Review of Florida's Investor-Owned Electric Utilities

2013 Service Reliability Reports

DECEMBER 2014

State of Florida
Florida Public Service Commission
Division of Engineering

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Terms and Acronyms

AMI	Advanced Metering Infrastructure
ANSI	American National Standards Institute
CAIDI	Customer Average Interruption Duration Index
CEMI5	Customers Experiencing More Than Five Interruptions
CI	Customer Interruption
CME	Customer Momentary Events
CMI	Customer Minutes of Interruption
DSM	Demand Side Management
DEF	Duke Energy Florida (formerly Progress Energy Florida, Inc.)
EOC	Florida's Emergency Operation Center
F.A.C.	Florida Administrative Code
FEMA	Federal Emergency Management Agency
FPL	Florida Power & Light Company
FPUC	Florida Public Utilities Company
GIS	Geographic Information System
Gulf	Gulf Power Company
IEEE	Institute of Electrical and Electronics Engineers, Inc.
IOU	The Five Investor-Owned Electric Utilities: FPL, DEF, TECO, Gulf, and FPUC
L-Bar	Average of Customer Service Outage Events Lasting A Minute or Longer
MAIFIe	Momentary Average Interruption Event Frequency Index
N	Number of Outages
NWS	National Weather Service
OMS	Outage Management System
RDUP	Rural Development Utility Program
SCADA	Supervisory Control and Data Acquisition
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
TECO	Tampa Electric Company
VMP	Vegetation Management Program

Reliability Metrics

Average Duration of Outage Events (L-Bar) is the sum of each outage event duration for all outage events during a given time period, divided by the number of outage events over the same time within a specific area of service.

Customer Average Interruption Duration Index (CAIDI) is an indicator of average interruption duration, or the time to restore service to interrupted customers. CAIDI is calculated by dividing the total system customer minutes of interruption by the number of customer interruptions. (CAIDI = CMI ÷ CI, also CAIDI = SAIDI ÷ SAIFI).

Customers Experiencing More Than Five Interruptions (CEMI5) is the number of retail customers that have experienced more than five service interruptions. (CEMI5 in this review is a customer count shown as a percentage of total customers.)

Customer Interruption (CI) is the number of customer service interruptions, which lasted one minute or longer.

Customer Minutes of Interruption (CMI) is the number of minutes that a customer's electric service was interrupted for one minute or longer.

Customer Momentary Events (CME) is the number of customer momentary service interruptions, which lasted less than one minute measured at the primary circuit breaker in the substation.

Momentary Average Interruption Event Frequency Index (MAIFIe) is an indicator of average frequency of momentary interruptions or the number of times there is a loss of service of less than one minute. MAIFIe is calculated by dividing the number of momentary interruption events recorded on primary circuits by the number of customers served. (MAIFIe = CME ÷ C)

Number of Outage Events (N) measures the primary causes of outage events and identifies feeders with the most outage events.

System Average Interruption Duration Index (SAIDI) is a composite indicator of outage frequency and duration and is calculated by dividing the customer minutes of interruptions by the number of customers served on a system. (SAIDI = CMI ÷ C, also SAIDI = SAIFI x CAIDI)

System Average Interruption Frequency Index (SAIFI) is an indicator of average service interruption frequency experienced by customers on a system. It is calculated by dividing the number of customer interruptions by the number of customers served. (SAIFI = CI ÷ C, also SAIFI = SAIDI ÷ CAIDI)

Executive Summary

This is a review and analysis of the 2013 electric distribution reliability data filed by Florida's investor-owned electric utilities (IOU) and examines each utility's report concerning its distribution system. The review also tracks the progress and results of each utility's storm hardening plans. Observations and trends are used to predict possible declines in service reliability and are reported to determine if the Commission may require additional scrutiny, emphasis, or remedial actions. The Florida Public Service Commission (Commission) has jurisdiction to monitor the quality and reliability of electric service provided by Florida's IOUs for maintenance, operational, and emergency purposes.[1]

Monitoring service reliability is achieved through a review of service reliability metrics provided by the IOUs pursuant to Rule 25-6.0455, Florida Administrative Code (F.A.C.).[2] Service reliability metrics are intended to reflect changes over time in system average performance, regional performance, and sub-regional performance. For a given system, increases in the value of a given reliability metric denote declining reliability in the service provided. Comparison of the year-to-year levels of the reliability metrics may reveal changes in performance, which indicates the need for additional investigation, or work in one or more areas. As indicated in previous reports, Florida's utilities have deployed Supervisory Control and Data Acquisition systems (SCADA) and Outage Management Systems (OMS) in order to improve the accuracy of the measured reliability indices. This deployment often results in an apparent degradation of reliability due to improvements over manual methods that customarily underestimate the frequency, the size, and the duration of the outages. Throughout this review, emphasis is placed on observations that suggest declines in service reliability and areas where the company may require additional scrutiny or remedial action.

Rule 25-6.0455, F.A.C., requires the IOUs to file distribution reliability reports to track adjusted performance that excludes events such as planned outages for maintenance, generation disturbances, transmission disturbances, wildfires, and extreme acts of nature such as tornados and hurricanes. This "adjusted" data provides an indication of the distribution system performance on a normal day-to-day basis, but does not reveal the impact of excluded events on reliability performance.

With the active hurricane seasons of 2004 and 2005, the importance of collecting reliability data that would reflect the total or "actual" reliability experience from the customer perspective became apparent. Complete "unadjusted" service reliability data was needed to assess service performance during hurricanes. In June 2006, Rule 25-6.0455, F.A.C., was revised to require each IOU to provide both "actual" and "adjusted" performance data for the prior year.

Since 2007, IOUs have filed distribution reliability reports using metrics to track performance in two primary categories. The first is "actual" or unadjusted reliability data that reflects the total

[1] Sections 366.04(2)c and 366.05, Florida Statutes.

[2] The Commission does not have rules or statutory authority requiring municipal electric utilities and rural electric cooperative utilities to file service reliability metrics.

or actual reliability experience from the customer's perspective. Unadjusted service reliability data provides an indication of the distribution system performance during hurricanes and other unusual events. Second, each IOU is required to provide "adjusted" performance data for the prior year. The "adjusted" data provides an indication of the distribution system performance on a normal day-to-day basis by removing the impact of excluded events on reliability performance. Analyzing the "actual" and "adjusted" data provides insight concerning the overall reliability performance of each utility. The reports filed on March 1, 2014, include actual and adjusted 2013 distribution service reliability data, actual and adjusted 2013 performance assessments in three areas: (1) system-wide; (2) operating region; and (3) feeder and actual and adjusted 2013 cause of outage events data.

In addition, the scope of the IOUs' Annual Distribution Service Reliability Report was expanded to include status reports on the various storm-hardening and preparedness initiatives required by the Commission.[3]

The March 2014 Reports of Duke Energy Florida, (DEF), Florida Power & Light Company (FPL), Florida Public Utilities Company (FPUC), Gulf Power Company (Gulf), and Tampa Electric Company (TECO) were sufficient to perform the 2013 review.

The following company specific summaries provide highlights of the observed patterns.

Service Reliability of Duke Energy Florida

DEF's 2013 unadjusted data indicated that allowable exclusions for outage events accounted for approximately 17 percent of all Customer Minutes of Interruption (CMI). The largest contributor to the exclusion percentage was the category of Transmission (Non - Severe Weather) at 6 percent. DEF's service areas were affected by three tornados and Tropical Storm Andrea.

On an adjusted basis, DEF's 2013 System Average Interruption Duration Index (SAIDI) was 89 minutes, increasing its adjusted SAIDI by 16 minutes from the 2012 results. The trend for the SAIDI over the five-year period of 2009 to 2013 is trending slightly downward even with the higher SAIDI for 2013. Both System Average Interruption Frequency Index (SAIFI) and Customer Average Interruption Duration Index (CAIDI) had increases for 2013 compared to 2012. Over the five-year period, the SAIFI is still trending downward as the CAIDI is still trending upward.

[3] Wooden Pole Inspection Orders: Order No. PSC-06-0144-PAA-EI, issued February 27, 2006, in Docket No. 060078-EI; and Order Nos. PSC-06-0778-PAA-EU, issued September 18, 2006, PSC-07-0078-PAA-EU, issued January 29, 2007, in Docket No. 060531-EU.
Storm Preparedness Initiative Orders: Order Nos. PSC-06-0351-PAA-EI, issued April 25, 2006, PSC-06-0781-PAA- EI, issued September 19, 2006, PSC-06-0947-PAA-EI, issued November 13, 2006, and PSC-07-0468-FOF-EI, issued May 30, 2007, in Docket No. 060198-EI.

In **Figure 3-8**, DEF's Top Five Outage Categories, the category Animals remains in the top spot representing 14 percent of the ten outage categories. The next two highest categories were Tree Non-Preventable, i.e. fallen trees (13 percent) and Storms (12 percent). Tree Preventable (10 percent) and Defective Equipment (8 percent) are the next two causes of outages. Animals and Defective Equipment outage categories decreased in 2013 when compared to the 2012 data. Tree Non-Preventable, Storms, and Tree Preventable all showed increases in 2013 compared to 2012. For the five-year period of 2009 to 2013, outages caused by Animals, Tree Non-Preventable, and Storms are trending upward as outages caused by Tree Preventable and Defective Equipment are trending downward.

The percentage of reliability complaints to the total number of complaints filed with the Commission for DEF increased to 6.0 percent in 2013 from 3.4 percent in 2012. Over the five-year period from 2009-2013, DEF's reliability related complaints appear to be trending slightly upward.

In 2008, DEF completed the transition to a new Geographic Information System (GIS) called G-Electric. In 2011, DEF implemented two systems, Facilities Management Data Repository and Compliance Tracking System. The new systems facilitate the compliance tracking, maintenance, and planning and risk management of the major distribution assets. One hundred percent of the overhead (OH) and underground (UG) distribution systems are in the GIS. Nine-ninety percent of OH transmission system and one hundred percent UG transmission system are in the GIS.

Service Reliability of Florida Power & Light Company

In reviewing the unadjusted data for 2013, FPL's documented exclusions for outage events accounted for approximately 12 percent of all CMI. The biggest impact was the Planned Outages accounting for approximately 5 percent of the CMI. The weather events that affected FPL's service areas were nine tornados and Tropical Storm Andrea. FPL also noted that an Emergency Operation Center (EOC) was activated due to flooding in North Florida.

FPL's 2013 metrics on an adjusted basis include SAIDI which was reported as 61 minutes and represents a 2 minute decrease from last year's reported 63 minutes. Both the SAIFI and CAIDI improved in 2013. The SAIFI decreased from 0.90 interruptions in 2012 to 0.89 interruptions in 2013 and the CAIDI decreased from 71 minutes in 2012 to 69 minutes in 2013.

Equipment Failure (32 percent) and Vegetation (19 percent) outages continue to be the leading cause of the number of outage events per customer for the past five years. FPL explained that reliability programs that address Equipment Failure outages include, but are not limited to, equipment inspection, repair, and replacement, and overhead line inspections and repairs. The outages caused by vegetation are addressed through FPL's Vegetation Management Program (VMP). The next three outage causes are Unknown (12 percent), Animals (11 percent), and Other Causes (8 percent). Analysis of **Figure 3-16** shows an increasing trend in the number of outage events attributed to vegetation, causing the number of outages to increase by 7 percent from 2012 to 2013. The analysis shows a decreasing trend in the number of outage events caused by equipment failure, causing the number of outages to decrease by 4 percent from 2012 to 2013.

FPL's reliability related complaints percentage received by the Commission in 2013 was 0.6 percent, which was lower than 0.8 percent in 2012. FPL's reliability related complaints trend is relatively flat as shown in **Figure 4-10**, even with the decrease this year.

FPL completed its five approved Key Distribution GIS improvement initiatives in 2012. The initiatives include post-hurricane forensic analyses, the addition of poles, streetlights, joint-use survey and hardening level data to the GIS. Data collection and updates to the GIS will continue through inspection cycles and other normal daily work activities.

Service Reliability of Florida Public Utilities Company

The unadjusted data for FPUC indicates its 2013 allowable exclusions accounted for approximately 44 percent of the total CMI. The Transmission events category accounted for approximately 41 percent of the CMI that were excluded. Several of the Transmission events were related to lightning. FPUC did report a major transmission outage event due to temporary loss of power by Jacksonville Electric Authority (JEA) who supplies power to FPUC. FPUC's Northeast Division was affected by Tropical Storm Andrea.

The 2013 adjusted data for FPUC's SAIDI was 170 minutes, which is an 11 percent increase from the 152 minutes reported in the previous year. The SAIFI also increased from 1.48 interruptions in 2012 to 1.82 interruptions in 2013. The CAIDI improved in performance to 93 minutes from 102 minutes reported in 2012.

FPUC's top five causes of outages included animals, vegetation, unknown, corrosion, and weather related events. Weather (27 percent) related outages were the number one cause of outages for 2013 as shown in **Figure 3-21** followed by Animals (25 percent), Vegetation (24 percent), Unknown (9 percent), and Corrosion (6 percent). Animal, unknown, and weather attributed outages increased in 2013; however, corrosion and vegetation caused outages decreased.

Reliability related complaints against FPUC are minimal. In 2013, the utility had eight total complaints filed with the Commission of which none were reliability related. The volatility in FPUC's results can be attributed to its small customer base that averages 28,000 or fewer customers. For the last five years, the percentage of reliability related complaints against FPUC have trended downward.

FPUC uses GIS mapping for all of its deployed equipment and uses it to identify distribution and transmission facilities. The system interfaces with the Customer Information System to function as a customer Outage Management System (OMS). The implementation of the OMS has resulted in significant improvement in data collection and retrieval capability for analyzing and reporting reliability indices. The migration of the data began in 2012 and was completed in 2013. In addition, FPUC has plans to improve the current OMS in 2014 by enabling customer outage calls to be automatically logged into the system.

Service Reliability of Gulf Power Company

Gulf's 2013 unadjusted data indicates that allowable exclusions accounted for approximately 14 percent of the CMI. Planned Outage events accounted for 8 percent of the total CMI. Gulf explained that Planned Outage events include connecting a new service, performing maintenance work such as replacing a transformer or other protective devices and building a new feeder or lateral line. Gulf stated with the implementation of the Advanced Metering Infrastructure (AMI), the consistency of capturing these types of outages has increased. Gulf's service areas were affected by Tropical Storm Karen and EOC activation due to flooding.

The 2013 SAIDI for Gulf was reported as 95 minutes representing an 18 minute decrease from the 113 minutes reported in 2012. The SAIFI decreased to 1.08 interruptions from 1.16 interruptions the previous year. The CAIDI also decreased to 88 minutes down from 98 minutes in 2012. Gulf explained that it continues to seek improvements in distribution reliability through a continued focus on root causes and added distribution automation, which is part of its Storm Hardening Plan. In addition, Gulf stated there was added emphasis on identifying and addressing recurring trouble throughout the system.

Gulf's top five causes of outages remain unchanged and were listed as animals, deterioration, lightning, trees, and unknown. Animal (29 percent) caused outages were still the number one cause of outages followed by Deterioration (21 percent), Lightning (15 percent), Trees (14 percent), and Unknown (7 percent). The number of outages decreased for three of the top five causes of outages in 2013 when compared to 2012, which are outages due to animals, deterioration and lightning as shown in **Figure 3-29**.

The percentage of complaints reported to the Commission against Gulf that were reliability related stayed at 0.0 percent in 2013. The highest percent of total complaints that were reliability related occurred in 2011 at 0.4 percent. Overall, Gulf has the lowest percentage of total complaints that are reliability related as shown in **Figure 4-10**.

Gulf completed its distribution facilities mapping transition to its new Distribution GIS (DistGIS) in 2009. The transmission system has been completely captured in the transmission GIS database. The Distribution GIS and Transmission GIS are continually updated with any additions and changes as the associated work orders for maintenance, system improvements, and new business are completed. This ongoing process provides Gulf sufficient information to use with collected forensic data to assess performance of its OH and UG systems in the event of a major storm.

Service Reliability of Tampa Electric Company

TECO's 2013 unadjusted data indicated that the allowable exclusions for outage events accounted for approximately 10 percent of all the CMI. The largest documented exclusion was the Other Distribution – Planned Outages category, which involves the repair and replacement of equipment. These planned outage events accounted for approximately 6 percent of the total excludable CMI. TECO's service area was affected by one tornado and Tropical Storm Andrea.

The adjusted SAIDI for 2013 increased to 85 minutes from 78 minutes in 2012 and represents an 8 percent decline in performance. The SAIFI also increased to 0.95 interruptions from 0.91 interruptions in the previous year. The CAIDI increased 3 percent to 89 minutes from 86 minutes reported in 2012. TECO explained that the fluctuation in reliability performance is attributed to relays that are temporarily disabled during non-storm months which should reduce the number of momentary events. This action increases the frequency of outages due to faults being cleared by other protective devices. TECO stated that although the relays had been temporarily disabled during the non-storm months, the MAIFIe index still increased (7 percent) for the year due to the increased number of lightning strikes during the storm season.

Vegetation (20 percent) and Animals (19 percent) continue to be the largest contributors to TECO's causes of outage events followed by Lightning (17 percent), Electrical (12 percent), and Unknown (9 percent). **Figure 3-37** illustrates the top five outage causes showing vegetation related causes are trending downward, even though there was an increase of 5 percent from the previous year. TECO stated that it is currently performing vegetation management on a four-year cycle to mitigate the outages caused by vegetation. Additionally, TECO stated that it performs unscheduled trimming on isolated areas of concern for vegetation encroachment on distribution circuits. Animal related causes are trending upward, even though there was no change in percentages from the previous year.

TECO's 2013 percentage of total complaints that are service reliability related increased to 6.5 percent from 2.4 percent as reported in 2012, and from 2.5 percent reported in 2011. TECO's percentage of complaints is trending slightly upward over the period of 2009 to 2013. TECO's 2013 percent of reliability related complaints is the highest percentage for the same five-year period.

TECO's GIS continues to serve as the foundational database for all transmission, substation and distribution facilities. Development and improvement of the GIS continues on an ongoing basis. TECO is planning and scheduling major upgrades to its GIS which are expected to be implemented in the first half of 2014. The projects will be executed in two phases. Phase I will be an upgrade to the computing hardware, the software, and the database to bring these components up to the most current versions available. Phase II will be to implement a significant number of user improvements consisting of configuration changes as well as usability enhancements.

Review Outline

This review primarily relies on the March 2014 Reliability Reports filed by the IOUs for the 2013 reliability performance data and storm hardening and preparedness initiatives. A section addressing trends in reliability related complaints is also included. Staff's review consists of five sections.

- **Section I:** Storm hardening activities, which include each IOU's Eight-Year Wooden Pole Inspection Program and the Ten Storm Preparedness Initiatives.

- **Section II:** Each utility's actual 2013 distribution service reliability data and support for each of its adjustments to the actual service reliability data.

- **Section III:** Each utility's 2013 distribution service reliability based on adjusted service reliability data and staff's observations of overall service reliability performance.

- **Section IV:** Inter-utility comparisons and the volume of reliability related customer complaints for 2009 to 2013.

- **Section V:** Appendices containing detailed utility specific data.

Section I: Storm Hardening Activities

Each IOU, pursuant to Rule 25-6.0342(2), F.A.C., must file a storm hardening plan which is required to be updated every three years. The IOU's second updated storm hardening plans were filed on May 3, 2013.[4] The following subsections provide a summary of each IOU's programs addressing an on-going Eight-Year Wooden Pole Inspection Program and the ten storm hardening initiatives as directed by the Commission.

Eight-Year Wooden Pole Inspection Program

Order Nos. PSC-06-0144-PAA-EI, issued February 27, 2006, in Docket No. 060078-EI and PSC-07-0078-PAA-EU, issued January 29, 2007, in Docket No. 060531-EU, require each IOU to inspect 100 percent of their installed wooden poles within an eight-year inspection cycle. The National Electric Safety Code (NESC) serves as a basis for the design of replacement poles for wood poles failing inspection. Additionally, Rule 25-6.0342(3)(b), F.A.C., requires that each utility's storm hardening plan address the extent to which the plan adopts extreme wind loading standards as specified in figure 250-2(d) of the 2007 edition of the NESC. Staff notes that DEF determined the extreme wind loading requirements, as specified in figure 250-2(d) of the NESC did not apply to poles less than 60 feet in height that are typically found within the electrical distribution system. DEF stated in its 2009 Storm Hardening Report that extreme wind loading requirements have not been adopted for all new distribution construction since poles less than 60 feet in height are more likely to be damaged by falling trees, flying limbs, and other wind borne debris.[5]

[4] Docket Nos. 130129-EI, 130131-EI, 130132-EI, 130138-EI, and 130139-EI, In re: Review of the 2013-2015 Electric Infrastructure Storm Hardening Plan filed pursuant to Rule 25-6.0342 F.A.C. for each of the IOUs.
[5] See DEF Storm Hardening Plan 2007-2009, Appendix J, pp. 4-5.

Table 1-1 shows a summary of the quantities of wooden poles inspected by all IOUs in 2013.

Table 1-1. 2013 Wooden Pole Inspection Summary

Utility	Total Poles	Poles Planned 2013	Poles Inspected 2013	Poles Failed Inspection	% Failed Inspection	Years Complete in 8-Year Inspection Cycle
DEF	789,870	96,000	97,071	15,337	15.80%	7
FPL	988,559	126,183	130,037	16,678	12.83%	8
FPUC	26,151	2,989	3,887	523	13.46%	6
Gulf	202,407	21,000	21,884	790	3.61%	7*
TECO	395,350	49,176	49,362	8,792	17.81%	7

* Note: Gulf has completed 100 percent of its inspection cycle one year early (in year seven)

Table 1-2 indicates the projected wooden pole inspection requirements for the IOUs.

Table 1-2. Projected 2014 Wooden Pole Inspection Summary

Utility	Total Poles	Total Number of Wood Poles Inspected 2006-13	Number of Wood Pole Inspections Planned for 2014	Percent of Wood Poles Planned 2014	Percent of Wood Pole Inspections Completed in 8-Year Cycle	Years Remaining in 8-Year Cycle After 2013
DEF	789,870	736,847	47,557*	6.02%	93%	1
FPL	988,559	992,568	133,363	13.49%	100%	0
FPUC	26,151	21,235	2,546	9.74%	81%	2
Gulf	202,407	205,657	26,000	12.85%	102%	0*
TECO	395,350	341,450	49,176	12.44%	86%	1

* Note: DEF plans to inspect an additional 48,443 poles, to be counted towards the next cycle. Since Gulf finished the eight-year wooden pole inspection a year early, Gulf will begin the new cycle in 2014.

The annual variances shown in Tables 1-1 and 1-2 are allowable so long as each utility achieves 100 percent inspection within an eight-year period. Staff continues to monitor each utility's performance.

Ten Initiatives

On April 25, 2006, the Commission issued Order No. PSC-06-0351-PAA-EI, in Docket No. 060198-EI. This Order required the IOUs to file plans for ten storm preparedness initiatives (Ten Initiatives).[6] Storm hardening activities and associated programs are on-going parts of the annual reliability reports required from each IOU since rule changes in 2006. The status of these initiatives is discussed in each IOU's report for 2013. Separate from the Ten Initiatives, and not included in this review, the Commission established rules addressing storm hardening of transmission and distribution facilities for all of Florida's electric utilities.[7,8,9]

Three-Year Vegetation Management Cycle for Distribution Circuits

Each IOU continues to maintain the commitment to completion of three-year trim cycles for overhead feeder circuits since feeder circuits are the main arteries from the substations to the local communities. The approved plans of all the IOUs also require a maximum of a six-year trim cycle for lateral circuits. In addition to the planned trimming cycles, each IOU performs hot-spot tree trimming[10] and mid-cycle trimming to address rapid growth problems.

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[6] Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.

[7] See Order No. PSC-06-0556-NOR-EU, issued June 28, 2006, in Docket No. 060172-EU, In re: Proposed rules governing placement of new electric distribution facilities underground, and conversion of existing overhead distribution facilities to underground facilities, to address effects of extreme weather events, and Docket No. 060173-EU, In re: Proposed amendments to rules regarding overhead electric facilities to allow more stringent construction standards than required by National Electric Safety Code.

[8] See Order Nos. PSC-07-0043-FOF-EU, issued January 16, 2007, and PSC-07-0043A-FOF-EU, issued January 17, 2007, both in Docket Nos. 060173-EU and 060172-EU.

[9] See Order No. PSC-06-0969-FOF-EU, issued November 21, 2006, in Docket No. 060512-EU, In re: Proposed adoption of new Rule 25-6.0343, F.A.C., Standards of Construction - Municipal Electric Utilities and Rural Electric Cooperatives.

[10] Hot-spot tree trimming occurs when an unscheduled tree trimming crew is dispatched or other prompt tree trimming action is taken at one specific location along the circuit. For example, a fast growing tree requires hot-spot tree trimming in addition to the cyclical tree trimming activities. TECO defines hot-spot trimming as any internal or external customer driven request for tree trimming. Therefore, all tree trim requests outside of full circuit trimming activities are categorized as hot-spot trims.

Table 1-3 is a summary of feeder vegetation management activities by each company's cycle.

Table 1-3. Vegetation Clearing from Feeder Circuits

IOU	1st Year of 3 Year Cycle	Total Feeder Miles	Miles Trimmed				Total Miles Trimmed	% of Miles Trimmed
			1st Year	2nd Year	3rd Year	4th Year		
DEF	2012	3,968	196	476			672	17%
FPL	2013	13,459	4,637				4,637	34%
FPUC	2011	183	54	52	67		173	95%
Gulf	2013	719	240				240	33%
TECO	2013	1,710	373.9				374	22%

Note: In 2012, the Commission approved TECO's request to modify its trim cycle for feeders to four years.[11]

From the data in Table 1-3, DEF has achieved 17 percent of feeder miles trimmed for the second year of the three-year cycle. DEF assured staff that it expects to complete the remaining 83 percent of feeder miles in 2014. DEF noted that its trimming schedule varies from year to year based on a number of factors related to managing a large maintenance program including reliability performance, vegetation growth, and balancing feeder and lateral miles. After completion of the three-year trimming cycle for feeders in 2014, DEF will assess the results with the objective of optimizing routine maintenance cost and effectiveness in the future.

Also from the data in Table 1-3, FPUC achieved 95 percent of feeder miles trimmed for the whole three-year cycle. FPUC explained that the 95 percent completion was due to operating logistical efficiencies. FPUC noted that in most cases, both feeder and laterals are located near each other. FPUC explained that operating logistical efficiencies stem from trimming laterals that are located near the feeders versus trimming feeders only and returning to the same location to begin trimming laterals.

[11] See Order No: PSC-12-0303-PAA-EI, issued June 12, 2012, in Docket No. 120038-EI, In re: Petition to modify vegetation management plan by Tampa Electric Company.

Table 1-4 is a summary of the lateral vegetation management activities by company.

Table 1-4. Vegetation Clearing from Lateral Circuits

				Miles Trimmed							
IOU	**# of Years in Cycle**	**1st Year of Cycle**	**Total Lateral miles**	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**5th Year**	**6th Year**	**Total Lateral Miles Trimmed**	**% of Lateral Miles Trimmed**
DEF	5	2011	14,200	1,132	3228	3810				8,170	57.5%
FPL	6	2013	22,805	4,124						4,124	18.1%
FPUC	6	2008	556	88	109	140	149	123	129	738	132.7%
Gulf	4	2010	5,148	1,060	1,530	857	1293			4,740	91.7%
TECO	4	2010	4,591	1,634	1,514	1,282	1,098			5,528	120.4%

Note: In 2006, the Commission approved DEF's request to modify its lateral trim cycle to five years.[12] In the same docket, the Commission approved FPL's modified trim cycle for laterals to six years.[13] FPUC's lateral trim cycle was modified to six years in 2010.[14] The Commission approved Gulf's modified lateral trim cycle to four years in 2010.[15] In 2012, the Commission approved TECO's request to modify its trim cycle for laterals to four years.[16]

From the data in Table 1-4, Gulf achieved 91.7 percent for its four-year lateral trim cycle. Gulf noted that it began its transition in 2010 from a six-year to a four-year lateral trim program. The company achieved a 4.3-year cycle for laterals while it maintained a three-year cycle on feeders. Gulf responded to staff's inquires that it considered shifting additional resources to its vegetation management program, but decided it was not warranted at this time. Gulf weighed reducing lateral CMI versus maintaining a balanced approach to maintaining a safe, reliable distribution system.

[12] See Order No: PSC-06-0947-PAA-EI, issued November 13, 2006, in Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.
[13] See Order No: PSC-07-0468-FOF-EI, issued May 30, 2007, in Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.
[14] See Order No: PSC-10-0687-PAA-EI, issued November 15, 2010, in Docket No. 100264-EI, In re: Review of 2010 Electric Infrastructure Storm Hardening Plan filed pursuant to Rule 25-6.0342, F.A.C., submitted by Florida Public Utilities Company.
[15] See Order No: PSC-10-0688-PAA-EI, issued November 15, 2010, in Docket No. 100265-EI, In re: Review of 2010 Electric Infrastructure Storm Hardening Plan filed pursuant to Rule 25-6.0342, F.A.C., submitted by Gulf Power Company.
[16] See Order No: PSC-12-0303-PAA-EI, issued June 12, 2012, in Docket No. 120038-EI, In re: Petition to modify vegetation management plan by Tampa Electric Company.

Tables 1-3 and **1-4** do not reflect hot-spot trimming and mid-cycle trimming activities. An additional factor to consider is that not all miles of overhead distribution circuits require vegetation clearing. Factors such as hot-spot trimming and open areas contribute to the apparent variances from the approved plans. Annual variances as seen in Tables 1-3 and 1-4 are allowable as long as each utility achieves 100 percent completion within the cycle-period stated in its approved plan for feeder and lateral circuits.

