans that cut diagonally across a road and that require pruning on one side of the span on one end and the other side of the span on the opposite end will be considered a 1-sided unit.

6 Reference Documents

- None identified

7 Appendix

7.1 Slow-Growing Species

A list of slow-growing species to consider when determining proper clearances but not limited to the following species:

- Ironwood (*Carpinus caroliniana*).
- Pignut Hickory (*Carya glabra*).
- Buttonbush (*Cephalanthus occidentalis*).
- Flowering Dogwood (*Cornus florida*).
- Rusty Lyonia (*Lyonia ferruginea*).
- Southern Magnolia (*Magnolia grandiflora*).
- Devilwood (*Osmanthus americana*).
- Swamp Bay (*Persea palustris*).
- Myrtle Oak (*Quercus myrtifolia*).
- Wax Myrtle (*Myrica cerifera*).
- Citrus spp. Eastern Redbud (*Cercis canadensis*).
- Yaupon Holly (*Ilex vomitoria*).
- Southern Red Cedar (*Juniperus silicicola*).
- Eastern Red Cedar (*Juniperus virginiana*).

Slow-growing species may also include any species defined as having a slow growth rate in the Institute of Food and Agricultural Sciences (IFAS) database.

ANSI A300 (Part 1)-2008 Pruning (R2014)
reaffirmation and redesignation of
ANSI A300 (Part 1)-2008

American National Standard

ANSI A300 (Part 1)-2008 Pruning (R2014)
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for Tree Care Operations —
Tree, Shrub, and Other Woody Plant Management —
Standard Practices (Pruning)

TCIA®
VOICE OF TREE CARE

Approved American National Standard
ANSI

American National Standard for Tree Care Operations –

Tree, Shrub, and Other Woody Plant Management – Standard Practices *(Pruning)*

1 ANSI A300 standards

1.1 Scope

ANSI A300 standards present performance standards for the care and management of trees, shrubs, and other woody plants.

1.2 Purpose

ANSI A300 performance standards are intended for use by federal, state, municipal and private entities including arborists, property owners, property managers, and utilities as standards of practice and as specification writing guidelines.

1.3 Application

ANSI A300 performance standards shall apply to any person or entity engaged in the management of trees, shrubs, or other woody plants.

2 Part 1 – Pruning standards

2.1 Purpose

The purpose of this document is to provide standards of practice and a specification writing guideline for pruning.

2.2 Reasons for pruning

The reasons for tree pruning may include, but are not limited to, reducing risk, managing tree health and structure, improving aesthetics, or achieving other specific objectives. Pruning practices for agricultural, horticultural production, or silvicultural purposes are exempt from this standard unless this standard, or a portion thereof, is expressly referenced in standards for these other related areas.

2.3 Implementation

2.3.1 Specifications for pruning should be written and administered by an arborist.

2.3.1.1 Specifications should include location of tree(s), objectives, methods (types), and extent of pruning (location, percentage, part size, etc).

2.3.2 Pruning specifications shall be adhered to.

2.4 Safety

2.4.1 Pruning shall be implemented by an arborist, familiar with the practices and hazards of pruning and the equipment used in such operations.

2.4.2 This performance standard shall not take precedence over applicable industry safe work practices.

2.4.3 Performance shall comply with applicable Federal and State Occupational Safety and Health standards, ANSI Z133.1, Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and other Federal Environmental Protection Agency (EPA) regulations, as well as state and local regulations.

3 Normative references

The following standards contain provisions, which, through reference in the text, constitute provisions of this American National Standard. All standards are subject to revision, and parties to agreements based on this American National Standard shall apply the most recent edition of the standards indicated below.

ANSI Z60.1, Nursery stock
ANSI Z133.1, Arboriculture – Safety requirements
29 CFR 1910, General industry [1)]
29 CFR 1910.268, Telecommunications [1)]
29 CFR 1910.269, Electric power generation, transmission, and distribution [1)]
29 CFR 1910.331 - 335, Electrical safety-related work practices [1)]

4 Definitions

4.1 arboriculture: The art, science, technology, and business of commercial, public, and utility tree care.

1) Available from U.S. Department of Labor, 200 Constitution Avenue, NW, Washington, DC 20210

4.2 arborist: An individual engaged in the profession of arboriculture who, through experience, education, and related training, possesses the competence to provide for or supervise the management of trees and other woody plants.

4.3 arborist trainee: An individual undergoing on-the-job training to obtain the experience and the competence required to provide for or supervise the management of trees and other woody plants. Such trainees shall be under the direct supervision of an arborist.

4.4 branch: A shoot or stem growing from a parent branch or stem (See Fig. 4.4).

4.4.1 codominant branches/codominant leaders: Branches or stems arising from a common junction, having nearly the same size diameter (See Fig. 4.4).

4.4.2 lateral branch: A shoot or stem growing from another branch (See Fig. 4.4).

4.4.3 parent branch or stem: A tree trunk or branch from which other branches or shoots grow (See Fig. 4.4).

4.4.4 scaffold branch: A primary branch that forms part of the main structure of the crown (See Fig. 4.4).

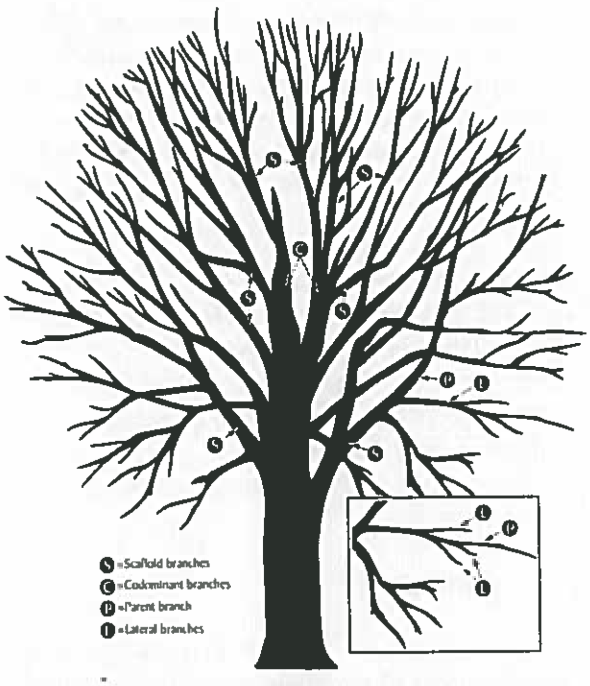


Figure 4.4 Standard branch definitions.

4.5 branch bark ridge: The raised area of bark in the branch crotch that marks where the branch and parent stem meet. (See Figs. 5.3.2 and 5.3.3).

4.6 branch collar: The swollen area at the base of a branch.

4.7 callus: Undifferentiated tissue formed by the cambium around a wound.

4.8 cambium: The dividing layer of cells that forms sapwood (xylem) to the inside and inner bark (phloem) to the outside.

4.9 clean: Selective pruning to remove one or more of the following non-beneficial parts: dead, diseased, and/or broken branches (7.2).

4.10 climbing spurs: Sharp, pointed devices strapped to a climber's lower legs used to assist in climbing trees. (syn.: gaffs, hooks, spurs, spikes, climbers)

4.11 closure: The process in a woody plant by which woundwood grows over a pruning cut or injury.

4.12 crown: Upper part of a tree, measured from the lowest branch, including all the branches and foliage.

4.13 decay: The degradation of woody tissue caused by microorganisms.

4.14 espalier: The combination of pruning, supporting, and training branches to orient a plant in one plane (6.5).

4.15 establishment: The point after planting when a tree's root system has grown sufficiently into the surrounding soil to support growth and anchor the tree.

4.16 facility: A structure or equipment used to deliver or provide protection for the delivery of an essential service, such as electricity or communications.

4.17 frond: A leaf structure of a palm.

4.18 heading: The reduction of a shoot, stem, or branch back to a bud or to a lateral branch not large enough to assume the terminal role.

4.19 interfering branches: Crossing, rubbing, or upright branches that have the potential to damage tree structure and/or health.

4.20 internode: The area between lateral branches or buds.

4.21 job briefing: The communication of at least the following subjects for arboricultural operations: work specifications, hazards associated with the job, work procedures involved, special precautions, electrical hazards, job assignments, and personal protective equipment.

4.22 leader: A dominant, typically upright, stem – usually the main trunk. There can be several leaders in one tree.

4.23 lion's tailing: The removal of an excessive number of inner and/or lower lateral branches from parent branches. Lion's tailing is not an acceptable pruning practice (6.1.7).

4.24 live crown ratio: Crown height relative to overall plant height.

4.25 mechanical pruning: A pruning technique where large-scale power equipment is used to cut back branches (9.3.2).

4.26 method: A procedure or process for achieving an objective.

4.27 peeling: The removal of dead frond bases without damaging living trunk tissue at the point they make contact with the trunk. (syn.: shaving)

4.28 petiole: A stalk of a leaf or frond.

4.29 pollarding: Pruning method in which tree branches are initially headed and then reduced on a regular basis without disturbing the callus knob (6.6).

4.30 pruning: The selective removal of plant parts to meet specific goals and objectives.

4.31 qualified line-clearance arborist: An individual who, through related training and on-the-job experience, is familiar with the equipment and hazards in line clearance and has demonstrated the ability to perform the special techniques involved. This individual may or may not be currently employed by a line-clearance contractor.

4.32 qualified line-clearance arborist trainee: An individual undergoing line-clearance training under the direct supervision of a qualified line-clearance arborist. In the course of such training, the trainee becomes familiar with the equipment and hazards in line clearance and demonstrates ability in the performance of the special techniques involved.

4.33 raise: Pruning to provide vertical clearance (7.3).

4.34 reduce: Pruning to decrease height and/or spread (7.4).

4.35 remote area: As used in the utility pruning section of this standard, an unpopulated area.

4.36 restoration: Pruning to redevelop structure, form, and appearance of topped or damaged trees (6.3).

4.37 rural area: As used in the utility pruning section of this standard, a sparsely populated place away from large cities, suburbs, or towns but distinct from remote areas.

4.38 shall: As used in this standard, denotes a mandatory requirement.

4.39 shoot: Stem or branch and its leaves, especially when young.

4.40 should: As used in this standard, denotes an advisory recommendation.

4.41 specifications: A document stating a detailed, measurable plan or proposal for provision of a product or service.

4.42 sprouts: New shoots originating from epicormic or adventitious buds, not to be confused with suckers. (syn.: watersprouts, epicormic shoots)

4.43 standard, ANSI A300: The performance parameters established by industry consensus as a rule for the measure of extent, quality, quantity, value or weight used to write specifications.

4.44 stem: A woody structure bearing buds, foliage, and giving rise to other stems.

4.45 structural pruning: Pruning to improve branch architecture (6.2).

4.46 stub: Portion of a branch or stem remaining after an internodal cut or branch breakage.

4.47 subordination: Pruning to reduce the size and ensuing growth rate of a branch or leader in relation to other branches or leaders.

4.48 sucker: Shoot arising from the roots.

4.49 thin: pruning to reduce density of live branches (7.5).

4.50 throw line: A small, lightweight line with a weighted end used to position a climber's rope in a tree.

4.51 topping: Reduction of tree size using internodal cuts without regard to tree health or structural integrity. Topping is not an acceptable pruning practice (6.1.7).

4.52 tracing: The removal of loose, damaged tissue from in and around the wound.

4.53 trunk: The main woody part of a tree beginning at and including the trunk flare and extending up into the crown from which scaffold branches grow.

4.54 trunk flare: 1. The area at the base of the plant's trunk where it broadens to form roots. 2. The area of transition between the root system and trunk (syn.: root flare).

4.55 urban/residential areas: Populated areas including public and private property that are normally associated with human activity.

4.56 utility: A public or private entity that delivers a public service, such as electricity or communications.

4.57 utility space: The physical area occupied by a utility's facilities and the additional space required to ensure its operation.

4.58 vista/view prune: Pruning to enhance a specific view without jeopardizing the health of the tree (6.4).

4.59 wound: An opening that is created when the bark of a live branch or stem is cut, penetrated, damaged, or removed.

4.60 woundwood: Partially differentiated tissue responsible for closing wounds. Woundwood develops from callus associated with wounds.

5 Pruning practices

5.1 Tree inspection

5.1.1 An arborist or arborist trainee shall visually inspect each tree before beginning work.

5.1.2 If a condition is observed requiring attention beyond the original scope of the work, the condition should be reported to an immediate supervisor, the owner, or the person responsible for authorizing the work.

5.1.3 Job briefings shall be performed as outlined in ANSI Z133.1, subclause 3.1.4.

5.2 Tools and equipment

5.2.1 Equipment, tools, and work practices that damage living tissue and bark beyond the scope of normal work practices shall be avoided.

5.2.2 Climbing spurs shall not be used when entering and climbing trees for the purpose of pruning.

Exceptions:
- when branches are more than throw-line distance apart and there is no other means of climbing the tree;
- when the outer bark is thick enough to prevent damage to the inner bark and cambium;
- in remote or rural utility rights-of-way.

5.3 Pruning cuts

5.3.1 Pruning tools used in making pruning cuts shall be sharp.

5.3.2 A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent branch without cutting into the branch bark ridge or branch collar or leaving a stub (see Figure 5.3.2).

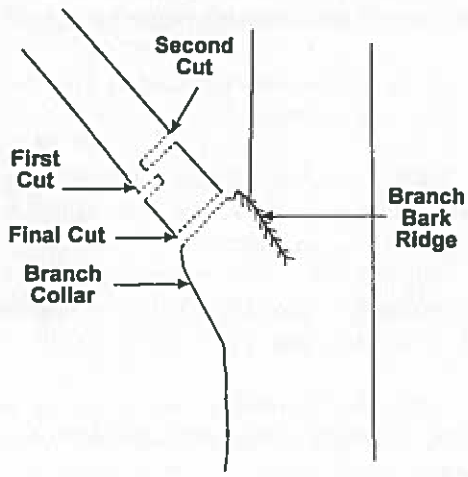


Figure 5.3.2. A cut that removes a branch at its point of origin. (See Annex A – Pruning cut guideline).

5.3.3 A pruning cut that reduces the length of a branch or parent stem shall be made at a slight downward angle relative to the remaining stem and not damage the remaining stem. Smaller cuts shall be preferred (see Fig. 5.3.3).

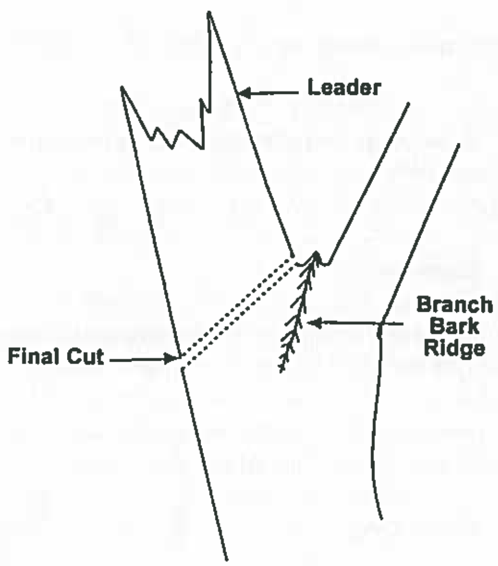


Figure 5.3.3. A cut that reduces the length of a branch or parent stem.

5.3.4 When pruning to a lateral, the remaining lateral branch should be large enough to assume the terminal role.

5.3.5 The final cut should result in a flat surface with adjacent bark firmly attached.

5.3.6 When removing a dead branch, the final cut shall be made just outside the collar of living tissue.

5.3.7 Tree branches shall be removed in such a manner so as to avoid damage to other parts of the tree or to other plants or property. Branches too large to support with one hand shall be precut to avoid splitting of the wood or tearing of the bark (see Figure 5.3.2). Where necessary, ropes or other equipment shall be used to lower large branches or portions of branches to the ground.

5.3.8 A cut that removes a branch with a narrow angle of attachment should be made from the outside of the branch to prevent damage to the parent branch (see Figure 5.3.8).

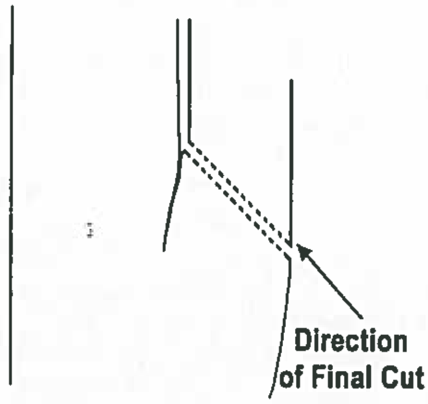


Figure 5.3.8. A cut that removes a branch with a narrow angle of attachment.

5.3.9 Severed branches shall be removed from the crown upon completion of the pruning, at times when the tree would be left unattended, or at the end of the workday.

5.4 Wound treatment

5.4.1 Wound treatments shall not be used to cover wounds or pruning cuts, except when necessary for disease, insect, mistletoe, or sprout control, or for cosmetic reasons.

5.4.2 Wound treatments that are damaging to tree tissues shall not be used.

5.4.3 When tracing wounds, only loose, damaged tissue shall be removed.

6 Pruning objectives

6.1 Pruning objectives shall be established prior to beginning any pruning operation.

6.1.1 Objectives should include, but are not limited to, one or more of the following:

- Risk reduction
- Manage health
- Clearance
- Structural improvement/correction
- View improvement/creation
- Aesthetic improvement
- Restoration

6.1.2 Established objectives should be specified in writing (See Annex B – *Specification writing guideline*).

6.1.3 To obtain the defined objective, the growth cycles, structure, species, and the extent of pruning to be performed shall be considered.

6.1.4 Not more than 25 percent of the foliage should be removed within an annual growing season. The percentage and distribution of foliage to be removed shall be adjusted according to the plant's species, age, health, and site.

6.1.5 When frequent excessive pruning is necessary for a tree to avoid conflicts with elements such as infrastructure, view, traffic, or utilities, removal or relocation of the tree shall be considered.

6.1.6 Pruning cuts should be made in accordance with section 5.3 *Pruning cuts*.

6.1.7 Topping and lion's tailing shall be considered unacceptable pruning practices for trees.

6.2 **Structural:** Structural pruning shall consist of selective pruning to improve tree and branch architecture primarily on young- and medium-aged trees.

6.2.1 Size and location of leaders or branches to be subordinated or removed should be specified.

6.2.2 Dominant leader(s) should be selected for development as appropriate.

6.2.3 Strong, properly spaced scaffold branch structure should be selected and maintained by reducing or removing others.

6.2.4 Temporary branches should be retained or reduced as appropriate.

6.2.5 Interfering, overextended, defective, weak, and poorly attached branches should be removed or reduced.

6.2.6 At planting, pruning should be limited to cleaning (7.2).

6.3 **Restoration:** Restoration shall consist of selective pruning to redevelop structure, form, and appearance of severely pruned, vandalized, or damaged trees.

6.3.1 Location in tree, size range of parts, and percentage of sprouts to be removed should be specified.

6.4 **Vista/view:** Vista/view pruning shall consist of the use of one or more pruning methods (types) to enhance a specific line of sight.

6.4.1 Pruning methods (types) shall be specified.

6.4.2 Size range of parts, location in tree, and percentage of foliage to be removed should be specified.

6.5 Espalier

6.5.1 Branches that extend outside the desired plane of growth shall be pruned or tied back.

6.5.2 Ties should be replaced as needed to prevent girdling the branches at the attachment site.

6.6 Pollarding

6.6.1 Consideration shall be given to the ability of the individual tree to respond to pollarding.

6.6.2 Management plans shall be made prior to the start of the pollarding process for routine removal of sprouts.

6.6.3 Heading cuts shall be made at specific locations to start the pollarding process. After the initial cuts are made, no additional heading cuts shall be made.

6.6.4 Sprouts growing from the cut ends of branches (knuckles) should be removed annually during the dormant season.

7 Pruning methods (types)

7.1 One or more of the following methods (types) shall be specified to achieve the objective.

7.2 **Clean:** Cleaning shall consist of pruning to remove one or more of the following non-beneficial parts: dead, diseased, and/or broken branches.

7.2.1 Location of parts to be removed shall be specified.

7.2.2 Size range of parts to be removed shall be specified.

7.3 **Raise:** Raising shall consist of pruning to provide vertical clearance.

7.3.1 Clearance distance shall be specified.

7.3.2 Location and size range of parts to be removed should be specified.

7.3.3 Live crown ratio should not be reduced to less than 50 percent.

7.4 **Reduce:** Reducing shall consist of pruning to decrease height and/or spread.

7.4.1 Consideration shall be given to the ability of a species to tolerate this type of pruning.

7.4.2 Location of parts to be removed or clearance requirements shall be specified.

7.4.3 Size of parts should be specified.

7.5 **Thin:** Thinning shall consist of selective pruning to reduce density of live branches.

7.5.1 Thinning should result in an even distribution of branches on individual branches and throughout the crown.

7.5.2 Not more than 25 percent of the crown should be removed within an annual growing season.

7.5.3 Location of parts to be removed shall be specified.

7.5.4 Percentage of foliage and size range of parts to be removed shall be specified.

8 Palm pruning

8.1 Palm pruning should be performed when fronds, fruit, or loose petioles may create a dangerous condition.

8.2 Live healthy fronds should not be removed.

8.3 Live, healthy fronds above horizontal shall not be removed. Exception: Palms encroaching on electric supply lines (see Fig. 8.3a and 8.3b).

Figure 8.3a Frond removal location.

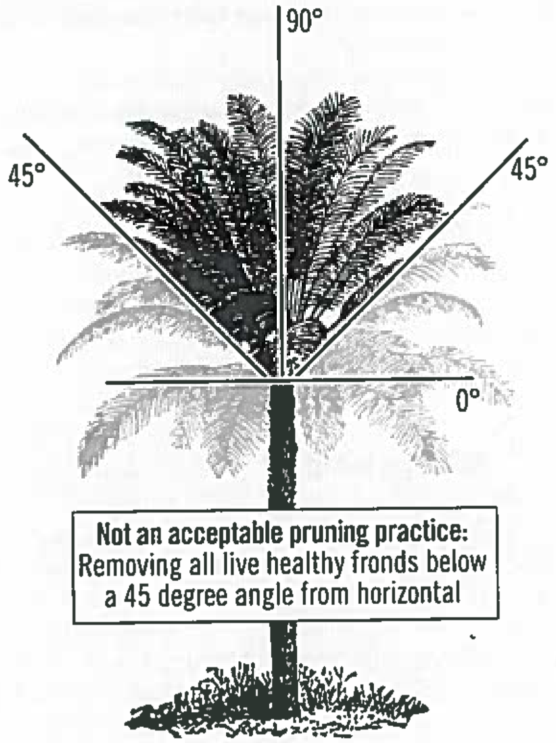


Figure 8.3b An overpruned palm (not an acceptable pruning practice).

8.4 Fronds removed should be severed close to the petiole base without damaging living trunk tissue.

8.5 Palm peeling (shaving) should consist of the removal of only the dead frond bases at the point they make contact with the trunk without damaging living trunk tissue.

9 Utility pruning

9.1 Purpose

The purpose of utility pruning is to prevent the loss of service, comply with mandated clearance laws, prevent damage to equipment, maintain access, and uphold the intended usage of the facility/utility space while adhering to accepted tree care performance standards.

9.2 General

9.2.1 Only a qualified line-clearance arborist or line-clearance arborist trainee shall be assigned to line clearance work in accordance with ANSI Z133.1, 29 CFR 1910.331 – 335, 29 CFR 1910.268 or 29 CFR 1910.269.

9.2.2 Utility pruning operations are exempt from requirements in subclause 5.1, *Tree Inspection*, for conditions outside the utility pruning scope of work.

9.2.3 Job briefings shall be performed as outlined in ANSI Z133.1, subclause 3.1.4.

9.3 Utility crown reduction pruning

9.3.1 Urban/residential areas

9.3.1.1 Pruning cuts should be made in accordance with subclause 5.3, *Pruning cuts*. The following requirements and recommendations of 9.3.1.1 are repeated from subclause 5.3 *Pruning cuts*.

9.3.1.1.1 A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent branch, without cutting into the branch bark ridge or collar, or leaving a stub (see Figure 5.3.2).

9.3.1.1.2 A pruning cut that reduces the length of a branch or parent stem shall be made at a slight downward angle relative to the remaining stem and not damage the remaining stem. Smaller cuts shall be preferred (see Fig. 5.3.3).

9.3.1.1.3 The final cut shall result in a flat surface with adjacent bark firmly attached.

9.3.1.1.4 When removing a dead branch, the final cut shall be made just outside the collar of living tissue.

9.3.1.1.5 Tree branches shall be removed in such a manner so as not to cause damage to other parts of the tree or to other plants or property. Branches too large to support with one hand shall be precut to avoid splitting of the wood or tearing of the bark (see Figure 5.3.2). Where necessary, ropes or other equipment shall be used to lower large branches or portions of branches to the ground.

9.3.1.1.6 A cut that removes a branch with a narrow angle of attachment should be made from the outside of the branch to prevent damage to the parent branch (see Figure 5.3.8).

9.3.1.2 A minimum number of pruning cuts should be made to accomplish the purpose of facility/utility pruning. The structure and growth habit of the tree should be considered.

9.3.1.3 Trees directly under and growing into facility/utility spaces should be removed or pruned. Such pruning should be done by removing entire branches or leaders or by removing branches that have laterals growing into (or once pruned, will grow into) the facility/utility space.

9.3.1.4 Trees growing next to, and into or toward, facility/utility spaces should be pruned by reducing branches to laterals (5.3.3) to direct growth away from the utility space or by removing entire branches. Branches that, when cut, will produce sprouts that would grow into facilities and/or utility space should be removed.

9.3.1.5 Branches should be cut to laterals or the parent branch and not at a pre-established clearing limit. If clearance limits are established, pruning cuts should be made at laterals or parent branches outside the specified clearance zone.

9.3.2 Rural/remote locations – mechanical pruning

Cuts should be made close to the main stem, outside of th branch bark ridge and branch collar. Precautions should be taken to avoid stripping or tearing of bark or excessive wounding.

9.4 Emergency service restoration

During a utility-declared emergency, service must be restored as quickly as possible in accordance with ANSI Z133.1, 29 CFR 1910.331 – 335, 29 CFR 1910.268, or 29 CFR 1910.269. At such times, it may be necessary, because of safety and the urgency of service restoration, to deviate from the use of proper pruning techniques as defined in this standard. Following the emergency, corrective pruning should be done as necessary.

Annex A
Pruning cut guideline

A-1 Three-cut method

Multiple cutting techniques exist for application of a three-cut method. A number of them may be used to implement an acceptable three-cut method.

A-1.1 The technique depicted in *Figure 5.3.2* demonstrates one example of a three-cut method that is common to hand-saw usage. It is not intended to depict all acceptable three-cut method techniques.

Annex B
Specification writing guideline

A300 (Part 1)-2008 *Pruning* standards are performance standards, and shall not be used as job specifications. Job specifications should be clearly detailed and contain measurable criteria.

The words "should" and "shall" are both used when writing standards. The word "shall" is used when writing specifications.

Writing specifications can be simple or complex and can be written in a format that suits your company/the job. The specifications consist of two sections.

I. General: This section contains all aspects of the work to be performed that needs to be document ed, yet does not need to be detailed.

Saying under the General section that "all work shall be completed in compliance with A300 Standards" means the clauses covering safety, inspections, cuts, etc. will be adhered to. There is no need to write each and every clause into every job specification.

Other items that may be covered in the General section could be: work hours and dates, traffic issues, disposal criteria, etc.

The second section under Job Specifications would be:

II. Details: This section provides the clear and measurable criteria; the deliverables to the client. This section, to be written in compliance with A300 standards, shall contain the following information:

1. **Objective – Clause 6**
   These objectives originate from/with the tree owner or manager. The arborist shall clearly state what is going to be done to achieve the objective(s).

   Objectives can be written for the entire job or individual trees. Rarely can one or two words clearly convey an objective so that all parties involved (client, sales, crew, etc.) can visualize the outcome.
2. **Method – Clause 7**
   Here the method(s) to be used to achieve the objective are stated. Again, depending on the type of job, this can be stated for the individual tree or a group of trees.
3. **Location – Clause 7.2.1, 7.3.2, 7.4.2, 7.5.3**
   This is the location in the tree(s) that the work methods are to take place.
4. **Density – Clause 7.3.1, 7.3.3, 7.5.1, 7.5.2, 7.5.4**
   This is the amount or volume of parts that are to be removed and can be stated exactly or in ranges.
5. **Size – Clause 7.2.2, 7.3.2, 7.4.3, 7.5.4**
   This is the size or range of sizes of cut(s) utilized to remove the volume specified.

   NOTE: Items # 4 & 5 are directly related to resource allocation, staffing and dollars.

SAMPLE PRUNING SPECIFICATIONS

#1. **Scope:** Large live oak on west side of pool

Objectives: Increase light penetration through east side of tree. Reduce risk potential of 1-inch-diameter branches falling.

Specifications: All broken branches and 1-inch-plus diameter dead branches shall be removed from the crown.

The three lowest 8-inch-plus diameter branches on the east side shall be thinned 25 percent with 1-inch- to 3-inch-diameter cuts.

NOTE: All work shall be completed in compliance with ANSI A300 and Z133.1 Standards.

Annex B
Specification writing guideline

#2. Scope: 1 Arizona ash

Objective: Enhance structure/structural development.

Specifications: General:

All pruning shall be completed in compliance with A300 Standards.

Detail:

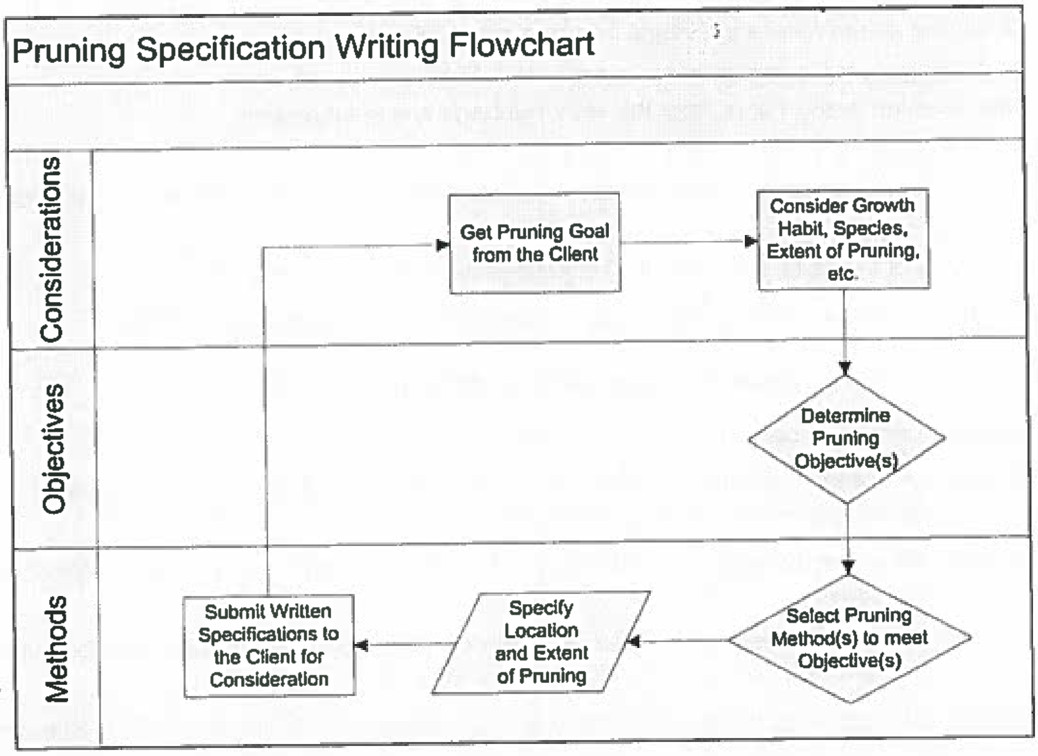
Thin crown 20-25 percent with 1-inch- to 4-inch-diameter cuts. Reduce west codominant leader by approximately 12 feet.