Audit of Joint-Use Agreements

For hardening purposes, the benefits of fewer attachments are reflected in the extreme wind loading rating of the overall design of pole loading considerations. Each IOU monitors the impact of attachments by other parties to ensure the attachments conform to the utility's strength and loading requirements without compromising storm performance. Each IOU's plan for performing pole strength assessments includes the stress impacts of all pole attachments as an integral part of its eight-year wood pole inspection program. In addition, these assessments are also conducted on concrete and steel poles. The following are some 2013 highlights:

- DEF completed its eight-year joint-use audit in 2013. Of the 65,226 distribution poles that were strength tested 54 failed the test. DEF added guy wires to 34 poles and replaced 20 of the failed poles. DEF found no unauthorized attachments on the poles. Of its 5,580 joint-use transmission poles, 31 poles were strength tested with 5 poles deemed overloaded and scheduled for replacement.

- FPL audited approximately 20 percent of its service territory through its joint-use survey in order to determine the number and ownership of jointly-used poles and associated attachments in 2013. Pole strength and loading tests were also performed on the joint-use poles. Of the 62,716 distribution poles that were strength tested, 66 Grade C poles and 5,362 Grade B poles were found to be overloaded and 6,740 Grade B and C poles failed for other reasons. FPL does not track at the joint-use level if the poles were corrected or replaced. There were 472 distribution poles with NESC violations and 212 poles with violations involving third-party facilities. FPL made the necessary correction concerning these violations.

- FPUC, through, a contractor performed 684 pole loading calculations in 2013. Poles having remaining strength at or below 67 percent and poles having third-party attachments of one-half inch or larger in diameter were selected for loading assessment. Poles with loading estimates greater than 100 percent were added to a follow-up inspection list. A list of replacement poles is provided to all third parties so their attachments can be transferred. Some joint-use agreements will have language added in 2014 to add or clarify Joint-Use safety audit instructions.

- Gulf performs its Joint-Use inventory audits every five years. The most recent audit was completed in December 2011 and the next audit is scheduled for 2016. As of 2013 data, Gulf has 200,543 total distribution poles with 159,783 third-party attachers. Gulf is attached to 57,485 foreign poles and leased 136,698 poles. During the last audit, 26,317 "unauthorized attachments" were identified. Gulf explained that the "unauthorized

attachments" identified in the last audit, have been associated with the appropriate third-party attachers and that it has updated its mapping system to reflect these changes. Gulf also noted that a number of its third-party agreements include language allowing Gulf to account and bill for more than one attachment on a pole.

- TECO, in 2013, conducted comprehensive loading analysis and continued to streamline its processes to better manage attachment requests from attaching entities. The comprehensive loading analysis was performed on 1,920 poles. TECO identified 33 distribution poles that were overloaded due to joint-use attachments. TECO also found 58 poles that had NESC violations. All poles were corrected by adjustments to attachments, poles replacements or joint-use entities' removal of the attachments.

Six-Year Transmission Inspections

The IOUs are required by the Commission to inspect all transmission structures and substations, and all hardware associated with these facilities. Approval of any alternative to a six-year cycle must be shown to be equivalent or better than a six-year cycle, in terms of cost and reliability in preparing for future storms. The approved plans for FPL, TECO, FPUC, and Gulf require full inspection of all transmission facilities within a six-year cycle. DEF, which already had a program indexed to a five-year cycle, continues with its five-year program. Such variances are allowed so long as each utility achieves 100 percent completion within a six-year period, as outlined in Order No. PSC-06-0781-PAA-EI, issued September 19, 2006, in Docket No. 060198-EI. All five IOUs reported that they are on target to meet the six-year inspection cycle for transmission structures and substations.

- DEF's transmission systems are on a five-year cycle plan. DEF inspected 225 transmission circuits and 475 transmission substations. DEF plans to inspect 23 percent of its transmission system in 2014. DEF performs ground patrol of transmission line structures and associated hardware and conductors on a routine basis to identify potential problems.

- FPL, in 2013, began a new six-year cycle, performing climbing inspections on more than 11,000 wood, concrete, and steel transmission structures. In 2013, FPL inspected approximately 66.5 percent of transmission circuits, 100 percent of transmission substations, 100 percent of non-wood transmission tower structures, and 100 percent of wood transmission poles.

- FPUC, in 2013, inspected 100 percent of transmission circuits, transmission substations, tower structures, and transmission poles. The transmission inspections included climbing patrols of 95 138kV and 219 69kV structures. Inspecting all transmission facilities ensures that all structures will have a detailed inspection performed at a minimum of every six years.

- Gulf inspected all of its 33 transmission substations in 2013 and conducted 514 inspections of its metal poles and towers as well as 2,520 wood transmission poles. Gulf replaced 180 of the wood poles.

- TECO's transmission system inspection program includes ground patrol, aerial infrared patrol, and substation inspections, which are on a one-year cycle, above ground inspection, which is on a six-year cycle and ground line inspection, which is on an eight-year cycle. TECO's eight-year cycle for ground line inspections was completed ahead of schedule in 2012; therefore, no ground line inspections were performed in 2013. In 2013, infrared aerial patrols were performed on 100 percent of transmission circuits.

Hardening of Existing Transmission Structures

Hardening transmission infrastructure for severe storms is an important motivation for utilities in order to continue providing transmission of electricity to high priority customers and key economic centers. IOUs are required by the Commission to show the extent of the utility's efforts in hardening of existing transmission structures. No specific activity was ordered other than developing a plan and reporting on storm hardening of existing transmission structures. In general, all of the IOU's plans continued pre-existing programs that focus on upgrading older wooden transmission poles. Highlights of 2013 and projected 2014 activities for each IOU are explained below.

- DEF planned 1,590 transmission structures for hardening and completed 3,056 hardening projects, which includes Department of Transportation/customer relocations, line rebuilds, and system planning additions. The transmission structures are designed to withstand the current NESC wind requirements and are built utilizing steel or concrete structures. In 2014, DEF plans to harden 2,497 transmission structures. DEF has 25,738 wood poles left to be hardened. DEF projects to have all these wood poles changed out in about ten and half years.

- FPL accelerated its plan in 2013, to replace all wood transmission structures in its system, from a target date range of 2033-2038 to a new target date range of 2023-2028. FPL replaced 1,106 wood transmission structures with spun concrete poles. FPL also replaced ceramic post insulators with polymer insulators on 1,112 transmission structures, which far exceeds their goal of 351. In 2014, FPL plans on replacing 1,057 wood transmission structures and ceramic post insulators on 590 concrete structures. By the end of 2014, FPL expects to have completed the replacement of all ceramic post insulators and will have approximately 12,000 wood transmission structures remaining to be replaced. Additionally, FPL's approved 2013-2015 plan includes several storm surge/flood initiatives. Specifically, in 2013, FPL installed water-level monitoring systems and communication equipment in 103 of its substations, including the 25 substations in its system located below the FEMA 100-year flood elevations.

- FPUC did not conduct any storm hardening of existing structures during 2013. All of the Northeast (NE) Division's 138kV poles are constructed of concrete and steel and meet NESC standards. The NE Division's 69kV transmission system consists of 219 poles of which 43 are concrete poles. During the 2012 six-year transmission climbing inspection, 31 wooden transmission poles were identified for replacement, to which two additional poles were added in 2013. The poles will be replaced with concrete transmission poles in 2014. There are 131 69kV wood poles left to be hardened. FPUC has not set a schedule

for replacing these wood poles with concrete poles due to the expense involved. The Northwest (NW) Division does not have transmission structures.

- Gulf has two priority goals for hardening its transmission structures: installation of guys on H-frame structures and replacement of wooden cross arms with steel cross arms. The installation of guys on H-frame structures was completed in 2012 and the replacement of wooden cross arms with steel cross arms is proceeding on schedule to meet the 2017 completion date. In 2013, 210 transmission structures were hardened. Gulf has 713 remaining wooden cross arms left to be replaced. Gulf will replace 200 wooden cross arms per year from the years 2014 to 2016, with the remaining 113 to be replaced in 2017.

- TECO is hardening the existing transmission system by utilizing its inspections and maintenance program to systematically replace wood structures with non-wood structures. In 2013, TECO hardened 1,093 structures including 866 structure replacements utilizing steel or concrete poles and replaced 227 set of insulators with polymer insulators. TECO's goal for 2014 is to harden 805 transmission structures. TECO has approximately 9,500 wood poles left to be replaced. If the rate of 600 poles per year replacement is maintained, TECO estimates the wooden poles will be replaced by 2029.

Transmission and Distribution Geographic Information System

Post-Storm Data Collection and Forensic Analysis

Collection of Detailed Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems

These three initiatives are addressed together because effective implementation of any one initiative is dependent upon effective implementation of the other two initiatives. The five IOUs have GIS and other programs to collect post-storm data on competing technologies, perform forensic analysis, and assess the reliability of overhead (OH) and UG systems on an ongoing basis. Differentiating between overhead and underground reliability performance and costs is still difficult because underground facilities are typically connected to overhead facilities and the interconnected systems of the IOUs address reliability on an overall basis. Many electric utility companies have implemented an OMS or are in the process of doing so. The collection of information for the OMS is being utilized in the form of a database for emergency preparedness. This will help utilities identify and restore outages sooner and more efficiently. The OMS fills a need for systems and methods to facilitate the dispatching of maintenance crews in outages, sometimes during severe weather situations, and for providing an estimated time to restore power to customers. Effective restoration will also yield improved customer service and increased electric utility reliability. The year 2013 highlights and projected 2014 activities for each IOU are listed below:

- DEF's forensics teams will participate in DEF's 2014 Storm Drill. During field observations, the forensics team collects various information regarding poles damaged

during storm events and collects sufficient data at failure sites to determine the nature and cause of the failure. In collaboration with University of Florida's Public Utility Research Center (PURC), DEF and the other IOUs developed a common format to collect and track data related to damage discovered during forensics investigation. DEF collects information to determine the percentage of storm caused outages on OH and UG systems. DEF's GIS provides several sets of data and information points regarding DEF's assets. DEF uses OMS, customer Service System (CSS), and GIS to help analyze the performance of the OH and UG facilities. DEF collects available performance information as part of the storm restoration process.

- FPL completed its five approved Key Distribution GIS improvement initiatives in 2012. The initiatives include post-hurricane forensic analyses, the addition of poles, streetlights, joint-use survey, and hardening level data to the GIS. Data collection and updates to the GIS will continue through inspection cycles and other normal daily work activities. FPL has post-storm data collection and forensic analysis plans, systems and processes in place and ready for use. The plans, systems and processes capture OH and UG storm performance based on an alternative metric of analyzing performance of laterals. There were no storm forensic activities in 2013. In 2014, FPL's forensic team will participate in the Annual Storm Dry Run.

- FPUC uses GIS mapping for all of its deployed equipment and uses it to identify distribution and transmission facilities. The system interfaces with the Customer Information System to function as a Customer OMS. The implementation of the OMS has resulted in significant improvement in data collection and retrieval capability for analyzing and reporting reliability indices. The migration of the data began in 2012 and was completed in 2013. In addition, FPUC has plans to improve the current OMS system in 2014 by enabling customer outage calls to be automatically logged into the system. FPUC has implemented a forensic data collection process. Field data will be collected, analyzed, and entered into the OMS. The process is triggered 72 hours prior to a storm. FPUC collects outage data attributed to OH and UG equipment failure in order to evaluate the associated reliability indices. During 2013, there were no projects in the NE Division to convert OH facilities to UG or any storm hardening projects. There were no OH to UG conversion in the NW Division; however, two projects are currently on hold pending input from local government regarding formal requests to underground some of the overhead facilities in those projects. Two storm hardening projects took place – relocation of distribution facilities were completed along Hartsfield Road, Marianna, Florida; and the construction of a Malone feeder began.

- Gulf completed its distribution facilities mapping transition to its new Distribution GIS (DistGIS) in 2009. The transmission system has been completely captured in the transmission GIS database. The Distribution GIS and Transmission GIS are continually updated with any additions and changes as the associated work orders for maintenance, system improvements, and new business are completed. This ongoing process provides Gulf sufficient information to use with collected forensic data to assess performance of its OH and UG systems in the event of a major storm. While Gulf did feel some effects from Tropical Storm Isaac, the event was not significant enough to bring the Forensic

Collection Team on the system. Using aerial patrol, Gulf will be able to capture an initial assessment of the level of damage to the transmission system and record the GPS coordinates and failures with the Transmission Line Inspection System (TLIS). Gulf's existing Common Transmission Database (CTDB) will be utilized to capture all forensic information. Gulf did experience outages and damage from several storms in 2013, but these storms did not produce major storm related data. Gulf expanded its record keeping and analysis of data associated with OH and UG outages. Gulf will continue collecting the following data on outages as they occur: UG cables that are direct buried, but in conduit, and whether the pole type is concrete or wood.

- TECO's GIS continues to serve as the foundational database for all transmission, substation and distribution facilities. Development and improvement of the GIS continues on an ongoing basis. TECO is planning and scheduling major upgrades to its GIS which are expected to be implemented in the first half of 2014. The project will be executed in two phases. Phase I will be an upgrade to the computing hardware, the software, and the database to bring these components up to the most current versions available. Phase II will be implementation of a significant number of user improvements consisting of configuration changes as well as usability enhancements. TECO's process for post storm forensic data collection and analysis has been in place for approximately five years. TECO uses an outside contractor to execute the process that includes the establishment of a field asset database, forensic measurement protocol, integration of forensics activity with overall system restoration, forensics data sampling and reporting format. In 2013, $5,000 was spent on a contractor project to improve the field data model. The data collected following a significant storm will be used to determine the root cause of damage. However, in 2013, due to the lack of severity of weather events in TECO's service area, meaningful performance data of OH versus UG systems was not available. An established process is in place for collecting post-storm data and forensic analysis.

Increased Utility Coordination with Local Governments

The Commission's goal with this program is to promote an ongoing dialogue between IOUs and local governments on matters such as vegetation management and underground construction, in addition to the general need to increase pre- and post-storm coordination. The increased coordination and communication is intended to promote IOU collection and analysis of more detailed information on the operational characteristics of underground and overhead systems. This additional data is also necessary to inform customers and communities that are considering converting existing overhead facilities to underground facilities (undergrounding), as well as to assess the most cost-effective storm hardening options.

Each IOU's external affairs representatives or designated liaisons are responsible for engaging in dialog with local governments on issues pertaining to undergrounding, vegetation management, public rights-of-way use, critical infrastructure projects, other storm-related topics, and day-to-day matters. Additionally, each IOU assigns staff to each county's EOC to participate in joint training exercises and actual storm restoration efforts. The IOUs now have outreach and

educational programs addressing underground construction, tree placement, tree selection, and tree trimming practices.

- DEF's storm planning and response program is operational 12 months out of the year to respond to catastrophic events at anytime. There are approximately 40 employees assigned full-time, year-round to coordinate with local governments on issues such as emergency planning, vegetation management, undergrounding, and service related issues. In 2013, DEF visited several EOCs in different counties to review storm procedures and participated in several different storm drills including Florida's state wide annual storm drill. For 2014, DEF plans to continue to participate in county storm drills and Florida's State Wide Annual Storm Drill. Also in 2013, DEF launched a new program called Summer Storm Series, which focused on emergency management personnel, and key county and city officials, with multiple agencies attending three forums. The forum topics included: (1) major storm response processes and interfacing with local emergency management personnel; (2) safety around power lines and during emergencies involving the public; and (3) general areas to grow coordination and partnerships. DEF stated that seven forums were held in 2014 with plans to further expand the number of forums in 2015.

- FPL, in 2013, continued efforts to improve local government coordination, the company conducted meetings with county emergency operations managers to discuss critical infrastructure locations in each jurisdiction. FPL also activated the dedicated Government Portal Website, which has information that government leaders rely on to help during storm recovery, and invited federal, state, county, and municipal emergency management personnel to participate in FPL's annual Storm Preparedness Drill. FPL conducted more than 59 community presentations providing information on storm readiness and other topics of community interest.

- FPUC has continued its involvement with local governments regarding reliability issues with emphasis on vegetation management. FPUC and the City of Marianna have worked together to complete an undergrounding project in the downtown area and are planning further projects. The company's current practice is to have FPUC personnel located at the counties EOCs on a 24 hour basis during emergency situations to ensure good communication.

- Gulf meets with governmental entities for all major projects, as appropriate, to discuss the scope of the projects and coordinate activities involved with project implementation. Gulf maintains year round contact with city and county officials to ensure cooperation in planning, good communications, and coordination of activities. In 2013, Gulf participated in hurricane drills and EOC training with Escambia, Santa Rosa, and Okaloosa counties. Gulf also has employees assigned to county EOCs throughout Northwest Florida to assist during emergencies that warrant activation of the county EOCs.

- TECO's communication efforts, in 2013, focused on working with local governments in preparing for emergency situations. TECO was invited to participate in several local government drills, as well as partnering in preparations for the International Indian Film Academy Awards in Tampa. Other communication topics in 2013 included updating governmental officials of the company's transmission line inspections, structural upgrades, and the new Federal North American Electric Reliability Corporation/Federal Energy Regulatory Commission line clearance regulation changes.

Collaborative Research on Effects of Hurricane Winds and Storm Surge

PURC assisted Florida's electric utilities by coordinating a three year research effort, from 2006 to 2009, in the area of hardening the electric infrastructure to better withstand and recover from hurricanes. Hurricane winds, undergrounding, and vegetation management research are key areas explored in these efforts by all of the research sponsors involved with PURC. Since that time, PURC compiles a research report every year to provide the utilities with results from its research. The latest report was issued February 2014.

Current projects in this effort include: (1) research on undergrounding existing electric distribution facilities by surveying the current literature including case analyses of Florida underground projects, and developing a model for projecting the benefits and costs of converting overhead facilities to underground; (2) data gathering and analysis of hurricane winds in Florida and the possible expansion of a hurricane simulator that can be used to test hardening approaches; and (3) an initiative to increase public outreach to address storm preparedness in the wake of Hurricane Sandy. This included reaching out to affected states for further data and a print debate surrounding overhead vs. underground installation of power lines.

The effort is the result of Commission Order No. PSC-06-0351-PAA-EI, issued April 25, 2006, in Docket No. 060198-EI, directing each investor-owned electric utility 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. The order directed them to solicit participation from municipal electric utilities and rural electric cooperatives in addition to available educational and research organizations.

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 PURC. In serving as the research coordinator for the project outlined by the MOU, PURC manages the workflow and communications, develops work plans, serves as a subject matter expert and conducts research, facilitates the hiring of experts, coordinates with research vendors, advise the project sponsors, and provides reports for project activities.

Undergrounding Of Electric Utility Infrastructure: All five IOUs participate with PURC, along with the other cooperative and municipal electric utilities, in order to perform beneficial research regarding hurricane winds and storm surge within the state. The group's research shows that while underground systems on average have fewer outages than overhead systems, they can sometimes take longer to repair. Analyses of hurricane damage in Florida found that

underground systems might be particularly susceptible to storm surge. The research on undergrounding has been the focus for understanding the economics and effects of hardening strategies, including undergrounding. As a result, Quanta Technologies was contracted to conduct a three-phase project to understand the economics and effect of hardening policies in order to make informed decisions regarding hardening of underground facilities.

Phase I of the project was a meta-analysis of existing research, reports, methodologies, and case studies. Phase II examined specific undergrounding project case studies in Florida and included an evaluation of relevant case studies from other hurricane prone states and other parts of the world. Phase III developed a methodology to identify and evaluate the costs and benefits of undergrounding specific facilities in Florida. The primary focus is the impact of undergrounding on hurricane performance. This study also considered benefits and drawbacks of undergrounding during non-hurricane conditions. For 2013, the collaborative focused on refining the computer model developed by Quanta Technologies in response to Phase III of the overall project, as well as reaching out to other research groups to continue developing the model. The reports for Phase I, Phase II and Phase III are available at http://warrington.ufl.edu/purc/research/energy.asp.

Hurricane Wind Effects: The collaborative group is trying to determine the appropriate level of hardening required for the electric utility infrastructure against wind damage from hurricanes. The project's focus was divided into two categories: (1) accurate characterization of severe dynamic wind loading; and (2) understanding the likely failure modes for different wind conditions. An agreement with WeatherFlow, Inc., to study the effects of dynamic wind conditions upon hurricane landfall includes 50 permanent wind-monitoring stations around the coast of Florida. In addition, PURC has developed a uniform forensics data gathering system for use by the utilities and a database that will allow for data sharing that will match the forensics data with the wind monitoring and other weather data.

Public Outreach: To increase public outreach, PURC participated in a print debate addressing the considerations involved in underground vs. overhead line installation in the April 15, 2013, edition of the *Wall Street Journal*.

In response to Hurricane Sandy, PURC researchers discussed the collaborative effort in Florida with the engineering departments of the state regulators in Pennsylvania, Maryland, New York, and New Jersey, though no projects have arisen from these discussions.

A Natural Disaster Preparedness and Recovery Program

Each IOU is required to maintain a copy of its current formal disaster preparedness and recovery plan with the Commission. A formal disaster plan provides an effective means to document lessons learned, improve disaster recovery training, pre-storm staging activities and post-storm recovery, collect facility performance data, and improve forensic analysis. In addition, participation in the Commission's annual pre-storm preparedness briefing is required which focuses on the extent to which all Florida electric utilities are prepared for potential hurricane events. The following are some 2013 highlights for each IOU.

- DEF's Storm Recovery Plan is reviewed and updated annually based on lessons learned from the previous storm season and organizational needs. The Distribution System Storm Operational Plan and the Transmission Storm Plan incorporates organizational redesign at DEF, internal feedback, suggestions and customer survey responses. DEF uses the Extreme Wind Loading standards in accordance with the National Electrical Safety Code, Rule 250C in all planning for transmission upgrades, rebuilds and expansions of existing facilities. DEF is also actively engaged as both participant and presenter in a variety of organizations where hardening alternatives are reviewed and assessed. Examples include: Southern Electric Exchange, Edison Electric Institute, Institute of Electrical and Electronics Engineers, Chartwell Hardening Teleconference, and Davies Consulting Asset Management Conference.

- FPL's Storm Emergency Plan identifies emergency conditions associated with natural disasters and responsibilities and duties of FPL's Emergency Response Organization. The plan provides a summary of overall emergency processes. The plan also provides information on the organization's responsibility, conducting damage assessment, restoration response, support for external agencies; regulatory bodies, EOC's, local governments, etc., and support to major commercial and industrial customers. The plan is reviewed annually and revised as necessary.

- FPUC utilizes its Disaster Preparedness and Recovery Plan to prepare for storms annually and will ensure all employees are aware of their responsibilities. The following are some of the objectives that are included in the plan to ensure orderly and efficient service restoration: the safety of employees, contractors, and the general public; early damage assessment in order to develop manpower requirements; request additional manpower as soon as conditions and information indicate the need; provide for orderly restoration activities; provide all logistical needs for employees and contractors; provide ongoing preparation of FPUC's employee buildings, equipment and support functions; and provide support and additional resources for employees and their families.

- Gulf's 2013 Disaster Preparedness and Recovery Plan had no major revisions from what was submitted in the company's March 1, 2010, annual filing. Gulf continues to provide annual refresher training in the area of storm preparedness for various storm roles at minimal cost. A mock hurricane drill was completed on May 3, 2013. The purpose of this drill was to raise awareness and continue a culture of preparedness both at work and at home. Gulf uses the strategy described in its Storm Recovery Plan to respond to any natural disaster that may occur. Annually, Gulf develops and refines its planning and preparations for the possibility of a natural disaster. Gulf's restoration procedures establish a plan of action to be utilized for the operation and restoration of generation, transmission, and distribution facilities during major disasters.

  Additionally, Gulf conducted a check-in site drill on June 26, 2013, to ensure manpower resources along with existing policies and procedures were sufficient to process off system resources. Gulf's 2014 hurricane drill was completed May 1, 2014.

- TECO's Emergency Management Plans address all hazards, including extreme weather events. Prior to June 1, 2013, all emergency support functions were reviewed, personnel trained, and Incident Command System Logistics and Planning Section Plans were tested. In January 2014, the company Emergency Response Plan was reviewed. For 2014, TECO will continue in a leadership role in county and national preparedness groups: Hillsborough County Post Disaster Recovery Plan, Hillsborough County Local Mitigation Strategy Group, Tampa Bay Regional Planning Council, Edison Electric Institute, and the National Fire Protection 1600 Committee on emergency management, business continuity and disaster recovery.

Section II: Actual Distribution Service Reliability

Electric utility customers are affected by all outage events and momentary events regardless of where problems originate. For example, generation events and transmission events, while electrically remote from the distribution system serving a customer, affect the distribution service experience. This total service reliability experience is intended to be captured by the actual reliability data.

The actual reliability data includes two subsets of outage data: (1) data on excludable events; and (2) data pertaining to normal day-to-day activities. Rule 25-6.0455(4), F.A.C., explicitly lists outage events that may be excluded:

(1) Planned service interruptions.

(2) A storm named by the National Weather Service.

(3) A tornado recorded by the National Weather Service.

(4) Ice on lines.

(5) A planned load management event.

(6) Any electric generation or transmission event not governed by subsection 25-6.018(2) and (3) F.A.C.

(7) An extreme weather or fire event causing activation of the county emergency operation center.

This section provides an overview of each IOU's actual 2013 performance data and focuses on the exclusions allowed by the rule. The year 2007 was the first year for which actual reliability data was provided.

Duke Energy Florida: Actual Data

Table 2-1 provides an overview of key DEF metrics: Customer Minutes of Interruption and Customer Interruptions (CI) for 2013. Excludable outage events accounted for approximately 17 percent of the minutes of interruption experienced by DEF's customers. In 2013, DEF experienced one tropical storm and three tornados. Tropical Storm Andrea occurred on June 5-6, 2013. The three tornados occurred February 25, April 14, and June 24, 2013. These severe weather events accounted for 2 percent of the total minutes of interruption on its distribution system.

The biggest impact on CMI was the Transmission – Non-Severe Weather events which accounted for 6 percent of the excludable minutes of interruptions. DEF explained that transmission outages are reviewed and investigated to determine if events are isolated or impact other parts of the system. The investigation also determines what solution should be implemented to remedy the problem and what corrective actions are needed to prevent repeat

occurrences. All regions were affected by Transmission – Non-Severe Weather events with the North Central region having the highest CMI.

Table 2-1. DEF's 2013 Customer Minutes of Interruptions and Customer Interruptions

2013	Customer Minutes of Interruption (CMI)		Customer Interruptions (CI)	
	Value	**% of Actual**	**Value**	**% of Actual**
Reported Actual Data	180,417,856		2,614,538	
Documented Exclusions				
Distribution (Severe Weather)	3,960,492	2.20%	65,847	2.52%
Distribution (Non Severe Weather)	3,455	0.00%	42,052	1.61%
Transmission (Severe Weather)	112,721	0.06%	2,619	0.10%
Transmission (Non Severe Weather)	10,528,453	5.84%	258,335	9.88%
Emergency Shutdowns (Severe Weather)	403,082	0.22%	5,800	0.22%
Emergency Shutdowns (Non Severe Weather)	9,190,725	5.09%	354,750	13.57%
Prearranged (Severe Weather)	0	0.00%	0	0.00%
Prearranged (Non Severe Weather)	7,301,665	4.05%	59,989	2.29%
Reported Adjusted Data	148,917,263	82.54%	1,825,146	69.81%

Florida Power & Light Company: Actual Data

Table 2-2 provides an overview of FPL's CMI and CI figures for 2013. Excludable outage events accounted for approximately 12 percent of the minutes of interruption experienced by FPL's customers. Severe weather outages accounted for approximately 5 percent of the excludable outage events. FPL reported nine tornados, one tropical storm, and an EOC activation in 2013. The nine tornados accounted for less than 1 percent of the severe weather total, the tropical storm accounted for 2 percent of the total, and the EOC activation accounted for 2 percent of the severe weather total. The tornados occurred February 14, April 14, April 30, May 2, May 4, July 9, July 23, September 16, and December 14, 2013. Tropical Storm Andrea occurred June 5-7, 2013, and the EOC activation occurred March 23-24, 2013. The EOC was activated due to flooding in North Florida.

The biggest impact on CMI was the Planned Outage events which accounted for 5 percent of the excludable minutes of interruptions. FPL explained that Planned Outage events are classified in two categories – Crew-Requested and Customer-Requested. The Crew-Requested Planned Outages include facilities and equipment repairs and distribution facilities upgrades. The

Customer-Requested Planned Outages include repairs and/or upgrades to customer-owned equipment. Included in this category is the conversion of overhead to underground facilities. All FPL regions were affected by Planned Outages events.

Table 2-2. FPL's 2013 Customer Minutes of Interruptions and Customer Interruptions

2013	Customer Minutes of Interruption (CMI)		Customer Interruptions (CI)	
	Value	**% of Actual**	**Value**	**% of Actual**
Reported Actual Data	323,320,446		4,516,200	
Documented Exclusions				
Named Storm Outages	6,619,854	2.05%	77,718	1.72%
ECO Activation	7,117,724	2.20%	25521	0.57%
Planned Outages	15,320,239	4.74%	141,404	3.13%
Customer Request	4,706,344	1.46%	85,745	1.90%
Tornadoes	3,794,564	1.17%	24,940	0.55%
Other	0	0.00%	0	0.00%
Reported Adjusted Data	285,761,721	88.38%	4,160,872	92.13%

Florida Public Utilities Company: Actual Data

Table 2-3 provides an overview of FPUC's CMI and CI figures for 2013. Excludable outage events accounted for approximately 44 percent of the minutes of interruption experienced by FPUC's customers. FPUC reported that Tropical Storm Andrea, which occurred on June 6, 2013, affected the Northeast Division. The tropical storm accounted for less than 1 percent of the excludable minutes of interruption.

The biggest impact on CMI were Transmission events which accounted for 41 percent of the excludable minutes of interruptions. FPUC explained that the Northeast Division was affected by several transmission outages in 2013. FPUC determined the outages were related to lightning. Lightning arrestors and grounding were identified as the root causes for the failures. FPUC implemented new lightning arrestor and grounding standards in the areas that were affected. FPUC also noted a major outage due to a temporary loss of power by JEA who supplies power to FPUC. FPUC explained that JEA notified the company that it intended to perform maintenance on a substation. During JEA's maintenance, JEA had an issue with one of its relays which caused the outage. This event affected the Northeast Division and lasted 41 minutes.

Table 2-3. FPUC's 2013 Customer Minutes of Interruptions and Customer Interruptions

2013	Customer Minutes of Interruption (CMI)		Customer Interruptions (CI)	
	Value	% of Actual	Value	% of Actual
Reported Actual Data	8,526,619		101,347	
Documented Exclusions				
Planned Outages	268,588	3.15%	3,625	3.58%
Transmission events	3,475,482	40.76%	46,416	45.80%
Substation	0	0.00%	0	0.00%
Severe Storm Outages	0	0.00%	0	0.00%
Tornado	0	0.00%	0	0.00%
Named Storm Outages	13,233	0.16%	196	0.19%
Reported Adjusted Data	4,769,316	55.93%	51,110	50.43%

Gulf Power Company: Actual Data

Table 2-4 provides an overview of Gulf's CMI and CI figures for 2013. Excludable outage events accounted for approximately 14 percent of the minutes of interruption experienced by Gulf's customers. Gulf reported one tropical storm and an EOC activation in 2013. Tropical Storm Karen occurred October 3-7, 2013. The EOC was activated due to flooding that occurred July 3-5, 2013. The tropical storm accounted for less than 1 percent of the excludable minutes of interruption. The EOC activation accounted for 1 percent of the excludable minutes of interruption.

The biggest impact on CMI were Planned Outage events which accounted for 8 percent of the excludable minutes of interruptions. Gulf explained that Planned Outage events include connecting a new service, performing maintenance work such as replacing a transformer or other protective devices and building a new feeder or lateral line. The Planned Outages occur throughout Gulf's regions. Gulf reported slightly more Planned Outages in 2013 than in the previous year and stated with the implementation of the AMI, the consistency of capturing these types of outages has increased.

Table 2-4. Gulf's 2013 Customer Minutes of Interruption and Customer Interruptions

2013	Customer Minutes of Interruption (CMI)		Customer Interruptions (CI)	
	Value	**% of Actual**	**Value**	**% of Actual**
Reported Actual Data	48,728,790		619,516	
Documented Exclusions				
Transmission events	2,325,025	4.77%	76,812	12.40%
Planned Outages	4,118,294	8.45%	60,734	9.80%
Named Storm Outages	181,735	0.37%	2,722	0.44%
Tornadoes	0	0.00%	0	0.00%
Flooding/EOC Opened	440,366	0.90%	4,884	0.79%
Reported Adjusted Data	41,663,370	85.50%	474,364	76.57%

Tampa Electric Company: Actual Data

Table 2-5 provides an overview of TECO's CMI and CI figures for 2013. Excludable outage events accounted for approximately 10 percent of the minutes of interruption experienced by TECO's customers. TECO reported one tropical storm and one tornado that affected TECO's service areas. Tropical Storm Andrea occurred June 5-7, 2013, and the tornado occurred February 26, 2013. These extreme weather events accounted for approximately 4 percent of the minutes of interruption.

The biggest impact on CMI was the Other Distribution - Planned Outage events which accounted for 6 percent or 3,955,532 CMI of the excludable minutes of interruptions. TECO explained Planned Outage events involve the repair and replacement of equipment. Sometimes these outage events also include short duration outages where TECO isolates unsafe conditions, such as wire downs, vehicles that hit poles, and pole fires. All of TECO's regions were affected by Planned Outage events with the Central region experiencing the most, 25 percent, of the Planned Outages and Dade City region experiencing the least, 4 percent, of the Planned Outages.

Table 2-5. TECO's 2013 Customer Minutes of Interruptions and Customer Interruptions

2013	Customer Minutes of Interruption (CMI)		Customer Interruptions (CI)	
	Value	% of Actual	Value	% of Actual
Reported Actual Data	65,889,519		853,304	
Documented Exclusions				
Other Distribution - Planned Outage	3,955,532	6.00%	168,431	19.74%
Named Storm Outages	2,302,077	3.49%	17,304	2.03%
Tornado	51,692	0.08%	1,324	0.16%
Reported Adjusted Data	59,580,218	90.42%	666,245	78.08%

Section III: Adjusted Distribution Service Reliability Review of Individual Utilities

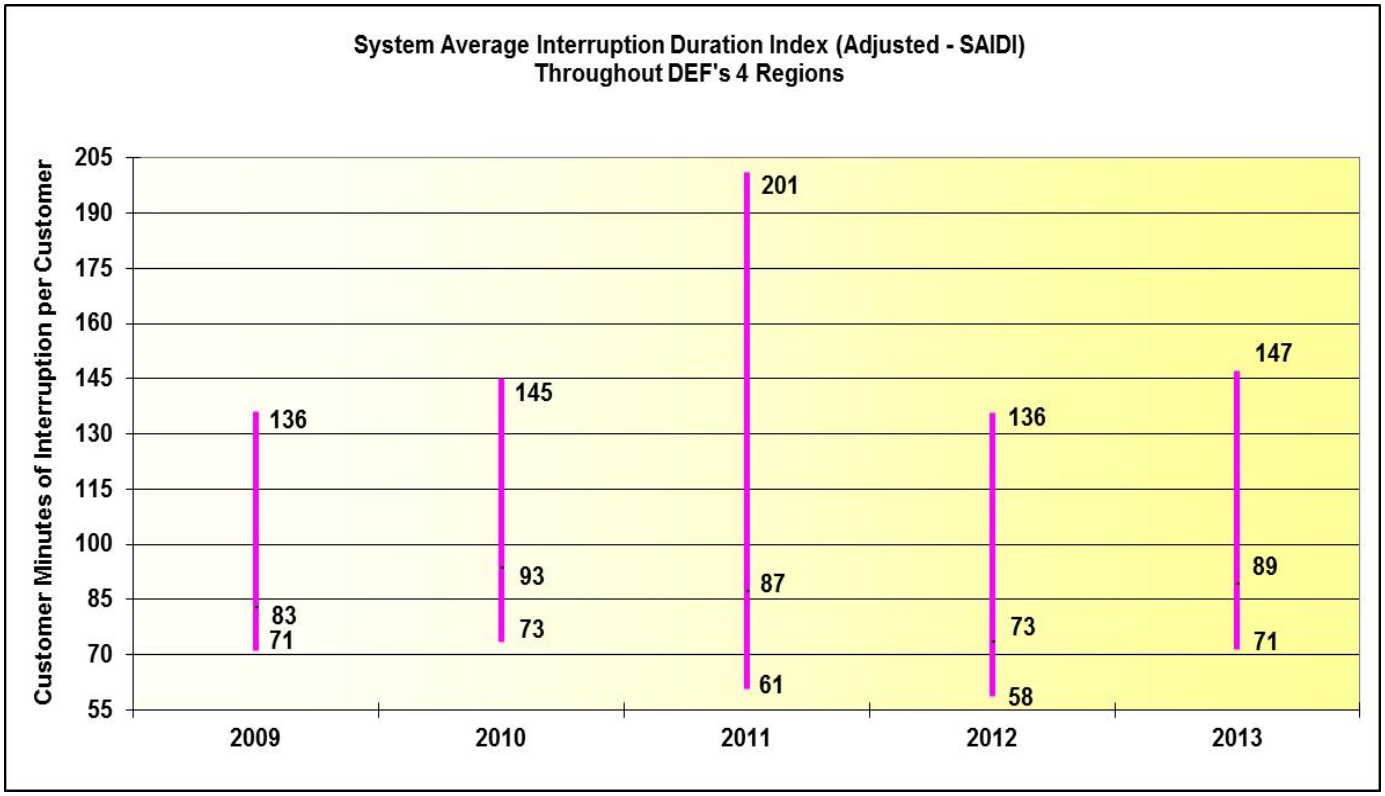
The adjusted distribution reliability metrics or indices provide insight into potential trends in a utility's daily practices and maintenance of its distribution facilities. This section of the review is based on each utility's reported adjusted data.

Duke Energy Florida: Adjusted Data

Figure 3-1 charts the adjusted SAIDI recorded across DEF's system and depicts an increase in the highest, average and lowest values for 2013. DEF reported that in 2013, three tornados and one tropical storm affected its service territory. DEF also noted that there were seven days of extreme weather that were not excludable. These extreme weather events caused the North Coastal region to have higher indexes.

DEF's service territory is comprised of four regions: North Coastal, South Coastal, North Central, and South Central. **Figure 3-1** illustrates that the North Coastal region continues to report the poorest SAIDI over the last five years, fluctuating between 136 minutes and 201 minutes. While the South Coastal and South Central regions have the best or lowest SAIDI for the same period. The North Coastal region is rural and has more square miles when compared to the other regions. It is also served by predominantly long circuits with approximately 7,700 miles of overhead and underground main circuits. DEF explained that these factors result in higher exposure to outage causes and higher reliability indices.

Figure 3-1. SAIDI across DEF's Four Regions (Adjusted)

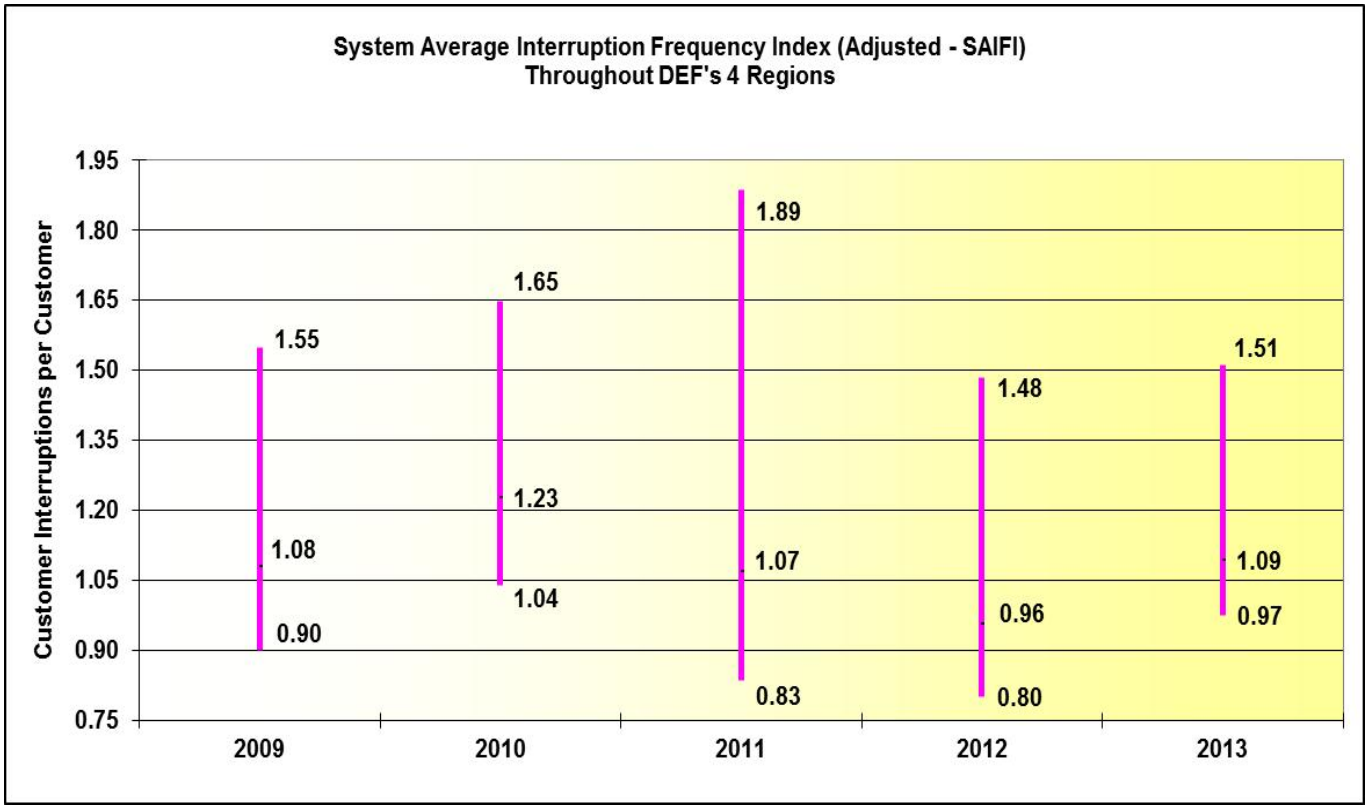


DEF's Regions with the Highest and Lowest Adjusted SAIDI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest SAIDI	North Coastal	North Coastal	North Coastal	North Coastal	North Coastal
Lowest SAIDI	South Central	South Central	South Central	South Coastal	South Coastal

Figure 3-2 shows the adjusted SAIFI across DEF's system. The maximum, minimum, and average SAIFI indexes are trending downward even though there were increases of 17 percent, 1 percent, and 12 percent, respectively, in 2013. The South Central region continues to have the lowest number of interruptions, while the North Coastal region continues to have the highest number of interruptions.

Figure 3-2. SAIFI across DEF's Four Regions (Adjusted)



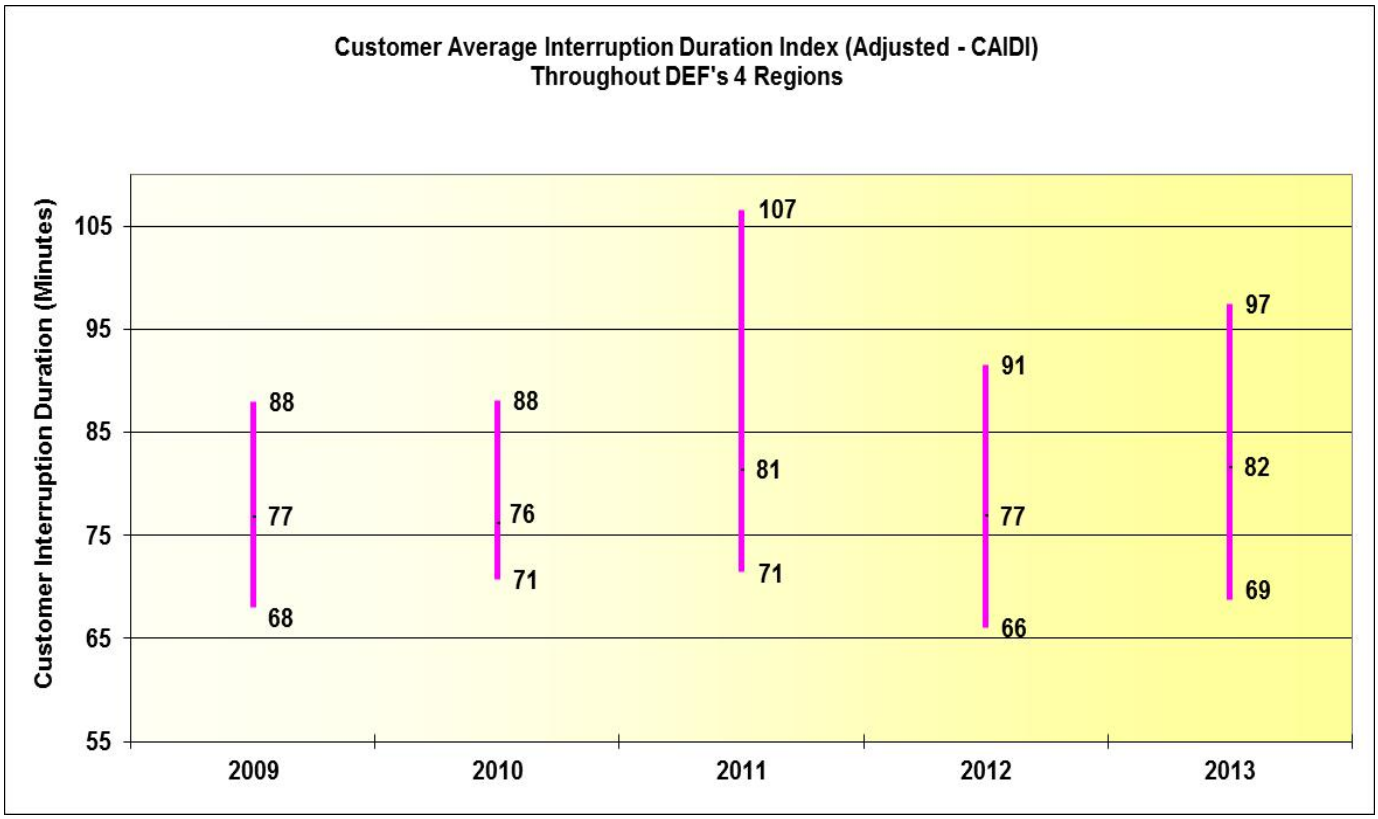
DEF's Regions with the Highest and Lowest Adjusted SAIFI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest SAIFI	North Coastal	North Coastal	North Coastal	North Coastal	North Coastal
Lowest SAIFI	South Central	South Central	South Central	South Central	South Central

Figure 3-3 illustrates the CAIDI, or the average number of minutes a customer is without power when a service interruption occurs, for DEF's four regions. DEF's adjusted CAIDI is trending upward for a five-year period from 77 minutes in 2009 to 82 minutes in 2013. There was a 6 percent increase from 77 minutes in 2012 to 82 minutes in 2013. The North Coastal region has continued to have the highest CAIDI level for the past five years with the maximum CAIDI trending upward. The South Coastal and South Central regions have maintained the lowest CAIDI level during the same period with the minimum CAIDI staying relativity flat.

DEF noted that it is in the process of implementing solutions to decrease outage count and outage duration. DEF will install Tollgrade Line Sensors, which will help pinpoint fault locations better. DEF believes this will reduce travel time for restoration. DEF is also planning to install Remote-Control Reclosers. These reclosers will assist in reducing travel time by eliminating a portion of the feeder that will require patrolling. The reclosers will also reduce the number of customer outages by eliminating a portion of the circuit from experiencing an outage.

Figure 3-3. CAIDI across DEF's Four Regions (Adjusted)



DEF's Regions with the Highest and Lowest Adjusted CAIDI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest CAIDI	North Coastal	North Coastal	North Coastal	North Coastal	North Coastal
Lowest CAIDI	South Coastal	South Central	South Coastal	South Coastal	South Coastal

Figure 3-4 is the average length of time DEF spends restoring customers affected by outage events, excluding hurricanes and certain other outage events. This is displayed by the index L-Bar in the graph below. The data demonstrates an overall 3 percent increase of outage durations since 2009, and a 3 percent increase from 2012 to 2013. DEF's overall L-Bar index is trending upward, indicating that DEF is still spending a longer time restoring service from outage events.

Figure 3-4. DEF's Average Duration of Outages (Adjusted)

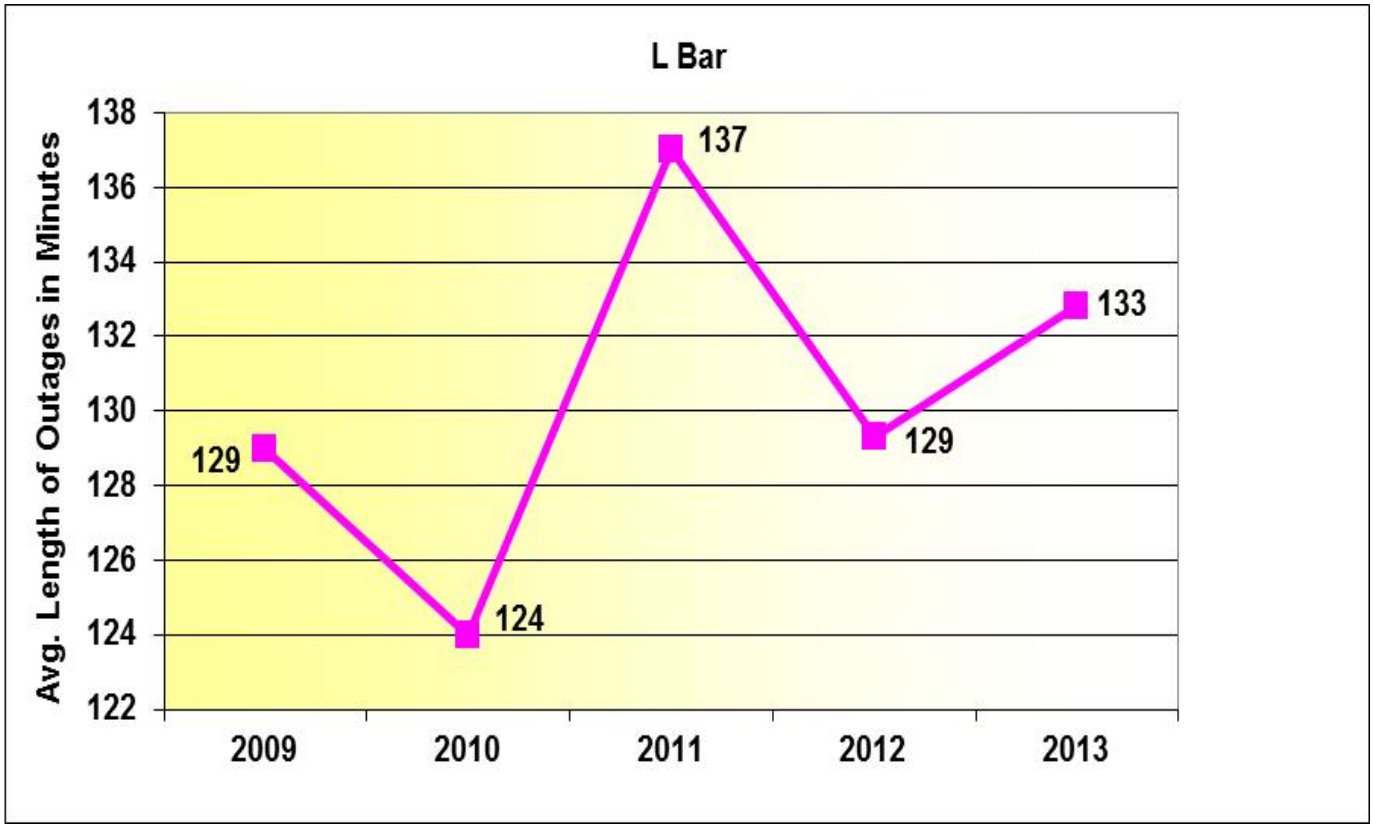
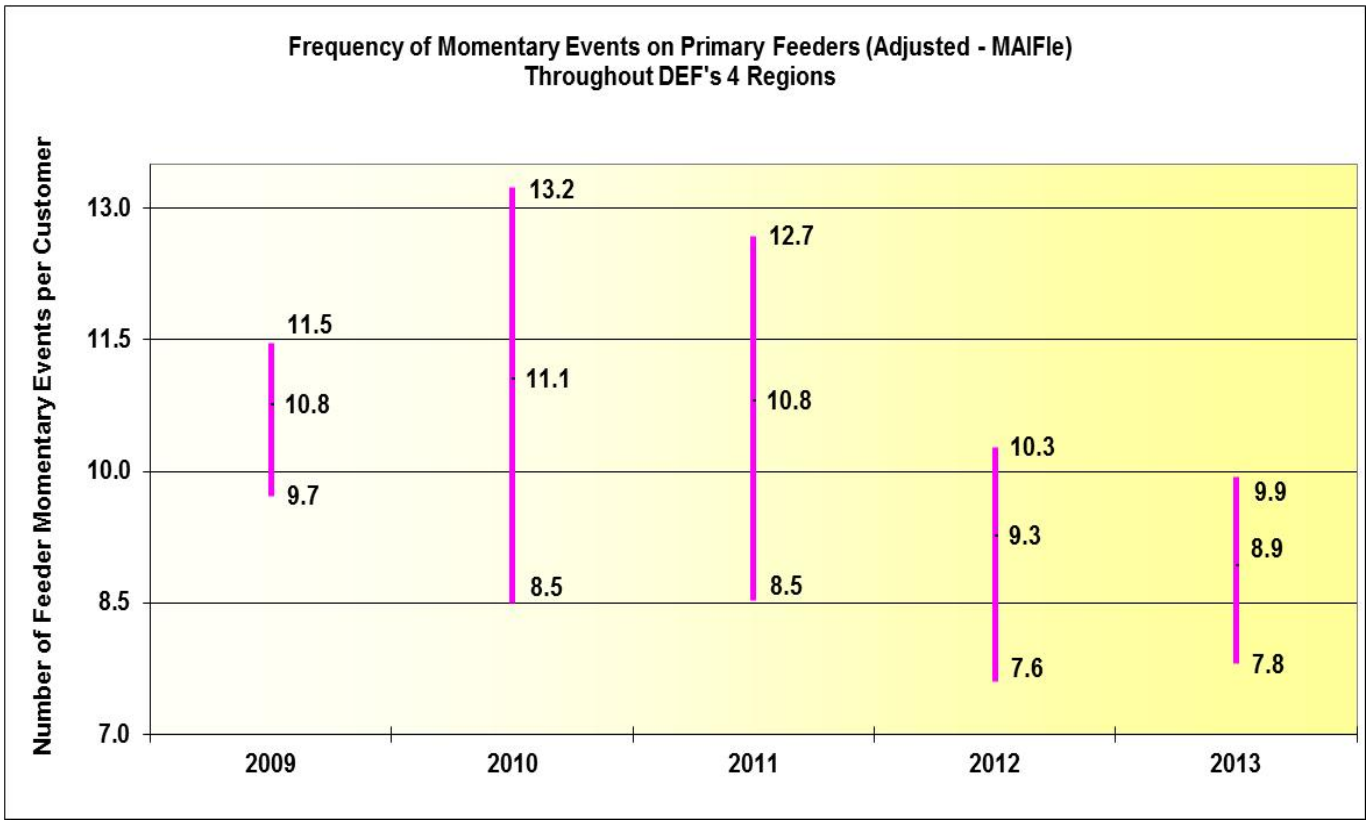


Figure 3-5 illustrates the frequency of momentary events on primary circuits for DEF's customers recorded across its system. These momentary events often affect a small group of customers. A review of the supporting data suggests that the MAIFIe results between 2009 and 2013 appear to be trending downward showing improvement. The South Central region appears to have the best (lowest) results for the last five years, even though there was a 3 percent increase from 2012 to 2013. The South Coastal region appears to have the worst (highest) results for the last five years, even though there was a 4 percent decrease from 2012 to 2013.

Figure 3-5. MAIFIe across DEF's Four Regions (Adjusted)

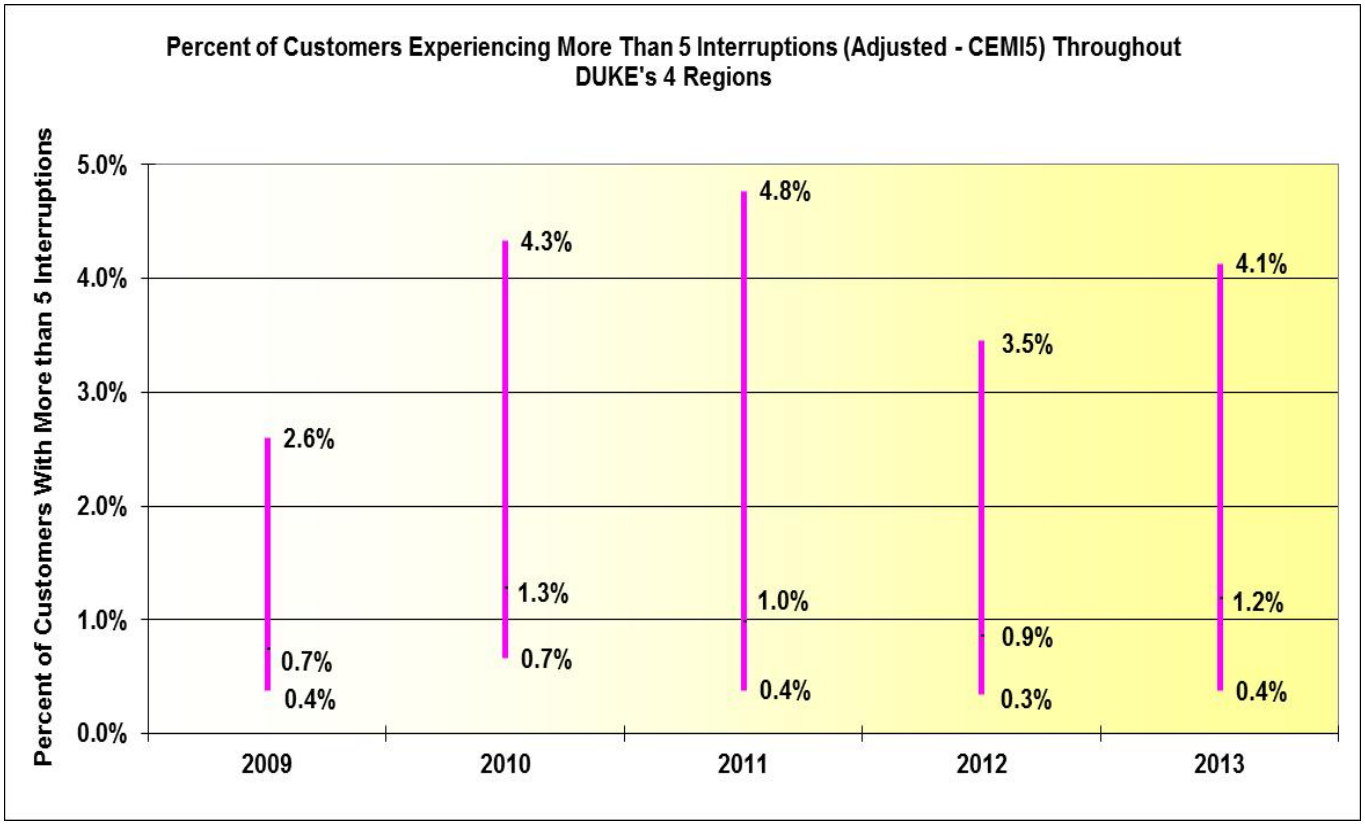


DEF's Regions with the Highest and Lowest Adjusted MAIFIe Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest MAIFIe	South Coastal	South Coastal	South Coastal	South Coastal	South Coastal
Lowest MAIFIe	South Central	South Central	South Central	South Central	South Central

Figure 3-6 charts the percentage of DEF's customers experiencing more than five interruptions over the last five years. DEF reported an increase in the average CEMI5 performance from 0.9 percent in 2012 to 1.2 percent in 2013. The average CEMI5 is trending slightly upward over the past five years. The South Costal region continues to have the lowest reported percentage for all of DEF's regions and the North Coastal region continues to have the highest reported percentage.