#3. Scope: Twenty-three newly installed evergreen elms

Objective: Maximize establishment – reduce nuisance while enhancing natural growth habit.

All work shall be completed in compliance with A300 Standards and the following specifications.

Specifications:
- Retain as much size as possible and 80-90 percent density of foliage.
- Lowest permanent branch will be 6 feet above grade in four to five years.
- Retain all sprout growth originating 18 inches above grade on trunk and 4 inches out from branch attachments throughout crown.
- Remove weakest rubbing branches.
- Remove dead branches.
- Reduce broken branches or branches with dead ends back to live laterals or buds. Heading cuts can be used.
- Maintain 6 inches behind adjacent edge of walks all growth that originates between 1.5 feet (18 inches) and 6 feet (72 inches) above grade. Heading cuts are acceptable.



Annex C
Applicable ANSI A300 interpretations

The following interpretations apply to Part 1 – *Pruning:*

C-1 Interpretation of "should" in ANSI A300 standards

"An advisory recommendation" is the common definition of "should" used in the standards development community and the common definition of "should" used in ANSI standards. An advisory notice is not a mandatory requirement. Advisory recommendations may not be followed when defensible reasons for non-compliance exist.

C-2 Interpretation of "shall" in ANSI A300 standards

"A mandatory requirement" is the common definition of "shall" used in the standards development community and the common definition of "shall" used in ANSI standards. A mandatory requirement is not optional and must be followed for ANSI A300 compliance.

Date: ____________ Time: ____________

We will soon be conducting vegetation maintenance along power lines in your area. After a review of power lines on your property, we found the following:

- ◯ Trees near power lines on your property will require routine trimming. We will perform needed trimming within 3-14 days of this notice and work could include removal of brush up to 6 inches in diameter growing under the lines.
- ◯ Certain trees on your property present a reliability risk and have been flagged for removal. Please contact us for more information.
- ◯ Power lines are clear of limbs and don't require additional maintenance at this time.
- ◯ Vegetation is interfering with access to a pad-mounted transformer and/or pole on your property and requires maintenance.
- ◯ Limbs are in cable TV and/or telephone lines and are not affecting power lines. No trimming is required.
- ◯ Since the required pruning is the result of storm damage, the brush is being left for your disposal.
- ◯ Limbs are affecting the illumination pattern on the light, but do not have an impact to the reliability of the electricity. No trimming is required.

If you have questions or concerns, please contact:

____

____

Duke Energy is committed to providing our customers with safe, reliable electric service.

Maintaining trees and vegetation along our power lines helps to ensure reliability, minimize outages and enhance safety for customers, Duke Energy employees and contractors.

Duke Energy hires qualified, trained tree experts to inspect and clear electric lines on its system. Our crews use industry-approved pruning techniques endorsed by the National Arbor Day Foundation and the International Society of Arboriculture.

All debris from our regular maintenance pruning activities will be cleaned up and disposed of by Duke Energy. Disposal of vegetation resulting from storms and other emergency operations is the responsibility of the property owner.

Learn more about Duke Energy's vegetation management program at **duke-energy.com/trees.**

How are trees pruned in a remote or wooded area?

In remote/rural locations, utilities often utilize mechanical equipment to increase efficiency and worker safety. Large saws mounted on high-reaching booms can be used to prune the sides of right-of-way corridors. In some cases, saws are suspended from helicopters. When using this equipment it is understood that the quality of the cuts can be less than those made by hand. Nevertheless, efforts are made to avoid unnecessary damage to the tree.

Chemical application is another method of side pruning where herbicides are applied to the foliage of selected branches growing into the right-of-way corridor. The treated branches eventually die and are shed by the tree.

Who will be performing the work on my trees?

Only qualified utility line clearance professional arborists who meet OSHA qualifications are legally permitted to work within 10 feet of power lines or work on a tree that has branches within 10 feet of power lines. Line clearance arborists are trained to prune trees according to American National Standards Institute (ANSI) A-300 pruning standards and follow industry best practices, which helps preserve the health of trees.

Danger: Homeowners should never hire a private tree contractor to work within 10 feet of power lines or attempt to do the work themselves. The utility should always be contacted for information first.

What specific pruning guidelines are followed?

The ANSI A-300 Part 1: Tree, Shrub and Other Woody Plant Maintenance—Standard Practices, Pruning are the accepted guidelines and are endorsed by the International Society of Arboriculture (ISA). They promote directional pruning methods which minimize pruning stress and focus on tree health while obtaining necessary clearance from power lines.

How often is utility tree pruning completed?

The time between maintenance activities varies from utility to utility and between different regions of the country. Sometimes the cycle is mandated by the state agency. The interval is based on:

- expected re-growth rates of the tree species
- amount of clearance obtained at the time of pruning
- available program funding

Some utilities conduct 'mid-cycle' pruning and/or inspections to mitigate the fastest growing trees and extend the cycle.

The Right Tree in the Right Place

Planting the right tree in the right place can increase property value and energy efficiency of your home. It will also minimize property damage and power outages caused when trees come into contact with power lines. When planting a new tree, consider where you are placing it and what the tree will look like when it reaches its mature height and width. Look up from the proposed planting site and ensure there are no overhead wires in the vicinity. If there are, consult your utility before planting. Also, before planting, make sure you are aware of the location of any underground utilities. To be certain you do not accidentally dig into any lines and risk injury, always call your utility companies first.

Additional Information

For additional information, contact:

- Utility Arborist Association; ***www.utilityarborist.org***
- American National Standards Institute; ***www.ansi.org***
- Tree Care Industry Association; ***www.tcia.org***
- Trees are Good; ***www.treesaregood.org***
- Tree Vitalize; ***www.treevitalize.com***
- International Society of Arboriculture; ***www.isa-arbor.com***
- Arbor Day Foundation; ***www.arborday.org/utility***

UTILITY PRUNING OF TREES

Trees and Distribution Electric Service Q & A

Any utility company's primary goal is to provide safe, reliable service. This brochure is intended to provide a generalized overview of how an electric utility may use tree maintenance techniques to achieve their goal.

Warning: Do not attempt to prune or remove trees in contact with or near electric lines unless OSHA line clearance certified. Contact your local electric utility before planting or

Electric Utility Pruning Q & A

Why do electric utilities prune trees?

SAFETY—Utility vegetation maintenance reduces electric hazard risk to the public by:

- providing separation between wires and vegetation to eliminate potential electrical shock
- reducing potential wildfire hazards from tree/wire conflicts

RELIABILITY—Trees are among the most common causes of utility service interruptions. Trees that are too close to power lines can interfere with electric service; especially when weather brings lightning, wind, ice, or wet snow.

How much will be cut from my tree?

Typically, a qualified utility forester or vegetation manager prescribes the amount and type of pruning necessary based on:

- tree growth rate and structure
- wind direction
- tree species: strong or weak wooded
- tree health or vigor
- environmental factors
- water sources
- proximity of tree to wires and line configuration—higher voltage lines require greater clearance

My trees are not even touching the wires, why do they have to be pruned now?

Utility companies are proactive and try to prune trees BEFORE they pose a risk to the power lines. Because trees are dynamic, factors such as swaying in the wind, sagging with ice/snow weight, and uprooting in storms are examples of how problems can develop without warning even if the trees are not in contact with wires at this moment.

What is directional pruning?

Directional pruning removes branches growing toward the power lines while leaving those that are growing away. It is the most appropriate pruning method for utility

How will a tree look after it is directionally pruned?

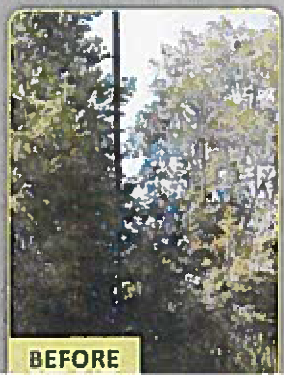
Trees growing directly under power lines may appear U or V-shaped (crown reduction or through-pruning). Trees growing alongside power lines may appear L- shaped, or one side may be completely removed (side pruning). The tree may often appear misshapen but this pruning is being performed to provide for safety and service reliability, not for aesthetic purposes. In general, trees growing near the power lines will never have the potential to grow with a "natural" shape.

DO NOT TOP TREES!

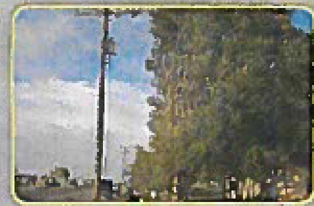
Also called 'rounding-over,' this is not directional pruning and is not an acceptable pruning practice. It involves cutting branches to stubs or lateral points that are not large enough to grow successfully. It can severely weaken the tree and even kill some species.

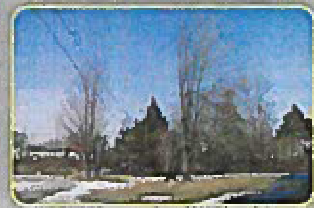
EXAMPLES OF PROPER THROUGH-PRUNING:

EXAMPLES OF PROPER SIDE PRUNING:



EXAMPLES OF PROPER SIDE PRUNING:





EXAMPLE OF A PROPER CROWN REDUCTION:

Why won't the utility put the lines underground?

Undergrounding of lines is very expensive and results in more difficult (and longer) repairs in the event of a power failure. Also, converting an overhead system to underground typically causes substantial damage to existing trees' root systems.

Is my tree a candidate for removal?

Situations where tree removal may be preferable to line clearance pruning include:

- Tall or fast-growing species growing directly under the power lines that require frequent pruning and will never have a natural form
- Saplings (brush) with the potential to grow into or close to the lines
- Large, previously topped trees under the lines
- Trees with a high risk of failure (examples – leaning, in decline, severe dieback, cracked, split, hollow, etc)

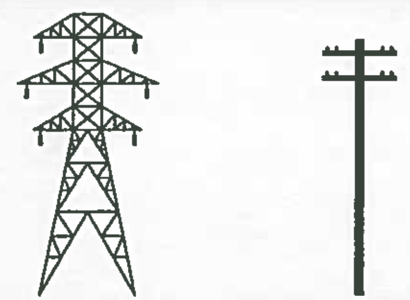
Overview

Our customers want reliable power – in both good weather and bad. And while the trees that thrive throughout our 104,000 square miles of service area are a source of tremendous pride, they are also one of the main causes of power outages.

Duke Energy works consistently to balance aesthetics with our goal to provide safe, reliable power to the households and businesses that depend on us. It is our responsibility to ensure power lines are free of trees and other obstructions that could disrupt electric service. Trees that are close to power lines must be trimmed or cut down to ensure they don't cause power outages, and Duke Energy does much of this work proactively.

Our crews use a variety of methods to manage vegetation growth along distribution circuits and transmission power line rights of way, including vegetation pruning, felling (cutting down) and herbicides. These methods are based on widely accepted standards developed by the tree care industry and approved by the American National Standards Institute for tree care maintenance and operations.

Examples of typical transmission and distribution structures



Transmission rights of way

High-voltage transmission lines provide large amounts of electricity over long distances. The transmission lines in your community are part of the larger, interconnected grid system that powers an entire region, not just the community through which the lines run. Federal rules are more stringent for some transmission lines, depending on the voltage, and may include fines up to $1 million per day for tree-related outages. Duke Energy manages its grid to provide reliable operation of transmission facilities while adhering to regulations and easement rights.

Distribution rights of way

Distribution lines carry power from local substations to homes and businesses. A distribution right of way provides access to a strip of land so that utilities (electric, telephone, cable, water and/or gas) may build and maintain service lines. Duke Energy manages rights of way to provide reliable delivery of electricity.

Vegetation management methods

Duke Energy uses an Integrated Vegetation Management approach, which includes careful pruning, selective herbicidal application and tree felling. This allows us to evaluate power line areas and determine the best method for maintaining reliable service.

The objective of an Integrated Vegetation Management program is to maintain the lines – before the trees and brush are close enough to cause outages – in a manner that is consistent with good arboricultural practices.

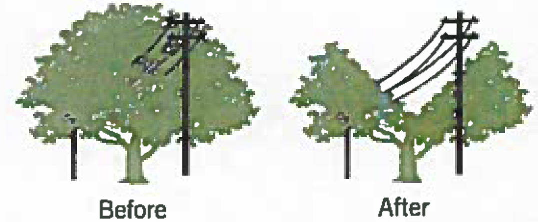
Duke Energy uses specific circuit information, reliability data and other indicators to prioritize lines for tree pruning and removal.

Pruning methods

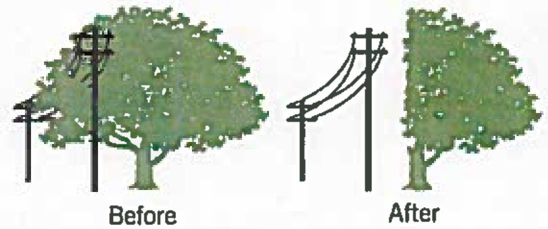
We do not "round" trees over because it's not good for a tree's health. We subscribe to directional or targeted pruning. These methods are endorsed by the tree care industry as the best pruning techniques for tree health.

Examples of trimming methods

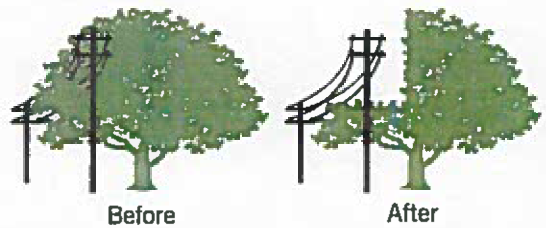
"V" trimming



Side trimming



"L" trimming



Directional pruning involves cutting a limb back to another limb (or lateral) so that future growth of the resulting limb is directed away from the power lines. The basis for this type of pruning is that each limb removed from a tree is removed either where it joins another limb or at the trunk. With directional pruning, tree growth causes less impact to public safety and electrical service. This procedure is different from the philosophy of "rounding" trees over in which limbs are cut at arbitrary points, normally leaving unhealthy "stub" cuts, which can damage the tree.

Brought to you by

DUKE ENERGY

A FREE, Effective Way to Reduce Risk for Tree, Landscape, and Lawn Care Workers

At Duke Energy, we'd like to help contribute to your company's well-being, especially when it comes to tree, landscape, and lawn worker safety around overhead and underground utilities. We're glad to offer you our worker safety training materials—FREE, to better help protect you, your workers, and the public. This is a pretty good business proposition, especially when you consider the risks.

Your Risks Can Be Costly

The result of a utility contact can be disastrous. Contacts can mean:

- Injury or death
- Higher insurance premiums
- Lawsuits and property damage
- Increased workers' compensation
- OSHA fines
- Worker days lost
- Clean-up costs
- Worker replacement costs

Save Money, Save Time, Save Lives

- **Control Injury-Related Costs.** Research indicates that safety training programs like ours help reduce injuries and fatalities and the costs associated with them, such as workers' compensation and lost production time, as well as the time and cost of paperwork, investigation, and fines associated with incidents.
- **Reduce Insurance Premiums.** Our materials include components that, studies have shown, correlate to lower insurance premiums.
- **Avoid OSHA Fines.** Our materials contain key elements that can help satisfy OSHA training regulations.
- **Save Lives.**
- **Free Safety Kit Includes:**
  - -20 *Contractor Beware®* books in English and/or Spanish
  - -20 *Worker Beware®* slideguides in English and/or Spanish
  - -1 *Worker Beware* DVD in English and/or Spanish

Tree & Landscape Workers

worker beware®

Protect yourself, your crew, and the public. Urge your employees to follow the enclosed safety tips when they work around energy lines.

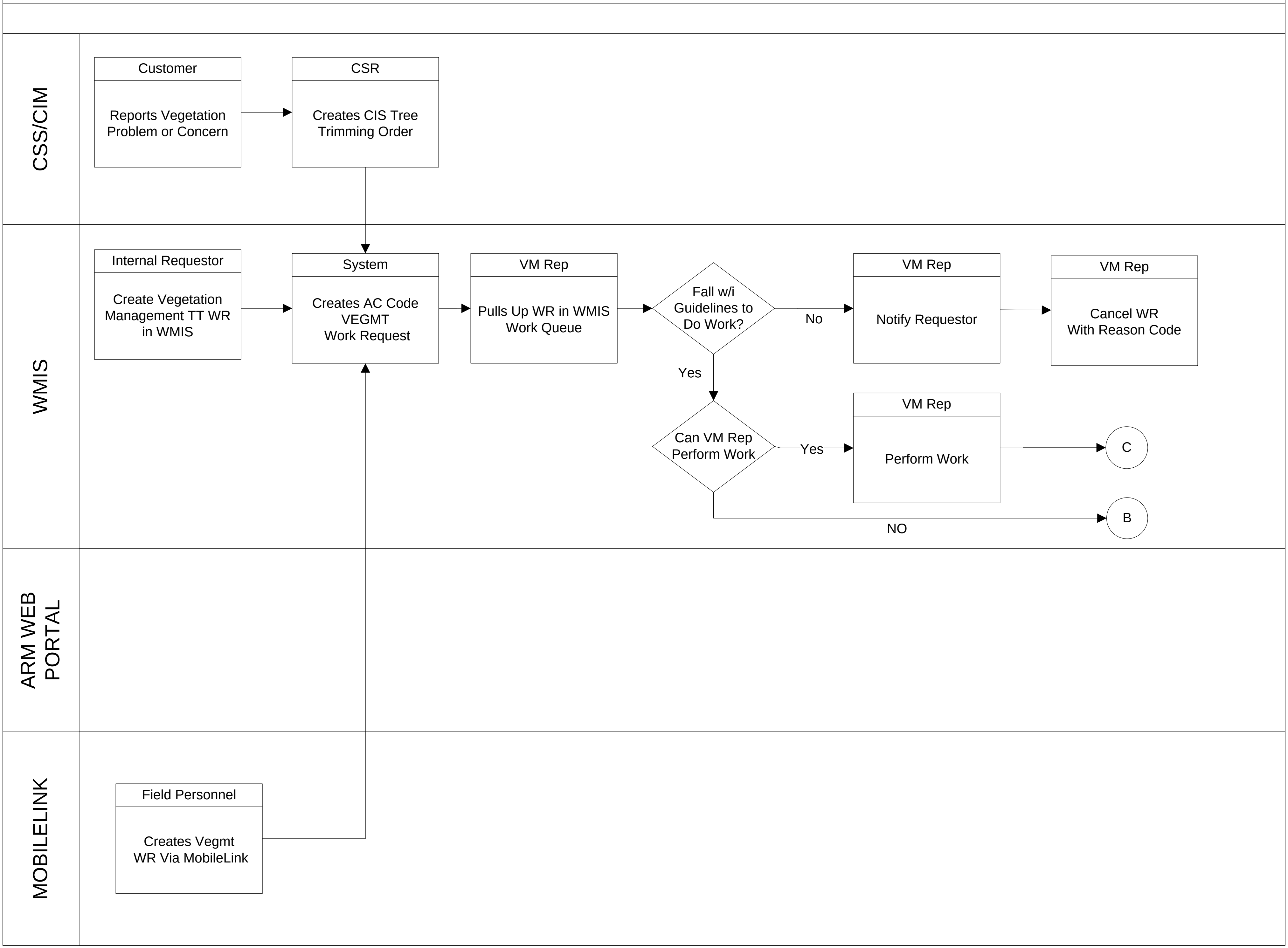
FREE poster inside.

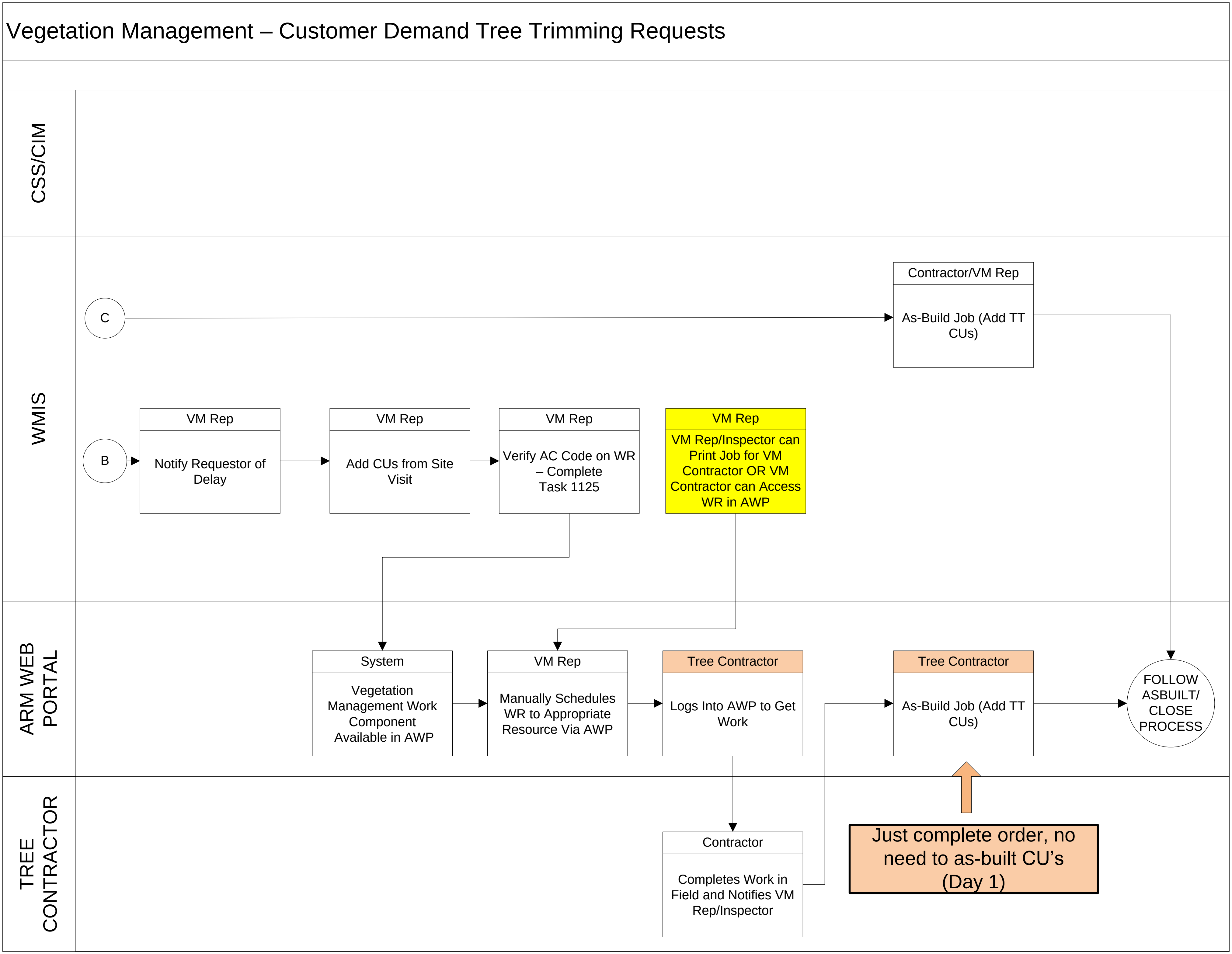
Brought to you by

DUKE ENERGY.

ATTACHMENT S

Vegetation Management – Customer Demand Tree Trimming Requests




Vegetation Management – Customer Demand Tree Trimming Requests
CSS/CIM
WMIS
ARM WEB PORTAL
TREE CONTRACTOR
C
Contractor/VM Rep
As-Build Job (Add TT CUs)
B
VM Rep
Notify Requestor of Delay
VM Rep
Add CUs from Site Visit
VM Rep
Verify AC Code on WR – Complete Task 1125
VM Rep
VM Rep/Inspector can Print Job for VM Contractor OR VM Contractor can Access WR in AWP
System
Vegetation Management Work Component Available in AWP
VM Rep
Manually Schedules WR to Appropriate Resource Via AWP
Tree Contractor
Logs Into AWP to Get Work
Tree Contractor
As-Build Job (Add TT CUs)
FOLLOW ASBUILT/ CLOSE PROCESS
Contractor
Completes Work in Field and Notifies VM Rep/Inspector
Just complete order, no need to as-built CU's (Day 1)

ATTACHMENT T

Duke Energy Florida
Storm Forensic Analysis Specification

Description of Services

The purpose of the forensic analysis services will be to collect and analyze damaged facilities and components after a storm event. The results of the analysis should provide correlation of the failed facilities to (1) storm intensity, (2) storm location, (3) facility condition and maintenance history, (4) facility design and vintage.

The forensic analysis requirements consist of four components:

- Post event data collection
- Forensic analysis of collected data
- Correlation of forensic analysis with storm data and GIS data
- Reporting of analysis

Contractor Qualifications

The forensic analysis contractor must be capable of performing all of the functions listed in the services section of this document. The contractor must have experience in transmission line design and must be geographically located so that they can be quickly mobilized after a storm event. The data collection team should have technical and transmission line design knowledge and have access to failure analysis experts so that the nature and cause of an failures can be analyzed.

Pre-storm Requirements

When the Storm Coordinator activates the storm plan prior to a storm event, one or more of the Forensic contractors will be notified that their service will be required. The forensic contractor will then mobilize their forensic team and will make preparations to support the forensic data collection requirements. Once the storm event has passed, the forensic contractor will be contacted by the logistic center coordinator and will be directed to affected region storm center where the region storm center coordinator will direct the team to the damaged zones.

Contracts

DEF will establish contracts with local engineering firms to support the forensic analysis requirements outlined in PSC-06-0947-PAA-EI. Contracts will ensure that upon notification the firm will mobilize a forensic data collection team within 24 hours of the passing of the storm event. Work will be performed on predetermined time and material rates for data collection, data analysis and reporting.

Post Storm Requirements

Data Collection

The contractor shall collect sufficient data at the failure sites to determine the nature and cause of the failure. Data collection shall include the following:

- Structure identification
- Photographs
- Sample of damaged components as necessary
- Field technical assessment (soil conditions, exposure, vegetation, etc)
- Inventory of attachments and guys

Forensic Analysis

Data and forensic samples will be analyzed to determine the cause and correlating factors contributing to the failure. Analysis will include as required:

- Conditional assessment of failed components
- Structural evaluations
- Failure analysis
- Correlation with storm path and intensity
- Correlation with GIS data

Reporting

The contractor will prepare a report containing the findings and assessments from the above described analysis. This report shall contain at minimum:

Diagram of storm path and intensity isobars and scatter chart of failed facilities
Summary table of failed facilities including:

- Type of facility (wood pole, steel tower, etc)
- Vintage
- Maintenance History
- Photographs
- Professional assessment as to cause of failure

Document title:	Document number:
Damage Assessment	GDLP-EMG-DOS-00008
	Revision No.: 001
Keywords: emergency; distribution system storm operational plan; forensic assessment	Applies to: Duke Energy Florida (Distribution)

Contents

Mission

Damage Assessment (DA) provides predictive and actual information regarding the extent of storm damage to the Duke Energy FL system, estimated number of resources needed and expected time of restoration. This is accomplished by assessing actual damage and estimated time of restoration immediately after the storm exits, and producing specific damage assessment information for restoration forces. Damage Assessment is scalable from Mid-Level storms to Major Storms

Organization Charts

Damage Assessment Org Chart

Definition of Mid-Level or Major Storm Event

Mid-Level Damage Assessment

This process consists of assessing damaged facilities on the load side of open devices during a Mid-Level Storm event. It is based exclusively on Outage Tickets from OMS and is usually run at the Zone and/or Operating Center organization level.

The following personnel are engaged in Mid-Level Damage Assessment:

- Senior Damage Assessor
- Damage Assessor
- Damage Assessor Driver
- Damage Assessment Support
- Operating Center Damage Assessment Coordinator
- Mid-Level Damage Assessment Coordinator (Zone)
- System Damage Assessment Coordinator

Specific Explanations of Mid-Level Damage Assessment

- This process is a logical and scalable version of the DA Major storm restoration process, i.e., the mid-level and major storm restoration processes will be nearly identical in both process and organizational structures. Additionally, it would provide for more opportunities to both practice and prepare for, make adjustments to, as well as execute the major storm process.
- Both the Central and Coastal Zones will have a designated DA Lead and a designated backup DA Lead.
- Prior to or during an event, DA Zone Leads will be engaged by either:
  - DCC / Zone Point Of Contact (ZPOC) / Ops Center Point of Contact (OPOC) request
  - Proactive monitoring of escalating weather conditions by the DA leadership

- Mid-Level DA Leads will either perform or cause the callout to be performed via Call Tree/ARCOS to acquire the requisite Damage Assessors.
- Mid-Level DA Leads will consider contacting R&D management to request driving resources to accompany damage assessors during an event.
- DA Local leads will work *side by side* with the Operations Center Point of Contact (OPOC).
- Damage Assessors will be categorized into two (2) distinct groups:
  - Senior DA - Experienced at Damage Assessment and Mid-Level DA, i.e., fully competent to perform their duties either during the day or at night.
  - Damage Assessor - Relatively Inexperienced at the Damage Assessment and Outage Investigation process, i.e., new to their roles with limited experience performing their duties either during the day or at night.