Figure 3-6. CEMI5 across DEF's Four Regions (Adjusted)



DEF's Regions with the Highest and Lowest Adjusted CEMI5 Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest CEMI5	North Coastal	North Coastal	North Coastal	North Coastal	North Coastal
Lowest CEMI5	South Coastal	South Central	South Coastal	South Coastal	South Coastal

Figure 3-7 shows the fraction of multiple occurrences of feeders using a three-year and five-year basis. During the period of 2009 to 2013, the five-year fraction of multiple occurrences is trending upward along with the three-year fraction of multiple occurrences. The Three Percent Feeder Report lists the top three percent of feeders with the most feeder outage events. The fraction of multiple occurrences is calculated from the number of recurrences divided by the number of feeders reported.

Staff notes that one of DEF's feeders was on the Three Percent Feeder Report for five years back-to-back. According to DEF, tree outages and the configuration of the circuit contributed to the vast majority of the outage causes for the feeder that was listed on the report for five years in succession. DEF installed three sets of switches that will allow some of this feeder's load to be transferred to an adjacent feeder during lengthy outages. DEF completed this upgrade in early 2014. DEF also trimmed 100 percent of the feeder and laterals miles for this feeder in 2013.

Another feeder was on the report for four years with the last two years consecutively. Also, this feeder had issues with tree outages. DEF noted that it trimmed 100 percent of the six feeder miles in April 2014. DEF will complete the remaining 39.4 lateral miles by the end of 2014. One outage investigation in 2013 identified a branch line recloser that was poorly coordinated with the feeder breaker. The recloser was replaced with a fuse that will prevent future feeder breaker outages. DEF will also install a set of fuses at the substation in 2014.

Figure 3-7. DEF's Three Percent Feeder Report (Adjusted)

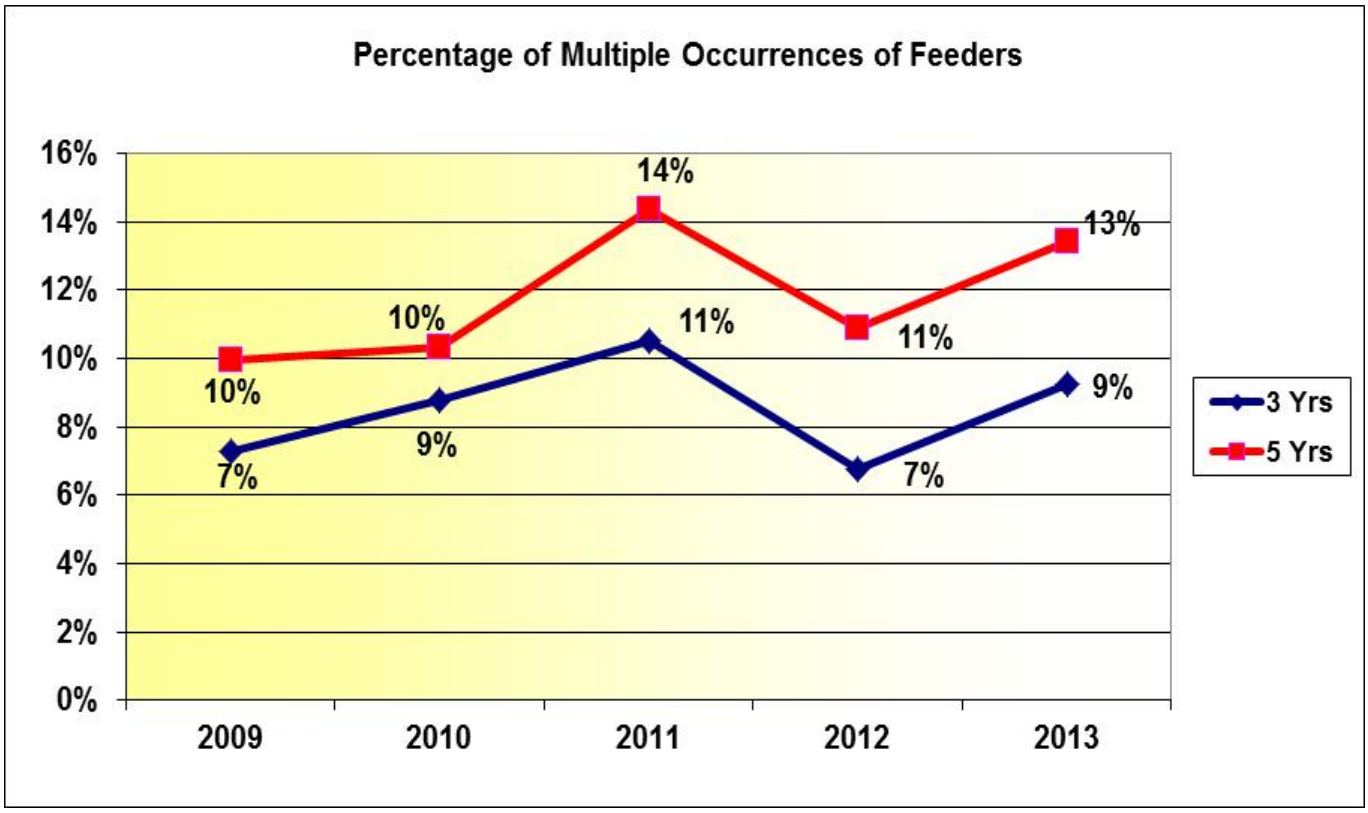
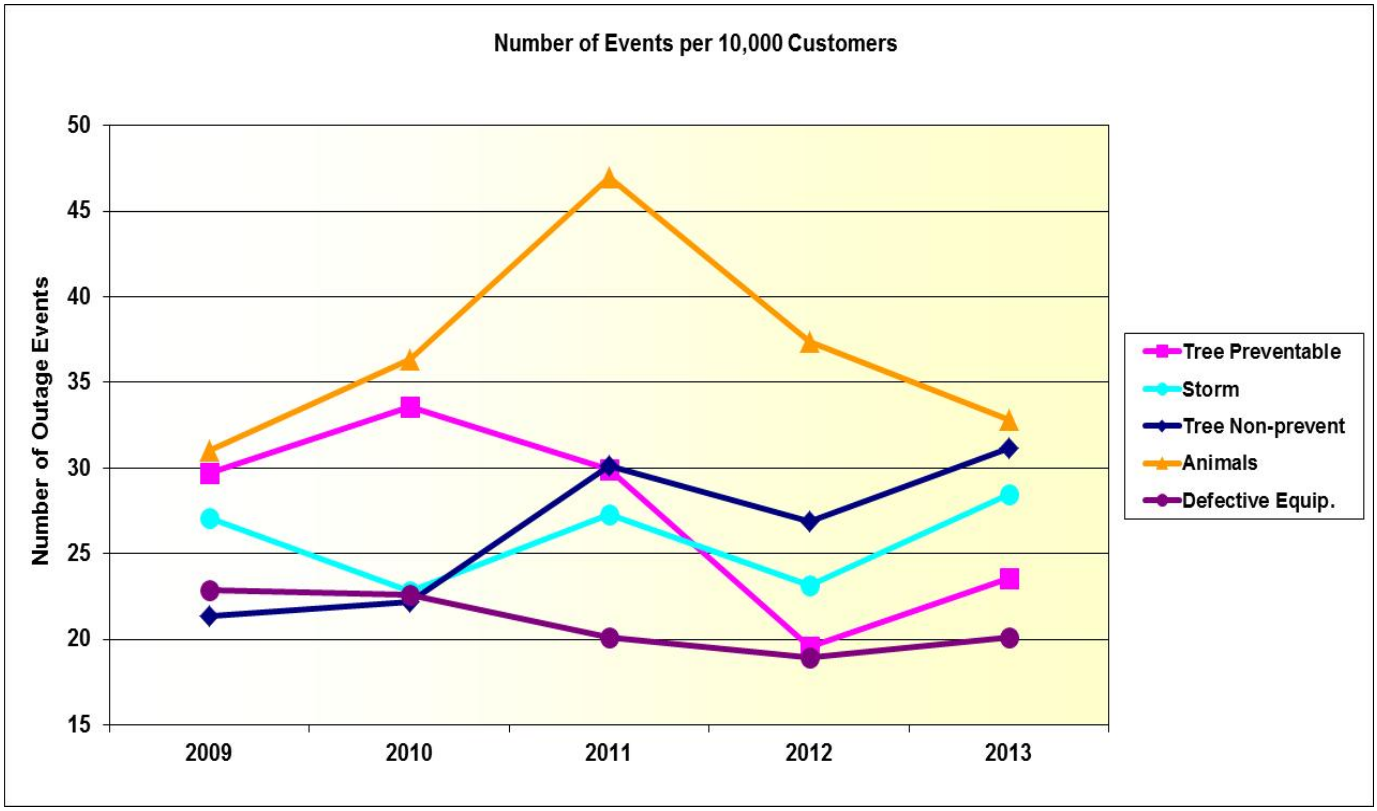


Figure 3-8 shows the top five causes of outage events on DEF's distribution system normalized to a 10,000-customer base. The figure is based on DEF's adjusted data and represents approximately 57 percent of the top ten causes of outage events that occurred during 2013. For the five-year period, the top five causes of outage events were Animals (14 percent), Tree Non-Preventable (13 percent), Storm (12 percent), Tree Preventable (10 percent), and Defective Equipment (8 percent) on a cumulative basis. The outage events caused by animals is trending upward even though there was an 18 percent decrease from 2012 to 2013. DEF noted that it installs animal guards proactively on all new overhead equipment installations and installs animal guards on a targeted basis based upon outage investigations and trends identified in the field. Tree Non-Preventable, and Storms are trending upward and both had a 7 percent and 12 percent increases, respectively, in the number of outages from 2012 to 2013. The outages caused by Tree-Preventable and Defective Equipment are both trending downward. There was an 11 percent increase for Tree-Preventable and a 1 percent increase from Defective Equipment in the number of outages from 2012 to 2013.

Figure 3-8. DEF's Top Five Outage Causes (Adjusted)



Observations: DEF's Adjusted Data

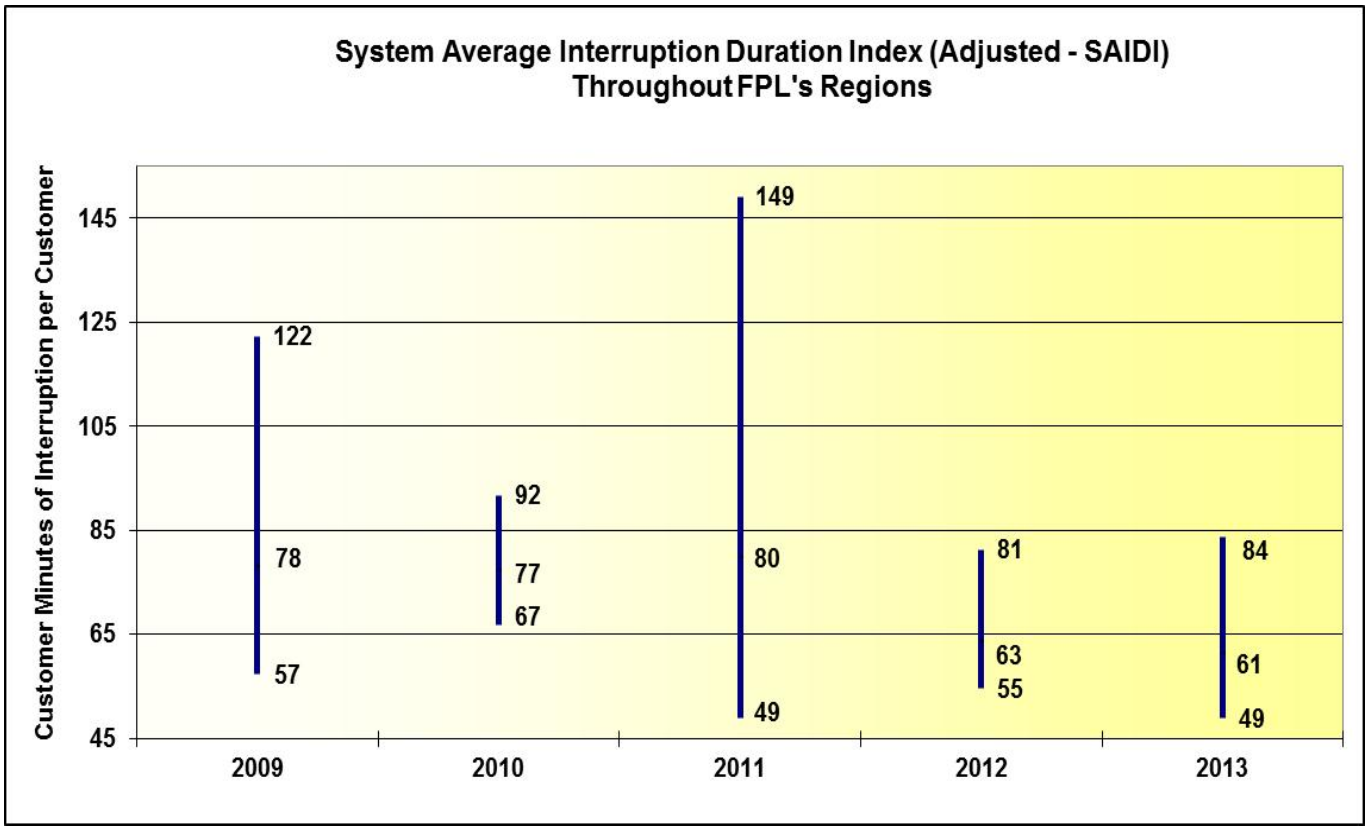
DEF's trend for the SAIDI, SAIFI and MAIFIe are trending downward over the past five years. The CAIDI, CEMI5, L-Bar, the Three-Year Percent of Multiple Feeder Outage events, and the Five-Year Percent of Multiple Feeder Outage events are all trending upward over the five-year period. All of the reliability indices, except MAIFIe, had increases from 2012 to 2013. The results of the North Coastal Region have continually demonstrated the highest (poorest) service reliability indices of the four regions within DEF for the past five years. The South Coastal and South Central regions continue to have the best results of the four regions within DEF for the last five years.

The North Coastal region is rural and has more square miles compared to DEF's other service territories. DEF reported seven days of extreme weather that were not excludable and these extreme weather events caused the North Coastal region to have higher indexes. DEF, in 2013, implemented a process to help determine why faults occur and what can be done to eliminate them. The process is called the Outage Follow-Up (OFU) and it entails investigations of significant outages to identify the primary root cause and implement solutions to mitigate the reoccurrence of the root cause. DEF defines Primary Root Cause as a cause for which action can be taken to correct the situation. According to DEF, most Primary Root Causes are actionable and many initiating causes (e.g. lightning, traffic accident) are not actionable. The OFU process is also based upon accumulation of trending data over time. DEF explained that in order to develop trends and solutions, a significant number of root cause investigations will need to be conducted. The lessons learned from these investigations will then be incorporated by DEF into construction standards and used to develop and expand existing programs.

Florida Power & Light Company: Adjusted Data

Figure 3-9 shows the highest, average, and lowest adjusted SAIDI recorded across FPL's system that encompasses four management regions with 16 service areas. The highest and lowest SAIDI values are the values reported for a particular service area. FPL had an overall decrease of two minutes (3 percent) to the average SAIDI results for 2013 compared to 2012. The average SAIDI appears to be trending downward over the five-year period of 2009 to 2013. The 2013 average SAIDI results are the lowest (best) for the five-year period for a second consecutive year.

Figure 3-9. SAIDI across FPL's Sixteen Regions (Adjusted)

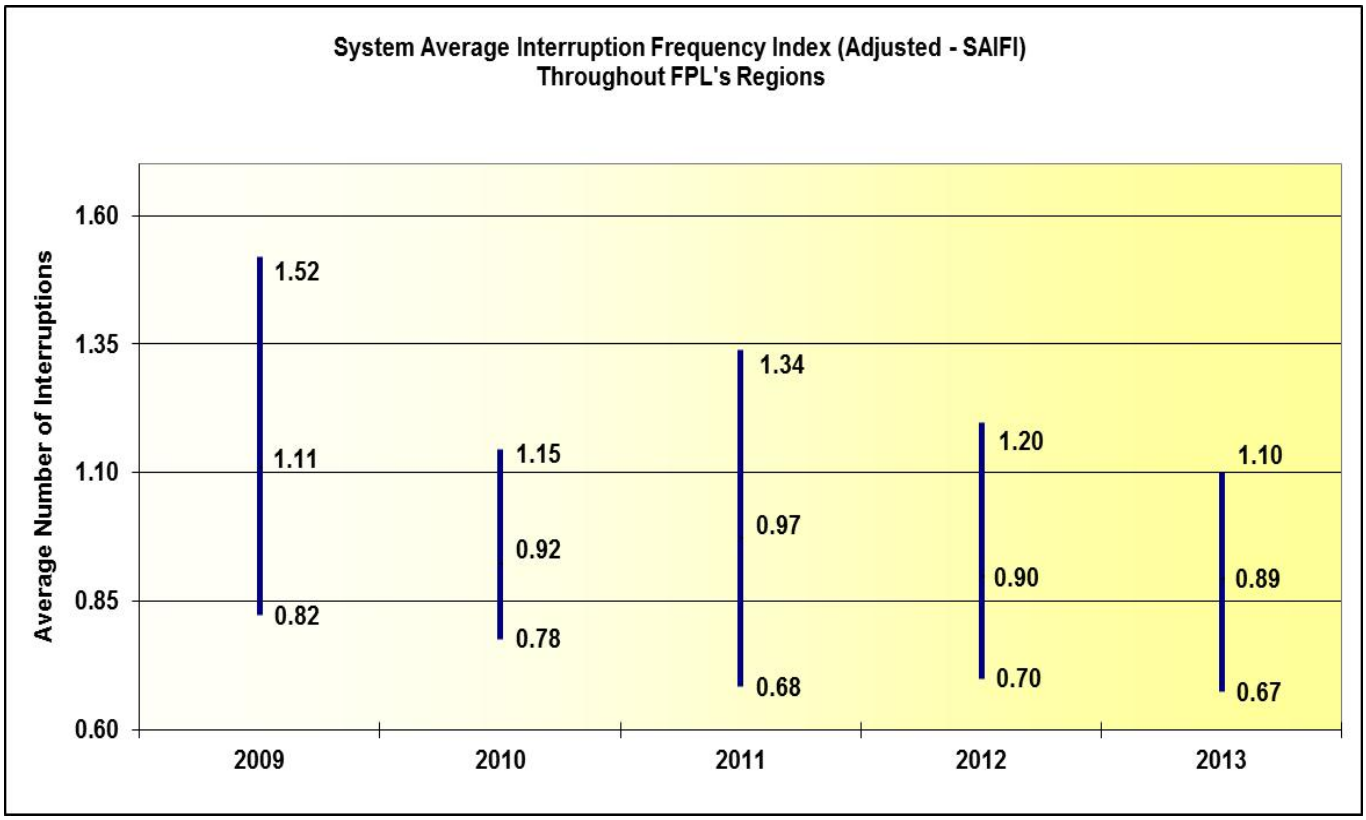


FPL's Regions with the Highest and Lowest Adjusted SAIDI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest SAIDI	South Dade	Naples	Central Florida	South Dade	North Florida
Lowest SAIDI	Pompano	West Palm	Central Dade	West Palm	Pompano

Figure 3-10 is a chart of the highest, average, and lowest adjusted SAIFI across FPL's system. FPL had a decrease in the system average results to 0.89 outages in 2013, compared to 0.90 outages in 2012, which is a 1 percent decrease. FPL reported a decrease to the highest SAIFI for Boca Raton of 1.10 interruptions in 2013 compared to West Dade's 1.20 interruptions in 2012. The region reporting the lowest adjusted SAIFI for 2013 was Central Dade at 0.67 interruptions compared to North Dade's 0.70 interruptions in 2012. The highest, average and lowest SAIFI appear to be trending downward suggesting improvements. The 2013 average SAIFI results are the lowest (best) for the five-year period of 2009 to 2013.

Figure 3-10. SAIFI across FPL's Sixteen regions (Adjusted)

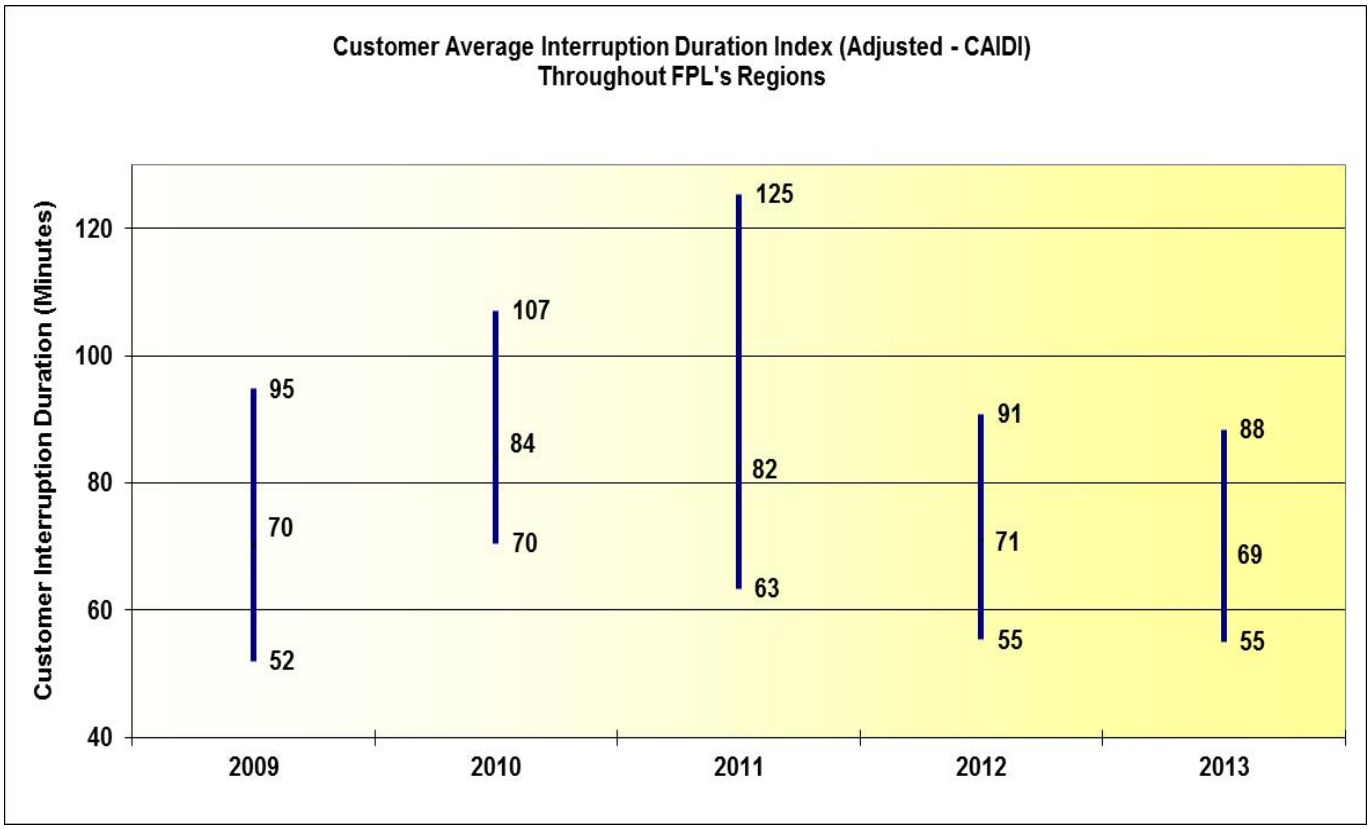


FPL's Regions with the Highest and Lowest Adjusted SAIFI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest SAIFI	South Dade	West Dade	North Florida	West Dade	Boca Raton
Lowest SAIFI	Pompano	Central Dade	Central Dade	North Dade	Central Dade

Figure 3-11 is a chart of FPL's highest, average, and lowest CAIDI expressed in minutes. FPL's adjusted average CAIDI has dropped approximately 2 percent from 71 minutes in 2012, to 69 minutes in 2013. The average duration of CAIDI is trending downward. For 2013, the Boca Raton service area once again reported the lowest duration of CAIDI, which was 55 minutes and was the same as 2012. The highest duration of CAIDI was 88 minutes for the North Dade service area for 2013, which is 3 percent lower than the highest CAIDI minutes in 2012.

Figure 3-11. CAIDI across FPL's Sixteen Regions (Adjusted)



FPL's Regions with the Highest and Lowest Adjusted CAIDI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest CAIDI	North Dade	Naples	Central Florida	North Dade	North Dade
Lowest CAIDI	Boca Raton	Brevard	Boca Raton	Boca Raton	Boca Raton

Figure 3-12 depicts the average length of time that FPL spends recovering from outage events, excluding hurricanes and other extreme outage events and is the index known as L-Bar (Average Service Restoration Time). FPL had a 7 percent decrease in L-Bar from 178 minutes in 2012, to 165 minutes in 2013. The 2013 L-Bar result is the lowest average duration of outages since 2009, indicating FPL is spending shorter times restoring service. The L-Bar measures the average length of time of a single service interruption.

Figure 3-12. FPL's Average Duration of Outages (Adjusted)

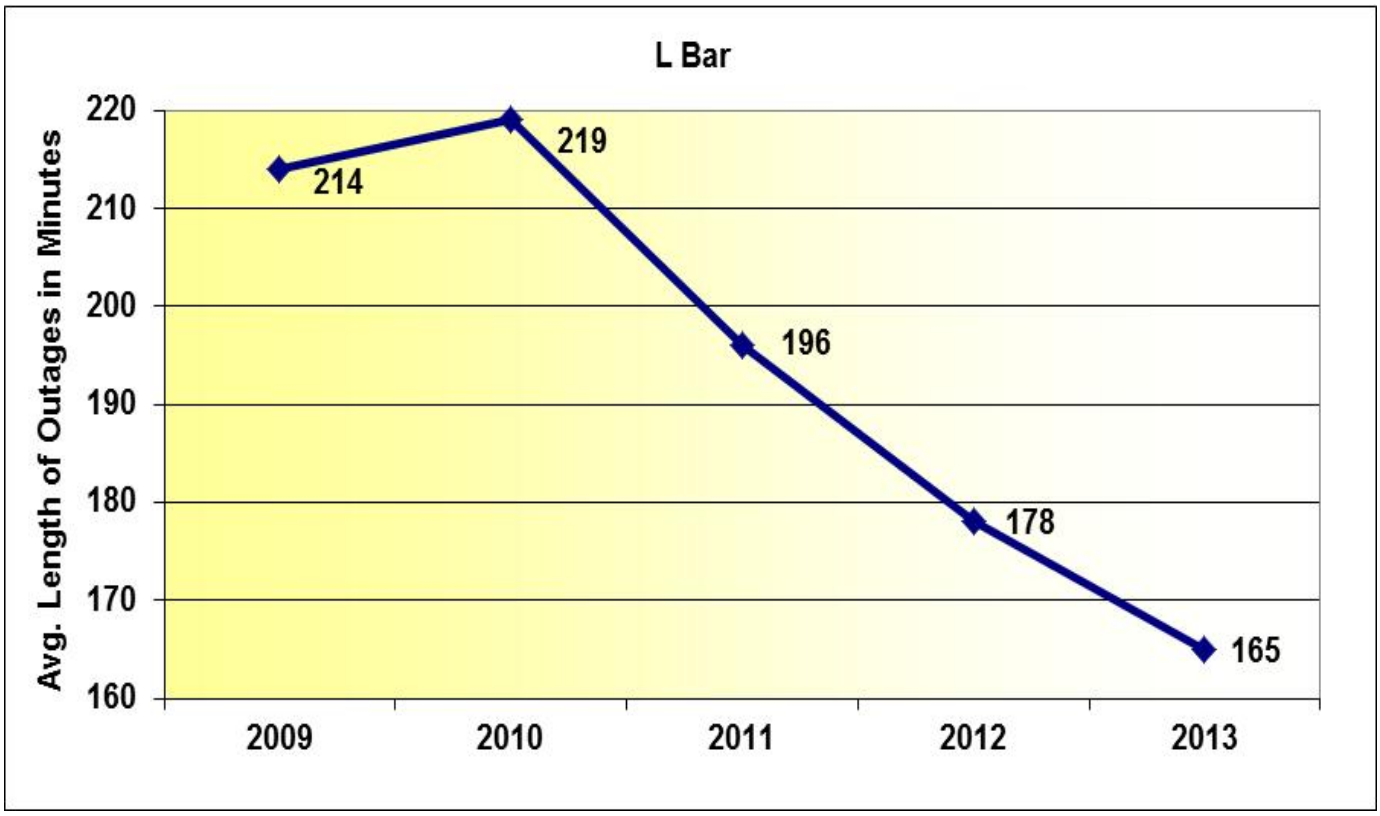
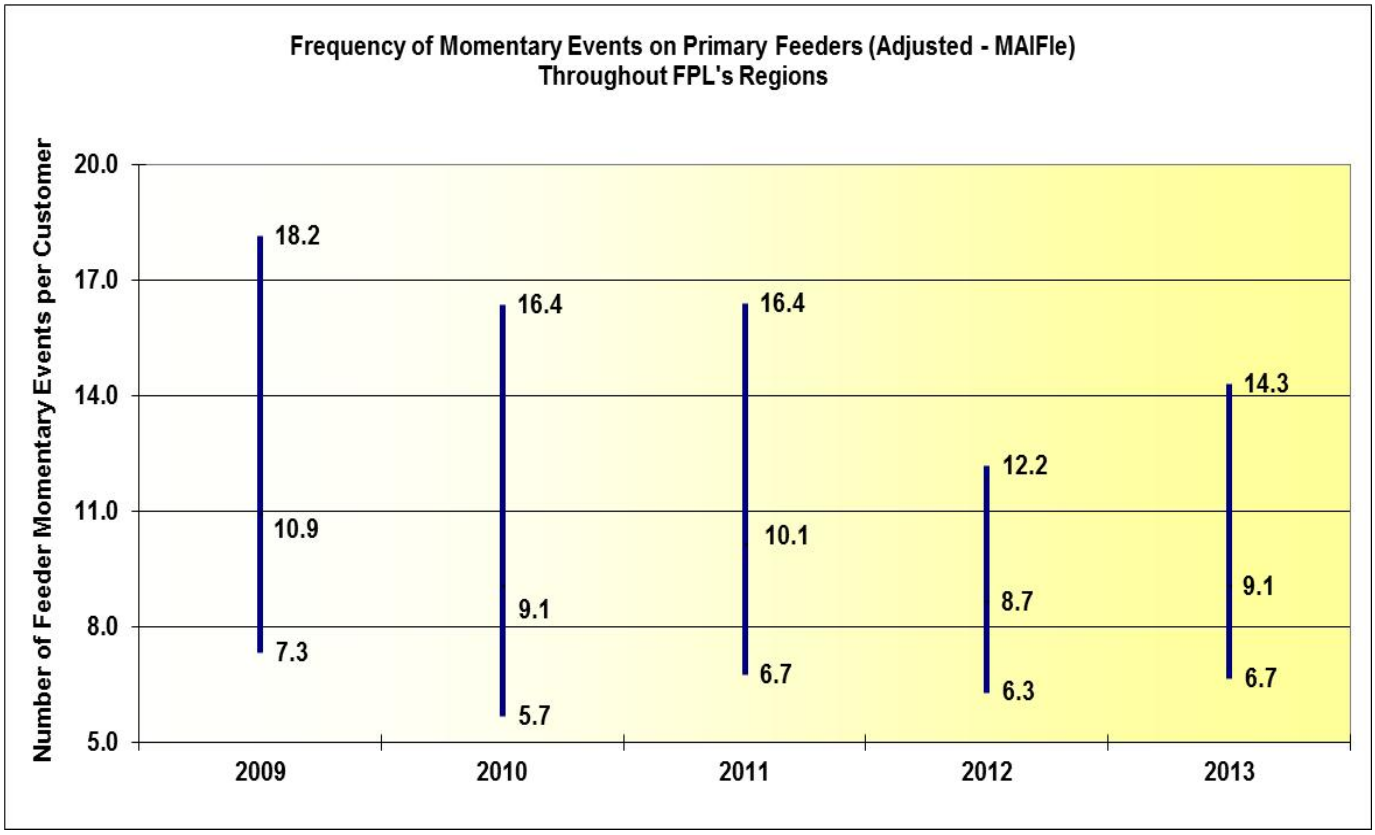


Figure 3-13 is the highest, average, and lowest adjusted MAIFIe recorded across FPL's system. FPL's Toledo Blade, Treasure Coast, and North Florida service areas have experienced the least reliable MAIFIe results of the 16 service areas of FPL since 2009. The Pompano, Central Dade, and Naples service areas had the fewest momentary events since 2009. The results have been trending downward (improving) over the last five years even though there is a 4 percent increase in the average MAIFIe results from 2012 to 2013.