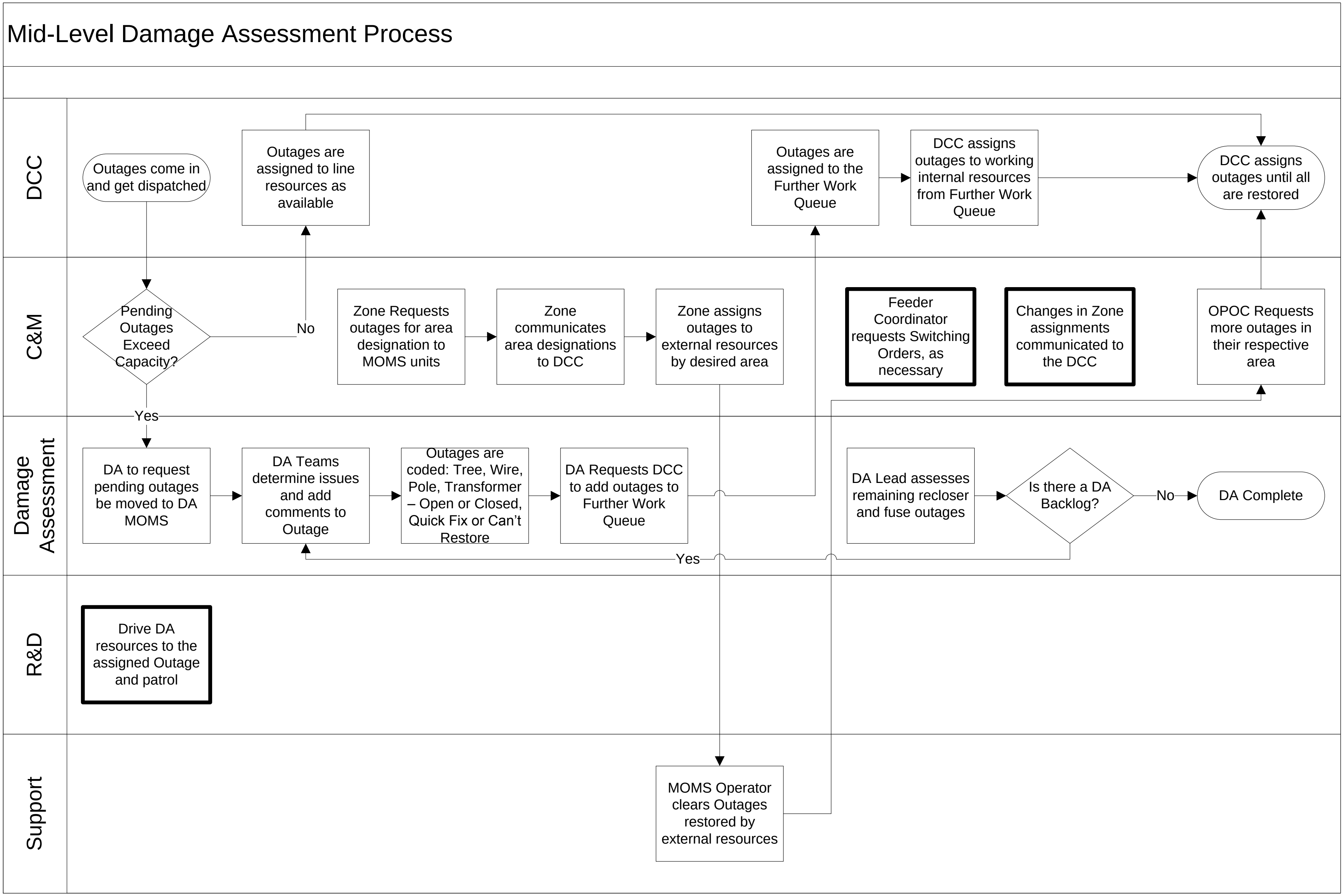
- DA resources will be deployed as follows and consist of 2 personnel in each vehicle:

	Senior Damage Assessor	Damage Assessor	R&D Driver (Optional)
Day	X	X	X
Night (No Backlot)	X	Only w/ Senior DA	X

- The Mid-Level Escalation guideline stipulates DA resources will be prepared to perform damage assessment and be available to respond to IPT's beginning at Level 2 activation.
- DA Local leads will be responsible for identifying the following:
  - How many resources will be required to assist in the restoration efforts,
  - Confirming that the resources have been assigned tasks that are commensurate with their abilities, i.e., DA-1, DA-2.
  - For Levels 1-3, communicating and coordinating submitted outage data to the MOMS operator or inputting the same data into MOMS, if capable.

  - Monitoring the pending tickets as well as communicating with the OPOC to determine the appropriate time to either mobilize DA resources or release them from their assigned duties.

The flowchart shown on the next page provides a detailed view of this sub-process:


Mid-Level Damage Assessment Process
DCC
C&M
Damage Assessment
R&D
Support
Outages come in and get dispatched
Outages are assigned to line resources as available
Outages are assigned to the Further Work Queue
DCC assigns outages to working internal resources from Further Work Queue
DCC assigns outages until all are restored
Pending Outages Exceed Capacity?
No
Yes
Zone Requests outages for area designation to MOMS units
Zone communicates area designations to DCC
Zone assigns outages to external resources by desired area
Feeder Coordinator requests Switching Orders, as necessary
Changes in Zone assignments communicated to the DCC
OPOC Requests more outages in their respective area
DA to request pending outages be moved to DA MOMS
DA Teams determine issues and add comments to Outage
Outages are coded: Tree, Wire, Pole, Transformer – Open or Closed, Quick Fix or Can't Restore
DA Requests DCC to add outages to Further Work Queue
DA Lead assesses remaining recloser and fuse outages
Is there a DA Backlog?
No
DA Complete
Yes
Drive DA resources to the assigned Outage and patrol
MOMS Operator clears Outages restored by external resources

Major Storm Event Damage Assessment

Consists of the following sub-processes:

- Statistical Damage Assessment
- Targeted Damage Assessment
- Forensics DA
- Final Sweep

Specific Explanations of Major Storm Event Damage Assessment

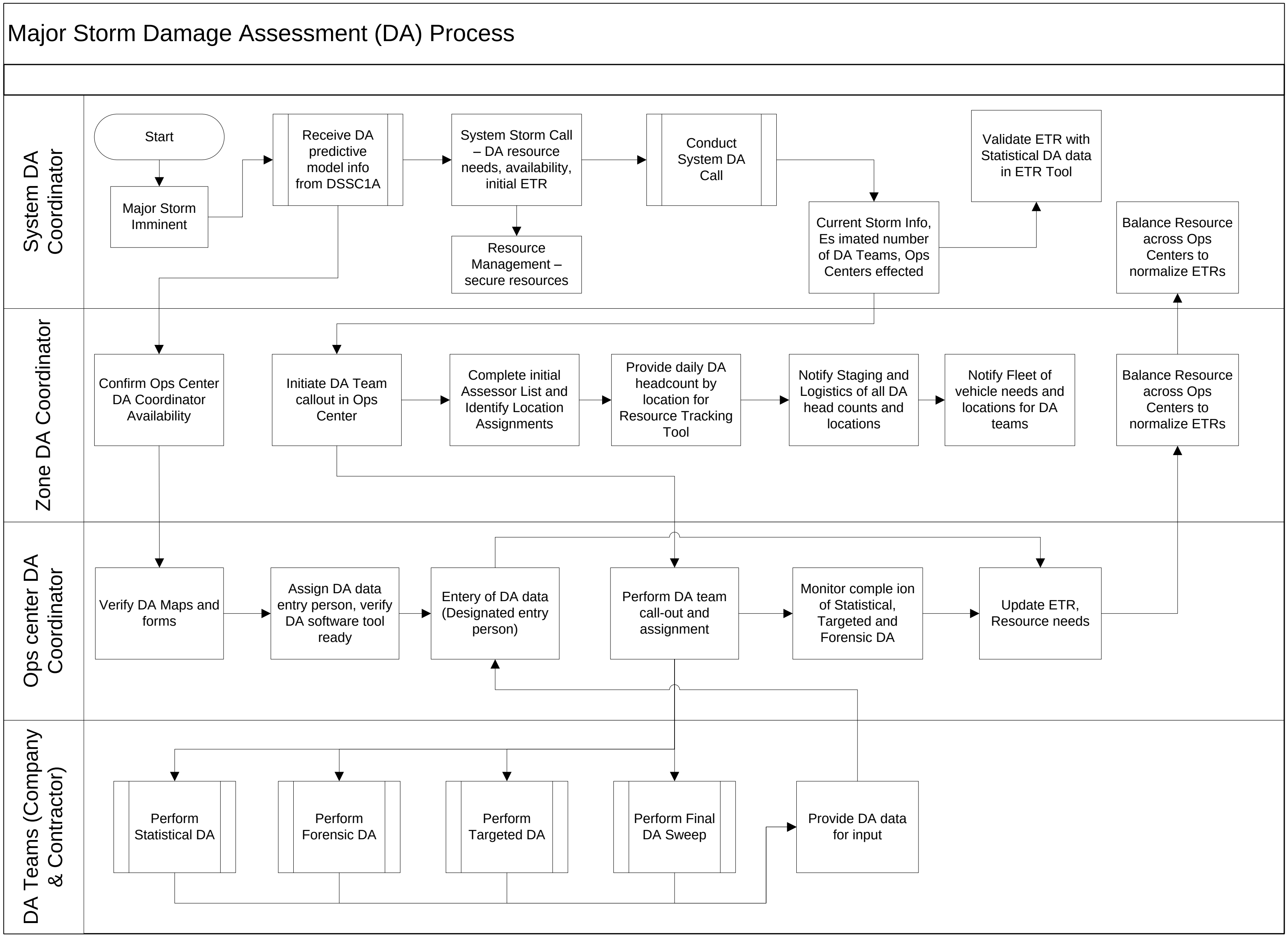
- This process is both a logical and scalable version of the DA Mid-Level restoration process, i.e., the mid-level and major storm restoration processes will be nearly identical
- Outages will be assigned by priority feeder after the AIRD feeders have been assessed and modeled in OMS.
- DA can commence on predicted device outages or reported outages as modeled in OMS based on the data obtained from the AIRD process.
- Outages are documented at the device level and either reported as *Further Work Tickets* or cleared as appropriate.
- Damage data, i.e., Further Work, is entered directly into MOMS.
- Addresses or GPS coordinates can be utilized when assigning work packets to both native and off-system line crews.
- The DA processes to support major storms will be defined in four (4) distinct categories:
    - **Statistical DA (High level tally of pole, wire, transformer damage within a sample areas to assist with damage estimates and ETR**;
    - **Targeted DA(Detailed damage assessment associated with specific outage events**;
    - **Final Sweep DA(Substation to meter assessment to update GIS of any asset changes)** ;
    - **Forensic DA (Specific assessment for analysis for pole damage, usually in response to tornado or high winds)** .

- Damage Assessment teams will be comprised of two (2) distinct groups:
    - Senior DA - Experienced at Damage Assessment and Mid-Level DA, i.e., fully competent to perform their duties
    - Damage Assessor - Relatively Inexperienced at the Damage Assessment and Outage Investigation process, i.e., new to their roles with limited experience performing their duties.

- DA resources will be deployed as follows and consist of 2 personnel in each vehicle:

	Senior Damage Assessor	**Damage Assessor**	**R&D Driver**
Day	X	X	X
Night (No Backlot)	none	none	none

The flowchart below provides a detailed view of this sub-process:



Major Event DA Timeline

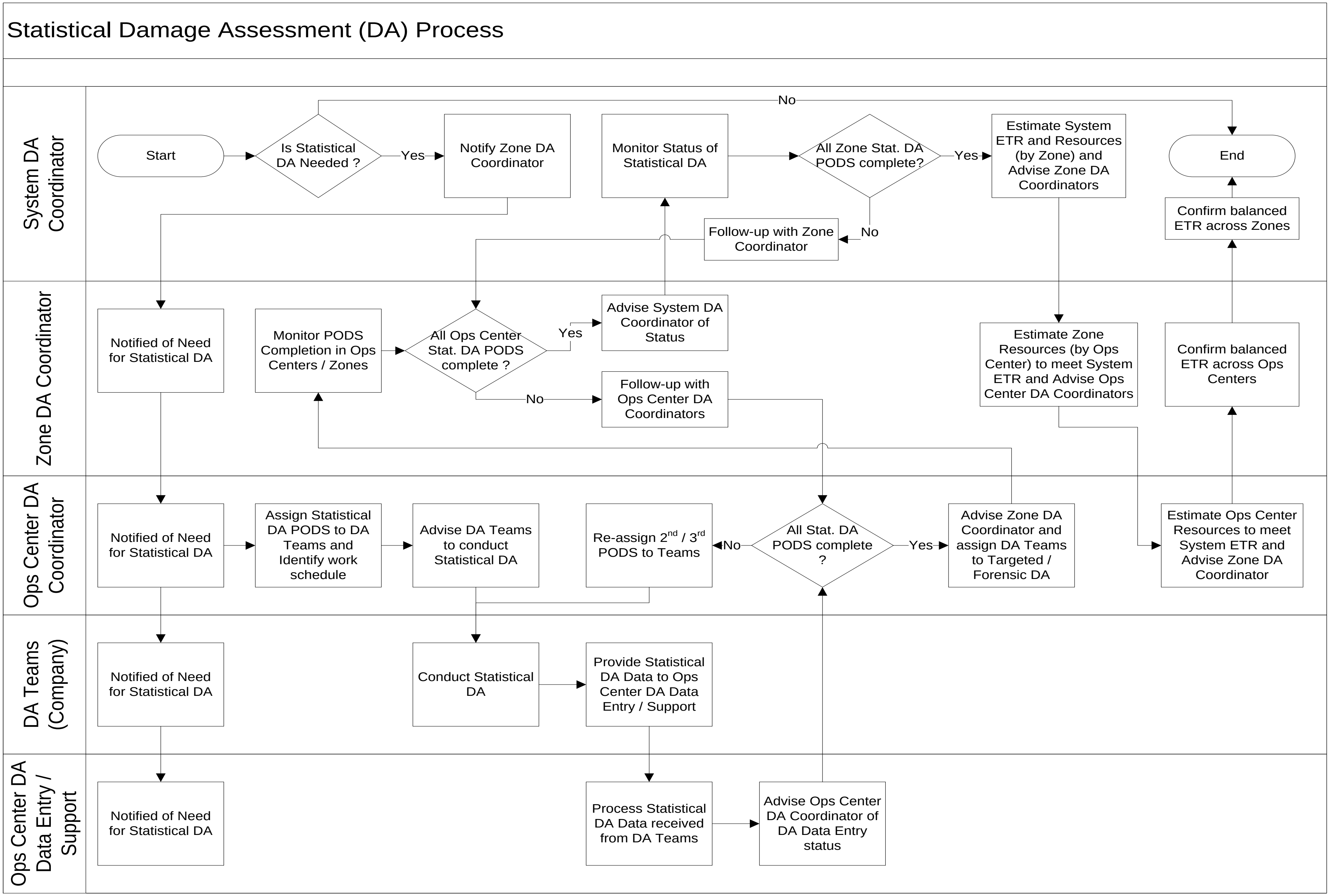
10	**Final DA Sweep** - *Do storm system change (abnormalities, non-s construction, etc) nec updates. Captures fo that pose impending Sweeps performed to base.*

Statistical Damage Assessment

This sub-process consists of assessing approximately 10% of the Distribution facilities (in each Operating Center) and recording the damage found. These results are then projected across all facilities in the operating center to predict total facilities damaged from which resource needs and estimated time of restoration can be calculated. Statistical DA will be completed within 12 hours after the All Clear.
The following personnel are engaged in Statistical Damage Assessment:

- Senior Damage Assessor
- Damage Assessor
- Damage Assessor Driver
- Damage Assessment Support
- Operating Center Damage Assessment Coordinator
- Zone Damage Assessment Coordinator
- System Damage Assessment Coordinator

The flowchart below provides a detailed view of this sub-process:


Statistical Damage Assessment (DA) Process
System DA Coordinator
Zone DA Coordinator
Ops Center DA Coordinator
DA Teams (Company)
Ops Center DA Data Entry / Support
Start
Is Statistical DA Needed ?
Yes
No
Notify Zone DA Coordinator
Monitor Status of Statistical DA
All Zone Stat. DA PODS complete?
Yes
No
Estimate System ETR and Resources (by Zone) and Advise Zone DA Coordinators
End
Confirm balanced ETR across Zones
Follow-up with Zone Coordinator
Notified of Need for Statistical DA
Monitor PODS Completion in Ops Centers / Zones
All Ops Center Stat. DA PODS complete ?
Yes
No
Advise System DA Coordinator of Status
Follow-up with Ops Center DA Coordinators
Estimate Zone Resources (by Ops Center) to meet System ETR and Advise Ops Center DA Coordinators
Confirm balanced ETR across Ops Centers
Notified of Need for Statistical DA
Assign Statistical DA PODS to DA Teams and Identify work schedule
Advise DA Teams to conduct Statistical DA
Re-assign 2nd / 3rd PODS to Teams
No
All Stat. DA PODS complete ?
Yes
Advise Zone DA Coordinator and assign DA Teams to Targeted / Forensic DA
Estimate Ops Center Resources to meet System ETR and Advise Zone DA Coordinator
Notified of Need for Statistical DA
Conduct Statistical DA
Provide Statistical DA Data to Ops Center DA Data Entry / Support
Notified of Need for Statistical DA
Process Statistical DA Data received from DA Teams
Advise Ops Center DA Coordinator of DA Data Entry status

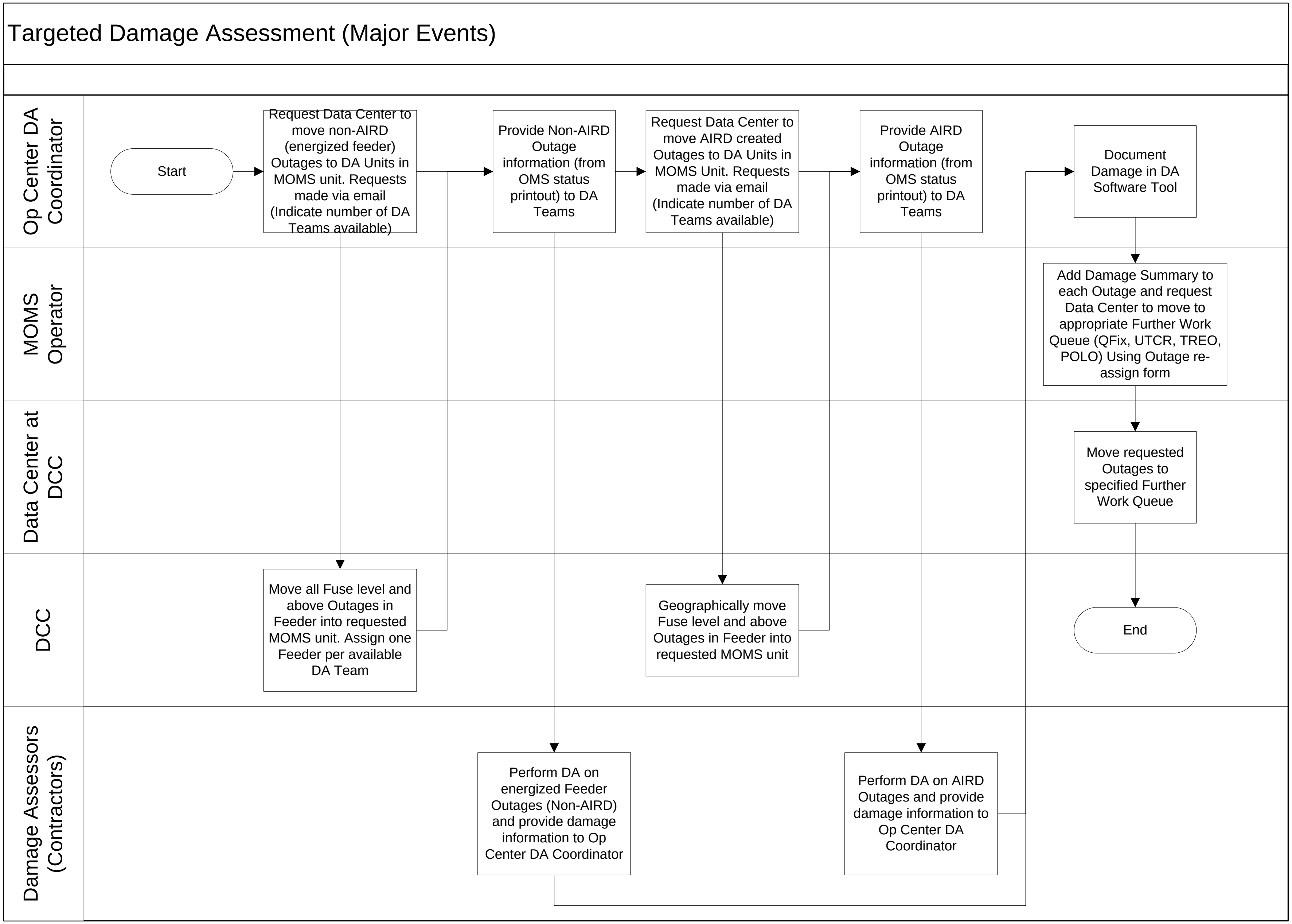
Targeted Damage Assessment

This sub-process provides data for restoring the distribution systems and models OMS.

The following personnel are engaged in Targeted Damage Assessment:

- Senior Damage Assessor
- Damage Assessor
- Damage Assessor Driver
- Damage Assessment Support
- Operating Center Damage Assessment Coordinator
- Zone Damage Assessment Coordinator
- System Damage Assessment Coordinator

The flowchart below provides a detailed view of this sub-process:


Targeted Damage Assessment (Major Events)
Op Center DA Coordinator
MOMS Operator
Data Center at DCC
DCC
Damage Assessors (Contractors)
Start
Request Data Center to move non-AIRD (energized feeder) Outages to DA Units in MOMS unit. Requests made via email (Indicate number of DA Teams available)
Provide Non-AIRD Outage information (from OMS status printout) to DA Teams
Request Data Center to move AIRD created Outages to DA Units in MOMS Unit. Requests made via email (Indicate number of DA Teams available)
Provide AIRD Outage information (from OMS status printout) to DA Teams
Document Damage in DA Software Tool
Add Damage Summary to each Outage and request Data Center to move to appropriate Further Work Queue (QFix, UTCR, TREO, POLO) Using Outage re-assign form
Move requested Outages to specified Further Work Queue
Move all Fuse level and above Outages in Feeder into requested MOMS unit. Assign one Feeder per available DA Team
Geographically move Fuse level and above Outages in Feeder into requested MOMS unit
End
Perform DA on energized Feeder Outages (Non-AIRD) and provide damage information to Op Center DA Coordinator
Perform DA on AIRD Outages and provide damage information to Op Center DA Coordinator

Final Sweep

This sub-process provides information regarding the current configuration of the distribution system (i.e., the state of each switch, existing phasing, etc.). Final Sweep teams identify existing distribution devices in need of repair or replacement due to storm damage or restoration actions immediately following the storm. Additionally, the teams record and report final sweep damage assessment information, which is used to assist in identifying the resources needed to return the distribution system to normal configuration. Contractors to complete Final Sweep as defined. Duke Energy to provide adequate oversight of contract resources completing final sweeps.

Final Sweeps Packet:

Final sweeps checklist (Targeted DA Form)

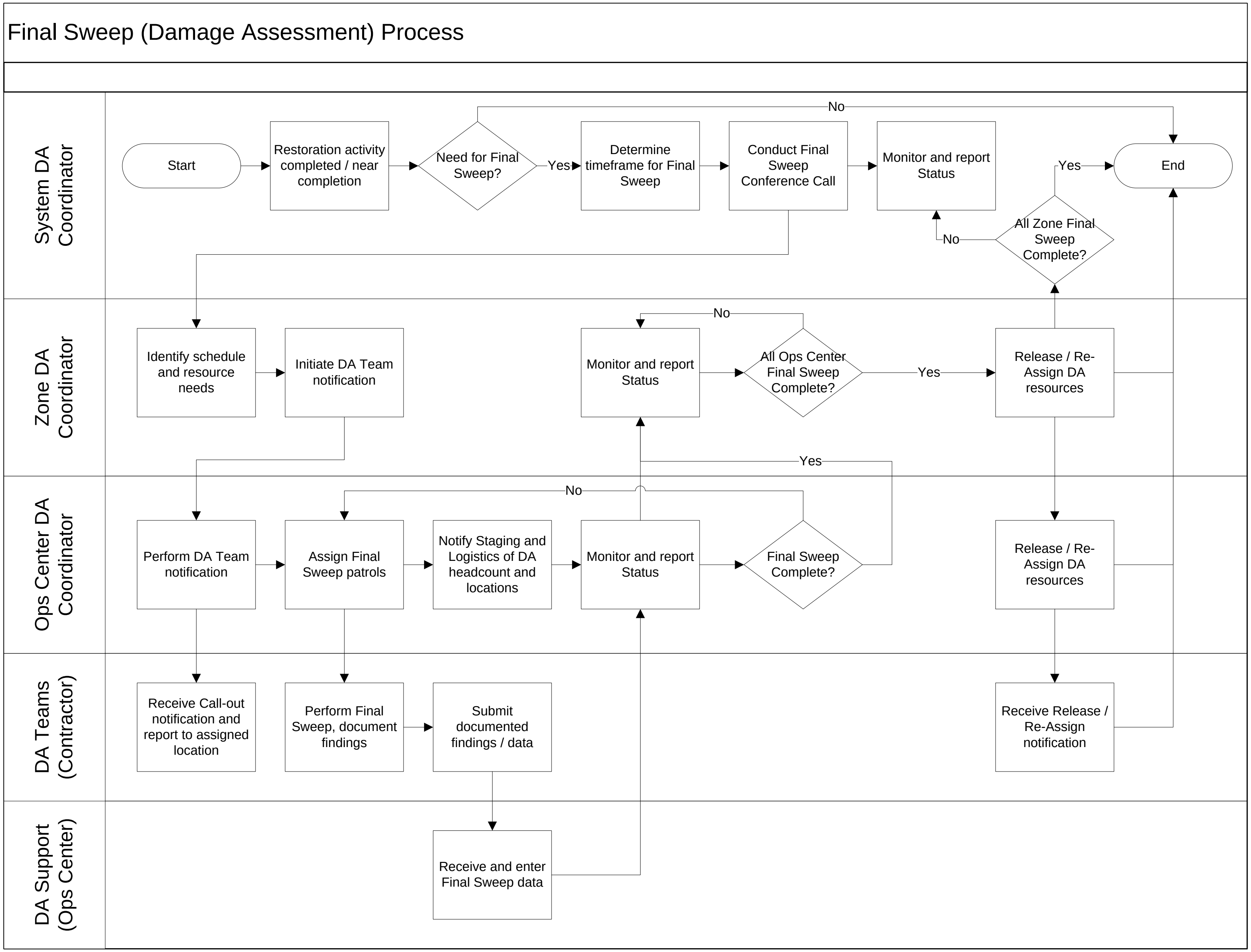
GIS map print of assigned area

Duke Energy contact sheet

The following personnel are engaged in Final Sweep:

- Senior Damage Assessor
- Damage Assessor
- Damage Assessor Driver
- Damage Assessment Support
- Operating Center Damage Assessment Coordinator
- Zone Damage Assessment Coordinator
- System Damage Assessment Coordinator

The flowchart below provides a detailed view of this sub-process:


Final Sweep (Damage Assessment) Process
System DA Coordinator
Zone DA Coordinator
Ops Center DA Coordinator
DA Teams (Contractor)
DA Support (Ops Center)
Start
Restoration activity completed / near completion
Need for Final Sweep?
Yes
No
Determine timeframe for Final Sweep
Conduct Final Sweep Conference Call
Monitor and report Status
All Zone Final Sweep Complete?
Yes
No
End
Identify schedule and resource needs
Initiate DA Team notification
Monitor and report Status
All Ops Center Final Sweep Complete?
No
Yes
Release / Re-Assign DA resources
Yes
Perform DA Team notification
Assign Final Sweep patrols
No
Notify Staging and Logistics of DA headcount and locations
Monitor and report Status
Final Sweep Complete?
Release / Re-Assign DA resources
Receive Call-out notification and report to assigned location
Perform Final Sweep, document findings
Submit documented findings / data
Receive Release / Re-Assign notification
Receive and enter Final Sweep data

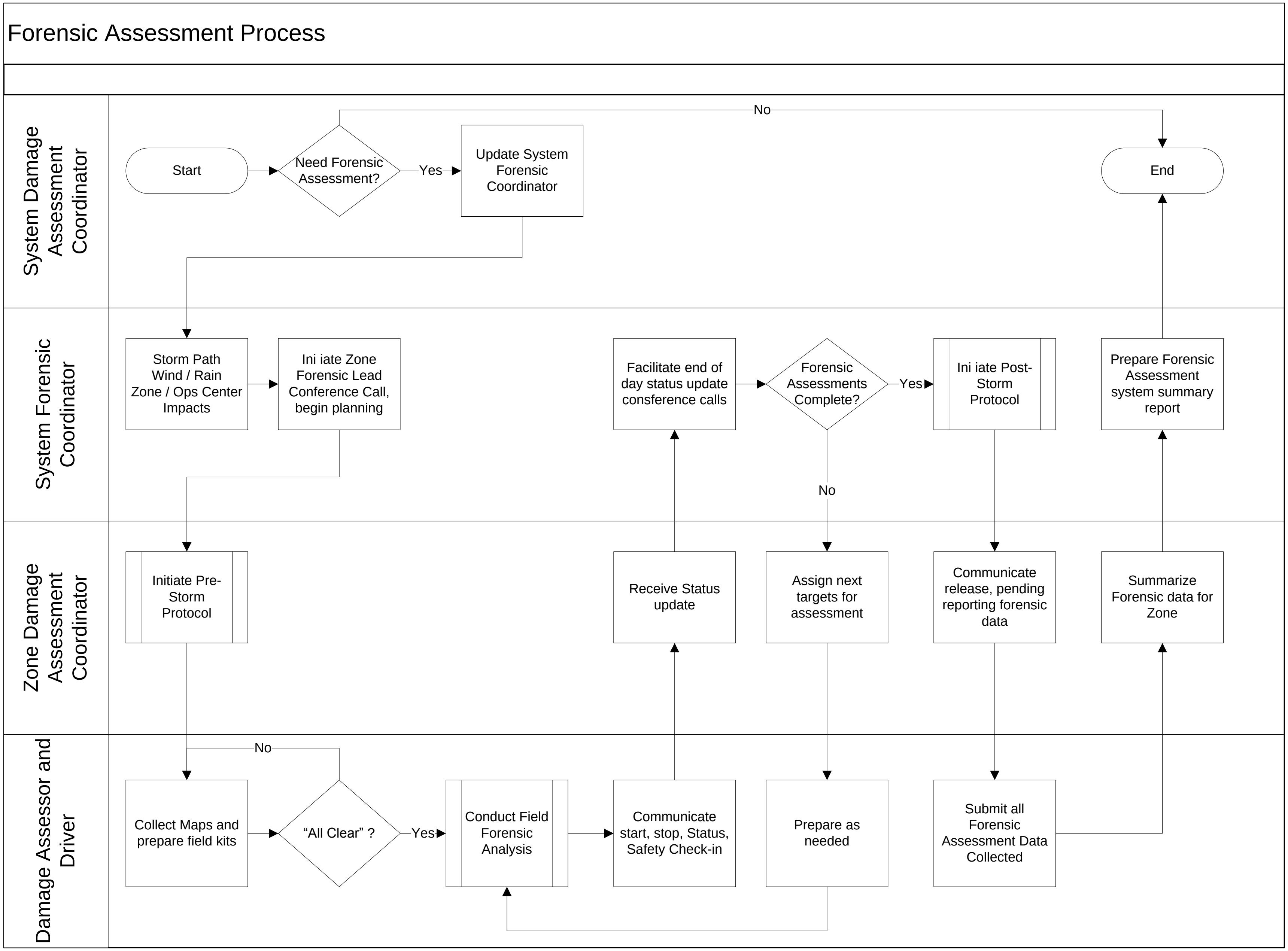
Forensic Assessment

This sub-process is not directly related to the restoration effort. The purpose of forensic assessment is to provide data on causal modes for distribution pole and structure damage due to storm related damage. The following personnel are engaged in Final Sweep:

- System Damage Assessment Coordinator
- System Forensic Coordinator
- Zone Forensic Lead
- Forensic Assessor
- Assessor Support

Forensic Assessment Form

The flowchart below provides a detailed view of this sub-process:


Forensic Assessment Process
System Damage Assessment Coordinator
System Forensic Coordinator
Zone Damage Assessment Coordinator
Damage Assessor and Driver
Start
Need Forensic Assessment?
Yes
No
Update System Forensic Coordinator
End
Storm Path Wind / Rain Zone / Ops Center Impacts
Ini iate Zone Forensic Lead Conference Call, begin planning
Facilitate end of day status update consference calls
Forensic Assessments Complete?
Yes
No
Ini iate Post-Storm Protocol
Prepare Forensic Assessment system summary report
Initiate Pre-Storm Protocol
Receive Status update
Assign next targets for assessment
Communicate release, pending reporting forensic data
Summarize Forensic data for Zone
No
Collect Maps and prepare field kits
“All Clear” ?
Yes
Conduct Field Forensic Analysis
Communicate start, stop, Status, Safety Check-in
Prepare as needed
Submit all Forensic Assessment Data Collected

Job Descriptions

System Damage Assessment Coordinator

Job Function

The System Damage Assessment Coordinator is responsible for the overall readiness of the Damage Assessment process at Duke Energy Florida and provides leadership to the process and for the coordination of collecting and collating forensic data of distribution pole and structure damage due to a major storm.

Job Description

- Understand the DSSOP and Damage Assessment Storm Plan and communicate effectively across group and department lines, ensuring that the damage assessment process is properly aligned with storm restoration strategy
- Maintain relationships with field and storm management team members
- Lead lessons learned activities following major events to ensure continual improvement
- Develop and deliver post-storm System Forensic Summary Report within 2 weeks after storm restoration activity has been completed

Key Interface Points

- Distribution System Storm Coordinator Zone Damage Assessment Coordinator
- Operations Center Damage Assessment Coordinator

Checklist of Actions

Before Major Storm

- Recruit skilled (senior) and unskilled Damage Assessors from:
  - Zone/Operations Center personnel
  - RSVP volunteers
  - Retirees
  - Fossil and Nuclear plants
  - Transmission Department
  - Contractors
- Create and maintain Damage Assessment databases and distribution lists
- Develop, schedule, and deliver Damage Assessor training
- Develop and schedule training for Zone and local Operations Center Damage Assessment contacts
- Request storm activation in the DA Software
- Ensure that estimated time of restoration (ETR) tool is maintained and enhanced to meet restoration needs
- Participate in development and administering of system storm drills to ensure readiness
- Develop and maintain specifications for statistical and feeder maps utilized during the Damage Assessment process
- Determine Damage Assessment materials needs, secure funding, purchase, and distribute to Duke FL and other jurisdictions
- Validate Forensic Assessment roles have been assigned and filled for all Zones

During Major Storm

- Participate in all System storm conference calls to develop restoration strategy
- Develop Damage Assessment plan and deploy to the field
- Determine availability of Damage Assessment team members
- Facilitate conference phone calls with Damage Assessment team members
- Develop Damage Assessment team assignments and vehicle deployment plans
- Deploy and communicate Damage Assessment plan to Zone Damage Assessment Coordinator
- Monitor storm progress and make Damage Assessment resource adjustments as necessary
- Monitor data entry into ETR tool across the System
- Provide resource modeling and ETR estimates for the System to the Distribution System Storm Coordinator
- Collect and collate all forensic data

After Major Storm

- Demobilize deployed Damage Assessment teams
- Lead lessons learned activities
- Provide input into DSSOP improvement
- Develop and deliver post-storm System Forensic Summary Report within 2 weeks after storm restoration activity has been completed

Training Requirements

- Review DSSOP and recent lessons learned to ensure understanding of “the big picture” as it pertains to damage assessment, restoration, and customer communications
- Participate in developing storm drill scenarios to ensure readiness of all those involved in the damage assessment process
- Communicate with Human Resources to obtain lists of recent retirees for recruiting purposes
- Review and test tools to ensure workability and competency of users: Resource Tracking, Damage Assessment Data Entry, Damage Assessment ETR (Web-based)
- Review Damage Assessment training module for potential enhancements
- Develop and implement Damage Assessment training classes for newly recruited Damage Assessors and contractors
- Communicate with Damage Assessors to enlist support for upcoming storm season

Engaged in the Following Sub-processes

- Mid-Level Damage Assessment
- Statistical Damage Assessment
- Targeted Damage Assessment
- Final Sweep
- Forensic Assessment

Zone Damage Assessment Coordinator

Job Function

The Zone Damage Assessment Coordinator is responsible for the overall readiness of the Damage Assessment process within the assigned Zone and provides leadership during the process. This includes response to major storms, mid-level events and forensic assessment requests.

Job Description

- Understand the Damage Assessment Storm Plan and communicate effectively across the Zone to ensure that the damage assessment process is in a ready state
- Communicate with the System Damage Assessment Coordinator to ensure linkage with the DSSOP
- Participate in lessons learned activities following major events to ensure continual improvement
- Provide complete Zone Substation Forensic Summary Reports to System Damage Assessment Coordinator within 1 week after storm restoration activity has been completed

Key Interface Points

- Operations Center Damage Assessment Coordinators
- Zone Storm Coordinator
- Damage Assessors
- System Damage Assessment Coordinator

Checklist of Actions

Before Major Storm, Mid-level Event or Forensic Assessment

- Organize and participate in training of Operations Center Damage Assessment personnel
- Stay linked with System Damage Assessment Coordinator to ensure readiness
- Ensure that all Operations Center contacts have the current ETR tool and are trained in its use
- Ensure timely printing of statistical maps for damage assessment
- Work with Zone management to ensure resource-sharing capability in the event the Zone is not impacted by a storm (i.e., how many Damage Assessment teams can be made available elsewhere)

During Major Storm, Mid-level Event or Forensic Assessment

- Participate in Zone storm conference calls
- Communicate with System Damage Assessment Coordinator to ensure that the deployment plan is understood
- Monitor storm progress and make Damage Assessment resource adjustments as necessary
- Monitor ETR tool for data input Duke and maintain communications with Operations Center Damage Assessment contacts to ensure that data flow is timely
- Provide Zone resource modeling from statistical damage assessment data
- If Zone is not impacted by storm, engage Zone Damage Assessment Coordinator to develop a Damage Assessment resource-sharing plan for use elsewhere in the System

After Major Storm, Mid-level Event or Forensic Assessment

- Participate in demobilizing efforts once restoration is complete
- Participate in lessons learned activities
- Ensure that Operations Center feeder maps and statistical sampling maps get restocked for next storm
- Provide complete Zone Substation Forensic Summary Reports to System Damage Assessment Coordinator within 1 week after storm restoration activity has been completed

Training Requirements

- Review Zone Storm Plan and recent lessons learned to ensure understanding of “the big picture” as it pertains to damage assessment, restoration, and customer communications
- Review and test tools to ensure workability and competency of users: Resource Tracking, Damage Assessment Data Entry, and Damage Assessment ETR (Web-based)
- Provide the DA training/safety awareness presentation at the DA staging sites prior to dispatching DA teams

Engaged in the Following Sub-processes

- Mid-Level Damage Assessment
- Statistical Damage Assessment
- Targeted Damage Assessment
- Final Sweep
- Forensic Assessment

Operations Center Damage Assessment Coordinator

Job Function

The Operations Center Damage Assessment Coordinator is responsible for the overall readiness of the damage assessment process within the assigned Operations Center.

Job Description

- Understand the Damage Assessment Storm Plan and communicate effectively within the Operations Center to ensure that the damage assessment process is in a ready state
- Communicate with Zone Damage Assessment Coordinator to ensure linkage with the DSSOP
- Participate in lessons learned activities following major events to ensure continual improvement

Key Interface Points

- Operations Center storm team
- Damage Assessors
- Zone Damage Assessment Coordinator
- System Damage Assessment Coordinator

Checklist of Actions

Before Major Storm, Mid-level Event or Forensic Assessment

- Participate in training of Operations Center Damage Assessment personnel
- Stay linked with Zone Damage Assessment Coordinator to ensure readiness
- Ensure that the most current version of the ETR tool is on appropriate Operations Center computers and that designated personnel are trained in its use
- Ensure that adequate feeder and statistical maps are available for Damage Assessment use
- Provide directions and addresses to beginning points of all statistical sampling maps

During Major Storm, Mid-level Event or Forensic Assessment

- Ensure Safety Briefings are conducted with all DA teams before field work is started
- Ensure “addresses to avoid” within that Operations Center are shared with DA teams before field work is started
- Communicate with Zone Damage Assessment Coordinator to ensure that deployment plan is understood
- Develop logistics and deploy Damage Assessment plan for the Operations Center
- Provide Assignments to DA Teams
- Work with Damage Assessor to provide refresher training to incoming teams
- Input statistical data into ETR tool, perform resource modeling for the Operations Center, and upload data to server
- Input non-emergency environmental reports into environmental tool for tracking by the Zone Environmental Lead
- Ensure a smooth transition for Damage Assessment teams—from performing damage assessment to leading crews, running Outage Tickets, etc.
- If Operations Center is not directly impacted by the storm, offer local resources to Zone Damage Assessment Coordinator for developing a resource-sharing plan

After Major Storm, Mid-level Event or Forensic Assessment

- Participate in demobilization efforts once restoration is complete DA teams are released to the Zone Damage Assessment Coordinator
- Participate in lessons learned activities
- Restock Operations Center feeder maps, statistical sampling maps, and local maps as needed

Training Requirements

- Review Operations Center Storm Plan and recent lessons learned to ensure understanding of “the big picture” as it pertains to restoration and customer communications
- Review and test tools to ensure workability and competency of users: Resource Tracking, Damage Assessment Data Entry, and Damage Assessment ETR (Web-based)
- Ensure the DA training/safety awareness presentation was conducted with all DA teams at the DA staging sites prior to dispatching DA teams

Engaged in the Following Sub-processes

- Mid-Level Damage Assessment
- Statistical Damage Assessment
- Targeted Damage Assessment
- Final Sweep
- Forensic Assessment

Damage Assessor

Job Function

The Damage Assessor performs field damage assessments.

Job Description

- Understand the Damage Assessment Storm Plan and communicate effectively across the Zone to ensure that the damage assessment process is in a ready state

Key Interface Points

- Feeder/Field Coordinators
- Operations Center Damage Assessment Coordinators
- Ops Center MOMS operator

Checklist of Actions

Before Major Storm, Mid-level Event or Forensic Assessment

- Complete Damage Assessment refresher training immediately prior to major storm event.
- Attend Damage Assessment briefing to get assignment, team information, and up-to-date weather update
- Attend pre-storm season training to ensure familiarity with:
  - Damage assessment process, forms, etc.
  - DA ETR tool review

During Major Storm, Mid-level Event or Forensic Assessment

Before traveling to location:

- Receive Safety Briefings conducted by Operations Center DA Coordinator before field work is started
- Receive “addresses to avoid” within that Operations Center from Operations center DA Coordinator before field work is started

- Receive Damage Assessment assignment document / package
- Notify assigned Operations Center of schedule, estimated time of arrival of teams, and preparations needed prior to arrival (vehicle assignment, etc.)
- Determine whether the Operations Center has resource needs (Network routers, office supplies, hardhats, etc.)

After arriving at assigned assessment location:

- Conduct Damage Assessment per training
- Document findings
- Ensure data is reported back to local Operation Center

After Major Storm, Mid-level Event or Forensic Assessment

- Prepare to provide contractor oversight for final sweeps , as needed.
- Prepare to perform forensic DA

Training Requirements

- Review Damage Assessment training materials
- Communicate any changes in contact numbers (home, work, cell phone, e-mail address, etc.) to Ops Center Damage Assessment Coordinator
- Keep abreast of major weather developments and proactively contact Ops Center Damage Assessment Coordinator regarding availability

Engaged in the Following Sub-processes:

- Mid-Level Damage Assessment
- Statistical Damage Assessment
- Targeted Damage Assessment
- Final Sweep
- Forensic Assessment

Damage Assessment Driver

Job Function

This position is typically filled by personnel with no experience in distribution or transmission systems. This position will work with the Damage Assessor.

Job Description

This position is primarily responsible for:

- the safe operation of the patrol vehicle
- entering damage assessment data that Damage Assessor has identified
- performing pre-flight inspections of vehicle
- participate in pre-job briefings prior to each assessment

Systems For Damage Assessment Team

- Damage Assessment Software (PC Based) for Ops center DA Coordinators
- Damage Assessment Software (Web Based) for Zone and System DA Coordinators
- OMS
- Resource On Demand Software
- Environmental input tool

Supplemental Information

FDO Major Storm Workflow Process (from DCC web Site):

FDO Major Storm Workflow Process

DEF Damage Assessment SharePoint Site:

Damage Assessment SharePoint Site

DA Checklist

Damage Assessment Reporting Software (Web Based – System and Zone Level):

Statistical DA Tool-System Level

Storm ETR and Resource Calculator (SERC) Tool:

Mid-Level SERC Tool

ATTACHMENT U

Comparison of Historical Trends
Overhead vs. Underground (Adjusted Data)

OVERHEAD INDICES											
SAIDI	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	73.3	74.0	64.9	60.7	62.4	66.6	63.8	71.2	82.5	76.3	63.3
SAIFI											
	1.125	1.155	1.068	0.992	0.986	1.015	0.944	0.986	1.140	0.987	0.880
CAIDI											
	65.2	64.0	60.8	61.2	63.3	65.6	67.6	72.2	72.3	77.4	71.9
L-Bar											
	102.3	101.3	102.1	105.2	106.7	109.7	104.9	115.6	112.7	125.8	112.7

UNDERGROUND INDICES											
SAIDI											
	14.7	11.8	12.0	13.5	12.5	11.9	12.0	11.6	10.8	10.6	10.1
SAIFI											
	0.130	0.111	0.122	0.120	0.107	0.112	0.104	0.092	0.086	0.082	0.075
CAIDI											
	112.9	106.2	98.7	112.8	116.6	105.6	115.2	125.9	126.0	129.8	134.0
L-Bar											
	145.8	141.3	143.7	156.5	155.4	157.2	161.2	169.4	161.3	176.0	182.0

ATTACHMENT V

OVERHEAD/UNDERGROUND RELIABILITY (OH/UG) (Initiative 7)
Section D

2016				
OVERHEAD METRICS	# OF Miles	CMI	CI	L-Bar
	25,523	131,379,586	1,605,874	127.5

UNDERGROUND METRICS	# OF Miles	CMI	CI	L-Bar
	23,075	17,297,315	114,549	179.2

ATTACHMENT W

Report on Collaborative Research for Hurricane Hardening

Provided by

The Public Utility Research Center
University of Florida

To the

Utility Sponsor Steering Committee

February 2017

I. Introduction

The Florida Public Service Commission (FPSC) issued Order No. PSC-06-00351-PAA-EI on April 25, 2006 (Order 06-0351) directing each investor-owned electric utility (IOU) to establish a plan that increases collaborative research to further the development of storm resilient electric utility infrastructure and technologies that reduce storm restoration costs and outages to customers. This order directed IOUs to solicit participation from municipal electric utilities and rural electric cooperatives in addition to available educational and research organizations. As a means of accomplishing this task, the IOUs joined with the municipal electric utilities and rural electric cooperatives in the state (collectively referred to as the Project Sponsors) to form a Steering Committee of representatives from each utility and entered into a Memorandum of Understanding (MOU) with the University of Florida's Public Utility Research Center (PURC). The third extension of this MOU was approved last year by the Research Collaboration Partners and now extends through December 31, 2018.

PURC manages the work flow and communications, develops work plans, serves as a subject matter expert, conducts research, facilitates the hiring of experts, coordinates with research vendors, advises the Project Sponsors, and provides reports for Project activities. The collaborative research has focused on undergrounding, vegetation management, hurricane-wind speeds at granular levels, and improved materials for distribution facilities.

This report provides an update on the activities of the Steering Committee since the previous report dated February 2016.

II. Steering Committee Workshop

On September 29, the Steering Committee organized a workshop for 26 participants from the Project Sponsors at TECO Plaza in Tampa. The workshop was held to orient new members on the work that the cooperative has accomplished, and to serve as a forum for new ideas in the field of storm preparedness and outage response.

The opening speaker was Matt Corey from Weatherflow, Inc. who discussed their wind monitoring network "HurrNet." The network consists of approximately 90 wind monitoring stations, 44 in Florida, and 21 on utility property. This data is available at no charge to the Project Sponsors. He also outlined Weatherflow's new capabilities, specifically their StormTrack/StormPrint model (on which he displayed, ironically, Hurricane Matthew) and their new line of Smart Weather weather stations for domestic to commercial users.

Next was Ted Kury from PURC with an update on the undergrounding model developed by the Project Sponsors. The current capabilities, which include both probabilistic and deterministic modeling, were reviewed.

The next item on the agenda was a roundtable on vegetation management. Participants discussed current procedures and best practices. All noted that utilities continue to face challenges regarding access to facilities that need to be managed, particularly within municipal boundaries due primarily to municipal codes. Some noted that municipalities may not be aware of the impact that their codes may have on system reliability, and that education is critical in these areas. Each utility then outlined their current trim cycle and approach. Finally, the participants discussed the evolution of customer expectations regarding communications with their utilities.

Next on the agenda was a discussion on the collection and usage of forensic storm damage data. Participants reviewed the existing platform and data framework.

Finally, the participants engaged in a roundtable discussion of topics that might be explored further in future workshops, and discussed the importance and the form of follow-up efforts.

Overall, the participants left the workshop with a greater appreciation and understanding of the work conducted at the various transmission and distribution segments of the Florida utilities.

III. Undergrounding

The collaborative research on undergrounding has been focused on understanding the existing research on the economics and effects of hardening strategies, including undergrounding, so that informed decisions can be made about undergrounding policies and specific undergrounding projects.

The collaborative has refined the computer model developed by Quanta Technologies and there has been a collective effort to learn more about the function and functionality of the computer code. PURC and the Project Sponsors have worked to fill information gaps for model inputs and significant efforts have been invested in the area of forensics data collection. Since the state has not been affected by any hurricanes since the database software was completed, there is currently no data. Therefore, future efforts to refine the undergrounding model will occur when such data becomes available.

In addition, PURC has worked with doctoral and master's candidates in the University of Florida Department of Civil and Coastal Engineering to assess some of the inter-relationships between wind speed and other environmental factors on utility equipment damage. PURC has also been contacted by engineering researchers at the University of Wisconsin and North Carolina State University with an interest in the model, though no additional relationships have been established. In addition to universities, PURC was again contacted by researchers at the Argonne National Laboratory who expressed interest in modeling the effects of storm damage. The researchers developed a deterministic model, rather than a probabilistic one, but did use many of the factors that the Collaborative have attempted to quantify. They are currently working to incorporate stochastic elements into their model and have consulted PURC for guidance. Every researcher that contacts PURC cites the model as the only non-proprietary model of its kind.

The research discussed in previous years' reports on the relationship between wind speed and rainfall is still under review by the engineering press. Further results of this and related research can likely be used to further refine the model.

IV. Wind Data Collection

The Project Sponsors entered into a wind monitoring agreement with WeatherFlow, Inc., in 2007. Under the agreement, Florida Sponsors agreed to provide WeatherFlow with access to their properties and to allow WeatherFlow to install, maintain and operate portions of their wind monitoring network facilities on utility-owned properties under certain conditions in exchange for access to wind monitoring data generated by WeatherFlow's wind monitoring network in Florida. WeatherFlow's Florida wind monitoring network includes 50 permanent wind monitoring stations around the coast of Florida, including one or more stations located on utility-owned property. The wind monitoring agreement expired in early 2012; however, the wind, temperature, and barometric pressure data being collected at these stations is being made available to the Project Sponsors on a complimentary basis.

V. Public Outreach

In last year's report we discussed the impact of increasingly severe storms on greater interest in storm preparedness. PURC researchers continue to discuss the collaborative effort in Florida with the engineering departments of the state regulators in Connecticut, New York, and New Jersey, Pennsylvania, and regulators in Jamaica, Grenada, Curacao, Samoa, and the Philippines. While all of the regulators and policymakers showed great interest in the genesis of the collaborative effort, and the results of that effort, they have not, at this point, shown further interest in participating in the research effort.

VI. Conclusion

In response to the FPSC's Order 06-0351, IOUs, municipal electric utilities, and rural electric cooperatives joined together and retained PURC to coordinate research on electric infrastructure hardening. The steering committee has taken steps to extend the research collaboration MOU so that the industry will be in a position to focus its research efforts on undergrounding research, granular wind research and vegetation management when significant storm activity affects the state.

ATTACHMENT X

Document title:	Document number:
Distribution System Storm Operational Plan	GDLP-EMG-DOS-00004
	Revision No.: 001
Keywords: emergency; distribution system storm operational plan	Applies to: Florida Delivery Operations and Supporting Storm Organizations - Florida

Introduction

At Duke Energy Florida we believe that people succeed because they act with integrity, collaborate effectively, embrace diversity, and communicate. Not only do they take responsibility for their actions and achieve objectives with speed and agility, they are intolerant of mediocrity and produce results that matter.

As a company our goals are to exceed customer expectations, to deliver superior shareholder value, and to challenge employees to excel. With these goals and principles in mind, we have developed the Distribution System Storm Operational Plan (DSSOP).

This plan provides a blueprint for safely restoring power to our customers in the shortest amount of time following a storm event. Designed with the flexibility to respond to both small and large storms, this comprehensive plan reflects an organizational redesign at Duke Energy Florida. The storm plan also incorporates internal feedback, suggestions and customer survey responses, documenting and applying the invaluable knowledge gained from experience.

Zones, Operation Centers and supporting storm organizations are responsible for following the storm plan as identified in this document and linked storm support documents. In addition, each storm organization shall maintain an updated storm organizational chart identifying personnel in key storm roles and contact information. When applicable, this information should be inserted into the storm organizations storm folder located on the storm center web site. Operations and Zone storm centers are responsible for placing their updated storm organizational charts and contact information on their respective web sites prior to the start of hurricane season. This information should be updated, as needed, throughout the storm season.

Built on Experience

At Duke Energy Florida we have faced more than our share of storms and hurricanes. In 2004, our company received the Emergency Response Award from Edison Electric Institute for “outstanding work under extreme conditions” during the unprecedented four hurricanes that pounded Florida and the Carolinas in August and September of that year. We have received this award a record five times, including our responses to hurricanes Bonnie (1998) and Floyd (1999), the January 2000 winter storm, and the December 2002 ice storm. In 2005, our company received the EEI Emergency Assistance award which recognized our storm restoration efforts in support of outside electrical utilities located in the Southeastern Electric Exchange (SEE).

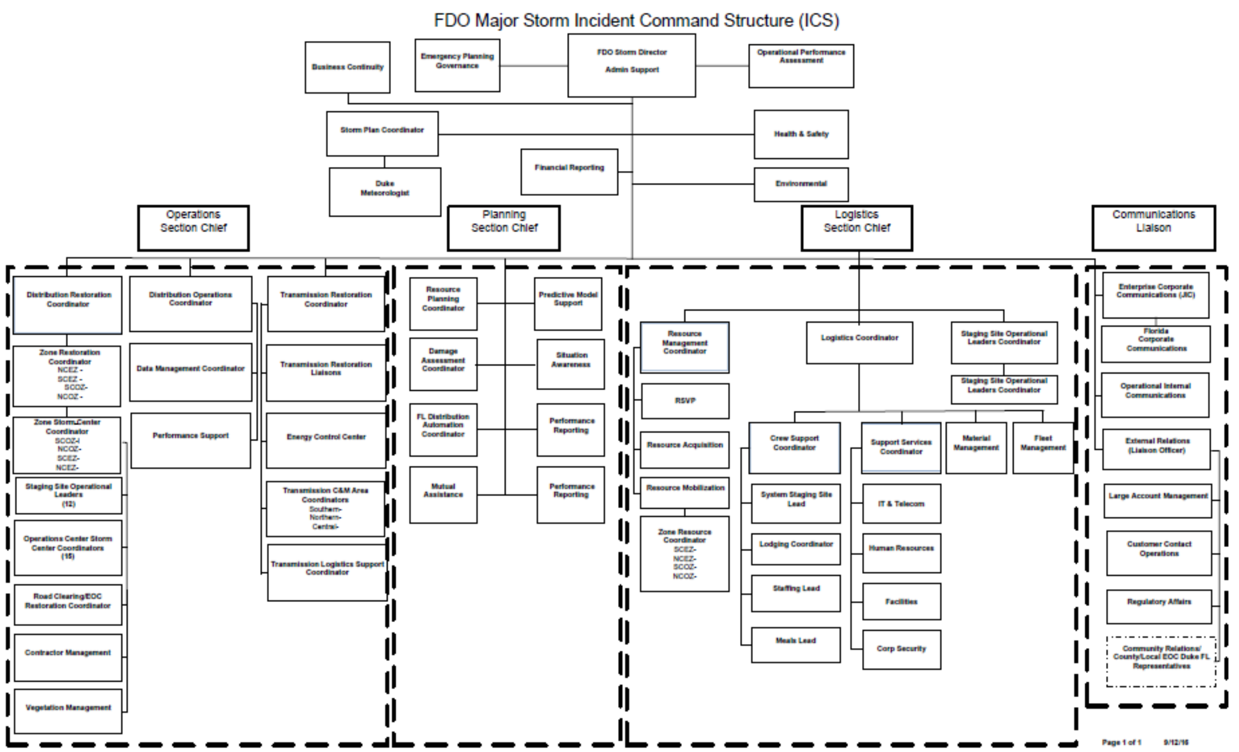
By applying lessons learned from past events and during the 2004 hurricane season, we were able to quickly and efficiently implement best practices, maximize manpower, and reduce damage to equipment. Lessons learned from all past storms and hurricanes have been integrated into this plan, so we may continue to produce results that matter with speed and agility before, during, and after a storm.

Plan Overview

The objective of this plan is to establish a consistent approach and level of responsibility for each emergency response. This document provides the authority and coordination needed to restore electric service and maintain business continuity from emergency storm events. This plan consolidates authority to a System Level “top down” organizational structure for major storm responses and organizational structure for minor storm events.

In addition, the plan offers guidance for transitioning from a minor event that escalates to a system level-major event.

The following is a representation of the Distribution System Storm Organization:



[1DF-DEF Major Storm Incident Command Structure]

[1DF-DEF-Major Storm Incident Command Structure Contacts]

Authority

The VP of Engineering & Construction Planning is the primary owner of this document and shall direct the maintenance of this document through the Distribution Department. The VP of Engineering & Construction fulfills the storm role: Distribution System Storm Coordinator when the Distribution System Storm Center is activated for major system level emergencies. Each storm organization will have an internal command and control structure that ultimately reports to the Distribution System Storm Coordinator.

Referenced Storm Title

Storm Process Owners(Section Chiefs/Liaison) – Each storm organization, as identified in the above storm organizational chart, shall identify a lead or individual person that is responsible for that storm organizations storm plan, preparedness and restoration efforts. This person is typically identified throughout this document as Storm Process Owner.

Supporting Storm Process Owner – Typically those storm organization leads other than the Distribution System Storm Center, Zone or Operations Storm Centers.

Using the Plan

The purpose of the Distribution System Storm Operational Plan (DSSOP) is to ensure that all employees are informed and aware of the roles they serve in the event of a major storm. Many of you whose jobs do not normally require involvement in service restoration will be called upon to offer your talents and services in providing logistics support, guiding crews, answering telephones at the Customer Contact Operations Center, or other critical roles.

To make best use of this plan, carefully read and understand this document and the section or sections that apply to your role for your organizations storm plan listed at the back of this document. It is also helpful to read the roles and responsibilities of your interface contacts, identified and hyper-linked in your storm plan. The table of contents, listed on the end of this document provides links to individualized functional storm plans, each of which contains (or will contain in a future revision as information becomes available) a mission statement, functional process and/or sub-process descriptions, flow charts, organization charts, job descriptions, key interface points, checklists of actions, lists of needed tools and information, an inventory of systems used, and links to supplementary information. Storm role codes are provided for each job title.

All Storm Process Owners will be required to certify annually that their storm organizations are prepared for a major storm event. The document below shall be completed, signed and forwarded to the Distribution System Storm Center each year.

Storm Organization Certification Form

The DSSOP has been created as a Word document and is posted on the Duke Energy Florida Intranet 1DF-DEF Major Storm SharePoint Page as a PDF file, making it easy to access, print, and keep on hand.

Testing the Plan

Storm Process Owners are responsible for determining if and when testing is necessary for effective storm plan implementation, prior to the start of storm season. Preparedness and action plans to test their individual organizations can include, but are not limited to:

- Simulated emergency conditions
- Drills
- Communication flow reviews
- Personnel and duties assignment listings review
- Resource listings reviews
- Evaluation of action plan readiness
- Priority circuits and customer listing s review
- Damage assessment plans
- Relevance of forms and reports format review

The Distribution System Storm Center will sponsor and facilitate an annual system level storm drill to test organizational preparedness prior to the start of hurricane season. In addition, the DSSC will sponsor a lessons learned process following the drill to ensure existing storm processes are being institutionalized throughout the organization and gaps in storm planning are identified and resolved.

Updating the Plan

The Duke Energy Florida DSSOP is a dynamic document that requires periodic enhancement and regular updates to maintain its effectiveness in time-critical situations. Maintenance of the DSSOP is the responsibility of the Distribution System Storm Coordinator and is accomplished in the following manner:

➢ Updating Key Storm Personnel

Telephone numbers and personnel assignments shall be updated prior to the hurricane season. In addition, updates should be made as they occur during each storm season. Zones and Operations Centers shall post their updated list of storm personnel and contact information on their respective storm web sites by May 30, with further updates required as personnel transition in and out of the organization.

➢ Lessons Learned Process

Each Supporting Storm Process Owner will conduct a lessons learned process with their storm teams within 30 days after each major storm and have each member review and critique planning and restoration efforts. The evaluation process should include the following:

- Things that went well—successes
- Things that need improvement—opportunities
- Lessons learned
- Follow-up action plans

The General Staff shall forward lessons learned and task assignments to the Distribution System Storm Coordinator who will ensure the quality of this integrated storm document.

Each Operations Center Coordinator will send their list of recommended improvements to the Zone Storm Manager, who will compile the zone level list and forward it to the Distribution System Storm Coordinator. The Distribution System Storm Coordinator will then determine which items should be pursued to effect any system-wide changes and will develop an action plan for implementing these improvements.

Lessons Learned

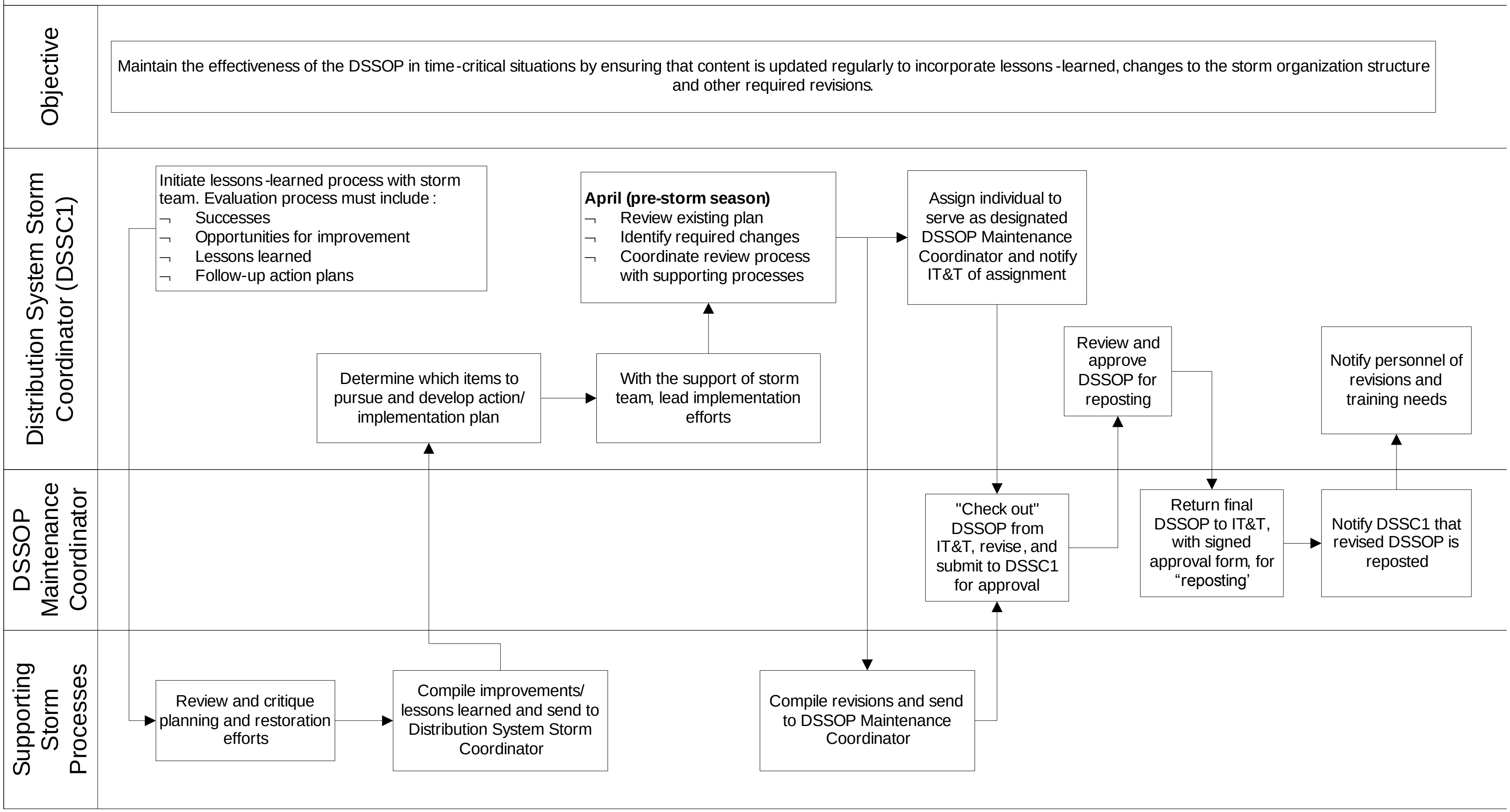
Plan Maintenance

Each spring prior to the start of hurricane season, the Distribution System Storm Coordinator will sponsor a review of the DSSOP for any needed changes. The Distribution System Storm Coordinator Assistant will coordinate the review process with all functional processes supporting the DSSOP. Each functional process owner will be responsible for making revisions. The Distribution System Storm Coordinator, with the support of the Distribution System Storm Coordinator Assistant, will ensure that necessary changes are incorporated.