Figure 3-13. MAIFIe across FPL's Sixteen Regions (Adjusted)

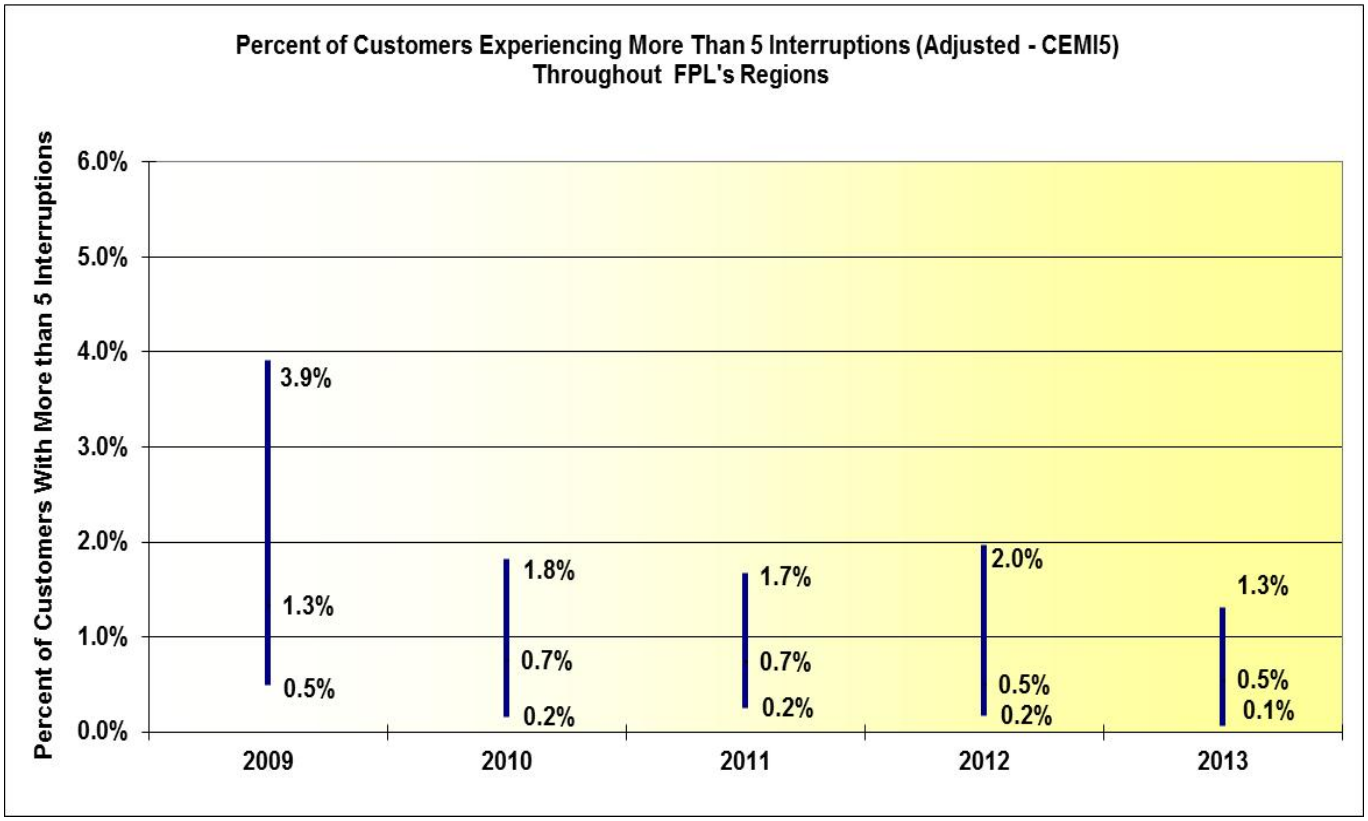


FPL's Regions with the Highest and Lowest Adjusted MAIFIe Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest MAIFIe	Toledo Blade	Toledo Blade	North Florida	Treasure Coast	Treasure Coast
Lowest MAIFIe	Pompano	Pompano	Central Dade	Naples	Central Dade

Figure 3-14 shows the highest, average, and lowest adjusted CEMI5. FPL's customers with more than five interruptions per year appear to be decreasing and trending downward. The service areas experiencing the highest CEMI5 over the five-year period appear to fluctuate among North Florida, South Dade, West Dade, and Boca Raton. Pompano and Central Dade are reported as having the lowest percentages in the last five years. The average CEMI5 results were the same in 2012 and 2013 at 0.5 percent.

Figure 3-14. CEMI5 across FPL's Sixteen Regions (Adjusted)



FPL's Regions with the Highest and Lowest Adjusted CEMI5 Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest CEMI5	South Dade	North Florida	North Florida	West Dade	Boca Raton
Lowest CEMI5	Pompano	Pompano	Central Dade	Pompano	Pompano

Figure 3-15 is a graphical representation of the percentage of multiple occurrences of FPL's feeders and is derived from The Three Percent Feeder Report, which is a listing of the top three percent of problem feeders reported by the utility. The fraction of multiple occurrences is calculated from the number of recurrences divided by the number of feeders reported. The three-year percentage increased from 7 percent in 2012 to 9 percent in 2013. The five-year percentage also increased from 11 percent in 2012 to 12 percent in 2013. The five-year percentage appears to be trending upward as the three-year percentage is relatively flat.

Staff notes there was one feeder that was on the Three Percent Feeder Report for four years with the last two years consecutively. From 2009 to 2013, FPL replaced multiple insulators, lightning arresters, cross-arms, disconnect switches, line front cabinet, the reframing of a slack span, 26 poles and reinforced 19 poles. In 2013, FPL trimmed the entire feeder circuit, and upgraded and strengthened the feeder. In early 2014, FPL performed thermal and visual inspections. The inspections revealed follow-up work that will be completed mid-2014. A mid-cycle feeder and lateral trimming and another visual and thermal inspection are scheduled for 2014.

There were three feeders that were listed on the Three Percent Feeder Report for three years with the last two years consecutively. For one of the feeders, FPL replaced wire, arresters, cross-arms, regulator, transformers, 262 poles, animal guards, disconnect switches, and insulators. Hot spot trimming was completed in 2011, 2012, and 2013. In early 2014, FPL installed an IntelliRuptor Automated Feeder Switches (AFS) and performed further inspections. The inspection revealed follow-up work is needed that will be completed mid-2014.

For the second feeder listed on the report for three years, FPL noted the equipment that was replaced included multiple poles, pole bonds, splices, cross-arms, insulators, fuse switches, riser shields, lightning arrestors, and disconnect switches. Feeder backbone and mid-cycle trimming were completed each year from 2010 to 2013. FPL also mentioned this feeder was hardened in 2013. In early 2014, FPL performed thermal and visual inspections that identified follow-up work was needed. All follow-up work has been completed and included replacing an insulator, lightning arresters, fuse switches, guy markers, a cross-arm and the installation of phase spreaders.

For the last feeder on the report, completed work noted by FPL during 2010-2012 included multiple thermal and visual inspections and the replacement of multiple cross-arms, insulators, lightning arrestors, and disconnect switches. In 2013, FPL initiated pole inspections and hotspot trimming. FPL will convert a 500 foot section of overhead line to underground which should be completed by mid-2014. In 2014, three sets of disconnect switches and two IntelliRupter AFS's will be installed on the feeder. FPL also constructed a 1.5 mile feeder tie to transfer a section of this feeder to an adjacent one, which will limit exposure and facilitate restoration.

Figure 3-15. FPL's Three Percent Feeder report (Adjusted)

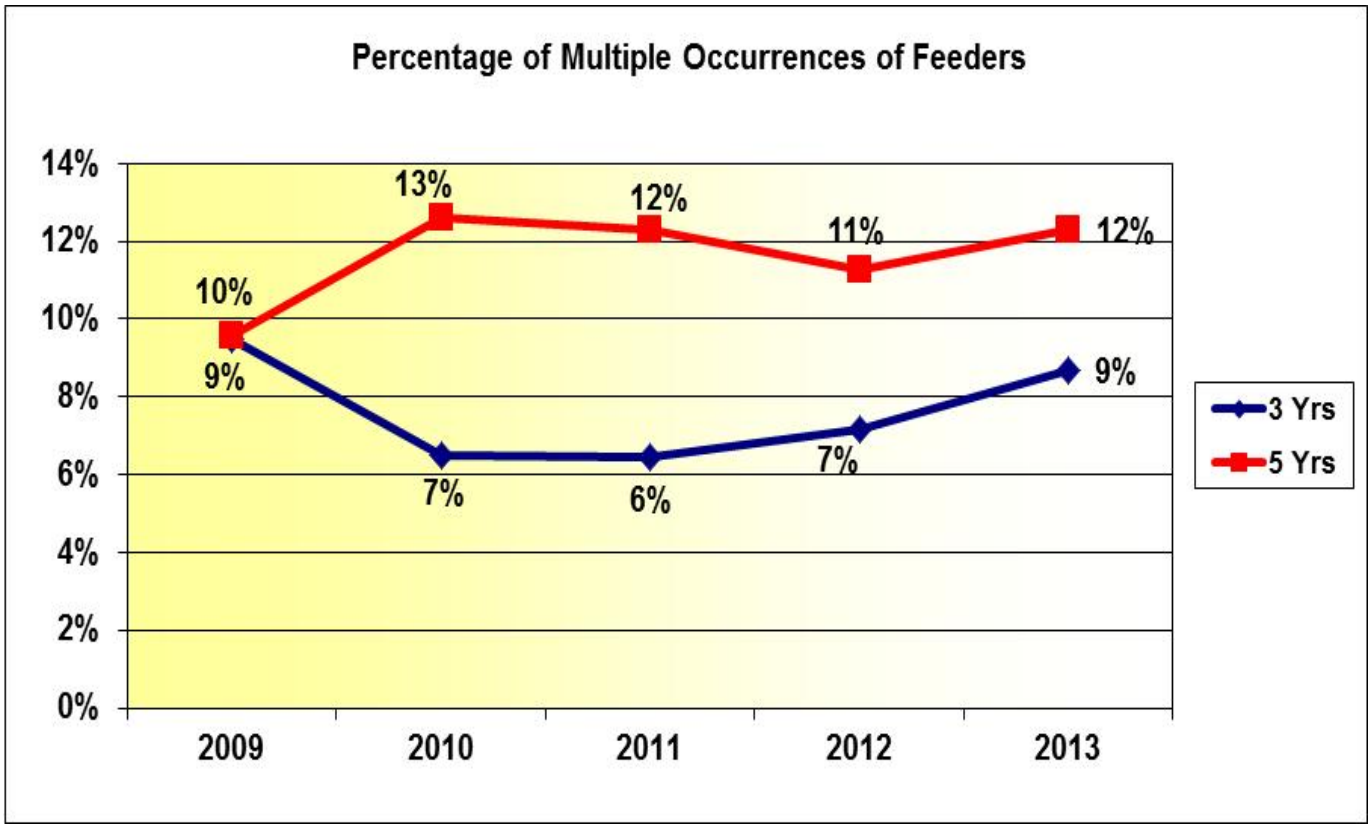
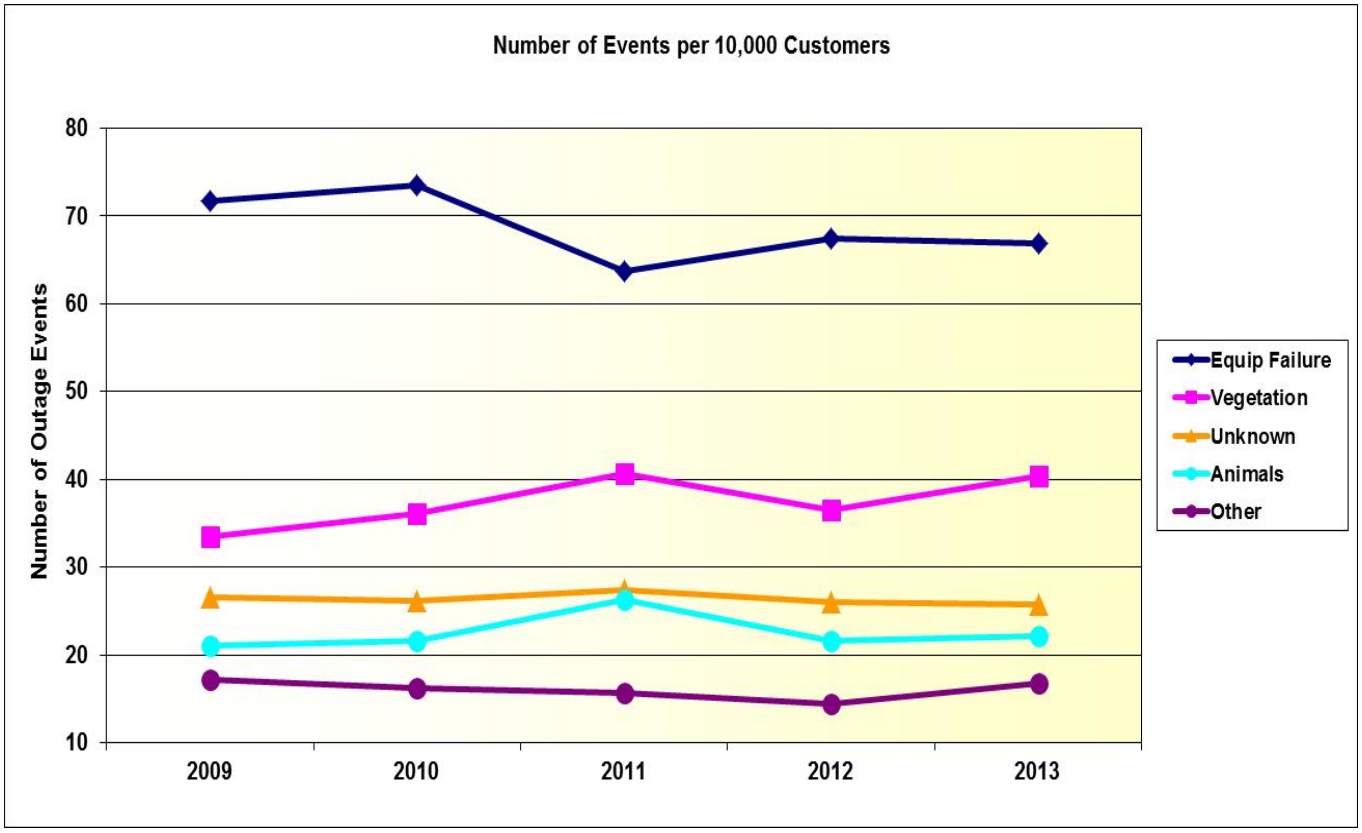


Figure 3-16 depicts the top five causes of outage events on FPL's distribution system normalized to a 10,000-customer base. The graph is based on FPL's adjusted data of the top ten causes of outage events. For the five-year period, the five top causes of outage events included Equipment Failures (32 percent), Vegetation (19 percent), Unknown (12 percent), Animals (11 percent), and Other Causes (8 percent) on a cumulative basis. The data shows an increasing trend in outage events caused by vegetation and animals, even though the number of outages did not change for outages caused by animals from 2012 to 2013. The outage events due to equipment failure are trending downward, which continues to dominate the highest percentage of outage causes throughout the FPL regions. The outage events due to unknown and other causes are remaining relatively flat over the five-year period.

FPL explained in 2013, seven different equipment code types were included in Equipment Failure outages: underground cable (25 percent of the 31,110 equipment failure outages); connector (18 percent), overhead wire (17 percent); transformer (14 percent); fuse switch (9 percent); lightning arrester (5 percent); and all other (12 percent). FPL's reliability programs that address outages caused by equipment failure include: priority feeders; cable lateral; AFS; hand hole inspections/pad-mounted transformers; submarine cable; cable feeder; RA type switch replacement; Line Fault switch cabinets inspections and replacements; momentary outliers; outlier devices; and overhead line inspections and repairs. FPL stated that all regions are affected by equipment failures. It appears that an average of 85 equipment failures occur daily throughout FPL's regions.

FPL mentioned that outages caused by vegetation are addressed through its Vegetation Management Program. The Vegetation Management Program includes: a three-year average trimming cycle for feeders; a six-year average trimming cycle for laterals; mid-cycle trimming; promotion of FPL's Right Tree Right Place program; and customer trim requests.

Figure 3-16. FPL's Top Five Outage Causes (Adjusted)



Observations: FPL's Adjusted Data

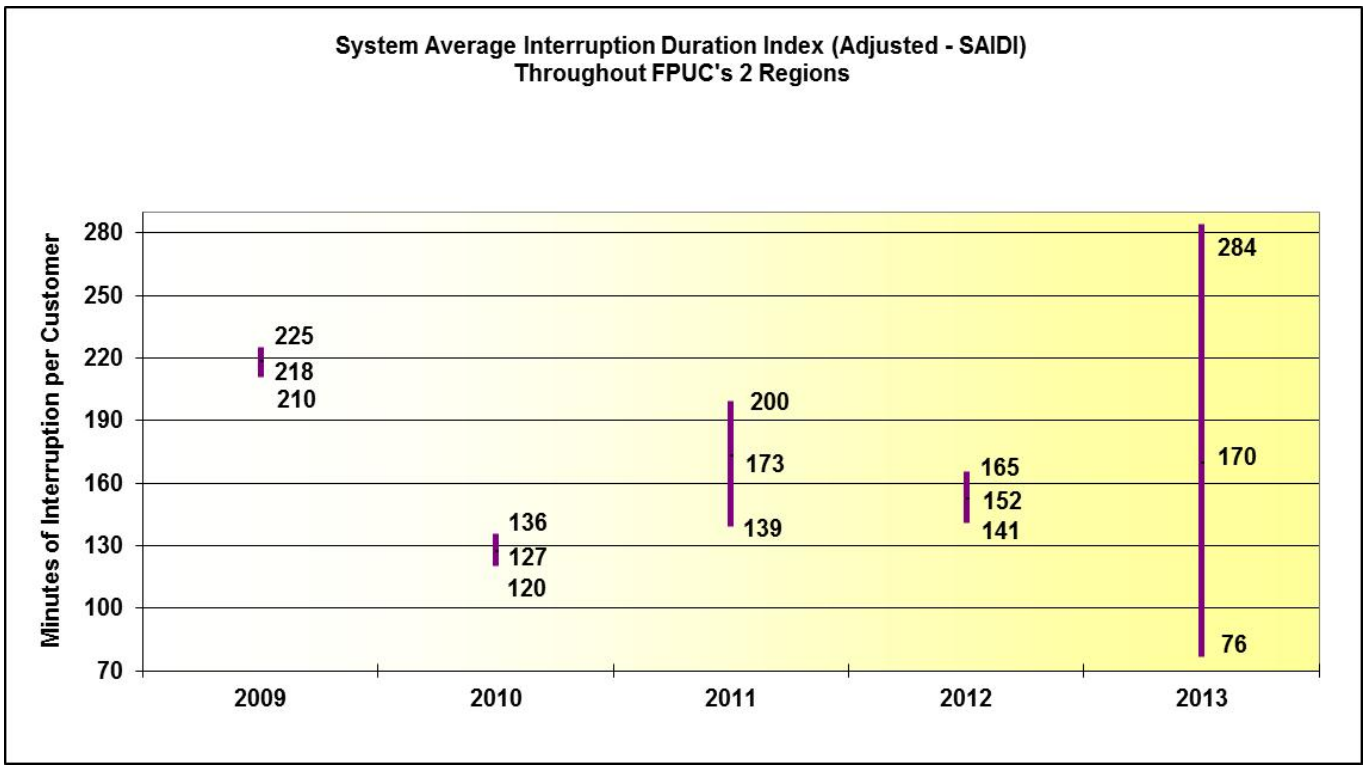
The least reliable overall results seem to fluctuate between FPL's different service areas, as do the best service reliability results. The 2013 report shows the system indices for SAIDI, SAIFI, CAIDI, CEMI5, and the L-Bar are slightly lower or better than the 2012 results. The system index for MAIFe, the Three-Year Percentages of Multiple Feeder Outage events and the Five-Year Percentages of Multiple Feeder Outage events are higher than the 2012 results. FPL explains that it evaluates its current reliability programs annually to verify the program's need and/or existence. In addition, FPL proposes new reliability programs to improve its reliability performance concentrating on the highest cause codes and those cause codes that have shown trends needing attention. The cause codes that FPL will be concentrating on to improve are equipment failures and vegetation causes of outages.

Florida Public Utilities Company: Adjusted Data

FPUC has two electric divisions, the NW Division, also referred to as Marianna and the NE Division, also referred to as Fernandina Beach. Each division's result is reported separately because the two divisions are 250 miles apart and not directly interconnected. Although the divisions may supply resources to support one another during emergencies, each division has diverse situations to contend with, making it difficult to compare the division's results and form a conclusion as to response and restoration time.

Figure 3-17 shows the highest, average, and lowest adjusted SAIDI values recorded by FPUC's system. The data shows the average SAIDI index is trending downward for the five-year period of 2009 to 2013 even though there was an 11 percent increase from 2012 to 2013. FPUC's 2013 Reliability Report notes that the reliability indicators continue to be heavily influenced by the weather and the small size of the territories.

Figure 3-17. SAIDI across FPUC's Two Regions (Adjusted)

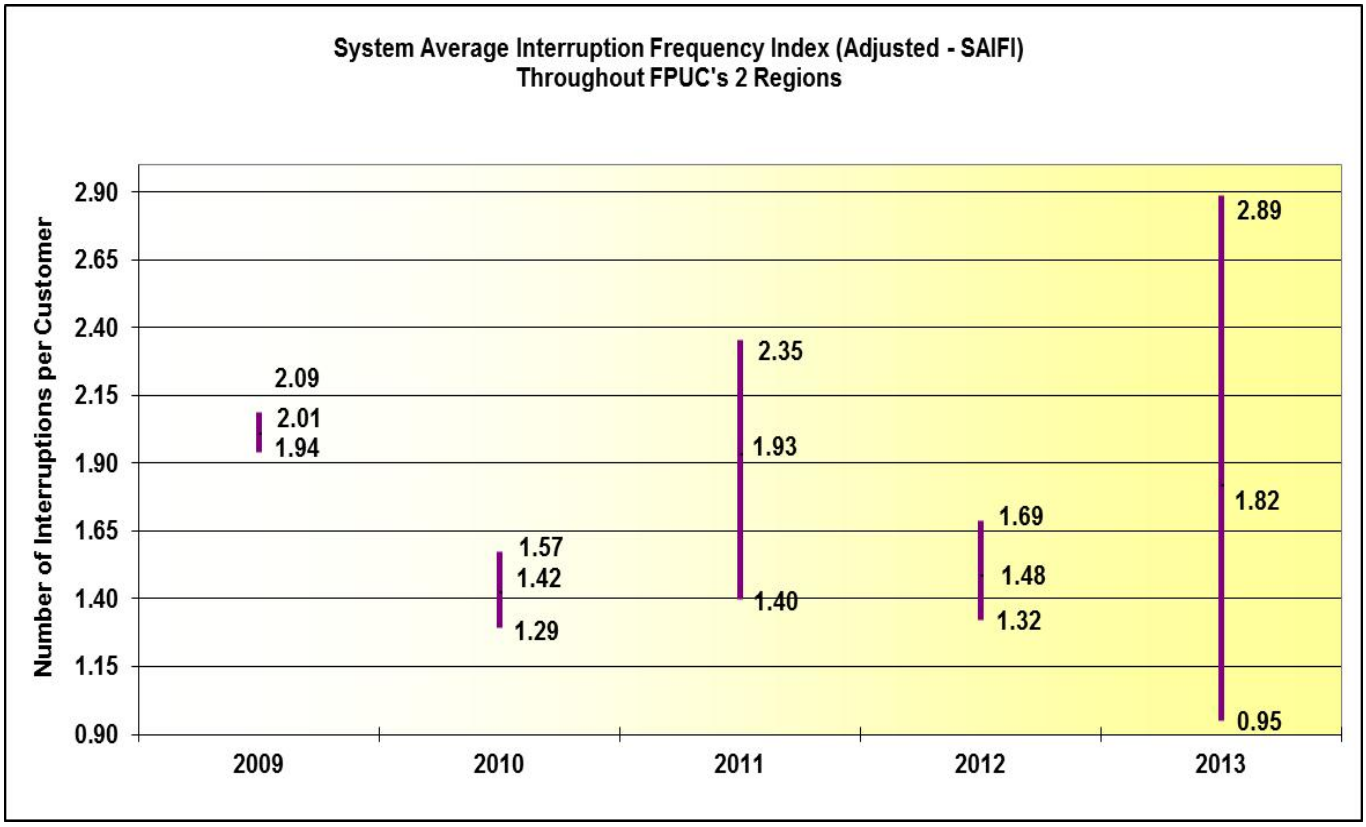


FPUC's Regions with the Highest and Lowest Adjusted SAIDI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest SAIDI	Fernandina(NE)	Marianna (NW)	Fernandina(NE)	Marianna (NW)	Marianna (NW)
Lowest SAIDI	Marianna (NW)	Fernandina(NE)	Marianna (NW)	Fernandina(NE)	Fernandina(NE)

Figure 3-18 shows the adjusted SAIFI across FPUC's two divisions. The data depicts a 17 percent increase in the 2013 average SAIFI reliability index from 2012. The data for the minimum and average SAIFI indices are trending downward over the five-year period of 2009 to 2013 as the trend line for the maximum SAIFI index is trending upward for the same period.