The Distribution System Storm Coordinator is responsible for notifying Delivery Operations personnel of any revisions to the DSSOP and ensuring that any training needs are accomplished in a timely manner, prior to the start of the hurricane season.

The following sub-process identifies key responsibilities for updating the DSSOP:

Distribution System Storm Operational Plan Update and Maintenance Process



Approach to Storm Preparation

Personal Safety

Personal safety is a shared responsibility of all employees. The safety of our fellow employees as well as the safety of the general public and contract resources is the most important consideration when implementing any major emergency plan:

- Keys of Life principles will be followed at all times.
- Under no circumstances will safety be sacrificed for speed.
- Job briefings are the cornerstone of all work to be performed safely and shall be utilized to identify and mitigate all hazards associated with the work, following appropriate safe work practices.
- No employee shall attempt any restoration activity or establish staging sites where environmental or weather conditions are deemed unsafe.
- Switching and tagging work rules shall be followed at all times, regardless of dispatching authority or control.
- Work at night shall be well planned and organized.

Training

The process owner of each storm organization is responsible for ensuring their personnel are assigned to a response role in the RSVP tool, are trained to the required responsibilities and are able to safely execute their assigned duties.

Environmental Stewardship

Duke Energy Florida has established itself as a good steward of the environment. Environmental concerns such as transformer oil and fuel spills must be reported immediately to the Zone level Environmental Lead/Coordinator or reported to the Oil Spill Hot-Line. Spills should be contained as quickly as possible to mitigate damage to the environment, especially when waterways are at risk.

Major Storm

Damage to facilities may be caused by hurricanes, tornadoes, ice, and other natural causes or disaster, or the damage may be caused by civil disturbances.

The use of the term “Major Storm”, as defined by IEEE Std 85901987; section 6.3.2 (page 10), indicates that weather has exceeded design limits of the facilities and results in all of the following:

1. Extensive damage to facilities
2. More than a percentage of customers out of service (10% or above)
3. Service restoration time is longer than a specified time (24 hours or above)

Note: Typical industry criteria are 10% of customers out of service and 24 hours or more restoration time. Percentage of customers out of service may be related to a company operating area rather than to an entire company.

There are no specific measures for EXTENSIVE MECHANICAL damage. However, the term does not include electrical damage such as internal failures of transformers or conductors. Extensive refers to the magnitude of damage and the distance over which the damage extends. Therefore, it would be expected that the storm was of sufficient severity to cause damage of an unusual magnitude at multiple locations on the system.

Minor Storm

Daily thunderstorm monitoring and coordination of operation center resources for level 1, level 2 and most level 3 storms are generally controlled by the Distribution Control Center (DCC). The DCC facilitates the coordination and management of the Zone Mid-level Storm Plans by supplying information to the Zone General Manager's or (Zone Point of Contacts and local Ops Center Point of Contacts. Enabling them to make informed decisions with regards to storm restoration within their respected zones.

1DF-DEF DCC Mid-Level Escalation Guidelines

Emergency Response Levels

Emergency response levels are generally associated with outages due to storms or other emergency situations. However, a large reduction of employees due to pandemic health outbreaks could also trigger these response levels. There are four (4) interrelated emergency plan levels. Where damage to our lines and equipment has occurred, one or more, or all levels may be implemented. This is dependent upon the intensity and speed of the storm, the amount of damage and the capability of the local personnel to restore service in a timely manner. When activating the various emergency response levels, the controlling authority must remember to "Think to the next level" in order to establish timely transitions between the levels.

The four (4) event levels are:

- **Level 1** - One Ops Center impacted (Resources within zone utilized) - Least Severe, typically with an ETR between 0-6hrs
- **Level 2** - More than one Ops Center impacted within a zone (Resources within zone utilized) – Moderately Severe, typically with an ETR between 6-12hrs
- **Level 3** – One or more Ops centers impacted within a zone(Resources from other zones utilized – Severe, Typically with an ETR between 12-24hrs
- **System (level 4)** – Most Severe, requiring system wide or mutual assistance resource plans, typically with an ETR greater than 24hrs or a forecasted major event (hurricane, national event)

Storm Level Definitions	Storm Level	Normal	Level 1	Level 2	Level 3	Level 4
	Resource Scope	On Duty Resources (1st resp)	Op Center Resources (1st and 2nd resp)	Zone Resources	Multiple Zones	System and Mutual Assistance

These levels may be implemented at any given time depending on the emergency. Often, emergency response efforts start out as minor events and then quickly transition into a more significant event. The outage restoration rate, assessment of damage and the number of new outages are important factors in the decision to move to a higher response level. Each level has an identified authority that implements their respective part of this plan and participates in the decision to transition to a higher emergency level.

Contacting Customers

Revenue Customers - Normal work activities will be affected when crews are supporting storm restoration efforts. Customers may understand why their scheduled work could be delayed should a storm event impact their area. However, deployment of local DEF resources to other areas impacted by storm events, that cause similar delays, may not be understood by our customers. To minimize customer concern in these circumstances, proactive calls to the customers should occur when it appears that scheduled work may be delayed due to major events. This will require a collaborative effort between the responsible Operations, Customer Contact Organization and Resource Management team.

Care Customers - Those accounts that are tagged "Life Support" in our CSS data base are to be contacted by the Customer Care Operations (Call Center) prior to the arrival of a Tropical System. The purpose of this function is to ensure all potentially impacted Life Support customers are contacted and advised that Duke Energy Florida will be unable to provide priority restoration. In the advent of an extended outage due to the storm, these customers are to find alternate locations, such as shelters that are suitable for life support functions during the restoration effort.

Weather Information

Duke Energy Florida is supported by the Duke Meteorology Team. The Duke Meteorology Team provides daily weather updates and forecasts for major weather events. During approaching tropical events, the Duke Meteorology Team Weather provides daily graphical tracking maps and projections on wind and rain. The Distribution System Storm Center forwards this information to supporting storm organizations. In addition, these projections will be posted in the Current Storm Information folder located on the Duke Energy Florida Storm Center Major Storm SharePoint page. Finally, the Duke Meteorology Team supports the DCC and Zone Operation and System storm conference calls with updated forecasts and projections for the approaching storm.

Storm Room Standards

Storm rooms or storm centers are the command and control authority while the emergency response plan is in effect. For a system level response, the command and control hierarchy is as follows:

1. System Storm Center
2. Zone Level Storm Room
3. Operations Center Storm Room

Effective operation of a storm center or storm room is critical to efficient and speedy responses to emergency situations. The following guidelines should be utilized:

System Storm Center Activation Checklist

Storm Room Standards

Planning for Storm Events

Restoration Priorities

The following guidelines should be utilized by the Storm Process Owners in coordination with LAM and External Relations to determine restoration priorities:

The following guidelines should be utilized by C&M Operations and the Storm Process Owners in coordination with LAM and External Relations to determine restoration priorities:

- **Priority 1** – Feeders, lines and service drops for nuclear sirens, hospitals, municipal water & sewer treatment plants (high volume lift stations) and emergency shelters. Industrial plants with public safety concerns (Ammonia Plants)
- **Priority 2** – Feeders, lines and service drops for EOCs, law enforcement, fire & rescue stations, central communications centers and food distribution centers.
- **Priority 3** – Feeders, line and service drops for medical assistance facilities and commercial nursing homes identified by Large Account Management
- **Priority 4** - All other feeders, lines, service drops and equipment.

Paralleling these priorities, are requirements for restoring communications links that facilitate the restoration of electric service. The Energy Delivery Group will assist IT&T by giving reasonable priority to electric facilities serving two-way radio sites, PBX sites, fiber optics and microwave sites, etc. In addition, the Delivery Operations Group will make resources available on a priority basis to support restoring fiber optic cables which carry communications traffic for the Company.

Operational Restoration Performance

The purpose is to assess conformance to DSSOP during a major storm restoration.

Operational Performance Time-line

Operational Performance Guiding Principles

Operational Performance Assessment

GIS Data Integrity

Maintaining the data integrity of our distribution information systems is important for day to day operational processes. Construction changes that occur during restoration efforts can negatively impact these information systems if not properly documented. The guiding principle is to restore our electric grid system back to original status. These changes are more economically and efficiently documented at the time the construction change occurred, but isolated cases may take place to support restoration efforts. The need for a re-verification or final sweep of an area after the restoration effort has been completed will be performed and lead by the Damage Assessment group.

At the point during a mid-level or major storm (outage volume threshold) where the determination is made by the Person in charge at the ops center, zone, or system level as to whether the yards will revert to paper during restoration.

Distribution Control Center

The Distribution Control Center (DCC) is responsible for monitoring the status of and issuing switching orders for system level distribution lines and equipment and underground loop designed facilities. As a major tropical system approaches or when restoration efforts require, the DCC may need to delegate their switching and tagging authority and/or dispatching authority for OMS and field equipment to appropriate Zone Storm Centers. The transferal of switching and tagging responsibility from the DCC to Zone Storm Centers and from Zone Storm Centers back to the DCC shall be documented utilizing the following form:

Transfer of Switching and Tagging Authority

Purchase Controls Measures

In support of major emergency events, Delivery Operation's purchase control processes are required to be in alignment with Duke Energy Sourcing and Purchasing guidelines, while enabling emergency response teams to execute plans to support safe and timely restoration. Guidelines and processes have been developed to support organizations establishing contracts for resources acquisition, vendor support, services. The process also provides structured estimation, communication and approval during the actual event.

Resource Management

The largest and most critical storm response resources are company employees and contractor line and tree crews. The efficient use of these valued resources directly affects the level of success with safety, timely restoration and cost for any restoration effort.

1) Duke Energy Florida Employee Mobilization and Tracking

In the event of a hurricane, major ice storm or other system emergencies, it may be necessary to deploy Duke Energy Florida employees across Departmental, Business Unit or Zone boundaries to support a timely restoration effort. The successful use of these resources requires precise communications between various groups and storm room/centers. The Resource Storm Volunteer Program (RSVP) is the authorized mobilization, tracking and release tool for Duke Energy Florida employees, non-line & tree contractors and activated retirees. Each storm organization and Department will identify a RSVP Coordinator and a backup to utilize and maintain the RSVP tool for major emergency responses.

2) On or Off System Crew Mobilization and Tracking

Resource Management within Logistics is responsible for maintaining an updated list of contractors in the service area who have a contract agreement with the company. The Contract Manager is responsible for keeping an updated zone list of contractors available for use during a storm event to support restoration efforts.

In the event of a hurricane, major ice storm or other system emergencies, it may be necessary to bring in off-system line and tree resources to support a timely restoration effort. The successful use of these resources requires precise communications and coordination between various storm rooms/centers. The resource tracking tool is the authorized mobilization, tracking and release tool for contract line and tree resources supporting Delivery Operations. The resource tracking tool shall be utilized by qualified employees at all affected Operations, Zone and System Storm Centers.

Prior to releasing restoration personnel, a thorough ride-out inspection should be performed to ensure restoration repairs and tree work has been completed and any mitigation plans have been established.

The following guideline should be used for the mobilization, tracking and release of off-system resources:

Off-System Crew Mobilization Guidelines

3) Handling of Crews

- Receiving Crews: Upon reporting for duty, the local Resource Management Coordinator should evaluate each person's work history to determine how many hours of work are available before rest should be scheduled. All prior hours worked, including travel time that have not been preceded by an eight hour rest period, should be counted.

- Crew Utilization: The Operations Center Resource Management Coordinator is responsible for making sure the location of each crew compliment is tracked during the storm restoration effort. Each off-system crew should have an assigned Zone/Feeder/Field Coordinator to monitor their work progress. Each crew lead/foreman should be supplied with the following:

  - Local maps
  - Safety information and instructions
  - Emergency contact list
  - Local emergency facilities locations
  - Staging area maps/directions
  - Assigned feeder one lines

  Crew packages should be stored at each Operations Center. Additional information regarding laundry services, food services and lodging should be included, when applicable.

- Transferring Crews: When crews from other areas are in route, the Substation/Zone Coordinator will be given the name of the person in charge, the number of personnel, and the ETA by the Ops Center Resource Management Coordinator. The Substation/Zone Coordinator can then organize them into a work unit and assign a Feeder/Field Coordinator to receive them. The person in charge of the crew will give a list of names and equipment to the Feeder/Field Coordinator. The Feeder/Field Coordinator will verify the list and log the arrival time. Crews will not be released without consent from Substation/Zone Coordinator to do so. When crews are released, the Feeder/Field Coordinator will log their departure time. The Feeder/Field Coordinator in one area may be assigned to deliver the crew to a new Feeder/Field Coordinator in another area. No crews can be released to go off system or travel to another zone without the approval and direction from the System Resource Management Group.

- Working Hours: Standard Hours in response of a Major Event will consist of 2 schedules (Day-time- 5am to 9pm and Night-time- 5pm to 9am). Exceptions will be managed by each Storm Process Owner to establish work shifts for those resources assigned to them. In the initial stages of the restoration effort it is general practice to work up to 16 hours, including travel time, without an extended rest period. As the 16 hour threshold approaches, each Process Owner will evaluate the extended response time needed and implement rotational shift assignments for all personnel, as needed. Operation Center Storm Coordinators should make assignments to utilize a minimum of 80% of their assigned work force during daylight and early evening hours and establish an eight (8) hour rest period, where practical, before beginning a new shift.

- Creature Comforts: Rooms, laundry service, meals, drinks, etc., will be coordinated through the System Logistics group by the Process Owners of each storm organization.

- Vehicles & Equipment: If crew personnel are lodged for the evening, Logistics personnel will identify an area near the lodging establishment for the parking of line vehicles and equipment if the lodging establishment cannot accommodate them. Vehicles and equipment should be safely secured and where possible, security personnel or local police should be asked to patrol the area from time to time to reduce exposure to vandalism or theft.

Logistics - Staging & Mustering Sites

The efficient staging of vehicles and equipment, and providing personnel with meals, medical care, fuel, material and sleeping quarters directly affects the level of success for any restoration effort.

For all level 4 responses and in some Level 3 responses, the normal line & service facility is not able to coordinate the volume of resources required to restore service. For the Florida Service territory, the Zone Storm Managers are responsible for coordinating the identification of staging sites within their respective areas. Ideally, there should be at least two staging areas identified per Operations Centers; the second being available should the first site be flooded or otherwise not available.

The preferred staging site would be able to accommodate at least 500 linemen and 250 line trucks. The staging site should have a prepared layout that indicates traffic flow, security area, pole storage, transformer storage, re-fueling arrangements, old material storage, administrative space with supporting communications lines and equipment, restroom facilities (portable or fixed), electricity, lighting, water & ice storage and food preparation and eating area. These staging sites will normally be manned, maintained and managed by Logistics personnel specifically trained to these responsibilities.

Damage Assessment

Accurate and timely damage assessment information is critical to being able to plan our response efforts and to set accurate Estimated Time of Repairs (ETR's) in our Outage Management Systems (OMS). In assessing damage, qualified employees and/or contractors will be dispatched to identify, document and report the type and severity of damage. In addition, damage assessors play an important role in identifying accounts that cannot receive service due to structural damage and reporting environmental spills to the Zone Environmental Lead or Coordinator.

For level 4 storms, Centralized Damage Assessment teams are available to assist in this process. Normally, a two person Damage Assessment teams are dispatched to assist the Operations Center. To utilize these teams to their fullest, the Operations Center Storm Coordinator should have GIS maps available for the targeted feeders. The Damage Assessment teams will perform a damage assessment in statistically valid areas first, then patrol the target feeders and mark every pole, span of wire and transformer that is down. Line patrolling is performed by both vehicles and helicopters. Once these teams have done their damage assessment assignment they may be available to remain in the Operations Centers to serve as support resources.

Data Management

Data Management plays an increasingly important role in the restoration effort from major events. This group is responsible for updating and tracking OMS outages and customers restored. Data Management is the authorized storm organization that supplies the outage information utilized by the Company for updating employees, customers, news channels and regulatory personnel on the progress of the restoration effort.

The Tactical Management Coordinator in each Operations Center is responsible for seeing that this function is properly manned and managed.

Truck and Vehicle Convoys

Duke Energy Florida’s Public Affairs group will initiate the procedures to ensure that state law enforcement agencies cooperate with our need to move trucks, vehicles and other equipment safely and quickly throughout the United States during major emergency responses. Public Affairs will ask state law enforcement officials to waive requirements that utility or contractor vehicles stop at weigh stations. In addition, a request will be made to suspend enforcement of fuel permits, size & weight restrictions, and other requirements for vehicles responding to the emergency. For additional details, see the following guideline:

Storm Plan for Truck Convoys-Waivers

Tracking of Road Closings

Efficiently transporting manpower, materials and fuel is dependent upon our knowledge of road closings. State DOT website postings for road closing information can be inaccurate and may not be up to date. Our local material delivery personnel, line & service employees and field support personnel develop accurate knowledge of road closings while performing their duties. The following procedure should be used to identify and track road closings reported by these individuals:

1. The EOC Representatives supporting County/Local EOCs will communicate any road closures on the Communications call and and inform the System Storm Center.
2. Each affected Zone Storm Center and the System Storm Center shall identify an individual in their center that will act as the single point of contact for consolidating road closing information.
3. The Zone Storm Centers and the System Storm Center shall equally share responsibilities for communicating road closing information.
4. All road closing information shall be sent to the System Storm Center contact, which should be associated with the Crew Mobilization Team.
5. Road closing information shall be consolidated at the System Storm Center into one document titled “Road Closings”.
6. The Road Closings document shall be posted and updated as necessary on the storm center intranet site under Current Storm Information for use by traveling members of Duke Energy Florida.

Post Response Plan and Functions

1) Post Emergency Response Recovery Plan – Once restoration efforts have been completed, the following should be utilized as a guideline for establishing a prioritized work list:

- Opening points should be identified and corrected to ensure the integrity of GIS and OMS.
- Primary phasing, recloser status and fuse and transformer size should be verified to ensure the integrity of GIS and OMS.
- Grid Mod asset restoration status
- All DIS or GIS construction changes documented during the restoration effort shall be updated in appropriate applications.
- Vegetation mitigation plan shall be developed and implemented with 10 days of completion of restoration effort.
- Pending customer revenue work should be evaluated and rescheduled.
- Missing or damaged streetlight facilities should be identified and scheduled for repair or replacement.
- Significant amount of missing GIS numbers in an area should be replaced.

The following should be utilized to help establish a recovery plan:

Post Storm Recovery Plan

2) Clean-up Crews - After a major emergency response has been completed, there is often a need to perform "clean-up work". The work consists of straightening leaning poles, re-sagging lines, re-installing or repairing streetlight fixtures, cutting danger limbs and/or trees and correcting any temporary repairs. The best resource that can be utilized for this work may be the off-system contract crews that can be held over. However, the cost of these resources and any mutual assistance agreements should be considered before utilizing them for this work. The Resource Management Team at the System Storm Center shall identify which contract resources are available for being held over and will work with the zone and operations center management team to develop a plan to efficiently complete this work.

3) Tree Removal Policy – When restoring power to customers as quickly as possible after a major event, line and tree crews cut trees and limbs off and away from power lines and equipment and leave the debris laying in place. Duke Energy Florida does not provide tree debris removal during storm restoration. Customers needing downed trees and limbs removed from their property should contact local tree contractors. Also, Duke Energy Florida does not remove any danger trees during storm restoration unless they pose an immediate threat to our facilities.

4) Revenue Customer Callbacks – Normal work activities will be affected when crews are supporting other areas during emergency responses. Customers may understand why their work could be delayed when they see a storm damage their area; however, when the storm hits elsewhere, customers may not readily tolerate delays in regular work caused by deploying local resources to those hard hit areas. To minimize customer concern in these circumstances, proactively call customers when it appears that regularly scheduled work may be delayed. This requires collaborative effort between the Operations Center and the Customer Service Center.

5) Grid Modernization Infrastructure – As a major emergency response nears completion, there is often a need to perform "Grid Mod clean-up work". The work consists of Connection to Distribution power source, remounting the Nan device to the pole, antenna connections and reconnection of cable to the battery Access Power Units. The best resource that can be utilized for this work may be the off-system contract crews that can be held over. However, the cost of these resources and any mutual assistance agreements should be considered before utilizing them for this work. The Resource Management Team at the System Storm Center shall identify which contract resources are available for being held over and will work with the zone and operations center management team to develop a plan to efficiently complete this work.

FDO Interim RDR AMI Florida Storm Response Plan

Supplemental Exempt Compensation Procedures

The Supplemental Exempt Compensation pay policy can be applied to major storm and other system level emergency work. If applicable, these procedures will be initiated and implemented by the System Storm Center.

See individual storm organization storm plans below:

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ATTACHMENT Y

DUKE ENERGY.

Transmission Florida Storm Plan

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TRANSMISSION - FLORIDA
STORM PLAN

1.0 Purpose

The Transmission Storm Plan, in keeping with the corporate guideline and Incident Command Structure (ICS), has been developed for use when responding to storms in Florida; where either catastrophic damage to transmission facilities has occurred and the repair is beyond the capability of the local Transmission Maintenance Area personnel, or the National Weather Service issues a wide area severe weather warning (e.g., hurricane or ice storm expected to hit the Duke Energy Florida service area).

2.0 Storm/Emergency Classification

The Transmission Storm response is controlled and managed via Incident Command Structure, whereby multiple Storm Centers report to the Incident Command Center, otherwise known as System Storm Center (See FDO & Transmission Integrated Storm Organization-page 38) . The Storm Centers and their associated roles and responsibilities are listed below. The storm/emergency classifications are also listed below.

2.1 Level I - Command and Control

Storms or events that affect or could affect only one Transmission Maintenance Area with low to moderate damage. Restoration is normally accomplished by the affected area's resources without outside assistance.

- Transmission Maintenance Area Storm Center is open and functioning (responsible for assessing needs, coordinating all assigned resources and restoration efforts within their respective areas).
- Transmission Maintenance Area is responsible for obtaining materials, major equipment, engineering support, general office support, fault locations and additional crews through normal methods
- Transmission Logistics Center is not open, however, Transmission Maintenance Area may contact T-FL Logistics Chief (S&L Support Coordinator) and request assistance.
- Transmission Storm Center is not open, but Transmission Maintenance Area Coordinator and Transmission Storm Coordinator will determine if/how updates via Storm Ops conference calls are needed to facilitate mobilization decisions and resource needs.
- Transmission Storm Center will represent Transmission on Distribution System Storm Conference Calls.

2.2 Level I Examples -

- Anticipated large number of distribution breaker operations.
- Loss of offsite power at Nuclear Plant (see note 1).
- Event of High Interest to Public or Media (see note 1).
- Single Transmission Line Locked out.

- Single Transformer Failure that the Transmission Maintenance Area can handle with own resources.
- Single Regulator Failure that Transmission Maintenance Area can handle with own resources.

Note 1: May be elevated to Level II, depending on needs as determined by affected Transmission Maintenance Area and Transmission Storm Center.

2.3 Level II - Command and Control.

Storms or events with moderate damage affecting one or more Transmission Maintenance Area. Damage in the maintenance area may require the use of crews from other Transmission Maintenance Areas or Transmission Construction in order to be repaired in a timely manner.

- Transmission Maintenance Area Storm Centers are open (responsible for assessing needs, coordinating all assigned resources and restoration efforts within their respective areas).
- Logistics Center is open for engineering, materials, contracting, accounting, fault locations, general office, staging site, lodging, and scheduling support.
- Transmission Storm Center is not open, however will facilitate updates on Storm Ops conference calls to assist with restoration efforts and facilitate mobilization decisions. The Transmission Storm Center will also resolve conflicts for competing resources, materials and contractors.
- Transmission Storm Center will represent Transmission on Distribution System Storm Conference Calls.

2.4 Level II Examples -

- Events that affect critical customers with sustained outage or that Transmission Maintenance Area cannot handle.
- Anticipated ice accumulation level of 3/8” to ½”.
- Lockout of two transmission lines in the same area at the same time, which Transmission Maintenance Area cannot handle with regularly available resources.
- Lockout of two Subs at the same time in one Transmission Maintenance Area, which cannot be handled with regularly available resources.
- Event threatening Major Generation Availability.
- Loss of offsite power at Nuclear Plant (see note 1)
- Event of High Interest to Public or Media (see note 1).
- Event where out-of-Area (on-system) crews/resources are needed

Note 1: When elevated from Level I by affected Transmission Maintenance Area Manager and Transmission Storm Center.

2.5 Level III - Command and Control

Storms or events causing damage to one or more Transmission Maintenance Area requiring the assistance of the Transmission Storm Center, Logistics Center, and Wholesale Customer Storm Center. Restoration efforts require the use of on-system contractors, possible off-system contractors, other utilities and personnel from other Transmission Maintenance Areas.

- Transmission Storm Center is open (responsible for coordinating inter-maintenance area efforts and serving as a liaison to Senior Management and Corporate Communications/media).
- Transmission Maintenance Area Storm Centers are open (responsible for assessing needs, coordinating all assigned resources and restoration efforts within their respective areas).
- Logistics Center is open for engineering, materials, contracting, accounting, fault locations, general office, staging site, lodging, and scheduling support.
- Wholesale Center is open to facilitate communications between Duke Energy Florida and Wholesale Power Customers.
- Transmission Storm Center will represent Transmission on Distribution System Storm Conference Calls.

2.6 Level III Examples -

- Conditions Significantly Threatening Reliability (System Stability) General Load Reduction & Restoration Status - PE level 4 condition Red or NERC EEA 3
- Potential for hurricane force winds over large area of Duke Energy Florida System.
- Open when anticipated Major Storm is declared.
- Damage in excess of what on-system crews can handle.
- Event of significant Civil Disturbance that could cause significant power disruption.
- Anticipated ice accumulation level of greater than ½".

2.7 Level IV Command Control -

Storms or events producing extensive damage to the Transmission System, as well as to other Electric, Communications, and Commercial Services Infrastructure. Restoration efforts require management of large compliments of off-system crews (>100 off-system personnel), as well as extensive materials, logistics, and engineering support.

- Transmission Storm Center is open (responsible for coordinating inter-maintenance area efforts and serving as a liaison to Senior Management and Corporate Communications/media).
- Transmission Maintenance Area Storm Centers are open (responsible for assessing needs, coordinating all assigned resources and restoration efforts within their respective areas).
- Logistics Center is open for engineering, materials, contracting, accounting, fault locations, general office, staging site, lodging, and scheduling support.
- Wholesale Center is open to facilitate communications between Duke Energy Florida and Wholesale Power Customers.
- Transmission Storm Center will represent Transmission on Distribution System Storm Conference Calls.

2.8 Level IV Examples -

- Heavy Category III (or stronger) Hurricane and accompanying tornadic activity producing widespread structural damage to lines and substations.

3.0 Activation and Communication

The individual Transmission Maintenance Area Storm Center leads shall be responsible for monitoring the storm/emergency situation and determining the storm/emergency classification level in order to activate the storm/emergency response for their area. The Transmission Storm Center shall also monitor the storm/emergency situation and has the responsibility for involving all Transmission Maintenance Area Storm Center Coordinators to determine the overall Transmission Storm/Emergency classification level and elevation. During system-wide events, such as ice storms and major damage events, the Transmission Storm Center shall have overall responsibility for communicating with the areas and determining the Storm/Emergency classification level.

To initiate a storm conference call, e-mails may be sent to the following addresses in the Global Address List, as required:
Carolinas – “Transmission – Carolinas East – Storm Center Call List”
Florida - “Transmission FL – Storm Call”

The Transmission Storm Center shall inform all Transmission Maintenance Area Storm Center leads and alternates of the storm/emergency classification level by direct communications. The Transmission Storm Center shall also inform the remainder of the General Office Transmission Department of the classification level via email. Meeting minutes and action items will be published by Storm Administrative roles within 30 minutes calls end.

Once the storm/emergency classification level has been activated, the individual Transmission Maintenance Area Storm Center leads in the affected areas shall inform their respective staffs of the classification level via email and direct communications.

Storm Communications Diagram: See Attachment 1

4.0 **Transmission Florida Storm Center** - The primary location of the Transmission Storm Center is at North Point, 3300 Exchange Place, Lake Mary, FL and the backup location is the Winter Garden Training Center, 402 E. Crown Point Road, Winter Garden, FL.

4.1 Storm Center Duties and Responsibilities

- Monitor development of storm or emergency and determine appropriate level of response.
- Track and Report outage data and information for external (to the Department) communications.
- Serve as liaison to FL-Storm Incident Command Center (SYSTEM STORM CENTER), Senior Management, Corporate Communications/Media, Legal, and.

4.2 Restoration Priority

- With input from the ECC, the Storm Center determines the overall priority for the assignment of transmission resources, equipment, and materials for system restoration activities among multiple maintenance areas.
- Paralleling the priorities set for restoring critical electrical services are requirements for restoring communications links that facilitate the restoration of electric service. The Storm center, with input from IT&T, will give reasonable priority to electric facilities serving two way radio sites, PBX sites, fiber optics and microwave sites, as well as over-head fiber optic cable which carries communications traffic for the company.
- Communicates restoration priorities to Logistics and the Maintenance Area Storm Centers.
- Enters outages and priorities into the Outage Tracking Tool – TOMS (Carolinas – FL-ECC enters the outages).

4.3 Transmission Storm Center Setup - Setup and decommissioning of the Transmission Storm Center and Transmission Logistics Center located in Lake Mary is the responsibility of the Storm Setup Team. The Setup Team configures the Storm Center as directed by the Storm Center Lead, and configures the Logistics Center as directed by the Logistics Center Lead.

Storm Center Organization Chart: See Attachment 2

Transmission FL Storm Call Distribution List

5.0 CONFERENCE CALL AGENDA/CHECKLIST

PRIOR TO EVENT

❑ ***Roll Call** FLORIDA* ❑ Staging &Logistics ❑ NorthTA ❑ CentralTA ❑ CoastalTA ❑ Trans. Financial ❑ Corporate Security ❑ ECC ❑ VP Maint & Const ❑ Fleet ❑ Aviation ❑ Distribution ❑ Safety ❑ Wholesale ❑ Supply Chain/ Materials ❑ Trans ROW ❑ Heavy Hauling ❑ Weather ❑ Telecom ❑ IT	***TSC***
❑ ***Safety / Messages to the troops*** ❑ Messages to reinforce commitment to safety excellence ❑ Identification of Safety risks, improvements, and plan during the storm	***VP & Safety***
❑ ***Weather Forecast*** ❑ Reference projected path & timeline storm map on storm web site ❑ Discussion of start/stop wind timeline ❑ Rainfall and flooding, ice accretion ❑ Area impact, damage predictions, based on the forecast.	***Weather***
❑ ***Resources Availability / Readiness*** ❑ Construction, Maintenance, Contract Crew Availability and Equipment ❑ Contract Line crews (on-system and off-system) ❑ Tree crews (on system and off system) ❑ Special resources (Helicopter, Track Equipment, other) ❑ Planned mobilization timeline – updates ❑ Location of Joint Use Staging Sites ❑ Identify / predictive total # human resources needed for storm response – RSVP/RoD/HB-Lodging Activation (employees, contractors, staff aug./contingent workers) ❑ Confirm resource availability versus projected resource needs ❑ Non-craft personnel availability	***Logistics***

❑ ***Logistics support***
❑ Staging Site – Joint Use, Single Use, mobilization
❑ RM/Crew Allocation
❑ Lodging
❑ Materials issues/availability vs. projected need (poles, hardware, other)
❑ Transportation – Vehicle needs
❑ Telecom – cell phone, radio needs
❑ IT – computers, laptops, system storm tools
❑ Financial – storm credit cards, storm project numbers
❑ For Level IV (heavy damage) event:
  ❑ Verify adequate plan for crew receiving, processing, staging, logistics
  ❑ Prepare for potential staging sites (personnel, security, communications, loading/unloading equipment, consumables)
	Logistics

❑ ***Area reports** FLORIDA* ❑ CentralTA ❑ CoastalTA ❑ NorthTA	***ATCs***
❑ ***ECC Update*** ❑ Preparation activities – updates	***ECC***
❑ ***System Storm Center*** ❑ Confirm system storm, logistics, and Area Storm Center hours of manned operations ❑ Review actions & open issues ❑ Verify next conf call time and phone number ❑ Preparation plans – system issues	***TSC***

DURING THE EVENT

❑ ***Roll Call*** **FLORIDA** ❑ Logistics ❑ NTA ❑ STA ❑ Trans. Financial	❑ Corp Security ❑ ECC ❑ Dept VP Maint & Const ❑ Fleet ❑ Aviation	❑ Distribution ❑ Safety ❑ Wholesale ❑ Stores	❑ Trans ROW ❑ Heavy Hauling ❑ Weather ❑ Telecom	***TSC***
❑ ***Safety / Messages to the troops*** ❑ Messages to reinforce commitment to safety excellence ❑ Identification of Safety risks, improvements, and plan during the storm				***VP or Safety***
❑ ***Transmission Outage updates*** FLORIDA ❑ NorthTA ☐ CoastalTA ☐ CentralTA				***ATCs***
❑ ***ECC Update*** ❑ Dispatch, communications, emerging issues,				***ECC***
❑ ***Distribution status update)*** ❑ Customers out and estimated restoration for the distribution system				***TSC***
❑ ***Resources Assignments / Mobilization*** ❑ Status of mobilization ❑ Update total # human resources needed for storm response – RSVP / RoD / HB-Lodging reallocation (employees, contractors, staff aug./contingent workers) ❑ Assignments / Reallocation of crews (contract / company / tree) ❑ Special resource assignments (Helicopter, Track Equipment, other) ❑ Additional needs ❑ De-mobilization timeline – when appropriate ❑ Non-craft personnel assignments				***Logistics***

❑ ***Logistics support***
❑ Materials issues/availability vs projected need (poles, hardware, other)
❑ Transportation issues
❑ Communications issues
❑ Staging Site updates, mobilization, reallocation, demobilization
❑ For Level IV (heavy damage) event:
  ❑ Crew receiving, processing, staging, logistics issues
  ❑ Staging sites (personnel, security, communications, loading/unloading equipment, consumables) issues
				Logistics

❑ ***System Storm Center*** ❑ Confirm System, Area Storm, & Logistics Ctr. hrs. of manned operations ❑ Review priories, actions, & open issues ❑ Are all ETRs current? ❑ Verify next conf. call time and phone number				***TSC***

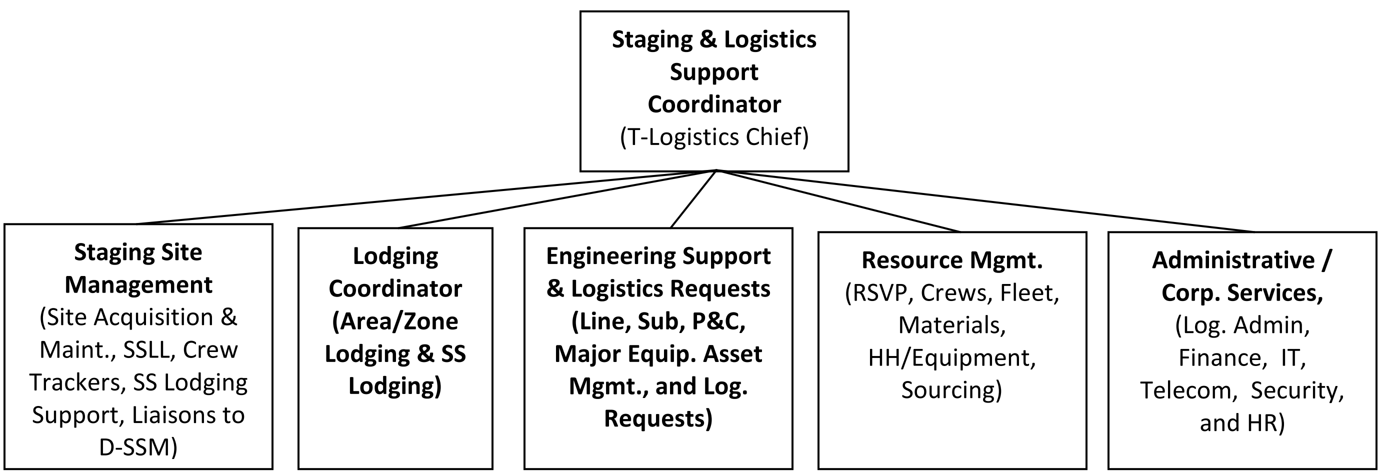
6.0 TRANSMISSION-FL- STAGING & LOGISTICS CENTER

Mission and Purpose

The mission of the T-Staging & Logistics Storm Organization is to provide logistical services and support to the company, employees, contractors, and vendors during major storm restoration events to support the achievement of the restoration objectives. The S&L Strom Organization includes the following functional areas:

- Staging Site Management (includes staging site support, asset procurement, meals, work management)
- Lodging (includes lodging for crews, logistics, leadership, all T-storm resources)
- Logistics Request Team and Engineering Support (includes processing requests and assignment of engineering resources)
- Resource Management (includes all logistics staffing, crew acquisition & mobilization, Fleet/fuel, Materials, Heavy Hauling & Sourcing)
- Administrative & Corporate Services (includes all administrate support for Storm Center and Logistics Center, HR, Corp. Security, IT, Telecom & Facilities)

To achieve this mission, T-FL S&L operates under T&D Logistics Guiding Principles.
In addition, T-FL S&L will regularly review, improve and execute on an Annual Readiness for Storm Planning and Preparedness; the review cycle and process will follow the FL-System Storm Center where possible and applicable.



Details and current assignments to the storm roles listed and illustrated above can be found in the Transmission Storm Org Chart.

The S&L Logistics Processes by function are listed below:

Staging Site Management and Processes

- Staging Site Management Org Chart – Staging Site Mgmt. Team tab
- Site Mobilization & Demobilization Process
- Daily Site Management Process
  - T-Fueling Sub-process
- Annual Staging Site Acquisition & Maintenance Process

- Alternative Housing Planning
- Staging Site communication plan
- Corporate Security Storm Processes
- Crew On-Boarding Materials
- Crew On-Boarding Safety Video

Lodging Coordinator and Processes

- Lodging Org Chart – Lodging Team tab
- Major Storm Lodging Process

Engineering & Logistics Requests Process

- Engineering and Logistics Request Org Chart – Engineering & Log. Req. Team tab
- Engineering Support Process / Materials Process
- T-Logistics Request Tool Process
- T-Logistics Request Tool Job Aid

Resource Management and Processes

- Resource Management Org Chart – Resource Mgmt. Team tab
- Resource Acquisition Process – Under Development
- Resource Mobilization Process – Under Development
- RSVP Process
- Fleet Process
  - Rental Vehicle Process
  - Fuel Process – Daily Site Management
    - T-Fueling – Sub Process
- Sourcing Process
- Heavy Hauling / Equipment Process – Under Development
- Materials Process / Engineering Support Process – Transmission Draft
  - Materials Management-System Staging Site

Administrative/Corp. Services and Processes

- Administrative / Corp. Services Org Chart – Admin-Corp Services Team tab
- Logistics Administration
- IT & Telecom
- Facilities Management
- Human Resources
- Corp. Security Storm Processes - The Corporate Security functional process includes the following sub-processes:
  - Providing Security Resources
  - Termination of Security Resources
  - Staging Site Demobilization

6.1 Logistics Center Duties and Responsibilities

- Provide logistical support for storm resources such as contract crews, engineering, materials, sourcing, accounting, administrative and scheduling support in restoration activities as requested by Transmission Maintenance Area Storm Centers and prioritized by the Transmission Storm Center.
  - Logistical support includes: staging sites, lodging, meals, fueling, fleet, materials, equipment and heavy hauling, sourcing and vendor relations, contract crews and internal crew support
- Serve as contact to SYSTEM STORM CENTER when Transmission Storm Center is not activated.
- Track all resources and location of Transmission Employees and contractors.

Transmission Logistics Center:	Provides logistics support for resources according to storm restoration priorities
Staging & Logistics Coordinators (T-Logistics Chief):	Provides overall coordination and direction to T-Logistics Storm Center support teams/branch organizations (See Storm Org. Chart).
Administrative / Corp Services Team:	Provides overall administrative support toward the Logistical and Storm Center efforts.
• Administrative Support	Provides administrative support for all storm center communications, calls, distribution lists, mailboxes, meeting minutes, documenting decisions and activation.
• Financial Tracker:	Establishes charging codes, charge cards and monitors costs of storm restoration
• Storm Set Up	Set up T-System Storm Center and T-Logistics Storm Center, assures all computers, telephones, radios, printers, modes of communication are functioning.
• IT / Telecom	Coordinate with Corp IT / Telecom for the needs (computers, cell phones, radios and support at storm centers (NOT the needs at Staging Sites except when asked to support SSM)
• Security	Coordinate with Corp Security those security needs above and beyond what the Staging Site Process provides.
• HR (Human Resources)	Provides support for human resources as needed during emergency response.
Resource Management Team:	Provides coordination of all vendor/contract resources (people, materials, equipment, fuel, etc.)
• Resource Acquisition	Acquires and assigns within RoD system contracted human resources, materials, equipment to restore system.
• Resource Mobilization	Mobilizes / assigns within RoD and supports crews / resources to staging site / work site to restore system
• Materials Support:	Provides all materials for restoration (poles to buggy stock)Enter, track and monitor the request and fulfillment of materials required for storm restoration.
• Sourcing Support:	Vender support and vendor relations for all vendors (staging site focused)

• Heavy Hauling / Equipment:	Large Equipment needed to support the work of restoration crews.
• Fleet	Fuel and Rental needed to restore the system.
Logistics Request and Engineering Support:	Manages the flow of Logistical Requests from field, triages and assures engineering support assigned and request provided.
• Log. Request Takers / Triage Team	Responds to all phone calls/computer requests from regions and field; documents request, time & date stamp, send request to appropriate support area for fulfillment.
• Engineering/Materials Support	Delivers request to Engineering and then to Materials; assures communication and feedback loop closed and request processed
• Engineering:	Reviews all Materials and Engineering requests; provides assessment / design and orders materials to be delivered to work site / laydown designation.
Staging Site Management Team:	Transmission Staging Site Team works to support transmission crews within the FDO Staging Site Management Operations
• Staging Site Management	Located in Winter Garden / with FDO SSM and serve as liaison and directors of transmission restoration crews mobilizing to and thru staging sites
• Staging Site Acquisition & Maintenance	At start of storm SAM team contact and validate any sites owners that sites may be used; during 'blue sky' times SAM team works to assure staging site readiness.
• Staging Site Admin	Located at WG with SSM, validates and mobilizes crews to staging sites within ROD and interacts with Lodging, Meals, other logistics teams to assure crews assigned and reallocated to staging sites within schedule adherence.
• Staging Site Logistics Leads	Transmission lead at staging sites and report to FDO SSLL to support set up and mobilization of crews to and through staging site.
• Crew Lodging Support	Supports crews in efforts of schedule adherence, transports or assures of transportation of crews from hotels, to staging site; from staging site to work site at beginning each day; transports crews from works tie to staging site; from staging site to hotel.
• Crew Trackers	Works at staging site to support crews on boarded, assigned to lodging, meals, worksite; updates and checks rosters and provides rosters to appropriate storm team members.
Lodging / Hotels Team:	Assures crews and storm resources have lodging
• Lodging Lead	Work with Enterprise processes and FDO Lodging lead to provide lodging for all storm resources that request lodging.
• Lodging Team	Works within Helms Briscoe Lodging tool to create blocks and assign lodging to staging sites and resources to lodging
• Field lodging (Area/Zone leads & Staging Site Lodging Support)	Work either in the Area Storm Centers or at the Staging sites to assure resources / rosters/ lodging are in sync. See job descriptions for details.

6.2 Staging & Logistics Coordinator (T-Logistics Chief) – Role & Responsibility

Complete Logistics Job Descriptions and Checklists can be located on the Transmission – Florida Storm Page – Staging & Logistics - Storm Documentation.

Job Function

The Staging & Logistics Chief/Coordinator oversees the Transmission Staging & Logistics Storm Organization which is comprised of the following sections:

- Staging Site Management
- Lodging
- Resource Management (Materials, Heavy Hauling / Equipment, Fleet, Sourcing, and Acquisition & Mobilization)
- Logistics Requests & Engineering Support
- Admin./Corp. Services (IT, HR, Facilities, Corporate Security)

This role is ultimately responsible for ensuring the annual readiness of each branch of the Staging & Logistics Storm Organization. During storm events, the Staging & Logistics Coordinator is responsible for managing the entire T-Staging & Logistics Storm Organization and representing Logistics on Storm Calls. They also provide daily goal and task direction to the Staging & Logistics Branch Leads.

Job Description

- Oversee execution of Annual Logistics Readiness Plan by Logistics Branch Leads
- Participate in all Operations Storm Calls and System Storm Calls
- Facilitate or Participate in T&D Logistics Storm Calls / Serve as back up to FDO Logistics Chief for all Logistics Storm Calls
- Negotiate number and selection of staging sites to be opened with FDO Storm Director, Transmission System Liaison/Restoration Coordinator and Zone Storm Managers/Area Coordinators on Operations Storm Call
- Notify Staging & Logistics Branch Leads of which sites are requested for activation and expected activation date/time based on storm path
- Direct Staging & Logistics Branch Leads to complete site requests tasks for identified staging sites to be opened after all-clear
- Manage Staging & Logistics checklist of actions included in all job descriptions of the Logistics section within the Transmission Storm Plan
- Monitor weather and company storm notices to keep Logistics organization up to date on storm planning activities
- Collaborate with jurisdictional peers
- Participate in SEE Mutual Assistance Logistics Sub-Committee (serve as back-up to FDO Logistics Chief)
- Participate in Wholesale Support discussions / Storm Calls.
- Oversee storm event and annual storm drill lessons learned activities and best practice implementations

Key Interface Points

- Distribution Logistics Chief
- Transmission System Liaison
- Transmission Restoration Coordinator (Storm Chief)
- Staging Site Management

- Resource Management & Mobilization
- Admin/Corp Services
- Fleet Director
- Materials Director
- FDO Crew Support Director
- Logistics Administration Lead
- System Staging Site Leads
- IT Liaison
- Area Logistics Coordinators
- Logistics Lodging Lead
- Sourcing Lead

Checklist of Actions

This timeline is designed for a major hurricane entering our area. Smaller events would require timing of some activities to be adjusted. A near miss could require timing adjustments on some activities and cancellation of others.

The following link provides the Staging & Logistics Checklist of Actions for annual readiness prior to storm season and during storm events (before landfall, during restoration, and after the storm event**).**
See Checklist: S&L Coord.-T-Log. Chief tab

6.3 Administrative / Corporate Services – Role & Responsibility

Administrative / Corporate Services – Storm Organization

- **See Transmission Storm Org Chart –** Admin-Corp Services Team tab

Job Function

The Admin/Corp Services role is the liaison between the System Storm Center, Transmission Storm Center, Staging & Logistics Center, and IT, HR, Facilities, and Corporate Security to facilitate storm support report outs and issue resolution.

Job Description

- Facilitate Admin/Corp. Srvs. team storm conference calls for restoration support updates from IT, HR, Facilities, and Corporate Security
- Compile information from Administrative roles, IT, HR, Facilities, and Corporate Security to create Admin/Corp Services Update for daily Logistics or T-System calls
- Represent IT, HR, Facilities, and Corporate Security on daily T-System calls
- Ensure storm season readiness with Admin / Corp. Services organization and alignment with Staging & Logistics / Transmission System Storm plan
- Participate in all Logistics storm conference calls; publish meeting notes and follow up items
- Distribute Storm Charging Guidance and Accounting Information to Logistics distribution lists

- Schedule Logistics Daily Calls (am/pm) according to the Major Storm Daily Call Schedule
- Assist Staging & Logistics Coordinator, RM - RSVP Lead, Staging Site Mgmt. Lead, & Mobilization Lead as needed to support Logistics storm processes
- Receive Annual Logistics Readiness Plan start date from Staging & Logistics Coordinator and schedule Kick Off Meeting with Logistics Directors and Leads
- Schedule re-occurring bi-weekly Logistics Readiness Meetings following Annual Logistics Readiness Plan Kick Off Meeting
- Track Annual Logistics Readiness Plan task completion reported on bi-weekly Logistics Readiness Meetings
- Setup Logistics System Storm Room (table top office supply)
- Provide Admin. Financial Liaison with Logistics cost information as requested
- Collect Logistics Lessons Learned throughout storm restoration efforts, compile and submit to Staging & Logistics Coordinator
    - Schedule review meeting to identify improvement opportunities, best practices, and resulting action items for implementation with Staging & Logistics Coordinator and Logistics Directors and Leads
    - Track status updates as reported on bi-weekly calls
- Establish catering support for Storm Centers feeding greater than 50 people or whose local caterers are unable to respond
    - Provide standardized tracking catering form to Op Center Contacts and consolidate feedback to update Catering List
        - Contact Information
        - Ranking of vendor/caterer preference and history of previous storm support
            - Are they equipped to provide service if power is unavailable?
            - Are they able to provide breakfast, lunch, and dinner?
            - Distance and/or travel time to Operation Centers
            - Food quality and cleanliness of equipment and staff
    - Collaborate with Sourcing to ensure contact has been established with new vendors, sample menus are acquired, negotiations are started and contracts are secured for Storm Centers.
    - Once catering services have been established for Area Storm Centers, the Area Storm Center Contact will take over coordination with the assigned caterer

Key Interface Points

- Staging & Logistics Coordinator
- Logistics Request & Engineering Support
- Staging Site Management
- Resource Management
- Logistics Administration
- Corp. Services point of contacts assigned from functional areas for IT, HR, Facilities, and Corporate Security
- Logistics IT Liaison
- Area Logistics Coordinators
- Area Coordinators / Managers
- Transmission Storm Liaison

- Transmission Restoration Coordinator / Storm Director

Checklist of Actions

This timeline is designed for a major hurricane entering our area. A near miss could require timing adjustments on some activities and cancellation of others.

The following link provides the Admin / Corp. Services Checklist of Actions for annual readiness prior to storm season and during storm events (before landfall, during restoration, and after the storm event).

See Checklist: Admin-Corp Srvs tab

6.4 Resource Management Team - Role & Responsibility

Resource Management - Storm Organization

- **See Transmission Storm Org Chart –** Resource Mgmt. Team tab

Job Function

The Resource Management Lead oversees the Transmission Resource Management Storm Organization (as a branch of Staging & Logistics) which is comprised of the following sections:

- RSVP / Internal Resource Management (Job Description follows)
- Resource Acquisition (Job Description follows)
- Resource Mobilization (Job Description follows)
- Materials Management – See Materials Storm page & RM-Materials checklist tab
- Heavy Hauling & Equipment Mgmt. (Process under development) See RM-Heavy Hauling checklist tab
- Fleet / Fuel Management – See Fleet Storm page & RM-Fleet-Fuel checklist tab
- Sourcing & Vendor Management – See Sourcing Storm page & RM-Sourcing checklist tab

This role is ultimately responsible for ensuring the annual readiness of each team of the Resource Management Storm Organization. During storm events, the Resource Management Lead is responsible for This position is responsible for ensuring that identified resource needs for support of the restoration effort are met. RM participate on all System and Logistics on Storm Calls. They also provide updates to the daily goals directed by Logistics.

Job Description

The Resource Manager manages the RM storm organization and functions during major restoration efforts. This position will ensure that off-system line and tree resources are acquired, mobilized, tracked, assigned, and demobilized before and during major storm events. This position will ensure that additional support resources are acquired, mobilized, assigned and tracked utilizing the RSVP process.

- Direct and manage storm preparedness and restoration activities of the Resource Management storm organization.
- Coordinate storm preparedness and restoration activities with FDO Resource Manager ,

SEE Mutual Assistance, and T-Wholesale Customer Manager
  - SEE and EEI company representative
  - Team lead, or designee, participates and collaborates with national and Area mutual assistance contacts
- Coordinate storm preparedness activities with Line and Tree Contractors to establish resource availability.
- Support the Transmission System Liaison / Restoration Coordinator by identifying, acquiring and mobilizing pre-storm landfall resources needs based on predictive model.
- Support the Transmission System Liaison / Restoration Coordinator by identifying, acquiring and mobilizing post-storm landfall resources needs based on predictive model and damage asses
- Support the Transmission System Liaison / Restoration Coordinator, Staging and Logistics Coordinators and Area Coordinators /C&M Managers by activation and continuous maintenance of RSVP / Storm Resource Tool to track resource mobilization.
- Direct and manage the development and communication of the resource deployment, re-allocation and release plans.
- Develop release plan that identifies value added contract line and/or tree resources for retention during draw down of resources.
- Administer process to recruit and deploy resources by matching skill sets to Staging & Logistics roles and responsibilities
- Review the Staging & Logistics-Branches within the organization chart annually to identify resource gaps and make assignment recommendations to each branch lead
- Update RSVP based on annual Logistics organization chart process output
- Partner with S&L Lead and Staging Site Management to determine resources needed to manage staging sites
- Acquire/track/assess need for all Staging & Logistics resources prior to and during storm restoration
- Centralize recruiting for Staging & Logistics storm roles / branch team members from current DEF personnel, i.e. Plants, as well as company retirees
- Identify any available transmission resources to assist in opening requested staging sites as requested by the FDO Crew Support Director
- Maintain Logistics org chart
- Assure the maintenance and monitoring Assurance System; engage Admin/Corp Service to manage.
- Monitor RSVP tool for additional resource availability; use RSVP Lead
- Provide current personnel list for specific job training to Administration/Corp Services Leads (Training planning)
- Provide & post daily update of staging site rosters to the current storm website, utilize Mobilization Lead and Area Logistics Coordinators for validation and posting of rosters.

Key Interface Points

- Transmission System Liaison
- Transmission Restoration Coordinator / Storm Director
- Staging & Logistics Coordinators
- Area Coordinators/C&M Managers
- Admin/Corp Services / Finance Admin.
- Staging Site Management
- Acquisition Lead
- Mobilization Lead

- RSVP Lead
- Mutual Assistance Coordinator
- FDO Resource Management Director

Checklist of Actions

This timeline is designed for a major hurricane entering our area. A near miss could require timing adjustments on some activities and cancellation of others.

The following link provides the Resource Management Team Checklist of Actions for annual readiness prior to storm season and during storm events (before landfall, during restoration, and after the storm event).

See Checklist: Resource Mgmt tab

6.4.1. RSVP-Internal Resource Management Lead – Role & Responsibility

Job Function

This position is responsible for keeping their assigned area portion of the RSVP tool current. In addition, this position will support the storm response by updating the RSVP tool to accurately reflect the resource mobilization plan.

Job Description - This position will:

- Participate in daily system call with Transmission System Calls and T&D Logistics calls as needed.
- Manage the process of receiving requests, and staffing, non-craft and technical storm resources requests on behalf of Florida Transmission System
- Maintain a tracking tool for assignments and personnel:
  - Utilize the Storm Resource On Demand to input the damage assessment resources;
  - Create rosters for resources needing logistical support (lodging, meals, etc.);
  - where appropriate utilize separate RSVP tool for balance of support personnel
- When internal resources are not available, contact DE RSVP/Retiree resource availability. In addition, contact RM-Acquisition Lead and inquire about contractor availability
- Employee point of contact – Serve as a central point of contact for those resources recruited or secured to fill gaps
- Interface with Carolina RSVP system coordinators to share resources between transmission organizations
- Serve as Lead to RSVP Coordinators within Transmission –FL; assure the RSVP coordinators are:
  - Keeping the RSVP tool updated as employees transfer in and out of the storm organization
  - Being the first point of contact for the organizations employees regarding RSVP questions or concerns
  - Able to perform their duties as outlined in the process document.
  - Assisting employees when signing up for their storm role
- Participating in pre-storm season planning

Key Interface Points:

- Resource Management Leads
- Area RSVP/Resource Coordinators

- DE storm support coordinator
- Damage assessment system team
- Fleet services
- Outside contract companies
- Staging and Logistics coordinators
- System RSVP Coordinator
- Storm Organization Manager/Lead

Checklist of Actions

This timeline is designed for a major hurricane entering our area. A near miss could require timing adjustments on some activities and cancellation of others.

The following link provides the Resource Management Team Checklist of Actions for annual readiness prior to storm season and during storm events (before landfall, during restoration, and after the storm event).

See Checklist: RM-RSVP Lead tab

6.4.2. Resource Acquisition Lead – Role & Responsibility

Job Function

The Resource Acquisition Lead is responsible for assuring contract crew resources are identified, acquired and brought on-to the Transmission system as storm restoration resources. In addition, the Resource Acquisition Lead is to contact all on-system contractors and internal crews to establish on-system resources available for restoration activities prior to acquiring off-system resources. RA Lead is to follow the corporate contracting protocols for utilizing / acquiring Duke resources then external/foreign resources. This role is key in assuring all transmission contract, internal and external, storm resource teams are accounted for within the resource management tool so that equipment, work, lodging, meals, logistical support, effective monitoring, and management can occur safely and effectively throughout the duration of the storm/event.

Job Description - This position will:

- Primary contract manager – Confirm with Distribution, that FDO has created and activated storm in resource tracking tool. Confirm Transmission naming convention and Crew ID numbers for loading rosters.
- Collaborate with Resource Management Lead or designee, to determine
    - Resource requirements
    - Timing for mobilization
    - Financial constraints
    - Pricing limitations
    - Location to stage resources (in state, out of state)
    - Radius to acquire resources
- Communicate the result of above to the acquisition team to begin Resource Acquisition process
- Ensure resources are acquired and appropriate terms and conditions are negotiated. Acquire and secure resources from utilities, private companies, muni's and coops that meets the criteria established by the Acquisition team lead. Negotiate terms and conditions as prescribed by team lead.
    - How many needed?
    - What is the timing?
    - When to make financial commitment.
    - Pricing limitations
    - Location to stage resources (in state, out of state)

- Responsible for reporting on goal achievement as defined by the system Sample goals:
  - Number of incremental line resources acquired
  - Number of incremental tree resources acquired
  - Number of line resources demobilized
  - Number of tree resources demobilized
- Acquire / capture all contract and internal crew / storm resources within rosters and upload into RoD (Resource on Demand) storm tool. See RoD Process
- Assure training and regular use of resource management tools (RoD, Reports for storm centers, etc.) for Self and Acquisition Team. Assure annual readiness for Resource Acquisition Team and collaborate with Resource Mobilization Team on use of resource management tools.
  - Radius to acquire resources
  - Participate and collaborate with national and Zone mutual assistance associations
- Resource outlook and forecast
  - Provide high level information on resources to be made available (example: Southern Company to release 200 people in 2 days to Duke Energy). Provide to Resource Management Director.
- Major issue resolution
  - Handle unique issues as requested by the Resource Mobilization team leads or the Resource Management Leads
- Develops crew demobilization Plan
  - Determine means to populate information regarding crew price and designate team member to update file
  - Solicit feedback from the Zones on crew performance via the line and tree crew lead
  - Provide timeline to make crew decisions on who to release which will be discussed on the daily resource call
  - Acquisition team notifies home office first of release and the Zone will notify the local crews
- Implement Crew Demobilization Plan
  - Notify home office first of release as directed by Crew Mobilization team leads

Key Interface Points

- Resource Management Lead
- Area Logistics Coordinators
- Area RoD Support
- Resource Mobilization Lead / Team
- Crew Acquisition Team / Line, Tree, DA RoD Support
- FDO Resource/Crew Acquisition Manager (Line, Tree Account Team Leads)

Checklist of Actions

This timeline is designed for a major hurricane entering our area. A near miss could require timing adjustments on some activities and cancellation of others.

The following link provides the Resource Management Team Checklist of Actions for annual readiness prior to storm season and during storm events (before landfall, during restoration, and after the storm event).

See Checklist: RM-Acquisition Lead tab

6.4.3. Resource Mobilization Lead – Role & Responsibility

Job Function

Responsible for mobilizing all required / acquired resources; which mean assigning crews to zones and then staging sites. For collaborating with the Area Restoration Coordinators and Staging & Logistics to assure crews have information necessary to report to work.