Figure 3-18. SAIFI across FPUC's Two Regions (Adjusted)

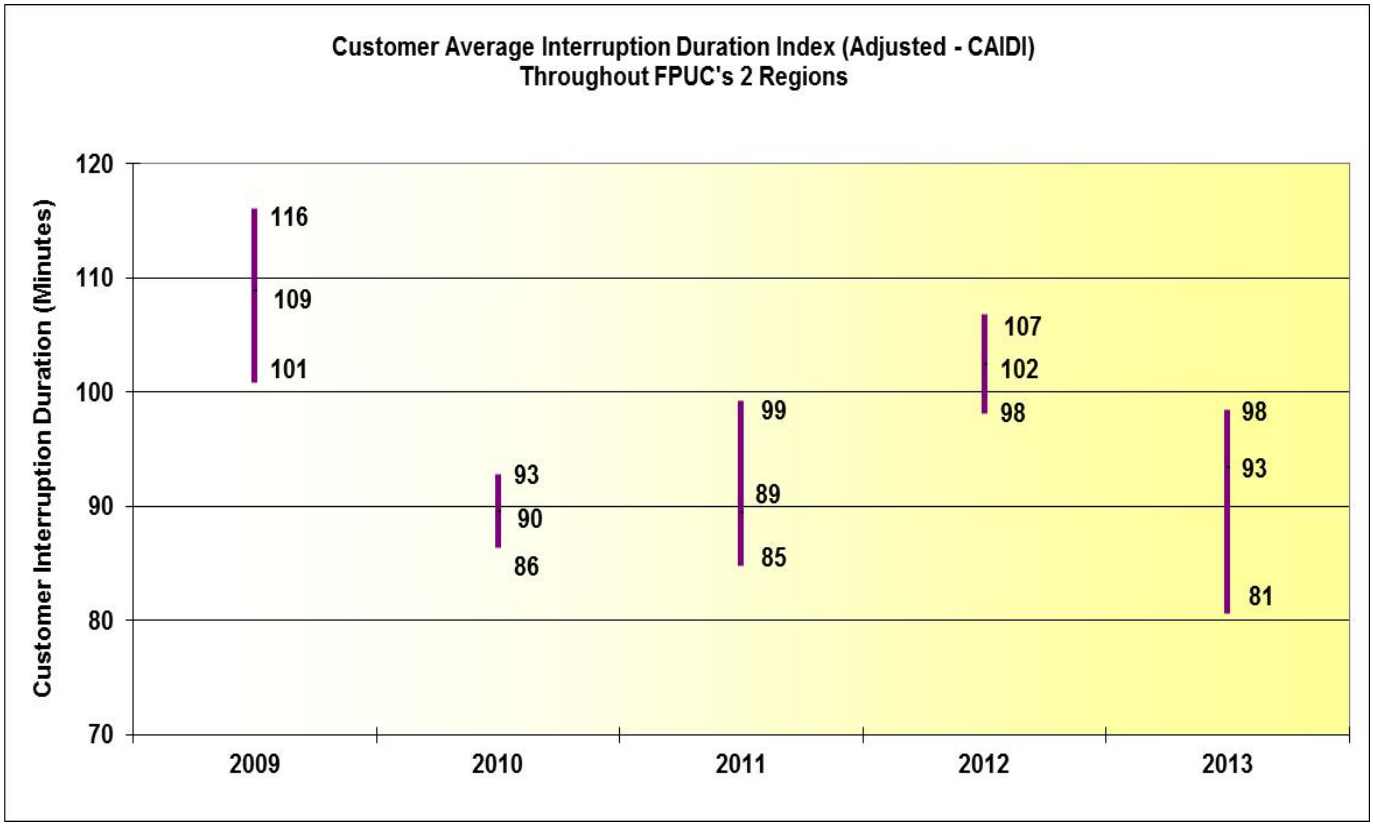


FPUC's Regions with the Highest and Lowest Adjusted SAIFI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest SAIFI	Marianna (NW)	Marianna (NW)	Fernandina(NE)	Marianna (NW)	Marianna (NW)
Lowest SAIFI	Fernandina(NE)	Fernandina(NE)	Marianna (NW)	Fernandina(NE)	Fernandina(NE)

Figure 3-19 shows the highest, average, and lowest adjusted CAIDI values across FPUC's system. FPUC's data shows a 9 percent decrease in the 2013 reliability indices relative to 2012 values. For the past five years, the maximum CAIDI index, the minimum CAIDI index, and the average CAIDI index are trending downward.

Figure 3-19. CAIDI across FPUC's Two Regions (Adjusted)



FPUC's Regions with the Highest and Lowest Adjusted CAIDI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest CAIDI	Fernandina(NE)	Fernandina(NE)	Marianna (NW)	Fernandina(NE)	Marianna (NW)
Lowest CAIDI	Marianna (NW)	Marianna (NW)	Fernandina(NE)	Marianna (NW)	Fernandina(NE)

Figure 3-20 is the average length of time FPUC spends recovering from outage events (adjusted L-Bar). There was a 1 percent decrease in the L-Bar value from 2012 to 2013. The data for the five-year period of 2009 to 2013 suggests that the L-Bar index is still trending downward indicating FPUC is improving on the time to restore service.

Figure 3-20. FPUC's Average Duration of Outages (Adjusted)

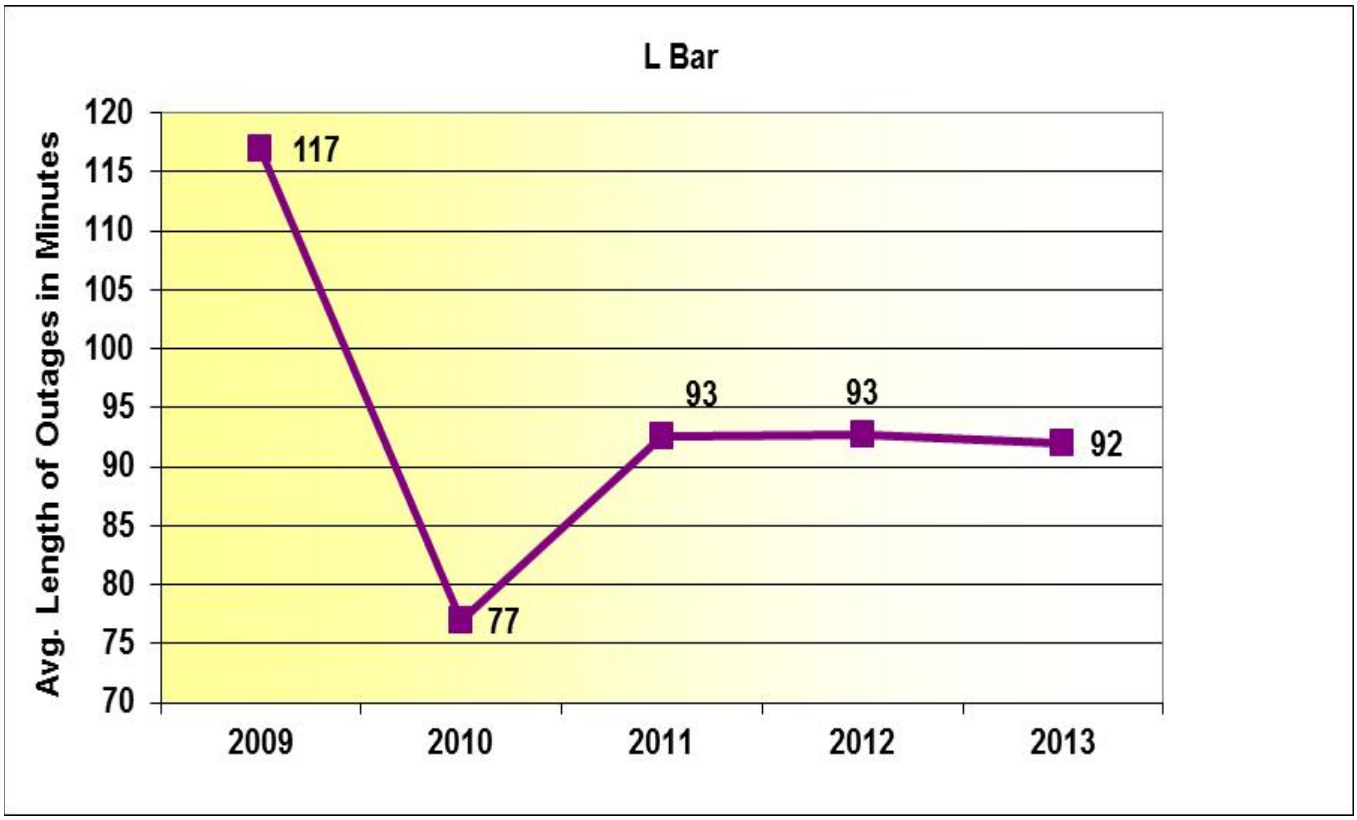
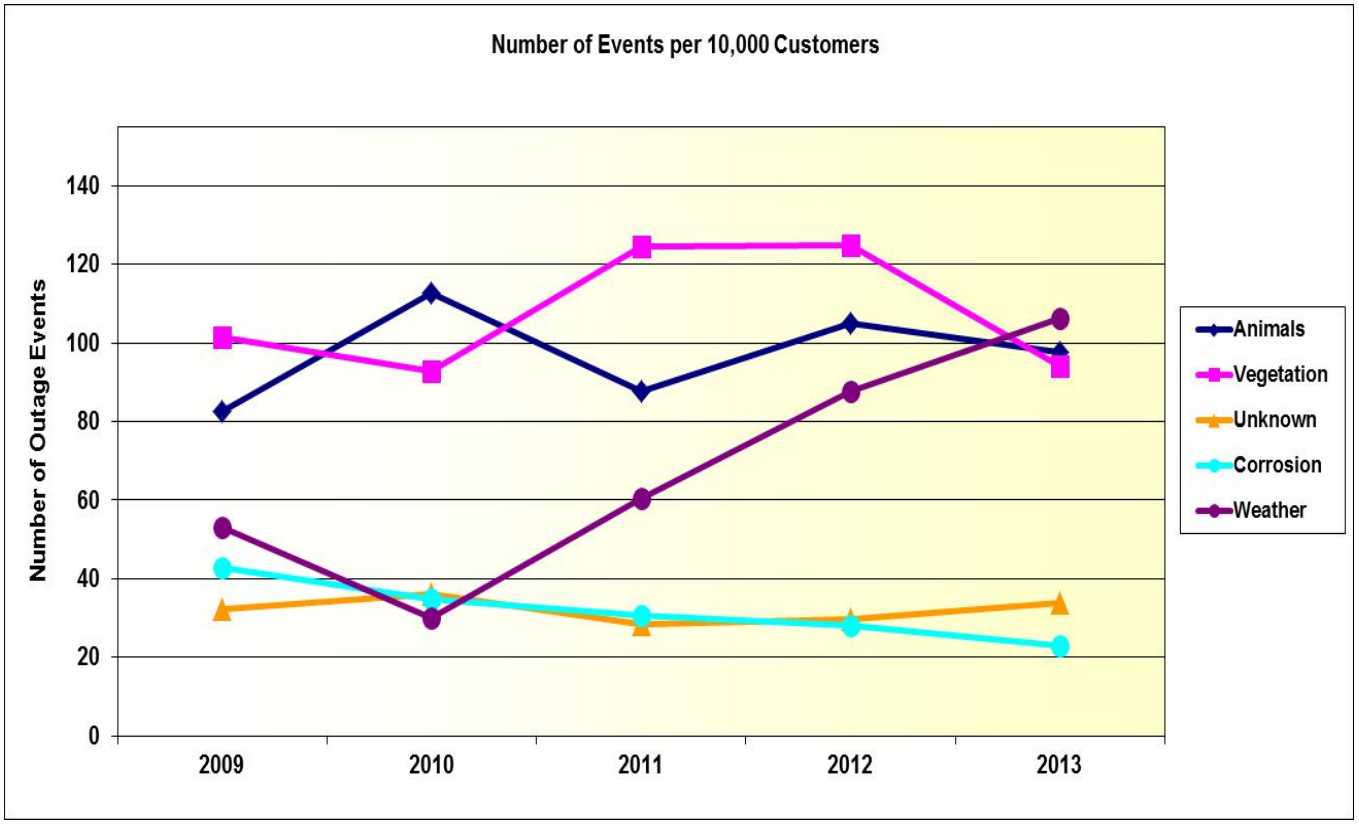


Figure 3-21 shows the top five causes of outage events on FPUC's distribution system normalized to a 10,000-customer base. The figure is based on FPUC's adjusted data of the top ten causes of outages. For 2013, the top five causes of outage events were Vegetation (24 percent), Animals (25 percent), Weather (27 percent), Unknown (9 percent), and Corrosion (6 percent). These five factors represent 89 percent of the total adjusted outage causes in 2013. The causes by animals and weather are trending upward and both causes did increase 0.4 percent and 23 percent from 2012 to 2013, respectively. Concerning the outages caused by animals, FPUC explained that it continues to install animal guards. In addition, FPUC mentioned metal T-bracket designs are being replaced with fiber units, end-caps are added to underground distribution risers and tree trimming is performed as needed and on scheduled cycles. The cause by vegetation is trending upward even though there was a 19 percent decrease from 2012 to 2013. The cause by corrosion is trending downward and there was a 12 percent decrease from 2012 to 2013. The Unknown category caused outages remain relatively flat over the five-year period of 2009 to 2013, even though there was a 19 percent increase from 2012 to 2013.

Figure 3-21. FPUC's Top Five Outage Causes (Adjusted)



FPUC filed a Three Percent Feeder Report listing the top three percent of feeders with the outage events for 2013. FPUC has so few feeders that the data in the report has not been statistically significant. There were two feeders on the Three Percent Feeder Report, one in each division. The 2013 report listed one feeder that was on the Three Percent Feeder Report for three years.

FPUC has completed the following projects to improve the reliability of this feeder: re-insulated a section of the feeder, added an electronic line recloser, hardened approximately a mile of the feeder, installed animal guards, changed several arrestors and insulators, and performed additional tree trimming.

Observations: FPUC's Adjusted Data

The SAIDI and SAIFI average indices have increased compared to 2012, as the CAIDI average index decreased. For the five-year period of 2009 to 2013, the average indices for SAIDI, SAIFI, CAIDI, and L-Bar are all trending downward. FPUC mentioned that its reliability indexes continue to be heavily influenced by the weather and the relative small size of its territories. FPUC states that it will continue to invest in infrastructure upgrades and it believes the upgrades have begun to show reliability improvement.

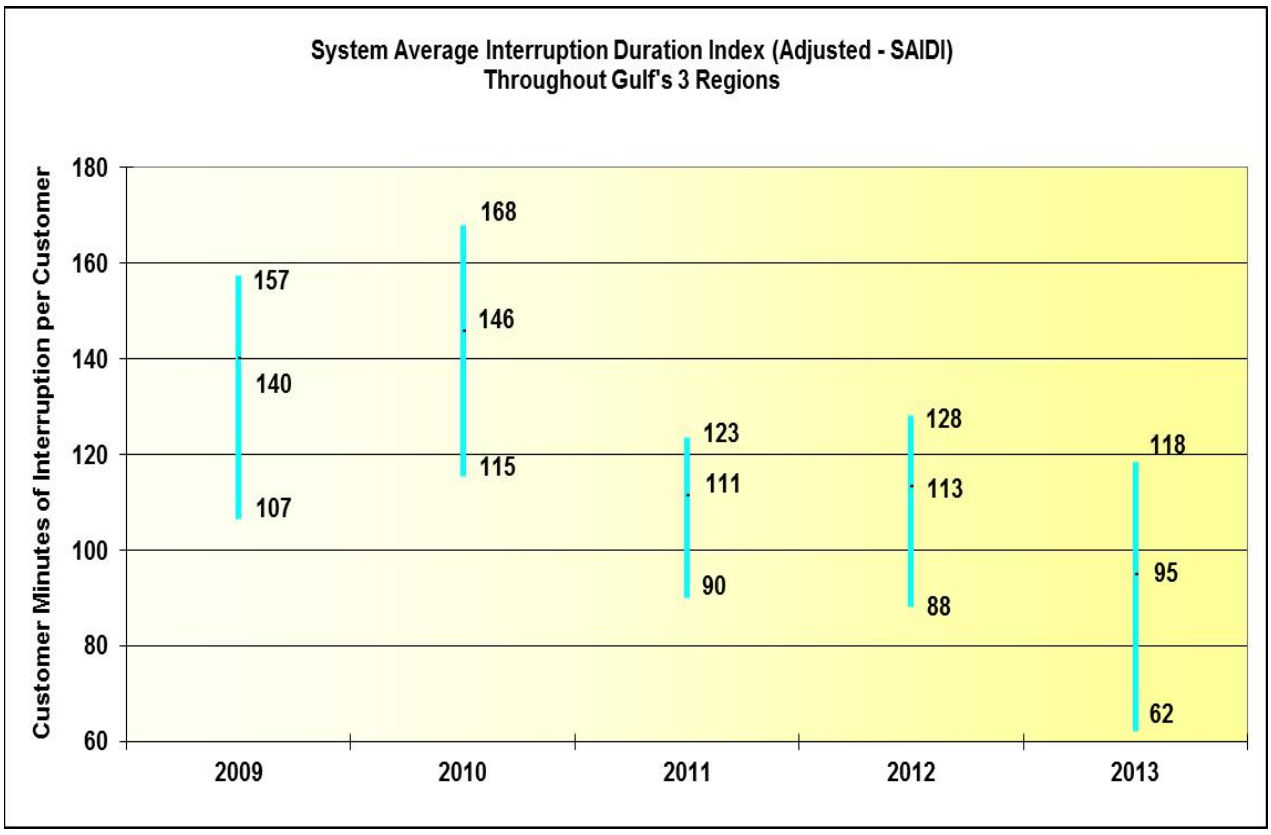
FPUC does not have to report MAIFIe or CEMI5 because Rule 25-6.0455, F.A.C., waives the requirement. The cost for the information systems necessary to measure MAIFIe and CEMI5 has a higher impact on small utilities compared to large utilities on a per customer basis.

Gulf Power Company: Adjusted Data

Gulf's service area includes much of the Florida panhandle and covers approximately 7,550 square miles in eight Florida counties – Bay, Escambia, Holmes, Jackson, Okaloosa, Santa Rosa, Walton, and Washington. This geographic area is divided into three districts known as the Western, Central, and Eastern. The district distribution metrics and overall distribution system metrics are presented in the following figures.

Figure 3-22 illustrates Gulf's SAIDI minutes, or the interruption duration minutes on a system basis. The chart depicts a decrease in the average SAIDI value by 18 minutes in Gulf's combined regions when compared to the 2012 results. Gulf's 2013 average performance was 16 percent better than the 2012 SAIDI results. The Eastern and Western districts had the highest SAIDI value for the past five years as the Central and Eastern districts have the best or lowest SAIDI values. The maximum, minimum, and average SAIDI indices are continuing to trend downward, showing improvements.

Figure 3-22. SAIDI across Gulf's Three Regions (Adjusted)

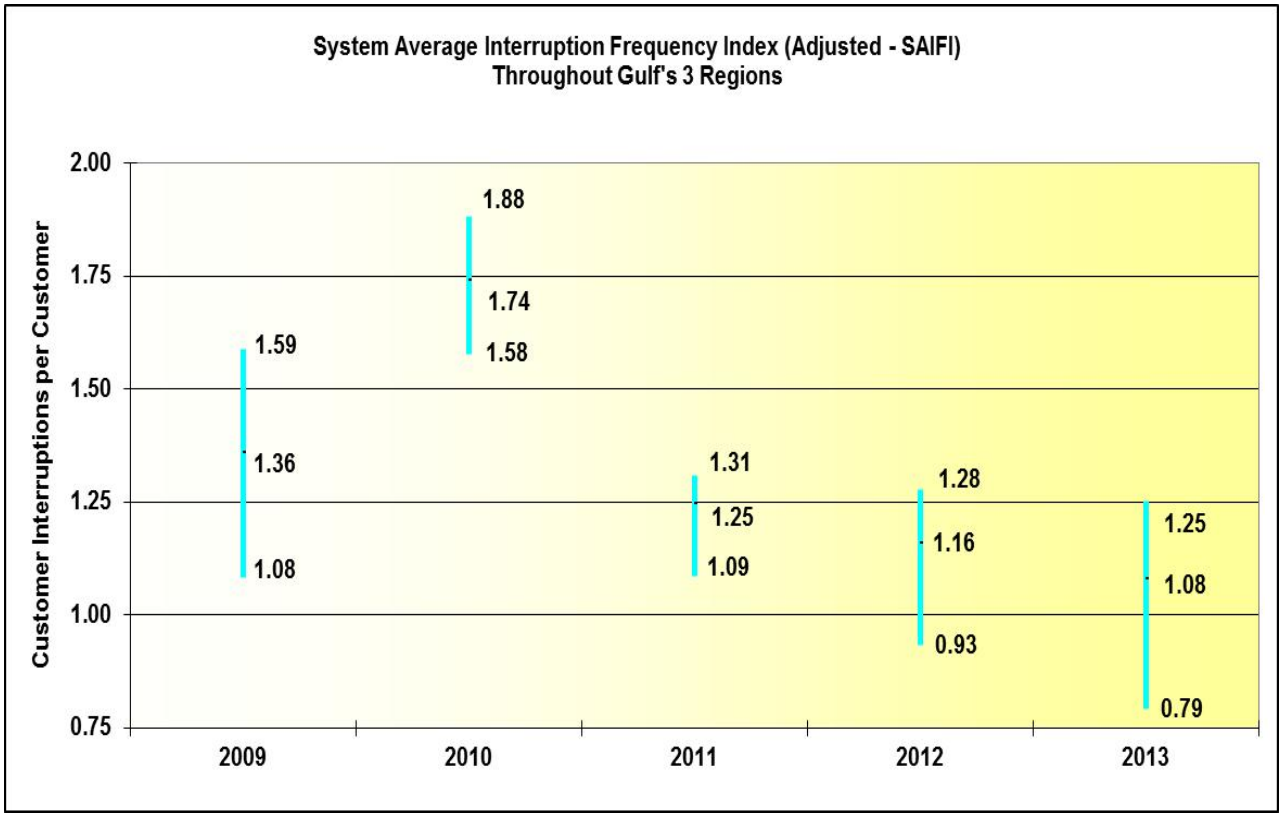


Gulf's Regions with the Highest and Lowest Adjusted SAIDI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest SAIDI	Western	Western	Western	Western	Eastern
Lowest SAIDI	Central	Central	Central	Eastern	Central

Figure 3-23 illustrates that Gulf's SAIFI had a 7 percent decrease in 2013 when compared to 2012. Gulf's Western region had the highest SAIFI values in three of the last five years, while the Eastern region had the highest SAIFI in the other two years. The lowest values appear to fluctuate between the Central region and the Eastern region. The maximum, minimum, and average SAIFI values still appear to be trending downward.

Figure 3-23. SAIFI across Gulf's Three Regions (Adjusted)

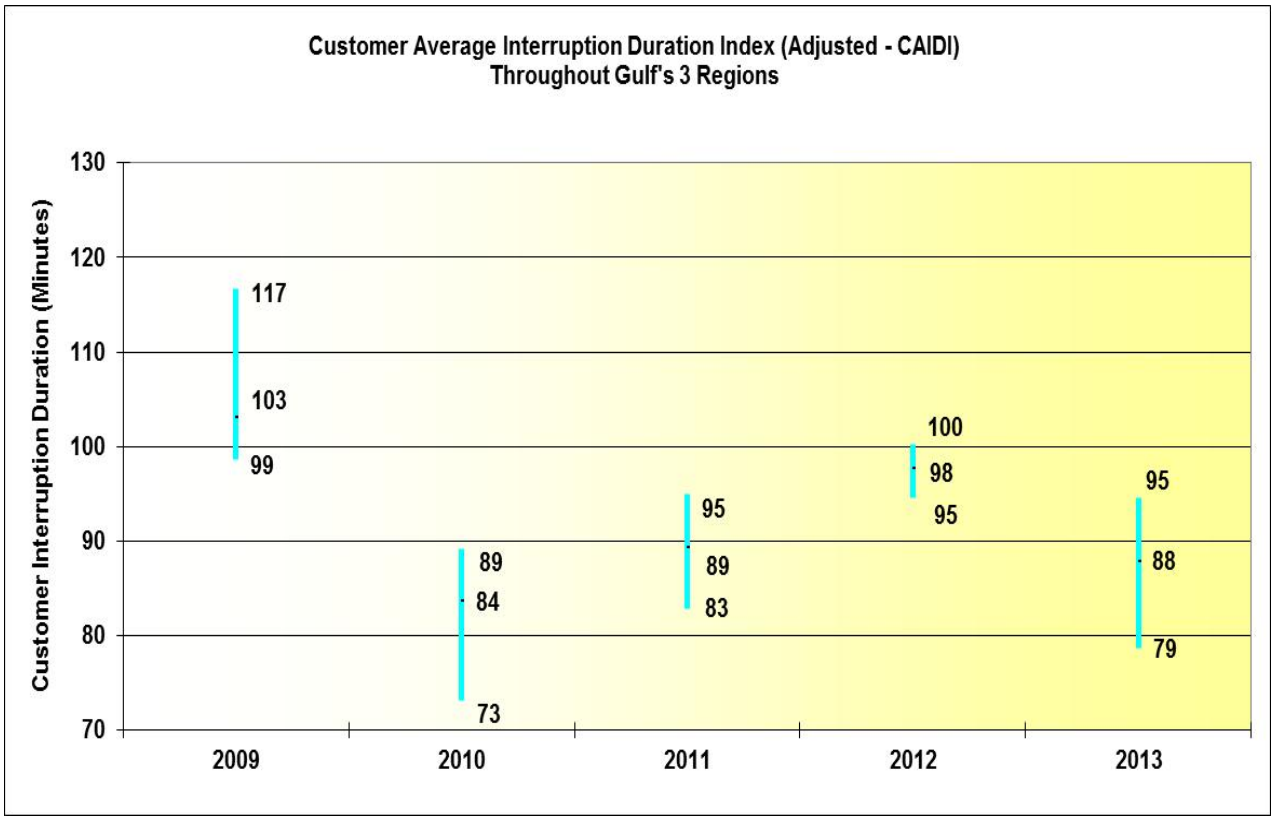


Gulf's Regions with the Highest and Lowest Adjusted SAIFI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest SAIFI	Western	Western	Eastern	Western	Eastern
Lowest SAIFI	Central	Central	Central	Eastern	Central

Figure 3-24 is Gulf's adjusted CAIDI. For 2013, the average CAIDI is 88 minutes and represents a 10 percent decrease from the 2012 value of 98 minutes. In 2013, the Eastern region had the highest CAIDI value, as the Central region had the lowest CAIDI. Staff notes that the average and minimum CAIDI values are trending downward, as the maximum CAIDI value is trending upward.

Figure 3-24. CAIDI across Gulf's Three Regions (Adjusted)



Gulf's Regions with the Highest and Lowest Adjusted CAIDI Performance by Year

	2009	2010	2011	2012	2013
Highest CAIDI	Eastern	Western	Western	Western	Eastern
Lowest CAIDI	Central	Central	Central	Central	Central

Figure 3-25 illustrates Gulf's L-Bar or the average length of time Gulf spends recovering from outage events, excluding hurricanes and other allowable excluded outage events. Gulf's L-Bar showed a 13 percent decrease from 2012 to 2013. The data for the five-year period of 2009 to 2013 shows a downward trend.

Figure 3-25. Gulf's Average Duration of Outages (Adjusted)

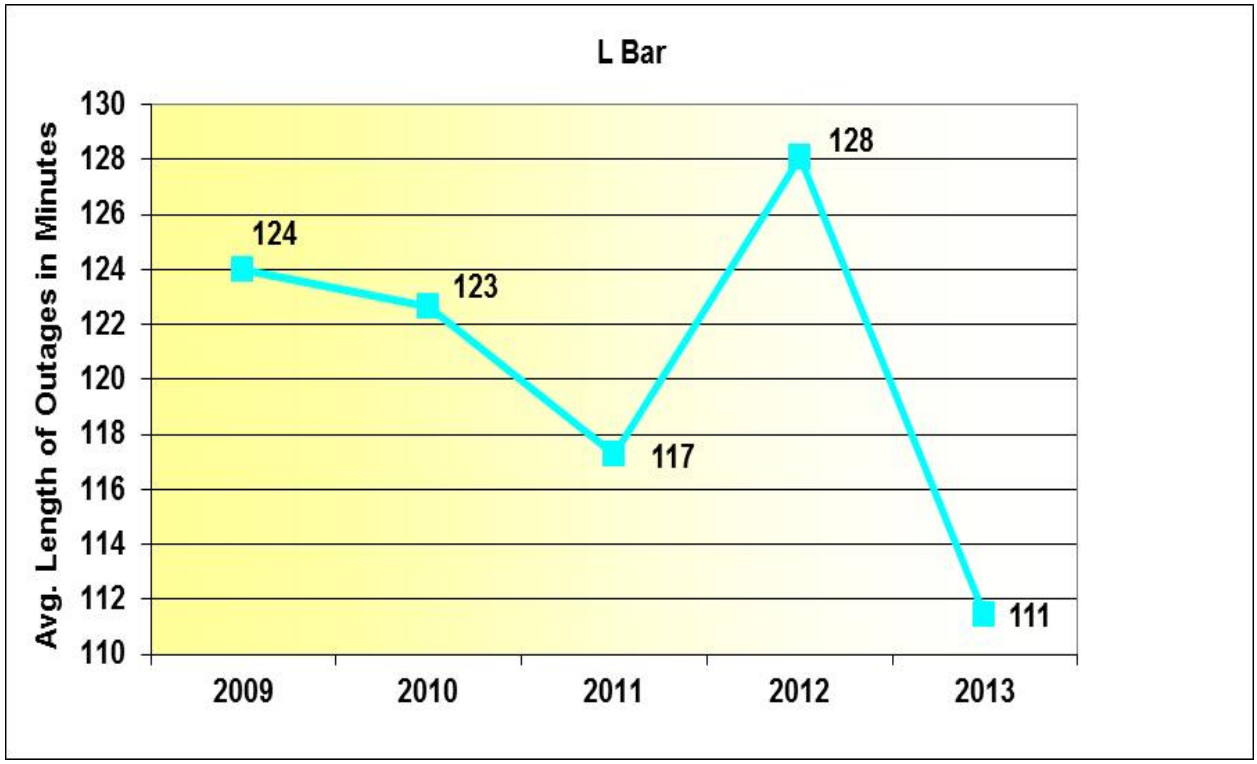
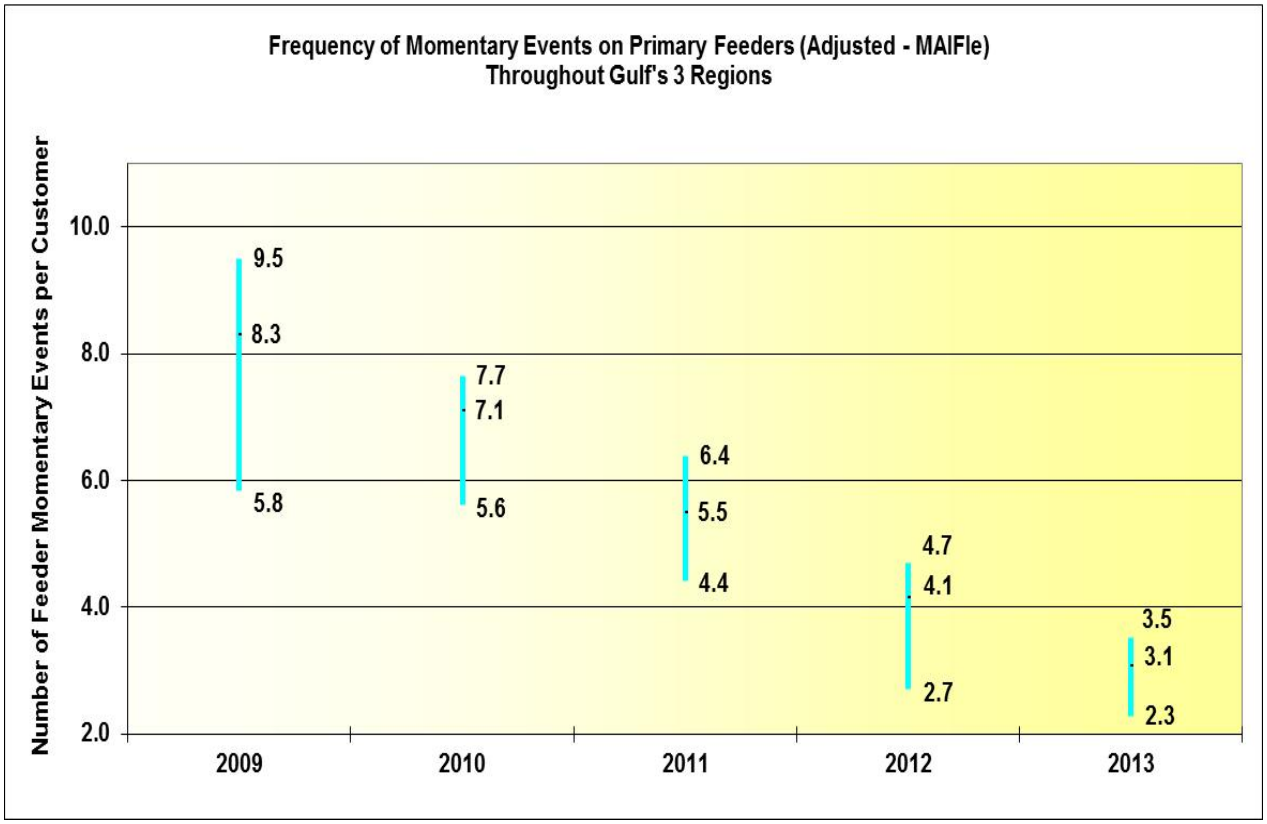


Figure 3-26 is the adjusted MAIFIe recorded across Gulf's system. The adjusted MAIFIe results by region show that the Eastern region once again had the lowest frequency of momentary events on primary feeders. The Western region has the highest MAIFIe index in 2013, with a 24 percent improvement when compared to 2012. The data suggests that the level of service reliability for the highest, average, and lowest MAIFIe are all continuing to trend downward, suggesting improvement.