Job Description - This position will:

- Participate in daily Transmission System Call and T&D Logistics Calls
- Manage crew assignment to Zones/Area
- Be decision maker with RM Leads and Area Coordinators for which crews are assigned to which Zone and then to Staging Site
- The lead will factor in, crew equipment and capability.
  - In order to make these decisions, the lead will refer to the comments section in the tool where that crew acquisition will use to identify specifics on crews and they will also list equipment being brought.
  - The lead will also receive verbal feedback on the system call with the Zone resource managers on their needs.
  - The lead will oversee the tool input personnel to ensure this information is updated in the Tool and the Zone is notified (will ensure the input personnel include such pertinent information as climbing vs non climbing tree personnel, special equipment, etc.)
- Break down crews into 10-15 person teams and assign in that manner to the Zones
  - Mobilization notifies crew leader of team ID number
- Communicate special needs related to outside resources. (Example: if a crew insists on using a mobile kitchen, the lead would provide that info on the system call to the Area Coordinator and to Staging Site Management and S&L Coordinators who will also be on the call.)
- Elevated issue resolution with the Zones
- Serve as the single point of contact when unique conflicts and situations arise
- Responsible for manual GPS on crews
  - Ensure the calls are being made to incoming crews, and that the tool is being updated with the latest ETA's
  - Once on system, initiate a daily call to ensure there are no issues
- Responsible to ensure updated rosters are received from Crew Foreman
  - Ensure rosters are acquired from incoming crews and populate a shared drive with that information
- Ensure smooth transition from system to Zones for incoming crews
  - If mustering site is used, after arriving there, turn them over to the Zone for future communication
  - If mustering site not used, turn the crew over to the receiving Zone within 2-3 hours of arrival
- To facilitate the transition, the system will call the crew and notify them that the Zone will now take over communication. Give the crew the Zone phone number and contact name but have the Zone initiate the call.
- Track internal line resources moved to another area
- Resource forecast – ensure a resource forecast is available to the Zones to provide a picture of resources to come through the upcoming week
- Developing a contingency plan if tool is inoperable or phone lines are down
- Ensuring the crew mobilization storm kit and pre storm checklists are prepared/completed as outlined
- Ensuring direction books are available to provide appropriate information to incoming crews
- Provide the needed system reports at designated times

Key Interfaces:

- Area Logistics Coordinators / RoD Support
- C&M Supervisor / Inspectors
- Resource Management Lead
- Staging & Logistics Coordinators
- Heavy Hauling / Fleet services
- Staging Site Management / SSOL
- Materials Management
- Resource Acquisition Lead / Team

Checklist of Actions

This timeline is designed for a major hurricane entering our area. A near miss could require timing adjustments on some activities and cancellation of others.

The following link provides the Resource Management Team Checklist of Actions for annual readiness prior to storm season and during storm events (before landfall, during restoration, and after the storm event).

See Checklist: RM-Mobilization Lead tab

6.5 Staging Site Management Team – Role & Responsibility

Staging Site Management - Storm Organization

- **See Transmission Storm Org Chart –** Staging Site Mgmt. Team tab

Job Function

The SSML will act as Transmission Logistics Liaisons to Distribution. The SSML under the direction of FDO CREW Support and FDO Staging Site Management, manages all transmission staging site related storm roles in support of crews logistical needs through staging site management, ensuring all staging site logistical needs are met during major storm restoration events. (Specifically, SSM role as liaison to Distribution, Site Acquisition and Maintenance roles, Staging Site Admin/RM support roles, Staging site Lodging/Crew support and Crew tracker roles. See Staging Site Mgmt. Org Chart.) The Staging Site Mgmt. Lead manages all Staging Site operations, ensuring all Staging Site needs are met while implementing best practices at sites throughout the system during storm restoration activities. The Transmission Staging Site Mgmt. Lead is the primary contact for the FDO System Staging Site Coordinator, Area Logistics Coordinators, and Transmission Staging & Logistics.

Job Description

The Transmission Staging Site Management Leads will report to Winter Garden Storm Center and communicate to North Point T-S&L Organization via telephone, Logistics Tool and email. Staging Site Mgmt. Lead and Co-Lead will follow FDO Staging Site Guiding Principles for T&D Storm organizations and will assure their team members are trained and prepared for storm planning, prep and restoration activities.

- Participate in all Transmission System Storm Calla snd S&L / Logistics Storm Calls
- Receive staging site activation request from FDO Logistics Chief/Coordinator & Transmission Staging & Logistics Coordinator and notify Transmission staging site team which sites will be activated and request completion of site activation request tasks
- Manage SSM checklist of actions included in all job descriptions of the applicable Logistics – Crew Support DSSOP section & adapted Transmission Roles within this plan document.

- Monitor weather and company storm notices to keep Crew Support section up to date on storm planning activities
- Collaborate with jurisdictional peers
- Oversee execution of Site Management processes; identify and address any gaps
- Collaborate with FDO Logistics to determine Joint site use opportunities
- Collaborate with T- C&M Operations, FDO Staging site Acquisition and Maintenance team, and FDO C&M Operations to update Master Staging Site List with C&M validated site capacities for maximum personnel and equipment at activated sites
- Oversee Staging Site Management Team readiness task completion annually
- Track lessons learned to identify process improvement opportunities
- Participate in annual Joint Storm Drill, training and exercises
- Direct Staging Site Management team during storm events

Key Interface Points

- Distribution System Storm Coordinator
- Transmission System Storm Liaison
- Transmission Restoration Coordinator/Storm Director
- Area / Region Storm Coordinators
- FDO Logistics Chief/Coordinator
- Transmission Staging & Logistics Coordinator
- Resource Management
- Resource Mobilization
- Fleet Director/Transportation Storm Manager
- Materials Director/Supply Chain Storm Manager
- Administration/Corp Services Lead
- FDO System Staging Site Lead
- Admin/Corp Srvs. IT Liaison
- Lodging Lead
- Sourcing Lead
- System Security Liaison

Checklist of Actions

This timeline is designed for a major hurricane entering our area. A near miss could require timing adjustments on some activities and cancellation of others.

The following link provides the Staging Site Management Team Checklist of Actions for annual readiness prior to storm season and during storm events (before landfall, during restoration, and after the storm event).

See Checklist: Staging Site Management tab

6.5.1 Site Acquisition & Maintenance – Role and Responsibility

Job Function

This is an annual readiness role. The purpose is to assure throughout the year that all staging sites have been 'acquired' and the relationships and the sites are maintained for use during any storm season. The documentation is maintained within the Staging Site Master List on the storm website. At the beginning of a Major Storm Event, this role is to participate only in the initial activation of the staging sites selected.

Job Description

- Interface with FDO Site Acquisition & Maintenance team; attend regularly occurring meetings and complete assigned tasks.
- Acquire & update via Hold Harmless Agreements;
- Share and communicate to C&M and ensure that C&M has participated within the site rating and site map development so that C&M needs are met;
- Assure the site maps are GIS mapped and included within MyWorld mapping tool;
- Confirm that staging sites are designated within Zones and Areas for simultaneous use by T&D C&M and storm roles
- Assist with identification of new staging sites
- Provide assessment / gap analysis for existing staging sites across transmission system

Key Interface Points
- Staging Site Management
- C&M Area Managers
- FDO System Storm Liaison
- FDO System Crew Support
- FDO System Staging Site Management
- Fleet Director
- Sourcing Director
- Staging & Logistics Coordinator

Checklist of Actions – See SAM Process

6.5.2 Site Administration Support (RoD, Site & Crew Staff)

Job Function

The Site Administration Support storm role is Staging & Logistics' point of contact between Staging Site Mgmt., Admin/Corp Services, and Resource Management. The role assures staff and crew assignment to staging sites for logistical support (lodging, meals, work assignments, etc.) ; assists SSM and / or SSLL in set up and smooth operation of site (or storm station) as well as updates and manages crew rosters and assignments at the staging site.

Job Description

This position will:

- Interface with Resource Management (Resource Mobilization primarily)
- Ensure the timely flow of crew movement information
- Monitor crew counts and locations
- Provide current crew information on Logistics storm calls
- Provide Lodging Lead with actual and forecasted crew counts by locations at times designated in the Resource Management RoD Process and Timeline

Key Interface Points

- FDO Logistics Chief/Coordinator
- Transmission S&L Coordinator
- Resource Management
- Resource Mobilization - crews
- Staging Site Management
- FDO-System Staging Site Lead
- Staging Site Management
- Lodging Lead
- Area Logistics Coordinator
- Staging Site Logistics Leads
- RSVP Coordinator
- Administration/Corp Services

Checklist of Actions

This timeline is designed for a major hurricane entering our area. A near miss could require timing adjustments on some activities and cancellation of others.

The following link provides the Staging Site Management Team Checklist of Actions for annual readiness prior to storm season and during storm events (before landfall, during restoration, and after the storm event).

See Checklist: Staging Site Management tab

6.5.3 Staging Site Logistics Lead (SSLL) for Transmission

Job Function

The Staging Site Logistics Lead storm role is Staging & Logistics' point of contact between Staging Site Mgmt., Area Coordinator / Area Storm Center / Operations , Resource Management, and Lodging. The role assures staff and crew assigned to staging sites for logistical support (lodging, meals, work assignments, etc.) get the support requested, for example SSLL assures all crew members are assigned to lodging, have meals plan and schedule, have crew lodging support to get them to and from hotel – staging site-worksite as needed ; assists FDO and T SSM and / or FDO SSLL in set up and smooth operation of site (or storm station) as well as serves as backup for updates and manages crew rosters and assignments at the assigned staging site.

Job Description

Staging Site Management assigns to a specific staging site. This position reports to assigned staging site and reports to FDO SSLL and FDO SSOL, this role is the Transmission contact for site management and leadership. This role may step into LEAD role in the event that it is a Transmission only site or the FDO does not have the resources to fill this role at the site.

- Interface with SSM and Area Logistics for Crew needs and assignment
- Interface with Resource Management (Resource Mobilization primarily)
- Ensure the timely flow of crew movement information

- Monitor crew counts and locations
- Provide current crew information on Logistics storm calls
- Provide Lodging Lead with actual and forecasted crew counts by locations at times designated in the Resource Management RoD Process and Timeline

Key Interface Points

- FDO Logistics Chief/Coordinator
- Transmission S&L Coordinator
- Resource Management
- Resource Mobilization - crews
- Staging Site Management
- FDO-System Staging Site Lead
- Staging Site Management
- Lodging Lead
- Area Logistics Coordinator
- Staging Site Logistics Leads
- RSVP Coordinator
- Administration/Corp Services

Checklist of Actions

This timeline is designed for a major hurricane entering our area. A near miss could require timing adjustments on some activities and cancellation of others.

The following link provides the Staging Site Management Team Checklist of Actions for annual readiness prior to storm season and during storm events (before landfall, during restoration, and after the storm event).

See Checklist: Staging Site Management tab

6.6 Lodging – Roles & Responsibility

Lodging Team - Storm Organization

- **See Transmission Storm Org Chart –** Lodging Team tab

Job Function

The Lodging Lead directs all activity for the Area/Zone Hotel Leads and 3rd Party Acquisition vendor. The primary responsibility of the Lodging Lead is to meet bed needs and inform the Staging & Logistics Coordinator and FDO Logistics – Crew Support Director when beds are not available and the need for alternative housing exists.

Job Description

- Direct all activity for the Area/Zone Hotel Leads and 3rd Party Acquisition vendor
- Direct and monitor hotel procurement and cancellation numbers daily
- Work closely with Resource Mobilization to establish daily bed needs for crews
- Maintain daily buffer of needed beds

- Participate in Logistics storm calls
- Coordinate need for overflow between Transmission, FDO System Staging Site Leads, Transmission Staging Site Mgmt., T-Resource Mobilization and FDO Logistics Mobilization Liaisons
- Collaborate and maintain communication with FDO-Logistics Chief/Coordinator, Staging & Logistics Coordinator, Staging Site Management and Crew Support Director to ensure daily needs are met

Key Interface Points

- FDO- Logistics Chief/Coordinator
- FDO - Crew Support Director
- Staging & Logistics Coordinator
- Resource Mobilization
- Staging Site Management
- Logistics Administration Lead (SL-1A)
- 3rd Party Acquisition Vendor
- Logistics Mobilization Liaison (SL-4)
- Hotel Area/ Zone Lead (SL-5A)
- Staging Site Hotel Coordinator (SL-7B)
- Staging Site Hotel Support (SL-7C)

Checklist of Actions

This timeline is designed for a major hurricane entering our area. A near miss could require timing adjustments on some activities and cancellation of others.

The following link provides the Lodging Team Checklist of Actions for annual readiness prior to storm season and during storm events (before landfall, during restoration, and after the storm event).

See Checklist: Lodging Team tab

6.7 Logistics Requests and Engineering Support - Role & Responsibility

Engineering & Logistics Request Team - Storm Organization

- **See Transmission Storm Org Chart –** Engineering & Log. Req. Team tab

Job Function

Staging & Logistics Coordinator directs the activation of the Logistics Request section of Staging & Logistics. This begins the request process for restoration and storm response. The Logistics Request & Engineering Support Team are to receive, triage, assign, and assure complete processing of all logistical requests from the Area Storm Centers and System Storm Center. The lead of the LR/ES Team is to activate and assure team is trained, prepared, and effective in processing storm requests and developing work packages for storm restoration.

Job Description

The team is responsible for the functioning and processing of logistical requests through:

- Transmission Logistics Request tool set up and use including training at least annually.
- Annual readiness to process logistical needs by reviewing the tool and making updates necessary to stay current with storm organization and logistical support.
    - Area Storm Centers – Area Logistics Coordinators & Teams
    - System Storm Center – Staging & Logistics Storm Center, Log. Request Takers
    - Staging Site Management – Site Admin Support
    - All logistical support branches like: Resource Management, Engineering, Admin / Corp Services, Lodging, and FDO Logistics (if FDO decides to become a tool user).

This team is also responsible for the assigning and processing of all Materials requests through Engineering first, then Engineering is to process work request and process through to Materials. Engineering support role provides delivery of requests, physical hand off of drawings and materials orders.

- Engineering Support Leads and Design roles report to the Logistics Request & Eng. Support Lead.
- Engineering resources are to validate any safety, equipment, engineering changes or adjustments to damaged assets. Ultimately, Engineering receives work for LR/ES Lead and provides engineering package to the Requestor / Area Logistics Coordinator/Local Maint. area.
- Engineering provides estimated completion of storm request to the LR/ES Lead
- Engineering provides materials request to Material coordinators.
- Engineering communicates work / storm request complete to the Request Taker, who enters "complete date"
- Major Equipment Support supports engineering / materials requests by coordinating with Engineering resources.

Key Interface Points

- Area Coordinator / C&M Management
- Engineering Lead / Support
- Logistics Request Taker
- Area Logistics Coordinator
- Materials Management
- Heavy Hauling
- Major Equipment Support
- Staging Site Management/SSLL/SSOL

Checklist of Actions

This timeline is designed for a major hurricane entering our area. A near miss could require timing adjustments on some activities and cancellation of others.

The following link provides the Lodging Team Checklist of Actions for annual readiness prior to storm season and during storm events (before landfall, during restoration, and after the storm event).

See Checklist: Log. Req-Eng.Support Team tab

7.0 WHOLESALE CUSTOMER

7.1 Wholesale Customers Duties and Responsibilities

- The Wholesale Storm Center (WSC) is normally activated when the Transmission Storm Center is activated.
- It is staffed by Transmission Planning Unit with assistance from Account Management – North Unit (Regulated Commercial Operations) personnel if needed. In the event RCO staff provides assistance, the Legal Department will file for an exception to FERC Code of Conduct.
- The Wholesale Storm Center (Carolinas) is located in TPP 17C3-4 where phones and computer equipment are installed.
- The Wholesale Storm Center (Florida) is located in the Transmission Storm center.
- Upon activation, staff contacts the CSC and coordinates the transfer of the Wholesale Customer Service Restoration Hotline (800-615-4893) to the WEC.
- WSC staff notifies wholesale customers, SYSTEM STORM CENTER Storm Center, Transmission Storm Center, and ECC of its activation.
- When customer outage calls are received from customers, outage information is relayed to the appropriate Distribution Operations Center (currently developing access to DCC's Web based ticket reporting system) for distribution served POD outages or reported to the ECC and Transmission Storm Center for transmission POD outages.
- WSC staff obtains outage status information from the various distribution and transmission Storm Centers and/or Region staffs to provide appropriate information to customers and/or obtains information from customers for the Company's restoration operations.

8.0 MAINTENANCE AREAS

In the event of severe damage to transmission facilities, due to storm or other cause, the repair of which is beyond the capability of local Transmission Maintenance Personnel, the resources of the Company will be consolidated to the extent deemed necessary by the System or Area Transmission Coordinator, in accordance with the following outline.

In the Transmission Department, each Area will have appropriate personnel, facilities, and equipment under the direction of the Area Transmission Coordinator. The Area Transmission Coordinators will report to the Assistant System Coordinator for the Transmission Department.

All staff assignments and other necessary information must be kept up to date and reviewed annually. Area Transmission Coordinators must be ready to affect the transfer of help to other areas with a minimum of confusion and delay, as well as to direct the work of numerous crews with efficiency and safety in case of trouble in their own areas.

The decision on which Storm Center(s) to activate will depend on the location of the storm/emergency. The body of this document applies to all locations, with separate attachments for contacts primarily supporting each location.

THE SAFETY OF EMPLOYEES AND THE PUBLIC WILL, AT ALL TIMES, BE THE PRIME CONSIDERATION!

8.1 Transmission C&M Area Coordinator / Resource Mobilization

The Transmission C&M Area Coordinator will coordinate all the Company transmission resources in the respective Area in a severe storm or other disaster in an effort to maintain or restore service.

- The Area Transmission Manager is responsible for ensuring the area contact lists for storm/emergency restoration are maintained current.
- Under the authority of the Transmission System Coordinator, the Area Transmission Coordinator will have similar authority on the Transmission Area level.

8.2 Area LOGISTICS Coordinator

- **See Transmission Storm Org Chart –** Local Area / Zone Storm Centers tab

Job Function

Area Logistics Coordinator reports to the T-C&M Area Coordinator and acts as a liaison and requester for all Area logistics needs. The Logistics Area Coord. Teams provide the communication link to Logistics Storm Center providing Logistics with the details and updating

- Initial crew needs, lodging needs
- Crew movement notifications to reallocate or demobilize
- Validate through communication and coordination with Resource Mgmt. and Staging Site Mgmt.

Job Description

The AREA Logistics team is responsible for the identification and requesting of logistical needs to/through Staging & Logistics Storm Organization. and processing of logistical requests through:

- Team members will be trained in Staging Site Operations; HB-Lodging Process; RoD/Resource Mgmt. Process so they can validate and provide changes to appropriate storm resources.
- Gain training and use on Transmission Logistics Request at least annually.
- Annual readiness to request logistical needs by initiating and participating in planning with C&M Area Coordinators and Staging & Logistics storm planning and training.
- Based on storm impact to particular area, the Area Log. Coordinators are responsible for requesting and then tracking monitoring the receipt of all requests
  - Crew / Restoration resources requested and tracked through RoD, RSVP, Staging Site Daily Site Management
  - Works with Resource Mobilization to track and monitors within RoD all crew assignment and movement
  - Interface with Resource Mobilization
    - With RM, Ensure the timely flow of crew movement information
    - Monitor crew counts and locations
    - Provide current crew information on Logistics storm calls
  - Provide Lodging Lead (SL-5) with actual and forecasted crew counts by locations at times designated in the Resource Management RoD Process and Timeline
- Monitors and tracks lodging after initial requests for beds completed. Works with Lodging Lead and Staging Site Mgmt.
  - Lodging and meals through daily site management as well as Area /zone Lodging lead
  - Represents Transmission Area and collaborates between Distribution & Transmission regarding Area/Zone hotel concerns
  - Liaison role between: Lodging Lead (SL-5), 3rd Party Acquisition Vendor, and Staging

Site Hotel Coordinator (SL-7B)

- o Communicates with staging sites for issues and resolution
- o Track, confirm, and submit bed counts thru the Hotel Tool
- o Identify requests by Staging Site/Operation Centers/Cities
- o Cancellations to include pertinent information including Hotel Name and Bed Count
- o Manage any issues that develop with acquired rooms
- o Communicate and oversee the booking/cancellation of rooms by 3rd Party Acquisition Vendor
- o Provide daily report out to Lodging Lead (SL-5) including # beds reserved and used by Zone and Staging Site

Key Interface Points

- Area Coordinator / C&M Management
- Engineering Lead / Support
- Logistics Request Taker
- Staging & Logistics Coordinator
- Resource Acquisition
- Resource Mobilization
- Lodging Lead
- Materials Management
- Heavy Hauling
- Major Equipment Support
- Staging Site Management/SSLL/SSOL

Checklist of Actions

This timeline is designed for a major hurricane entering our area. A near miss could require timing adjustments on some activities and cancellation of others.

The following link provides the Lodging Team Checklist of Actions for annual readiness prior to storm season and during storm events (before landfall, during restoration, and after the storm event).

See Checklist: Area Logistics Coordinator tab

8.3 Asset Management Engineer

The Asset Management Engineer will normally work with the Area Transmission Coordinator, providing relief for rest and meals and otherwise assisting as needed.

- Can be designated as a Field Coordinator.
- Will be available to assess damage to Area substations and lines and provides local design review to local storm restoration and repair.
- Will maintain a current substation direction book.

8.4 Maintenance Supervisor

The Maintenance Supervisor will coordinate personnel restoration activities as directed by the Area Transmission Coordinator and ECC dispatcher.

- Will normally work with the Area Transmission Coordinator, providing relief for rest and meals and otherwise assisting as needed.
- Can be designated as a Field Coordinator.
- Will act as liaison between Transmission Maintenance and other DE or contract personnel.
- Will see that the generator located at the headquarters is tested periodically in anticipation of a storm/emergency, the tank level is checked and filled as necessary in anticipation of a storm/emergency (Substation Supervisor).
- Will, in anticipation of the storm/emergency, fuel all vehicles, test and charge all portable radio batteries, test and fuel all portable generators, emphasize the importance of minimizing radio traffic on primary channels, and check the operation of all pagers and cellular phones.
- Will contact fuel vendors and arrange for fuel supply needs. This will include field refueling.
- Will assist with Company/Contractor expense documentation and the implementation of all special accounting practices.
- Will keep a complete log of events.
- Will assign a member of crew (normally the Senior Lineman) to work with a Field Coordinator stationed at the Storm control center in the determining and dispatching of materials.

8.5 Forester

The Forester will normally work with the Area Transmission Coordinator, serving as relief for rest and meals and otherwise assisting as needed, particularly with moving and accounting for extra crews.

- Can be designated as a Field Coordinator.
- Will assess ROW damage and clearing needs.
- Will organize support from local contractors, coordinating all ROW and clearing activities.
- Will maintain Transmission Area maps to be copied and distributed to out-of-town crews.
- Will maintain a current Contractor directory.
- Will gather and provide information on road access from state and local agencies with the help of the Support Staff.
- Will arrange for aerial patrol of lines. When appropriate, will notify contract helicopter in advance and route to a location on the system where the storm is not expected to hit.
- Will help with the distribution, crew registration forms, voucher forms, and will be responsible for notification of charge numbers.
- Will assist with Company/Contractor expense documentation and the implementation of all special accounting practices.

8.6 Administrative Specialist

The Administrative Specialist will assist in communications between the Storm Center and field operations.

- Will lend clerical support to the Area Transmission Coordinator as needed.

- Will help man the Storm Center telephone/radio.
- Will contact and make arrangements with the local Division Services Coordinator for the possible need of rooms in advance; once needs are known, make reservations through the local Division Services Coordinator.
- Will make arrangements for meals for personnel involved in restoration of the system through the local Division Services Coordinator.
- Will be responsible for maintaining and distributing up-to-date employee directories, Storm Center telephone numbers, and inserts for inclusion in this plan.
- Will help with the distribution, crew registration forms, voucher forms, and will be responsible for notification of charge numbers.

8.7 Regional Data Coordinator

The Regional Data Coordinator will work within the Regional Storm Center to provide data entry of outages, clearances, work in progress, and restored lines/subs.

- The Coordinator must be trained in Storm/ECC tool and system data / 1-lines.

9.0 PRE-STORM PREPARATION TIMELINES

9.1 *Area Transmission Coordinator Pre-Storm Checklist*

	BEGINNING OF STORM SEASON (6-1)	
	Verify that staff revised and updated Storm Plan Contact List.	
	During the January and June Safety Council Meeting, discuss with employees the DE philosophy concerning employee safety during emergencies.	
	Verify area staff have completed pre-storm season check list.	
	96 – 72 HOURS PRIOR TO THE STORM	
	Verify area staff have completed 96-72 hour check list.	
	72 – 48 HOURS PRIOR TO THE STORM	
	Check tools and equipment including flashlights, boots, and rain suits, etc.	
	Review Storm Plan responsibilities.	
	Review safety responsibilities.	
	Verify area staff have completed 72-48 hour check list.	
	48 – 24 HOURS PRIOR TO THE STORM	
	Track storm and projected time, area, amount of damage. Set up on-going weather information channel. Evaluate need to request onsite IT support for the Storm Centers.	
	Hold staff meeting and ascertain their state of readiness.	
	Check all tools and equipment, to include flashlights, boots, and rain suits.	
	Review Storm Plan responsibilities.	
	Review safety responsibilities.	

	Place contract and Duke Energy Florida crews on standby.	
	Prepare a grab bag of clothes and hygiene items.	
	Verify area staff has completed 48- 24 hour check list.	
24 – 0 HOURS PRIOR TO THE STORM		
	Review crew readiness and availability.	
	Evacuate families if necessary.	
	Prepare headquarters area for storm/emergency.	
	Check availability and operation of pagers and portable radios.	
	Verify area staff have completed 24-0 hour check list.	

9.2 *Asset Management Engineer Pre-Storm Checklist*

96 – 72 HOURS PRIOR TO THE STORM		
	Make the necessary arrangements for staging areas.	
72 – 48 HOURS PRIOR TO THE STORM		
	Assist ATC to make arrangements for possible need of company crews.	
	Check all tools and equipment including flashlights, boots, and rain suits, etc.	
	Review Storm Plan responsibilities.	
	Review safety responsibilities.	
48 – 24 HOURS PRIOR TO THE STORM		
	Assist ATC to make arrangements for possible need of company crews.	
	Assist ATC in establishing Storm Center.	
	Check first aid kits.	
	Prepare a grab bag of clothes and hygiene items.	
24 – 0 HOURS PRIOR TO THE STORM		
	Evacuate families if necessary.	
	Prepare headquarters area for storm/emergency.	
	Check availability and operation of pagers and portable radios.	

9.3 Maintenance Supervisor Pre-Storm Checklist

	BEGINNING OF STORM SEASON (6-1)	
	Chain saw training and equipment obtained/checked.	
	Check condition of all vehicles.	
	96 – 72 HOURS PRIOR TO THE STORM	
	Line Supv: Check inventory; poles, arm, etc.	
	Sub Supv: Secure all items in all substations	.
	Relay Supv: Check inventory and supplies in the warehouse.	
	Check condition of all vehicles and fill fuel tanks.	
	Verify need for and request satellite phones	
	72 – 48 HOURS PRIOR TO THE STORM	
	Line Supv: Check with Transmission Construction for number of available crews.	
	Check all tools and equipment including flashlights, boots, and rain suits, etc.	
	Review Storm Plan responsibilities.	
	Review safety responsibilities.	
	48 – 24 HOURS PRIOR TO THE STORM	
	Line Supv: Review Storm Plan responsibilities of contractor with contract management: * Reporting location, * Meal tickets, * Motel tickets, * Time sheets, * Contractor work schedule, * Crew sign-in process, staging areas and crew tracking	

	Check all tools and equipment, to include flashlights, boots, and rain suits.	
	Sub Supv: At TM Headquarters, check gas in tank for the generator and arrange for refueling truck to be on site.	
	Sub Supv: Check generator and emergency lights.	
	Relay Supv: Assist Sub Supv to zero-hour countdown.	
	Discuss crew assignments.	
	Contact other Company crews.	
	Check for special tools - chain saw, air compressor, large generator.	
	Check first aid kits.	
	Review Pre-Event Briefing with Crew	
	Prepare a grab bag of clothes and hygiene items.	
24 – 0 HOURS PRIOR TO THE STORM		
	Move equipment out of storm path to safe area, if necessary.	
	Review crew readiness and availability.	
	Fill all vehicles and cans with fuel. (Spray windshields with Rain-X)	
	Evacuate families if necessary.	
	Prepare headquarters area for storm/emergency.	
	Obtain water and ice for each vehicle.	
	Check availability and operation of pagers and portable radios.	

9.4 *Forester Pre-Storm Checklist*

96 – 72 HOURS PRIOR TO THE STORM		
	Review area maps to assure that they are current	
	Review contractor labor, equipment, and phone number list to verify they are current.	
	Check contractor packets for crews.	
	Check condition of vehicle and fill fuel tank.	
72 – 48 HOURS PRIOR TO THE STORM		
	Make initial contact with helicopter service – verify availability and location.	
	Check tools and equipment including flashlights, boots, and rain suits, etc.	
	Review Storm Plan responsibilities.	
	Review safety responsibilities.	
48 – 24 HOURS PRIOR TO THE STORM		
	Make available current maintenance area maps.	
	Review contractor labor, equipment and phone number list to assure they are current.	
	Have contractor packets for crews available.	
	Review Storm Plan responsibilities of contractor with contract management: * Reporting location, * Meal tickets, * Motel tickets, * Time sheets, * Contractor work schedule, * Crew sign-in process, staging areas and crew tracking	

	Make follow-up contact with helicopter service - verify availability and location.	
	Check ready effort of contract crews.	
	Check first aid kits.	
	Prepare a grab bag of clothes and hygiene items.	
24 – 0 HOURS PRIOR TO THE STORM		
	Put contractors on ready alert.	
	Assure contract crews know where, when, and to whom to report.	
	Contact helicopter service-position helicopter at closest "safe" location.	
	Review crew readiness and availability.	
	Fill vehicle and cans with fuel. (Spray windshields with Rain-X)	
	Evacuate families if necessary.	
	Prepare headquarters area for storm/emergency.	
	Obtain water and ice for each vehicle.	
	Check availability and operation of pagers and portable radios.	

9.5 Administrative Specialist Pre-Storm Checklist

	BEGINNING OF STORM SEASON (6-1)	
	Verify and distribute updated Storm Plan organizational charts, phone lists, and identify where to find those.	
	96 – 72 HOURS PRIOR TO THE STORM	
	Contact Facilities Management to check gas in the tank for the local generator(s).	
	Check ice machine to see if ice is needed. Contact local ice company if needed.	
	72 – 48 HOURS PRIOR TO THE STORM	
	Review Storm Plan responsibilities.	
	Review safety responsibilities.	
	48 – 24 HOURS PRIOR TO THE STORM	
	Ask for additional portable cell phones and hand held radios and distribute.	
	Stock food and water at headquarters; order port-a-johns.	
	Check all tools and equipment, to include flashlights, boots, and rain suits.	
	Assist ATC in establishing Storm Center.	
	Prepare a grab bag of clothes and hygiene items.	
	Contact District Coordinator to reserve hotel rooms.	
	Contact District Coordinator regarding meals for crews.	

	Contact District Coordinator regarding fuel supply needs for vehicles.	
	Contact District Coordinator regarding availability of local garages for vehicle repairs.	
24 – 0 HOURS PRIOR TO THE STORM		
	Contact District Coordinator to confirm number of hotel rooms needed and to confirm meal arrangements.	
	Man Storm Center and radio.	
	Prepare headquarters area for storm.	

10.0 Links to Local Maintenance Area Contacts

10.1 Florida NTA - \\s00225\grpdata\TransDocs\Storm\Fla NTA Contacts

10.2 Florida STA - \\s00225\grpdata\TransDocs\Storm\Fla STA Contacts

11.0 Transmission Maintenance Area Storm Plan Accounting Procedures

Storm Plan accounting procedures for the Transmission Department will not be effective **until** the Transmission System Coordinator (or the designated Assistant) requests their implementation by Transmission C&M and Controller-Accounting. These procedures are intended for use when there is severe **and** extensive damage to transmission facilities.

Road Tax for Diesel Fuel
If arrangements are made with a vendor to deliver diesel fuel, make sure the vendor understands when he prepares his invoice that Duke Energy Florida does not pay the road tax on this fuel.

For questions concerning the current accounting procedures, contact Penny Goebel BELL 980-373-7708 or cell 704-975-6197.