Figure 3-26. MAIFIe across Gulf's Three Regions (Adjusted)

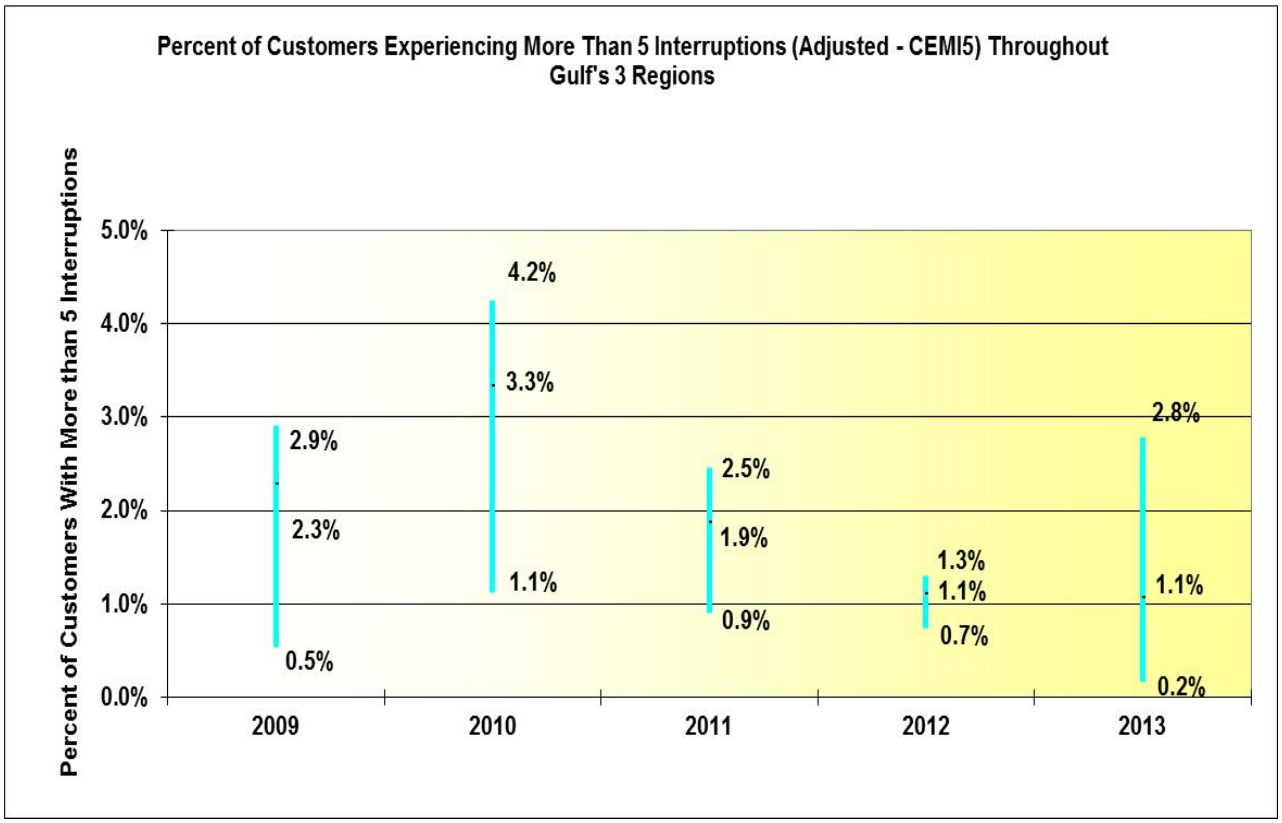


Gulf's Regions with the Highest and Lowest Adjusted MAIFIe Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest MAIFIe	Western	Western	Central	Western	Western
Lowest MAIFIe	Eastern	Eastern	Eastern	Eastern	Eastern

Figure 3-27 shows the highest, average, and lowest adjusted CEMI5 across Gulf's Western, Central, and Eastern regions. Gulf's 2013 results illustrate no change in the average CEMI5 percentage when compared to 2012. The average, lowest, and highest CEMI5 appears to be trending downward over the five-year period of 2009 to 2013, suggesting that the percentage of Gulf's customers experiencing more than five interruptions is decreasing and improving.

Figure 3-27. CEMI5 across Gulf's Three Regions (Adjusted)



Gulf's Regions with the Highest and Lowest Adjusted CEMI5 Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest CEMI5	Western	Eastern	Eastern	Western	Eastern
Lowest CEMI5	Central	Central	Central	Eastern	Central

Figure 3-28 shows the multiple occurrences of feeders using the utility's Three Percent Feeder Report and is analyzed on a three- and five-year basis. The Three Percent Feeder Report is a listing of the top three percent of feeders that have the most feeder outage events. The supporting data illustrates that the five-year multiple occurrences have decreased from 16 percent to 11 percent from 2012 to 2013 along with the three-year multiple occurrences which decreased from 7 percent to 4 percent. The five-year period of 2009 to 2013 indicates overall that the five-year index is trending upward even though there was a decrease in percentages from 2012 to 2013. The three-year multiple occurrences index appears to be trending downward.

Staff notes there was one feeder that was on the Three Percent Feeder Report for two years consecutively. Gulf explained that its initial review of the Feeder Report showed that the associated feeder problems were all corrected. Additionally, Gulf mentioned that its review of the 2013 outage information were the same type of outages that occurred in 2012. Two of the three 2013 outages were related to weather events with high winds. The other 2013 outage was due to an emergency planned outage where power was interrupted to allow construction crews to safely perform their work. Gulf stated that a full-line patrol of this feeder was performed and all mitigation work was completed in 2013.

Figure 3-28. Gulf's Three Percent Feeder Report (Adjusted)

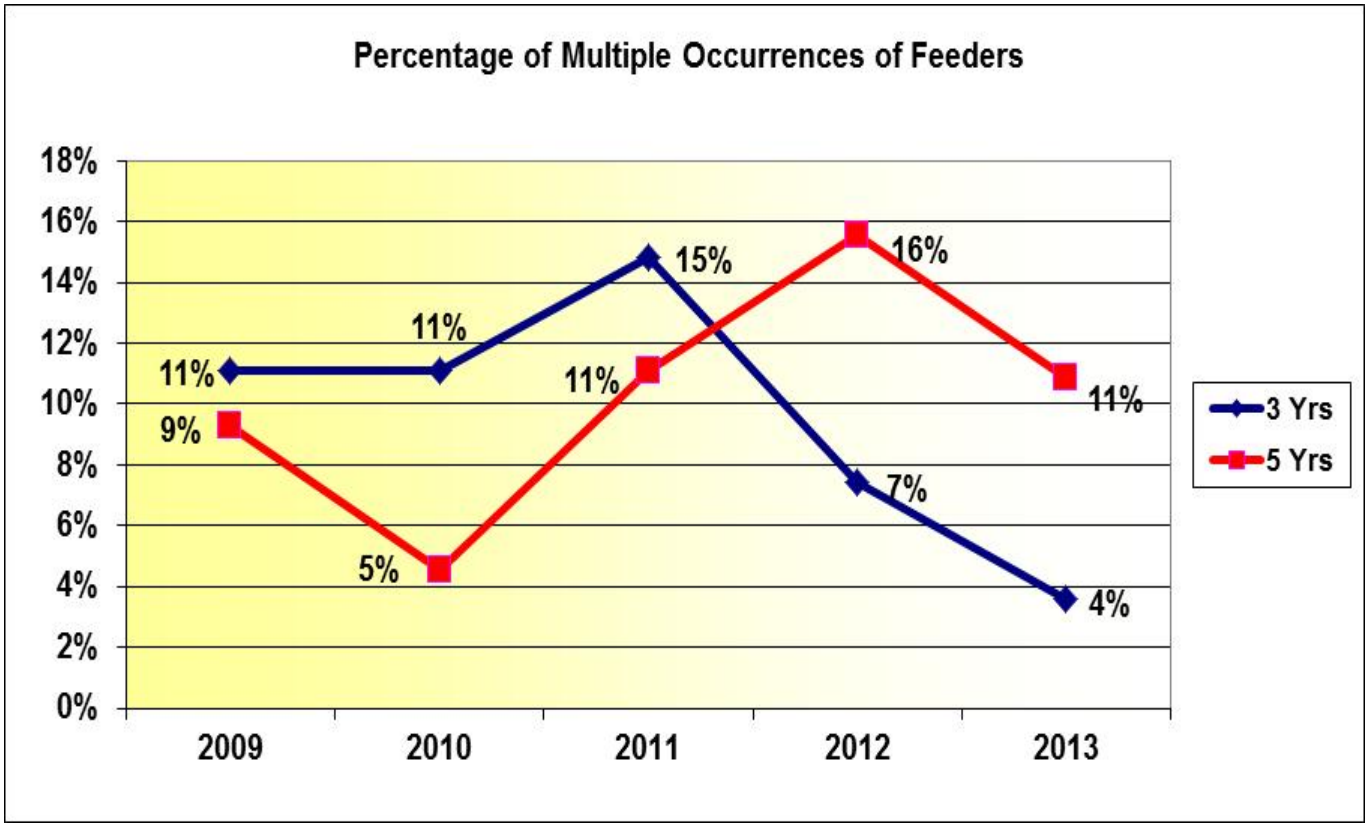
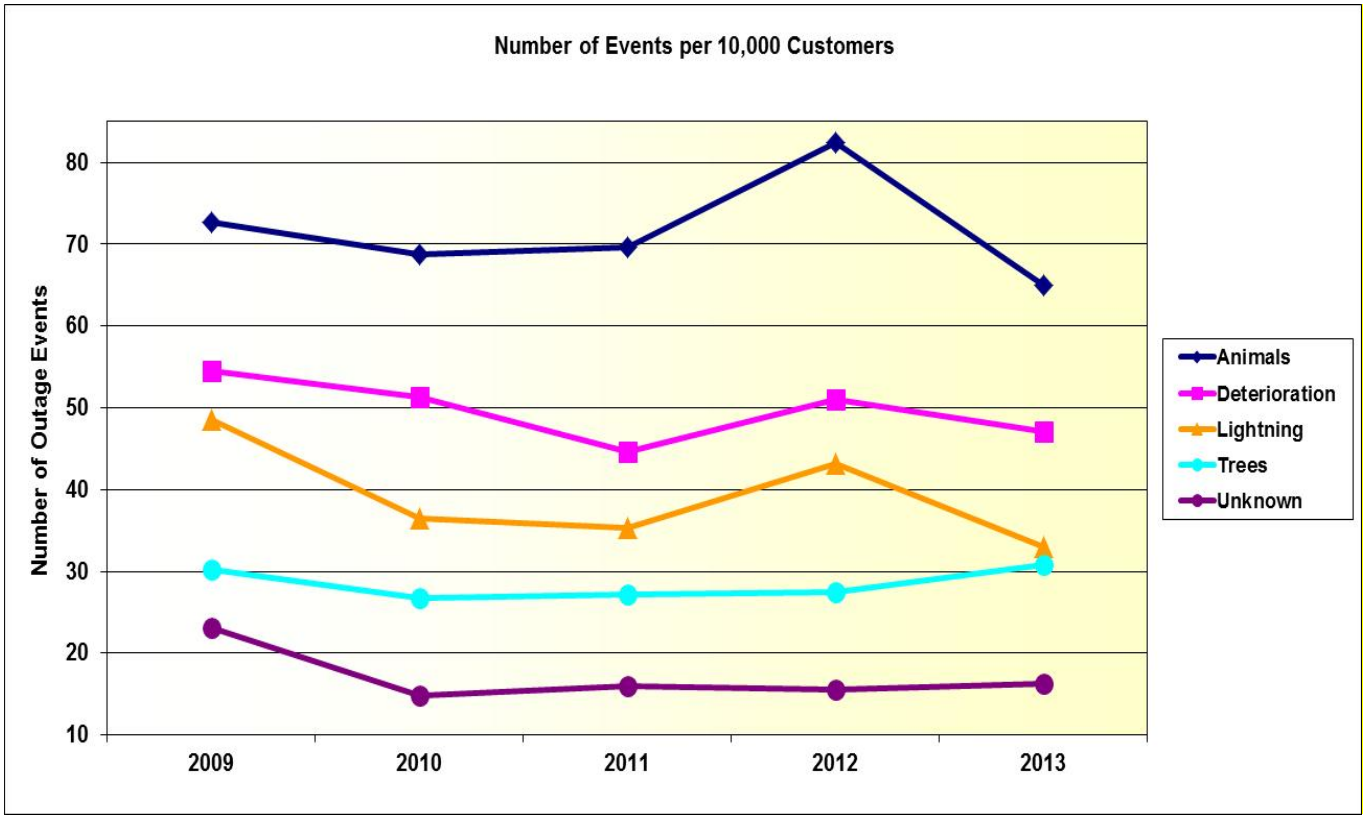


Figure 3-29 is a graph of the top five causes of outage events on Gulf's distribution system normalized to a 10,000-customer base. The figure is based on Gulf's adjusted data of the top ten causes of outage events and represents 85 percent of the total adjusted outage events that occurred during 2013. The top five causes of outage events were Animals (29 percent), Deterioration (21 percent), Lightning (15 percent), Trees (14 percent), and Unknown Causes (7 percent). The percentage of outages due to animals remains the highest cause of outages. As the number of outage events due to animals and trees are remaining relatively flat, the number of outage events due to deterioration (outages resulting from equipment that is at or approaching the end of its life), lightning, and unknown causes are trending downward.

Figure 3-29. Gulf's Top Five Outage Causes (Adjusted)



Observations: Gulf's Adjusted Data

There were improvements seen in all of Gulf's reliability indices in 2013, except CEMI5 where there was no change. It appears that the trend lines for the reliability indices for the five-year period of 2009 to 2013 are trending downward except the Five-Year Percentages of Multiple Feeder Outage events, which is trending upward.

Gulf improves its distribution reliability through a continued focus on root causes and added distribution automation. Gulf explained that distribution automation is part of its Storm

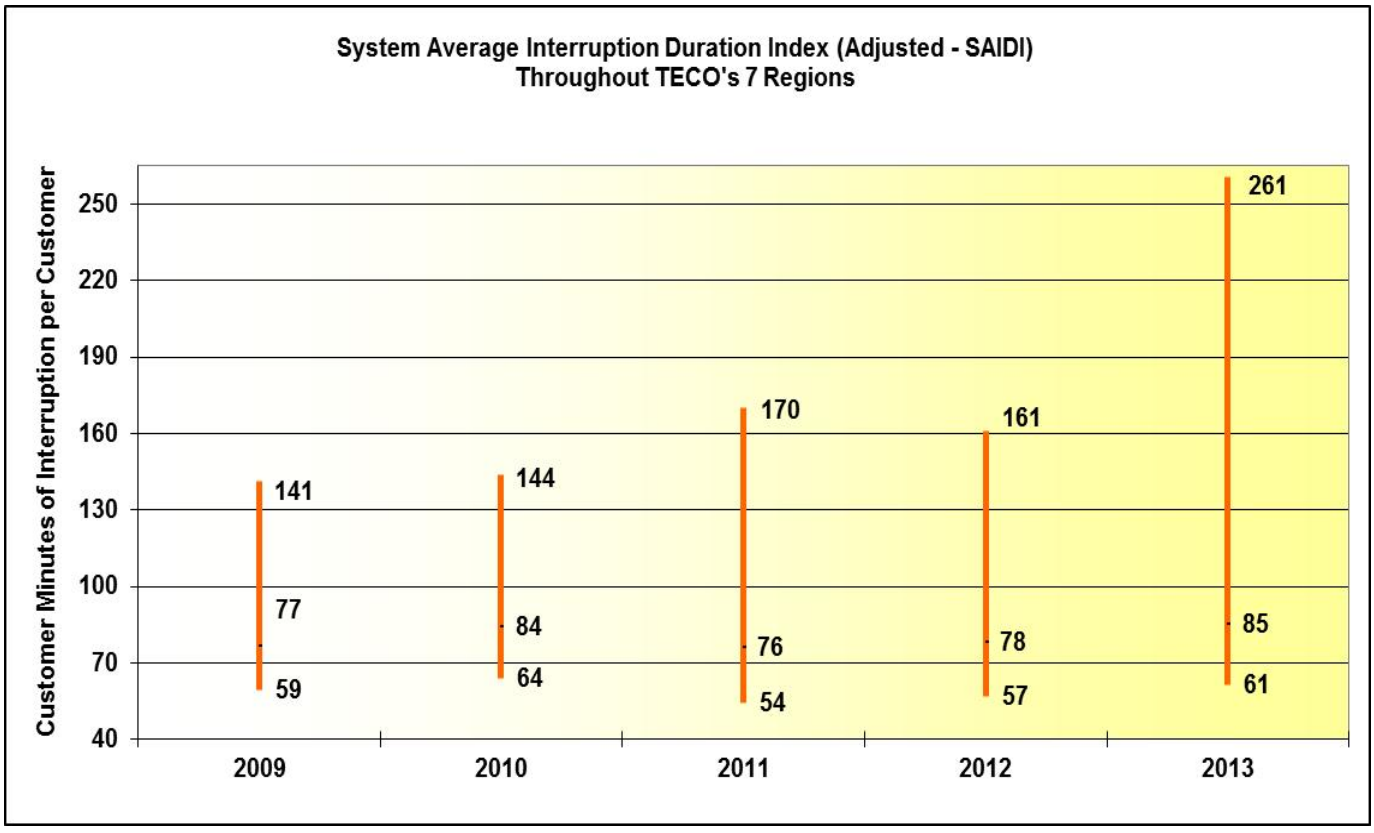
Hardening Plan, which includes installation of reclosers, transfer schemes, and fault indicators on the distribution system to further segment the feeders for outage restoration. Theses devices are part of Gulf's Distribution Supervisory Control and Data Acquisition (DSCADA) System. In addition, there was added emphasis on identifying and addressing recurring trouble throughout the Gulf's system where troubled areas are identified and work orders are generated with corrective actions.

The Eastern District had the highest indexes for four out of five indices from 2013 and when 2013 data is compared to 2012 data, the Eastern District improved in MAIFIe. Gulf continues to focus on improving reliability for all its distribution systems, which includes vegetation management, pole replacement, feeder patrols, infrared mainline inspections, reoccurring trouble reports, and other outage mitigation programs.

Tampa Electric Company: Adjusted Data

Figure 3-30 shows the adjusted SAIDI values recorded by TECO's system. Four of the seven TECO regions had an increase in SAIDI performance during 2013, with Plant City and Dade City having the highest SAIDI performance results for the five-year period of 2009 to 2013. The lowest SAIDI index for the seven regions appears to be staying relatively flat. The average SAIDI index increased 8 percent from 2012 to 2013 and appears to be trending upward. The Central, Eastern, and Winter Haven regions recorded the lowest SAIDI indices for the five-year period. Dade City, Plant City, and South Hillsborough regions have the fewest customers and represent the most rural, lowest customer density per line mile in comparison to the other four TECO divisions.

Figure 3-30. SAIDI across TECO's Seven Regions (Adjusted)

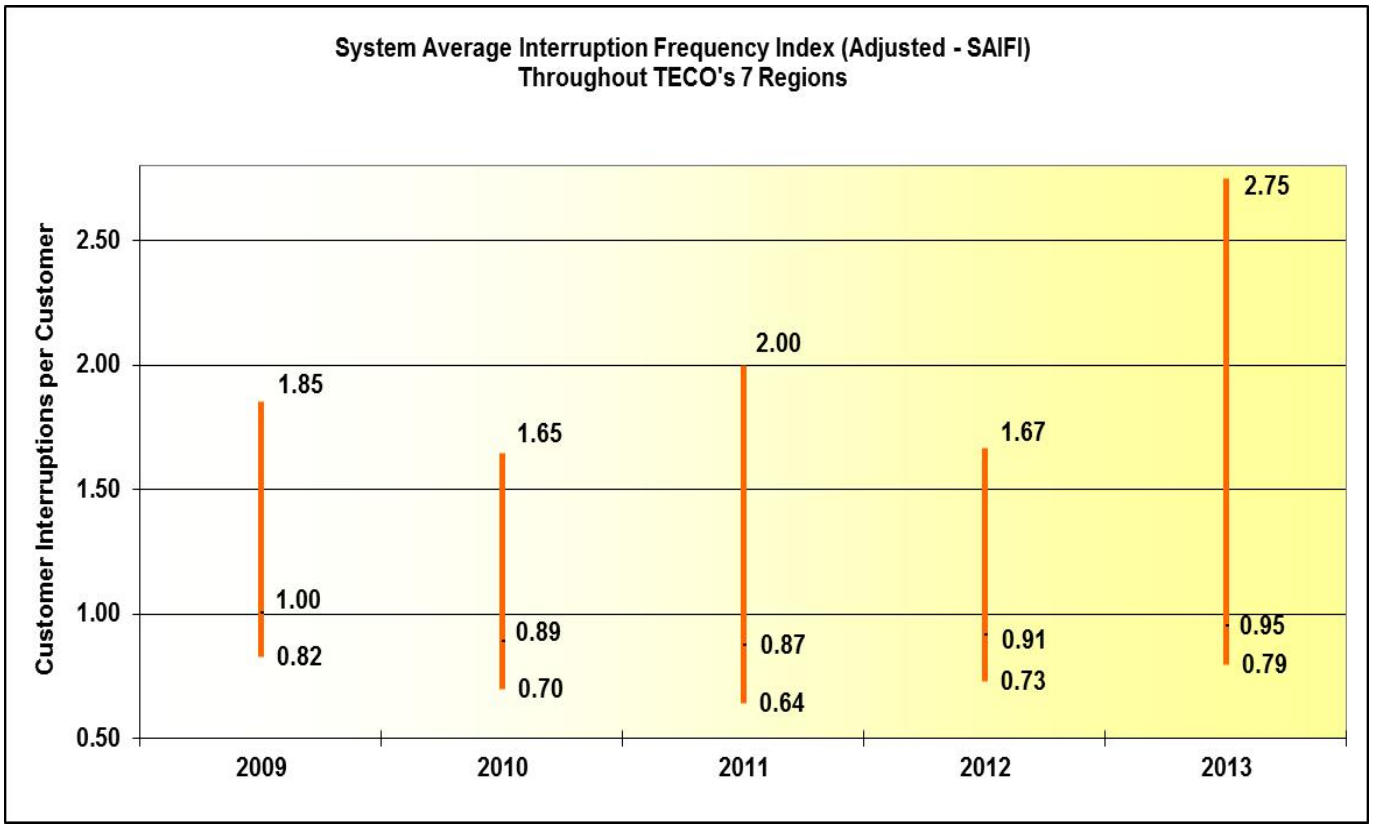


TECO's Regions with the Highest and Lowest Adjusted SAIDI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest SAIDI	Plant City	Plant City	Dade City	Dade City	Dade City
Lowest SAIDI	Winter Haven	Central	Central	Eastern	Winter Haven

Figures 3-31 illustrates TECO's adjusted frequency of interruptions per customer reported by the system. TECO's data represents a 4 percent increase in the SAIFI average from 0.91 interruptions in 2012 to 0.95 interruptions in 2013. TECO's Dade City region continues to have the highest frequency of service interruptions when compared to TECO's other regions. The maximum SAIFI index is trending upward and the minimum and average indices appears to be staying relatively flat.

Figure 3-31. SAIFI across TECO's Seven Regions (Adjusted)

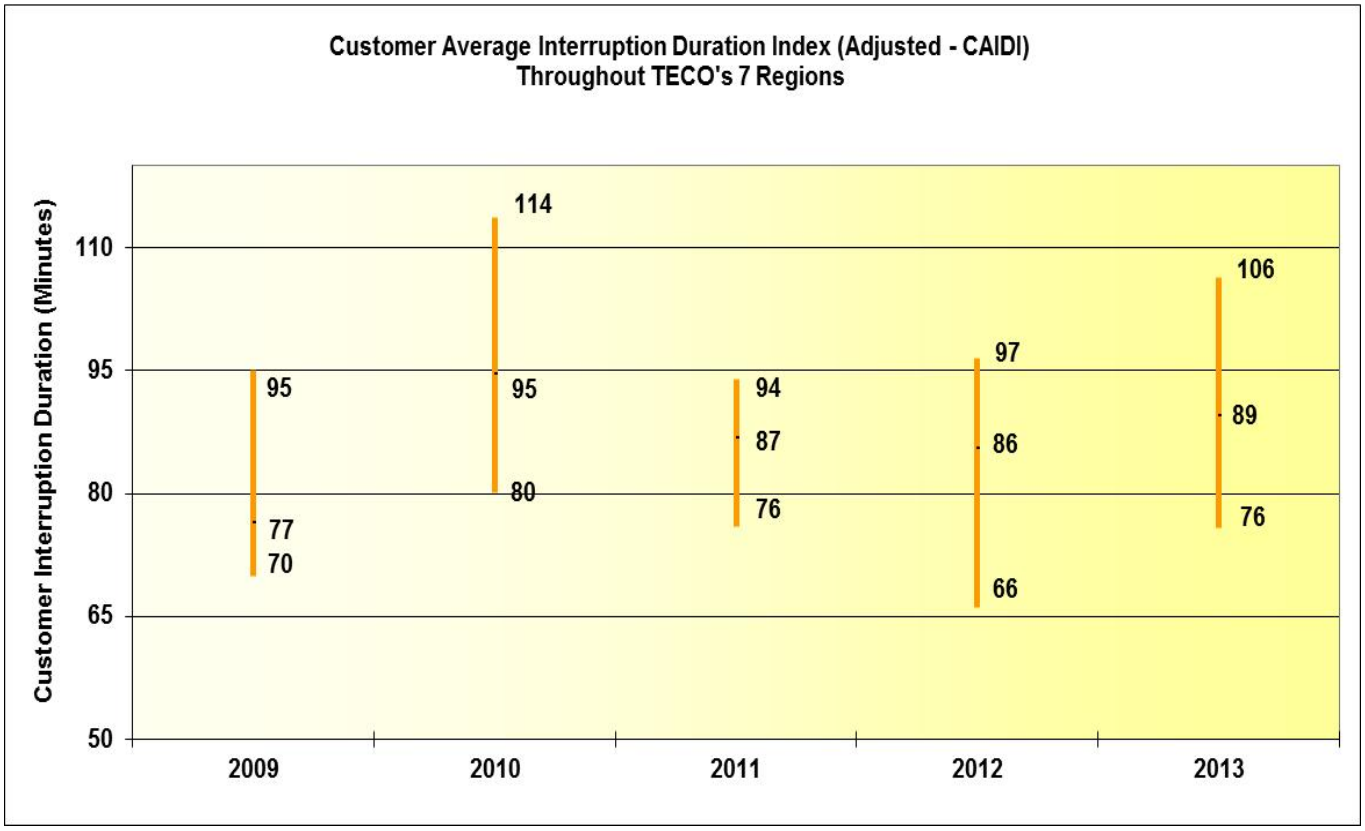


TECO's Regions with the Highest and Lowest Adjusted SAIFI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest SAIFI	Dade City	Dade City	Dade City	Dade City	Dade City
Lowest SAIFI	Central	Eastern	Central	Eastern	Central

Figure 3-32 charts the length of time that a typical TECO customer experiences an outage, which is known as CAIDI. The highest CAIDI minutes do not appear to be confined to any particular service area. Winter Haven and Eastern regions have had the lowest (best) results for four out of the last five years. The average CAIDI continues to be trending upward at this time suggesting TECO's customers are experiencing outages that are lasting longer. There was a 3 percent increase in the average CAIDI when comparing 2012 to 2013.