12.0 Nuclear Plant Siren Restoration Plan

After a major storm/emergency event such as a hurricane, sirens surrounding nuclear plants may be without service. These sirens are served by both Duke Energy Florida and other electric service providers. Plants cannot return to service until the power is restored to the sirens and they have been tested. The financial impact to Duke Energy of not having nuclear plants operational is significant. It is critical to assign a very high priority to the restoration of power to sirens.

The following action plan describes the process to be followed to ensure sirens are returned to service as quickly as possible following a major storm/emergency event.

Nuclear Siren Restoration Action Plan			
Item to be Addressed	**How Identified**	**Who**	**Status/Results**
1. Determine number and location of inoperative sirens and report results to SYSTEM STORM CENTER and Transmission Storm Centers.	Brunswick/Robinson: electronic feedback/reporting from each site. Harris: notify and dispatch Sanford TSM and/or Telecommunication crews to assess each site.	Emergency Preparedness (EP) at each affected plant will analyze data and communicate to SYSTEM STORM CENTER Operation and Transmission Area Storm Centers. EP at each affected plant will provide status reports to SYSTEM STORM CENTER Department and Transmission Operations and Planning Department Storm Centers.	Number and location of inoperative sirens is communicated to SYSTEM STORM CENTER and Transmission Storm Centers.

13.0 Environmental – Environmental Contact Information

14.0 Health & Safety Storm Plan Instructions

14.1 Health & Safety Services Transmission Support

- Monitoring and assigning Safety Representatives as needed
- Coordinating, tracking and dispersing Storm Plan Safety Reports
- Providing and dispersing daily Storm Plan safety tips
- Assisting on accident investigations and Workers' Compensation issues
- Providing safety support to regions as needed
- Providing on site medical support as needed

14.2 Oil Spill Reporting

- 1-866-769-1266

15.0 Pre-Event Briefing

15.1 Working in Windy Conditions

- The person in charge (PIC) of the crew must ensure the safety of all employees and cease work or travel when it becomes hazardous.
- Employees should cease traveling (in all vehicles) or working, including climbing, when winds reach tropical storm velocity of 39 MPH.
- The Area Storm Center has the authority to cancel all storm restoration related travel and work activities if weather conditions are expected to continue to deteriorate locally.
- The Area Storm Center will be contacted if assistance is needed to ascertain forecasted wind speeds in the work area.

- Transmission class bucket trucks will be equipped with an approved anemometer to determine wind speed in the work area.

15.2 Use of Transmission Class Bucket Trucks in Windy Conditions

- Employees are prohibited from operating bucket trucks in the elevated work position when the wind speed (steady or gusts) exceeds 30 MPH.
- Any manufacture's recommended wind speed guideline, for bucket trucks operating in the elevated position, which is less than 30 MPH must be adhered to for said equipment. (Example: Condor (Transmission) recommends a maximum wind speed of 25 MPH.)
- The wind speed must be determined by using an approved anemometer before vehicles equipped with an aerial lift device are operated in the elevated work position.
- The wind speed must be periodically tested with an approved anemometer at the work elevation throughout the work process if windy conditions are present in the work area.
- When operating in winds up to, but not exceeding 30 MPH, follow these precautions:
  - Outriggers, if so equipped, must be properly extended and on firm ground. Always use outrigger pads if there is any doubt as to the ground firmness.
  - On units without outriggers, the tires must be properly inflated and on firm ground. The truck must be maintained at a safe angle as described in the operator's manual.
  - Refer to specific equipment operator / instruction manual for other precautions.

15.3 Work Coordination

- **Coordination of Personnel:** Field personnel will be dispatched by the local area storm centers and will contact the ECC/DCC upon arrival at the work site.
- **Hours of Work:** The hours of work will be determined by the local area storm center. In general each person is permitted to initially work a maximum of 25 continuous hours before being rested. All hours should be counted once a person reports for work, including travel time to and from the job site. The hours that should be counted should also include breaks and rest periods that are less than eight hours in length. After the initial work period, the employee should be allowed to rest a minimum of 8 hours before returning to work. After the initial work period, employees should be limited to a maximum of 16 hours for each work period. In general, personnel are more productive in daylight hours and the majority of field personnel should have their hours scheduled in daylight.
- **Special Circumstances:** If special circumstances dictate that a major objective can be achieved by working an additional three hours or less, this

will be allowed only if authorized through the local area storm center. Any personnel working more than 28 hours should have approval from the Transmission System Storm Coordinator.

- **Hours of Rest:** Each person should have at least eight hours of rest scheduled between work periods.
- **Work History:** Upon reporting for storm/emergency duty, each person's work history should be evaluated to determine how many hours of work are available before rest should be scheduled. All prior hours worked, including travel time, that has not been preceded by an eight hour rest period should be counted.

16.0 Environmental Health and Safety Services Regional Storm Plan Instructions

16.1 Instructions for use of safety information

- Personal Injury/Property Damage
- Environmental and Health Representatives

16.2 Designated Safety Representatives Regional Storm Plan

- Providing necessary assistance with accidents
- Assisting with Workers' Compensation issues
- Supporting safety awareness with crews
- Sharing Storm related accident information
- Supporting crews with personal protective equipment needs

17.0 Contract and Accounting Procedures

- Storm Accounting Procedures/Hyperlink - *Process is in transition (TBD)*
- Storm Accounting Tasks

17.1 Contract Provisions for Storm Work

When contractor is utilized under storm/emergency conditions due to hurricanes, snow, ice emergencies, etc., or for special assignments requested by Duke Energy Company (hereinafter "Duke Energy Florida"), the following conditions apply:

- Contractor agrees to furnish all labor, tools, equipment, transportation, and supervision to perform storm/emergency work at the following rates: Assisting with Workers' Compensation issues
  - Equipment at contractor's standard hourly rates.
  - Labor at contractor's hourly payroll rate in effect at the time the work is done, plus overhead.
- All invoices for work done at hourly rates will be supported by a copy of the time tickets. Overtime for a partial week will be supported by time tickets for the full week.
- Each meal ticket which Duke Energy Florida is obligated to pay, whether charged to Duke Energy Florida or billed on the invoice, will show the name of

the restaurant, town, date, which meal, name of the contractor, and Duke Energy Florida, and each meal ticket will be signed by contractor's employee. Contractor employee shall be provided a meal every six hours. (See Staging Site – Daily Site Management Process)

- Each lodging receipt which Duke Energy Florida is obligated to pay, whether charged to Duke Energy Florida or billed on the invoice, will show the name of the place of lodging, town, date, name of contractor, and Duke Energy Florida, and each receipt will be signed by contractor's employee. . (See Staging Site – Daily Site Management Process and Lodging Process)
- Before Duke Energy Florida will pay overtime for a partial week, Duke Energy Florida must be furnished documentation of hours worked for each person on another utility system, by means of a copy of work report rendered to that utility company. It is understood that Duke Energy Florida will pay travel time for each person to and from his normal assembly point, to and from each emergency headquarters and, while at emergency headquarters, to and from each work location.
- If a contractor employee is required to work in excess of sixteen (16) hours in the twenty-four (24) hour period, the overtime rate shall prevail until such time as the employee is given an eight (8) hour rest period.

17.2 Construction and Clearing Contractors

Listed in this plan are the Construction and Clearing Contractors. The Contractors, which the Transmission Operations and Planning Department has contract agreements with are indicated with the contract number and expiration dates. These contracts have provisions for payment during emergency and standby situations. The next page is a copy of the contract provisions for Emergency work.

During a major storm/emergency, additional contractor work forces may be necessary. Arrangements for acquiring these additional contractors for mobilizing to work area or standby should be made through the Logistics Support Coordinator. However, if the Area Transmission Coordinator (ATC) makes the original contact, of contractors located in their maintenance area, to acquire additional contract workers, then the ATC should give the home office number and a contact name to the Logistics Support Coordinator. The Transmission Contracts Coordinator will call the contractor's home office and make agreements for payment (equipment and labor rates inclusive). The Transmission Contracts Coordinator will then send a copy of the agreement to the Area Technical Aid to assist her in processing invoices.

Hotel or motel reservations for contract labor will be made and guaranteed by the Area Transmission Coordinator unless the contractor specifies otherwise.

Releasing any contract crews that are on standby requires the approval of the Area Transmission Coordinator and the Transmission System Coordinator (or his assistant). The Transmission System Coordinator is to communicate the released contractor information to the Logistics Support Coordinator.

17.3 Crew Registration Instructions

General Information

- Crew Registration Form developed to provide the following:
  - Tracking of all crew personnel and equipment in the area.
  - Means for logging out work assignments.
  - Means for documenting any problems or comments that crews feel might be needed for future reference.
  - Method for collecting Fixed Asset Accounting information.

Instructions

- Side 1 of the form **must** be completed by the Duke Energy Florida Supervisor for his assigned crew when they first report to the area headquarters.
  - **Company:** write in the name of the company that the crew works for (example: Duke Energy Florida, MasTec, Richardson Wayland, etc.). If crew works for Duke Energy Florida, add the area that it is from (example: Duke Energy Florida Asheville Line Crew).
  - **Employee's Full Name:** write in the full name (not nickname) of each member of the crew.
  - **Social Security Number:** fill in the social security number for each crew member.
  - **Duke Energy Florida Supervisor of Crew:** supervisor should write in his name.
  - **Vehicles/Equipment:** list the types of vehicles and equipment assigned to the crew (for example: wire stringer, marsh master, bucket truck, etc.).
  - **Crew Lodging**: list the name of the place where the crew will be staying.

- On Side 2 of the form, the Area Transmission Coordinator will issue the **Date** and **Assignment** for each crew. The Duke Energy Florida Supervisor, or his designee, will record the structure number where his crew began their day's work assignment (**From Structure**) and will also record the structure number where the crew stopped (**To Structure**). The Duke Energy Florida Supervisor, or his designee, will record the number (**#**) of **poles** his crew replaced during the assignment, the **%** of **insulators** that had to be replaced, and the **%** of **conductor** that had to be replaced during each day's assignment.

The **Comments/Problems/Follow-up Needed** section will be completed by the crew's supervisor to record any information that may be needed by the Emergency Area's maintenance crews after storm/emergency work has been completed (example: structures that were repaired using engineering-approved substitutes, any temporary fixes that should be replaced after all storm/emergency work has been completed, etc.)

18.0 Transmission Storm Credit Card Procedures

Duke Energy Florida no longer utilizes a separate Storm Credit Card.

In the event of a **major storm/emergency,** Corporate Credit Cards are to be used for **all** purchases, cash advances, ~~motel bills~~, ~~meals,~~ vehicle rental, etc. associated with the restoration of the transmission system. This will drastically minimize the number of miscellaneous invoices that must be processed by Accounts Payable. The desired state is for all miscellaneous major storm/emergency costs incurred for restoration of the transmission system to be handled through Corporate Credit Cards. This will be a cost savings to Duke Energy Florida, and our vendors will be paid immediately.

18.1 Transmission Accounting Task Numbers - FL

Transmission DEF Storm Tasks

- T7202 - Transmission Storm Support – applies to all major storm support/restoration activities related to the Transmission system, except for what is specifically noted below.
- TTREE – Transmission Tree Trimming – applies to tree trimming contractor costs for Transmission system storm restoration.
- TLNDS – Transmission Landscaping - applies to contractor costs to restore landscaping (i.e. landscaping surrounding a Duke Energy Florida substation) damaged by a major storm.
- TOHLN – Transmission Overhead Line Restoration - applies to internal and contractor costs required to restore Transmission overhead lines damaged by a major storm.
- TUGLN – Transmission Underground Line Restoration - applies to internal and contractor costs required to restore Transmission underground lines damaged by a major storm.

19.0 Distribution Links

19.1 Critical Customers Priority List

19.2 Distribution Outage Map

19.3 Delivery Operations Storms - FL Center

20.0 Florida Emergency Operations Center

20.1 State Emergency Personnel - FL

- Florida Department of Emergency Management, ESF-12
  Voice: 850-921-0165
  Fax: 850-488-7841
- Florida Disaster EOC

21.0 Current Road Conditions

- **FLA Roads** http://www.fhp.state.fl.us/traffic/

22.0 Florida Support Services

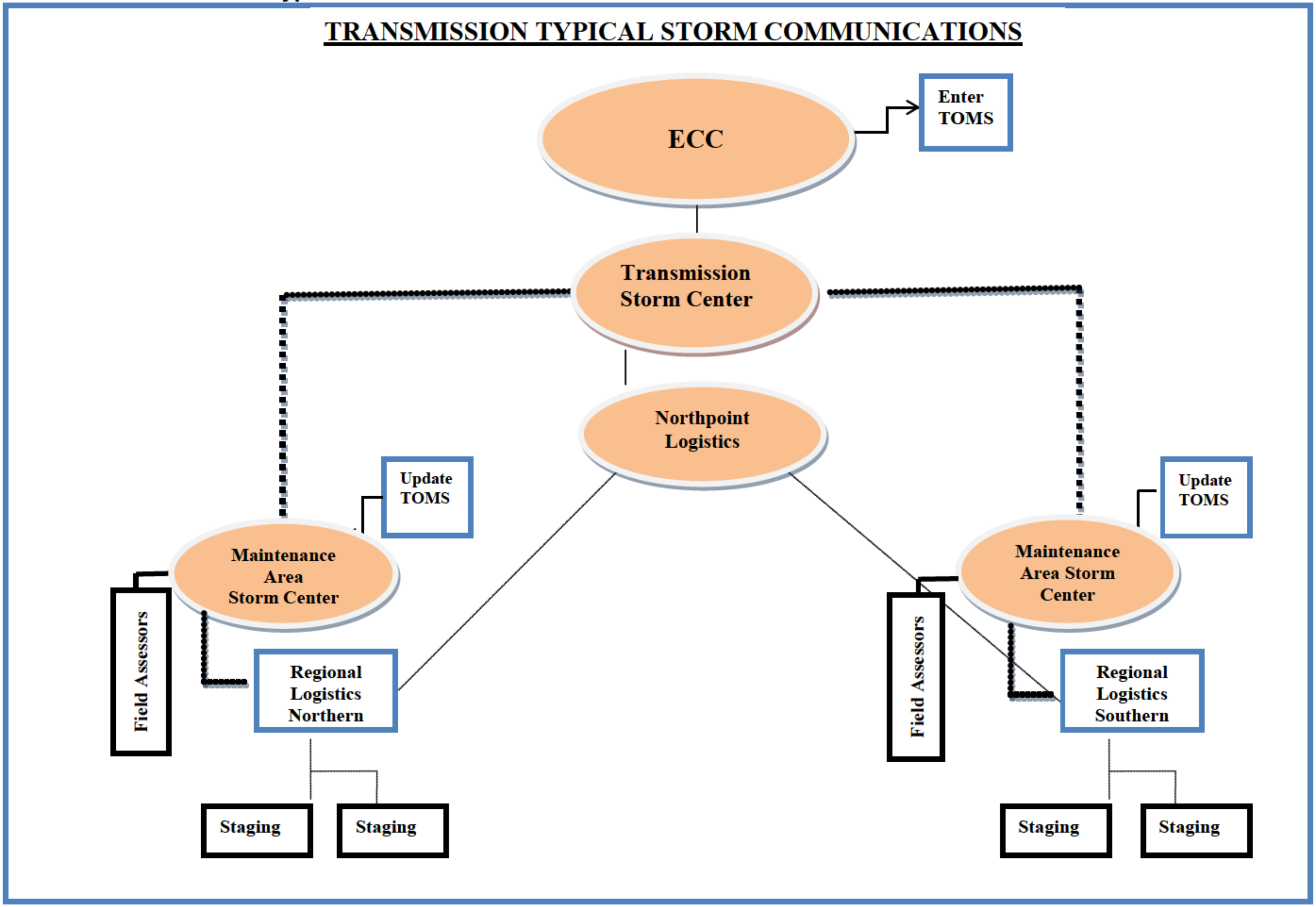
- **Transportation Storm**
- **Supply Chain M&S FL Storm**

23.0 Post Storm Analysis - FL

After any major storm, Duke Energy Florida is required by the Florida PSC to have an analysis of the storm response and service restoration performed. This is to be done by an outside company. Potential companies for this analysis have been identified. It is the responsibility of the Manager of Transmission Line Engineering to initiate the analysis.

In preparation for this post-storm analysis, Logistics (Logistics Requests, RoD, Helms Briscoe tools, and Finance reporting) can provide reports to support analysis development.

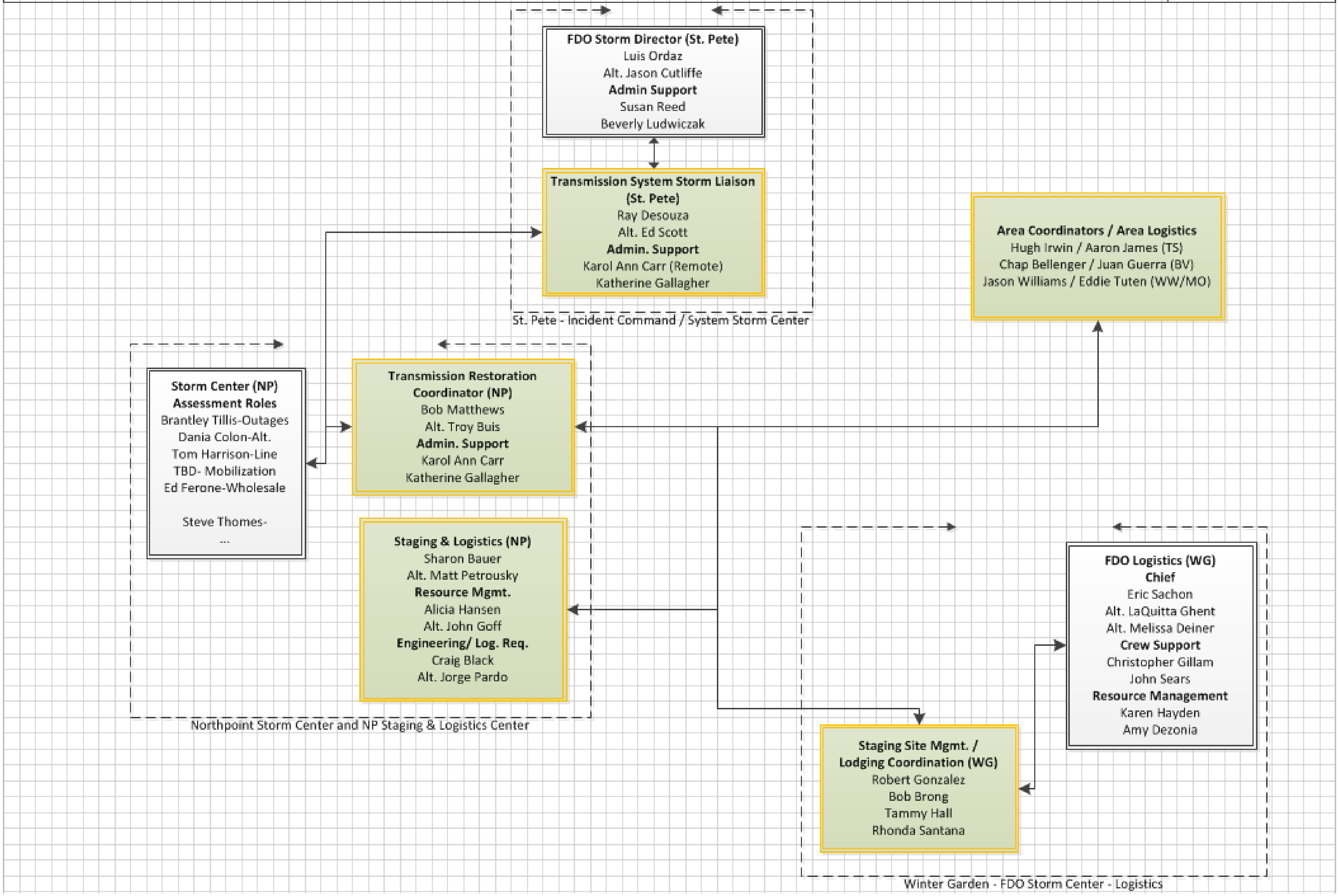
24.0 Transmission –FL Typical Storm Communications – ATTACHMENT 1



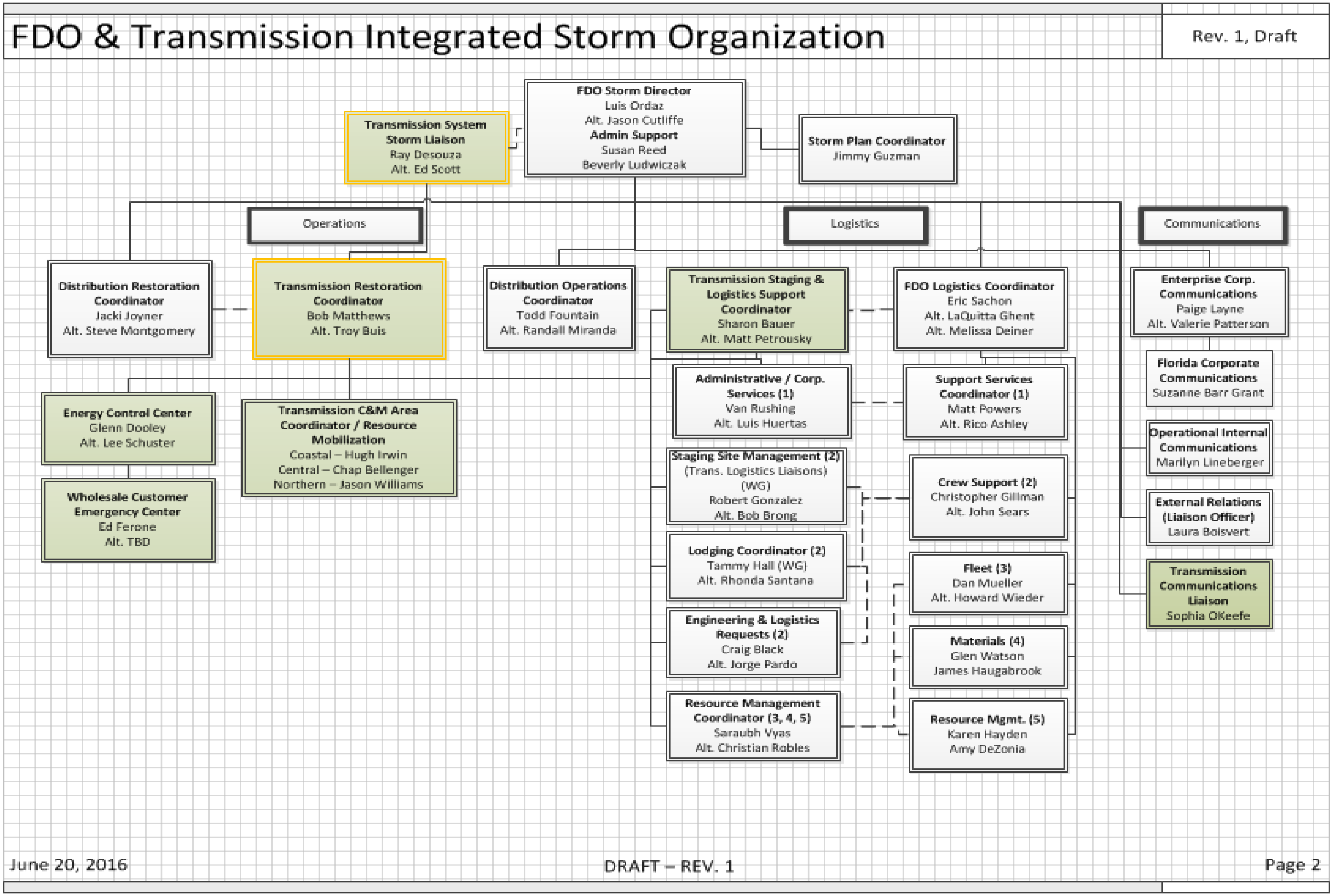
AUTHORIZED COPY

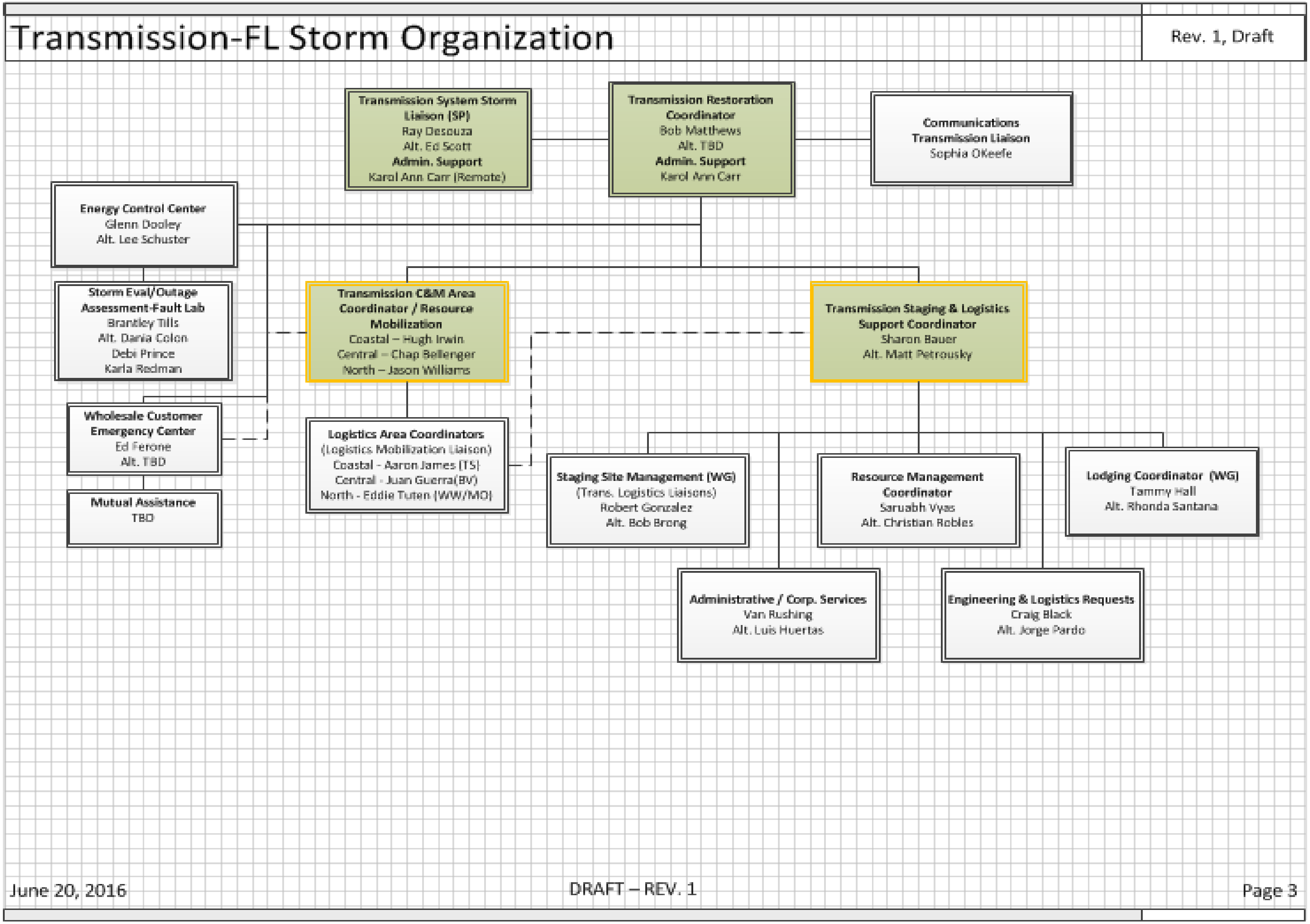
Trans.-FL Storm Ctrs. & Comm. (SP, NP, WG, & T-Areas)

Communication Flow



25.0 Transmission –FL Coordinator Organization Chart – ATTACHMENT 2




Transmission-FL Storm Organization
Rev. 1, Draft
Transmission System Storm Liaison (SP)
Ray Desouza
Alt. Ed Scott
Admin. Support
Karol Ann Carr (Remote)
Transmission Restoration Coordinator
Bob Matthews
Alt. TBD
Admin. Support
Karol Ann Carr
Communications Transmission Liaison
Sophia OKeefe
Energy Control Center
Glenn Dooley
Alt. Lee Schuster
Storm Eval/Outage Assessment-Fault Lab
Brantley Tills
Alt. Dania Colon
Debi Prince
Karla Redman
Wholesale Customer Emergency Center
Ed Ferone
Alt. TBD
Mutual Assistance
TBD
Transmission C&M Area Coordinator / Resource Mobilization
Coastal – Hugh Irwin
Central – Chap Bellenger
North – Jason Williams
Logistics Area Coordinators
(Logistics Mobilization Liaison)
Coastal - Aaron James (TS)
Central - Juan Guerra(BV)
North - Eddie Tuten (WW/MO)
Transmission Staging & Logistics Support Coordinator
Sharon Bauer
Alt. Matt Petrousky
Staging Site Management (WG)
(Trans. Logistics Liaisons)
Robert Gonzalez
Alt. Bob Brong
Resource Management Coordinator
Saruabh Vyas
Alt. Christian Robles
Lodging Coordinator (WG)
Tammy Hall
Alt. Rhonda Santana
Administrative / Corp. Services
Van Rushing
Alt. Luis Huertas
Engineering & Logistics Requests
Craig Black
Alt. Jorge Pardo
June 20, 2016
DRAFT – REV. 1
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26.0 Transmission FL System Contacts

Description	Bell #	VN#	Fax Bell #	Fax VN#	Satellite#
Trans Storm Center North Point Conference Line	407-905-3523 407-942-9606	284-3523			221651-439-728
Trans Logistics Northpoint	407-942-9565	280-2565	407-942-9568	280-2568	881651-439-727
North – Monticello *(Alt)*	850-342-2356	224-2356	850-342-2321	224-2321	
North - Crystal River *(Alt)*	352-501-6667	246-6667			
North – Wildwood	352-748-8275	223-4275	352-748-8786	223-4786	81651-442-545 81651-442-546
North – High Springs *(Alt)*	386-454-6039	257-6039	386-454-6037		
South –Buena Vista	407-938-6713	277-6713	407-938-6720	277-6720	881651-439-725 881651-439-726 881651-442-507
South - Tarpon Springs	727-939-4373	232-4373			
Wholesale Customer	407-905-3525	284-3525			
SR Lab	919-546-2350 919-546-6016	770-2350 770-6016	919-546-2684	770-2684	
Distribution	407-942-9581	280-2581	407-942-9588	280-2588	
ECC (FL)	727-344-4397 727-344-4398 727-344-4399	220-4398 220-4397 220-4399			

Dist. Op. Center	Bell #	VN#	Fax Bell#	Fax VN#	Satellite#
Clearwater	727-461-2964 (B1)	220-4201			
Seven Springs	727-372-5102	220-5102			
Walsingham	727-593-6931				
St. Petersburg	727-593-6931	220-3793			
Ocala	352-694-8420 352-694-8845	220-6420 220-6845			
Inverness	352-341-7518 352-341-7519	228-7518 228-7519			
Monticello	850-342-2298	224-2298			

Dist. Op. Center	Bell #	VN#	Fax Bell#	Fax VN#	Satellite#
Lake Wales	863-678-4501 863-678-4392	288-3501 288-3392			
Highlands	863-471-5822	288-5822			
Buena Vista	407-938-6651 407-938-6745	277-6651 277-6745			
North Central Region Storm Center	407-942-9585	280-2585			
Longwood	407-772-5300 407-772-5302	283-5300 283-5302			
Jamestown	407-359-4450 407-359-4831	239-4450 239-4831			
Apopka/Eustis	407-646-8530	237-5530			
Deland	386-943-3904 386-943-3932	286-3904 286-3932			