Figure 3-32. CAIDI across TECO's Seven Regions (Adjusted)



TECO's Regions with the Highest and Lowest Adjusted CAIDI Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest CAIDI	South Hillsborough	South Hillsborough	Western	Dade City	Eastern
Lowest CAIDI	Winter Haven	Winter Haven	Eastern	Winter Haven	Winter Haven

Figure 3-33 denotes a 0.6 percent decrease in outage durations for the period from 2012 to 2013 for TECO. The L-Bar index appears to be trending upward for the five-year period of 2009 to 2013, suggesting an overall decline and longer restoral times even though there was a slight decrease in the L-bar index from 2012 to 2013. The average length of time TECO spends restoring service to its customers affected by outage events, excluding hurricanes and other allowable excluded outage events is shown in the index L-Bar.

TECO has initiated several reliability improvements initiatives to address the overall reliability of its system. The initiatives include: installation of mid-point reclosers; installation of fault indicators; installation of lightning arrestors within transformers at optimum points; replacement and upgrade of select switchgear; and proactive cable replacement on circuits. Another initiative includes scheduling of more off-shift resources to quicken restoration efforts.

Figure 3-33. TECO's Average Duration of Outages (Adjusted)

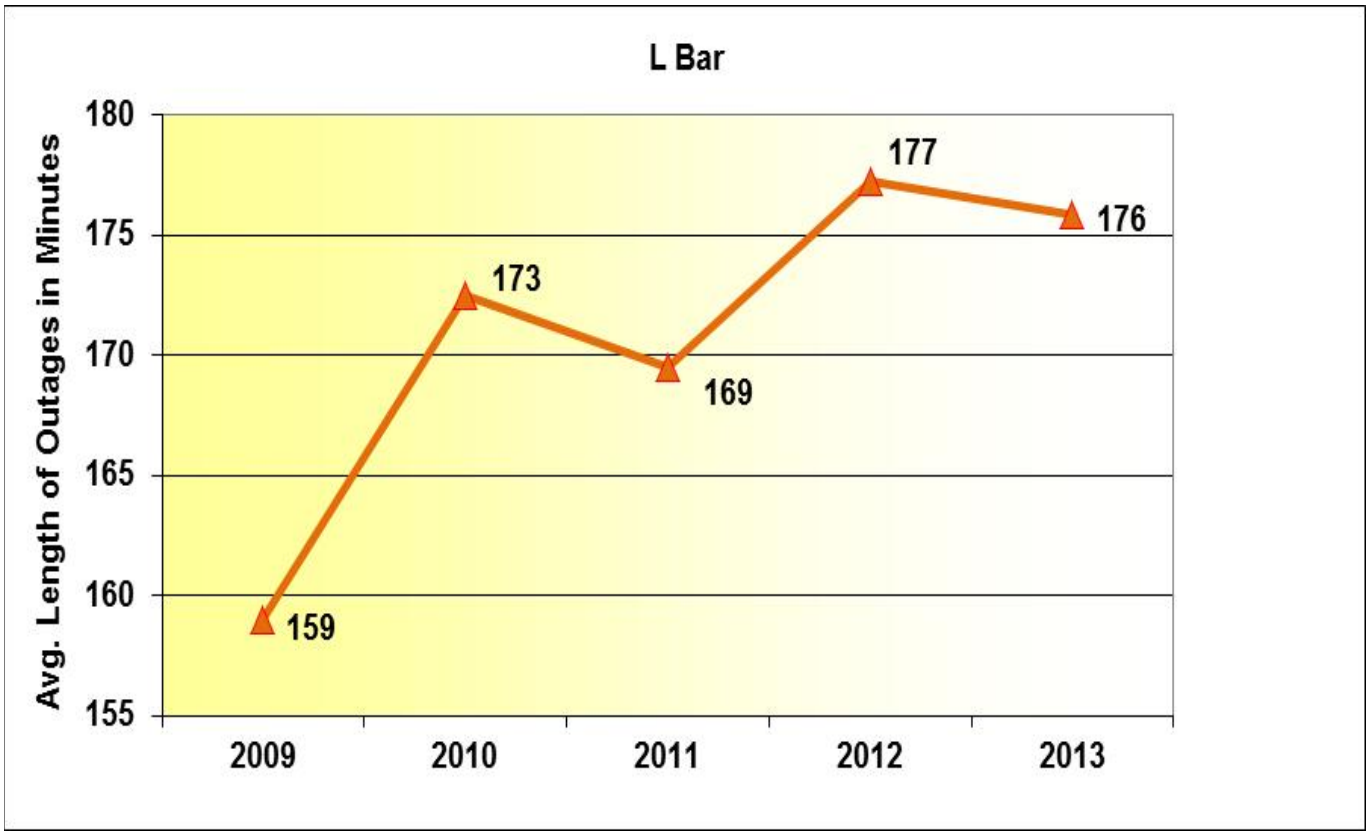
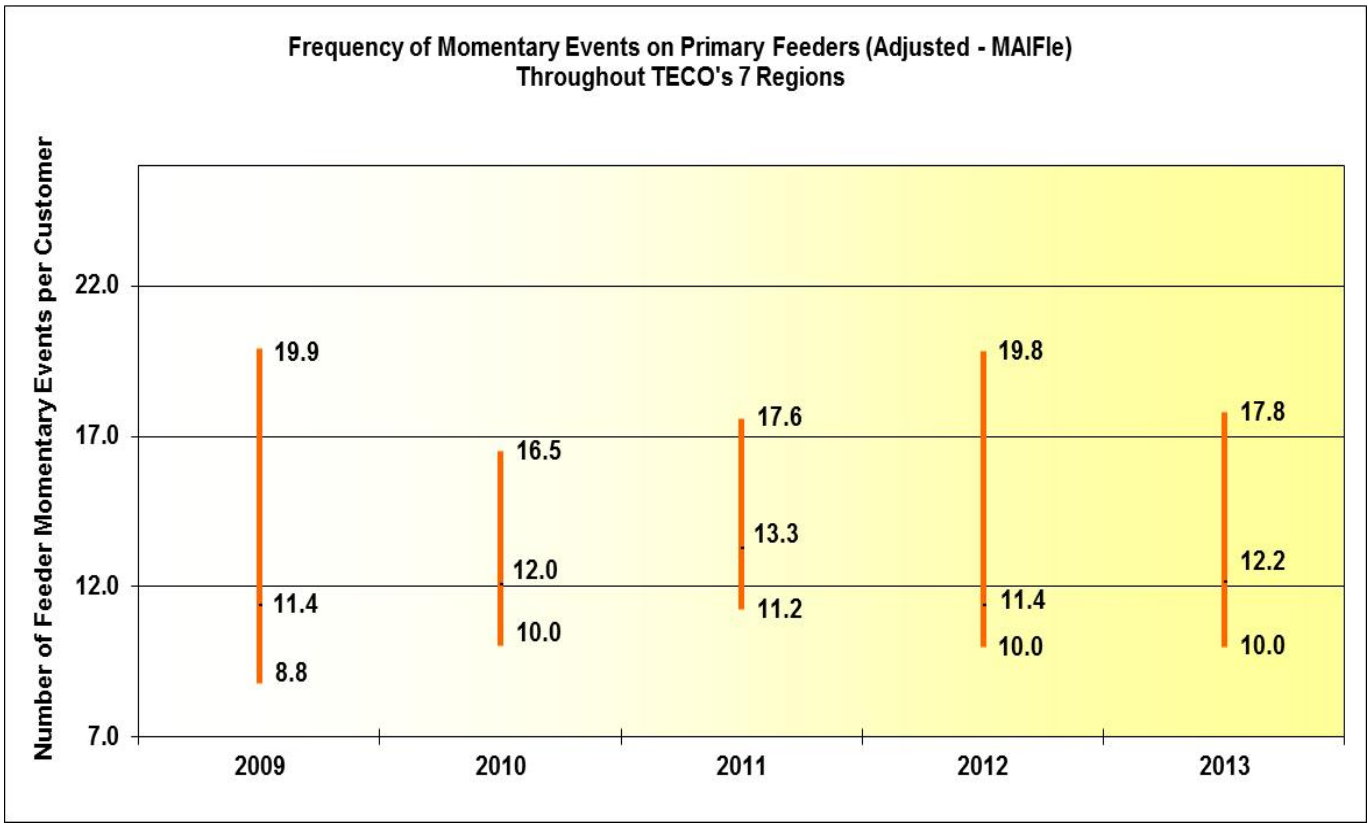


Figure 3-34 illustrates TECO's number of momentary events on primary circuits per customer recorded across its system. In 2013, the MAIFIe performance improved over the 2012 results in the Central and Plant City regions. The other five regions had increases in the MAIFIe index. The average MAIFIe increased 7 percent from 2012 to 2013. **Figure 3-34** shows that the average MAIFIe is slightly trending upward, which suggest a slight decline in performance over the five-year period of 2009 to 2013.

Figure 3-34. MAIFIe across TECO's Seven Regions (Adjusted)

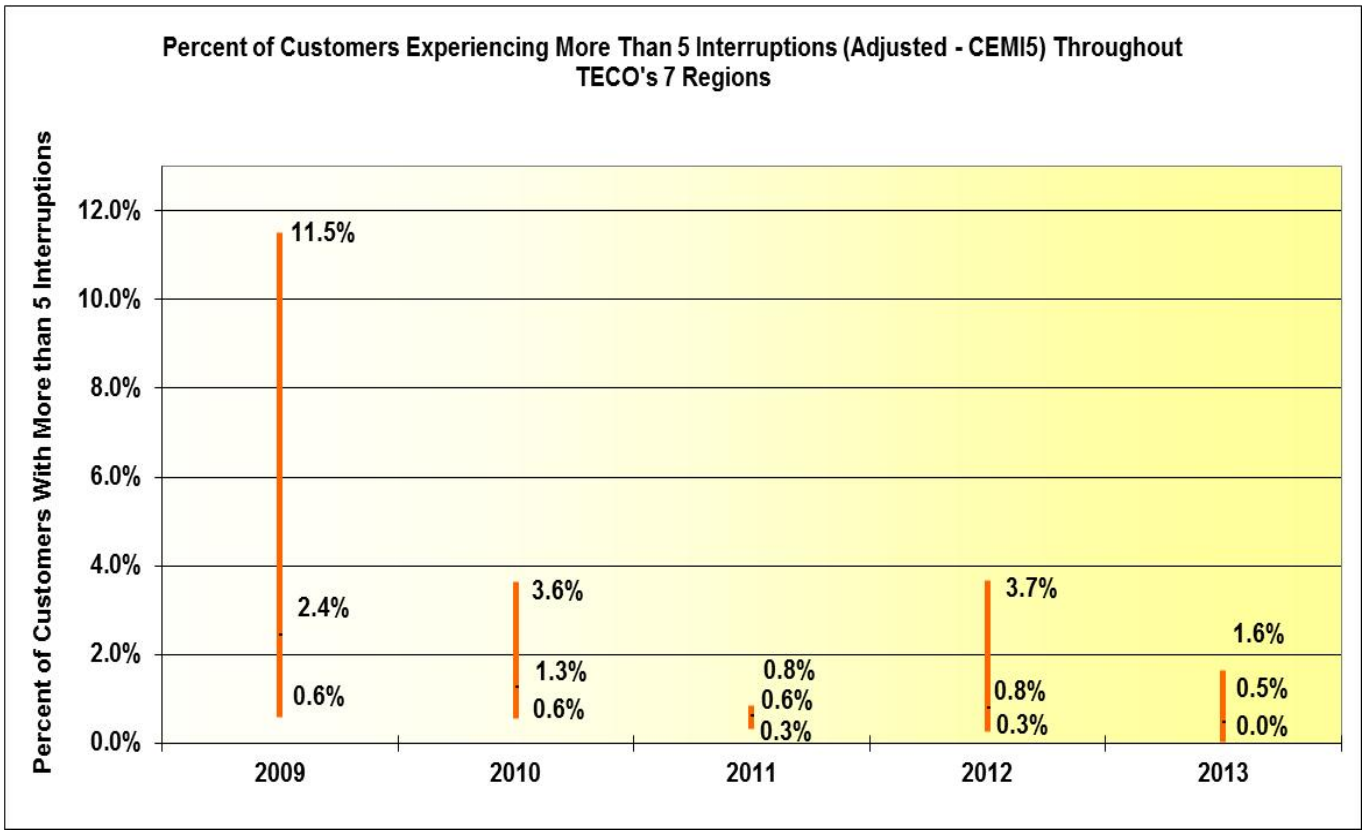


TECO's Regions with the Highest and Lowest Adjusted MAIFIe Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest MAIFIe	Plant City	Dade City	Plant City	Plant City	Plant City
Lowest MAIFIe	Central	Central	Central	Winter Haven	Central

Figure 3-35 shows the percent of TECO's customers experiencing more than five interruptions. Four regions in TECO's territory experienced a decrease in the CEMI5 results for 2013. The Eastern, Plant City, and Western regions experienced an increase in the CEMI5 index. Plant City reported the highest CEMI5 percentage for 2013. With TECO's results for this index varying for the past five years, the average CEMI5 index still appears to be trending downward suggesting improvement. There was a 38 percent decrease in the average CEMI5 index from 2012 to 2013.

Figure 3-35. CEMI5 across TECO's Seven Regions (Adjusted)



TECO's Regions with the Highest and Lowest Adjusted CEMI5 Distribution Reliability Performance by Year

	2009	2010	2011	2012	2013
Highest CEMI5	Dade City	Winter Haven	Plant City	Dade City	Plant City
Lowest CEMI5	Eastern	Central	South Hillsborough	Western	Winter Haven

Figure 3-36 represents an analysis of TECO's top three percent of problem feeders that have reoccurred (appeared on the Three Percent Feeder Report) on a five-year and three-year basis. The graph is developed using the number of recurrences divided by the number of feeders reported. The five-year average of outages per feeder did not change from 2012 to 2013, as the three-year average of outages increased from 4 percent in 2012 to 5 percent in 2013. The five-year averages of outages per feeder appear to be trending upward for the five-year period of 2009 to 2013, as the three-year averages of outages appear to be staying relatively flat for the same period.

Staff notes there were two feeders that were on the Three Percent Feeder Report for three years. TECO explained that it performed maintenance actives on these associated circuits. For one of the feeders, corrective actions included replacing lightning arresters, poles, switches, and fused cutouts, and fixing bad connections. For the other feeder, corrective actions included replacing defective transformers, poles, switches, lightning arresters, 575 feet of primary overhead feeder line, and 820 feet of primary underground feeder line. TECO stated that it will continue to monitor circuit outage performance as part of its daily and ongoing review of system reliability and will respond accordingly at a regional level.

Figure 3-36. TECO's Three Percent Feeder Report (Adjusted)

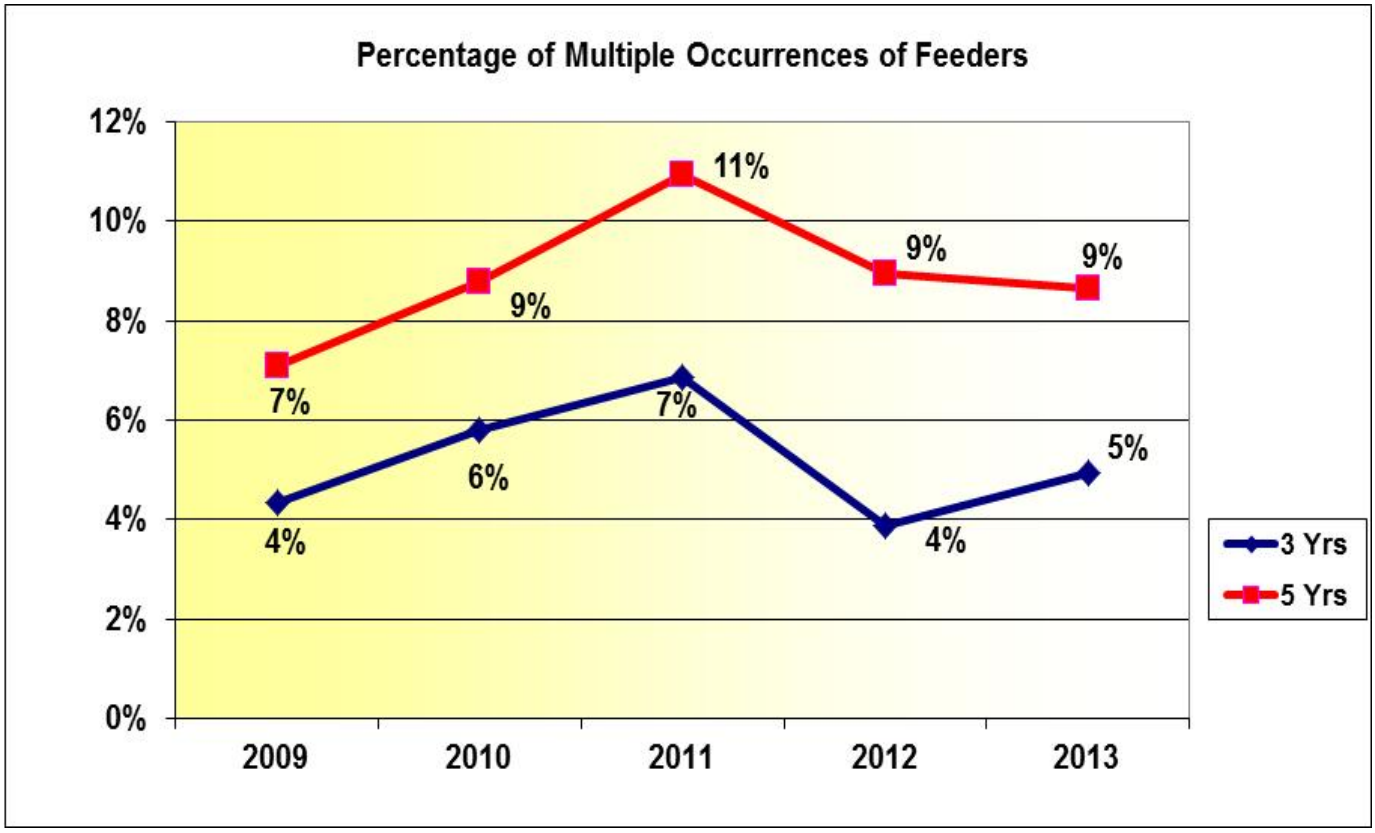
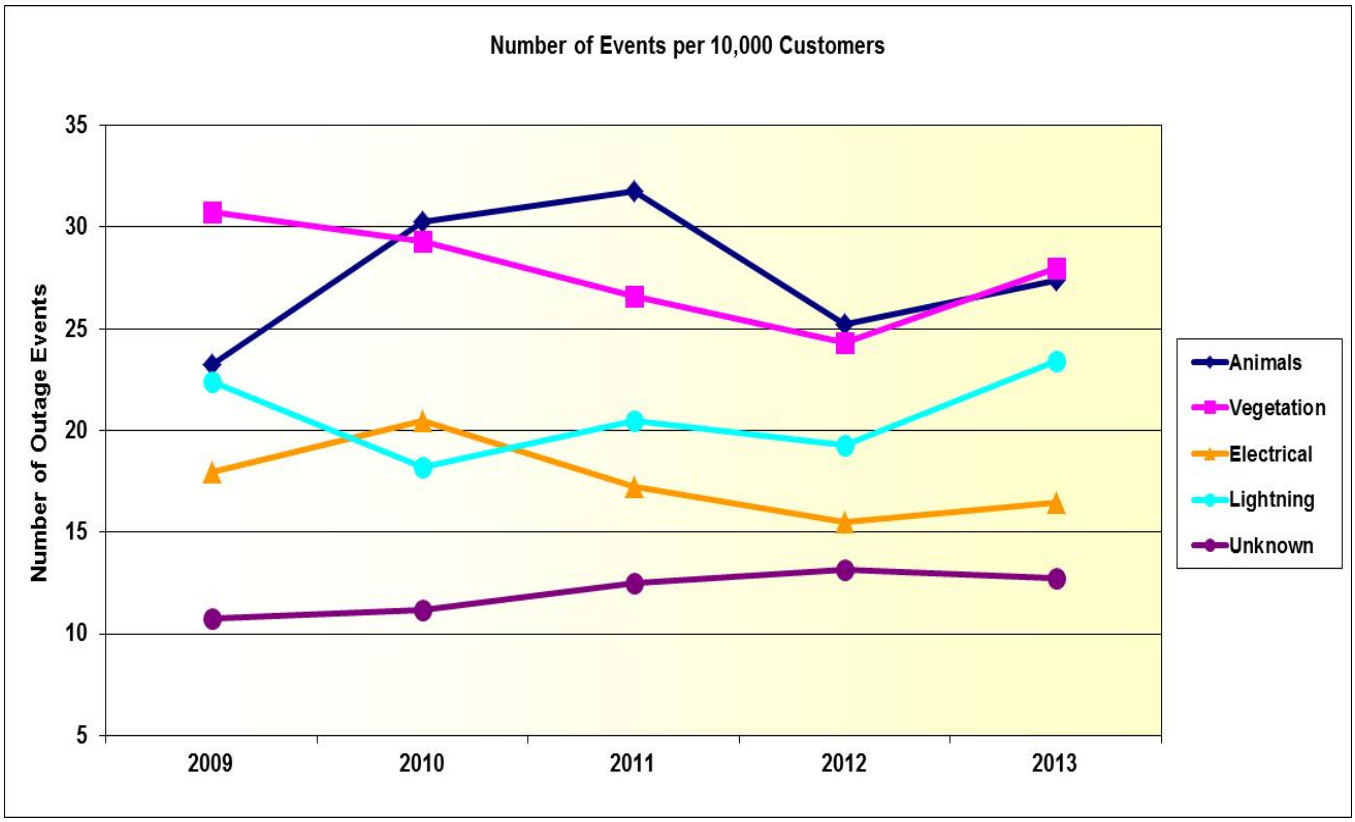


Figure 3-37 shows the top five causes of outage events on TECO's distribution system normalized to a 10,000-customer base. The figure is based on TECO's adjusted data of the top ten causes of outage events and represents 76 percent of the total outage events that occurred during 2013. For the five-year period, the five top causes of outage events included Vegetation (20 percent), Animals (19 percent), Lightning (17 percent), Electrical (12 percent), and Unknown Causes (9 percent) on a cumulative basis. Vegetation and animal causes continue to be the top two problem areas for TECO. The outages due to animals increased 1 percent from 2012 to 2013. The outages from vegetation increased 5 percent for the same time period. The number of outages due to animals, lightning, and unknown causes are trending upward while the number of outages due to vegetation and electrical issues (which include overloads, underfused, open secondary legs, shorted services, shorted secondary lines, faulted/failed switches, shorted primary, open neutrals, and failed capacitors) are trending downward.

TECO explained that it is currently performing vegetation management on a four-year cycle to mitigate the outages caused by vegetation. Additionally, TECO expressed that it performs hot spot trimming in isolated areas of concern for vegetation encroachment on distribution circuits. TECO stated that it is committed to maintaining its reliability with regard to vegetation outages.

Figure 3-37. TECO's Top Five Outage Causes (Adjusted)



Observations: TECO's Adjusted Data

TECO's 2013 indices for CEMI5, Five-Year Percent of Multiple Feeder Outage events, and the L-Bar showed an improvement in performance compared to 2012 while the indices for SAIDI, SAIFI, CAIDI, MAIFIe, and Three-Year Percent of Multiple Feeder Outage events showed a decline in performance. For the five-year period of 2009 to 2013, the indices for SAIDI, SAIFI, CAIDI, L-Bar, and Five-Year Percent of Multiple Feeder Outages events are all trending upward. The index for MAIFIe is trending slightly upward for the five-year period while the Three-Year Percent of Multiple Feeder Outage events are staying relatively flat. The index for CEMI5 was the only index that is trending downward for the five-year period. TECO explained that the fluctuations in performance are attributed to relays that are temporarily disabled during non-storm months to reduce the number of momentary events; however, this increased the frequency of outages due to faults being cleared by other protective devices. TECO explained the MAIFIe index still increased for the year due to the increased number of lightning strikes during storm season.

Section IV: Inter-Utility Reliability Comparisons

Section IV contains comparisons of the utilities' adjusted data for the various reliability indices that were reported. It also contains a comparison of the service reliability related complaints received by the Commission.

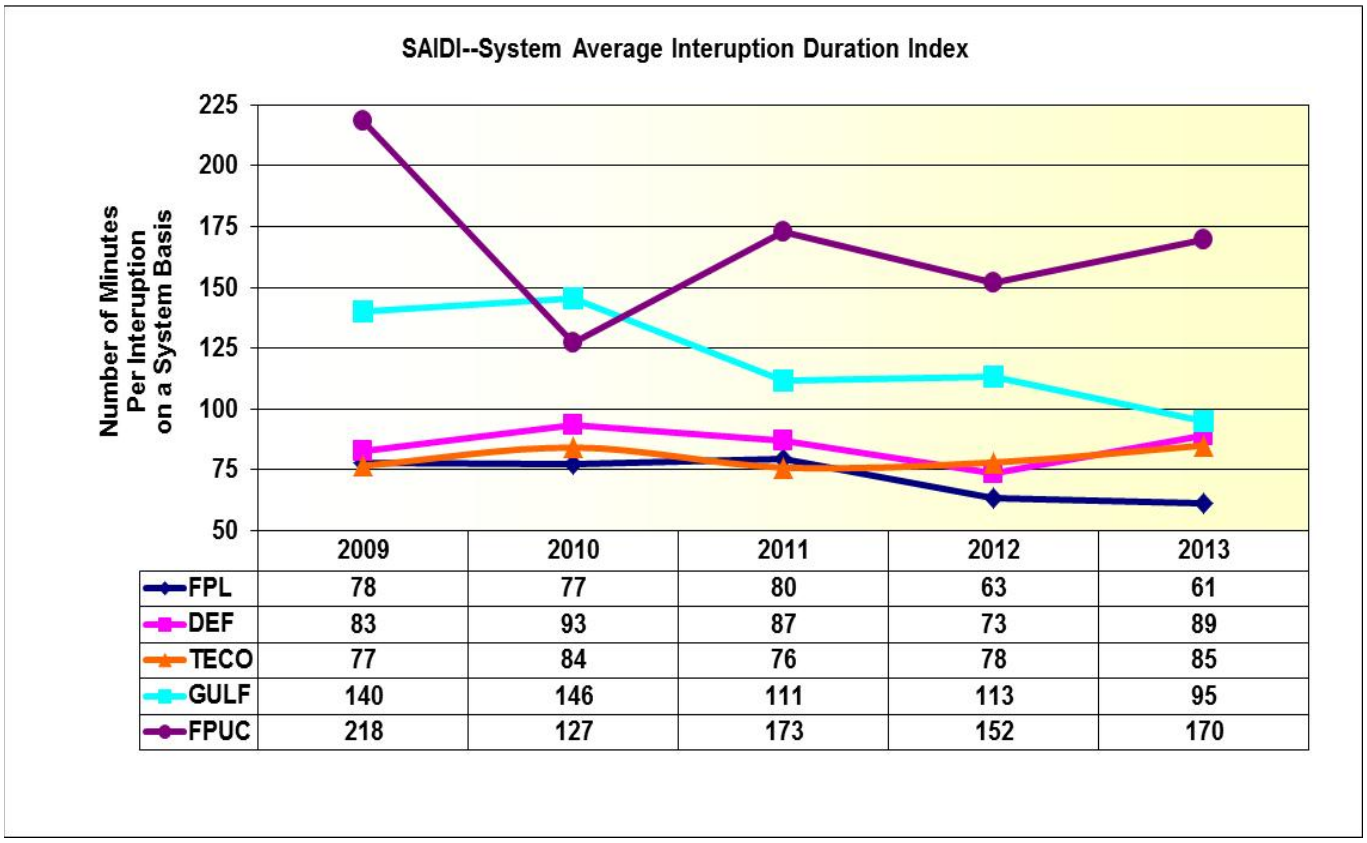
Inter-Utility Reliability Trend Comparisons: Adjusted Data

The inter-utility trend comparison focuses on a graphical presentation that combines all of the IOUs' distribution reliability indices for the years 2009 to 2013. **Figures 4-1** through **4-3** apply to all five utilities while **Figures 4-4** and **4-5** do not apply to FPUC because it is not required to report MAIFIe and CEMI5 due to the size of its customer base. The adjusted data is used in generating the indices in this report and is based on the exclusion of certain events allowed by Rule 25-6.0455(4), F.A.C. Generalizations can be drawn from the side-by-side comparisons; however, any generalizations should be used with caution due to the differing sizes of the distribution systems, the degree of automation, and the number of customers. The indices are unique to each IOU.

Figure 4-1 indicates that TECO's SAIDI trend has gradually risen since 2009. DEF's trend has been primarily flat while FPL, FPUC, and Gulf appear to be trending downward. Comparing 2012 SAIDI indices to 2013 SAIDI indices, FPL and Gulf's indices have fallen 3 percent and 16 percent respectively. DEF, FPUC, and TECO's SAIDI indices have risen 17 percent, 11 percent, and 8 percent, respectively, from 2012 to 2013.

SAIDI is the duration of an interruption per retail customer served within a specified area of service over a given period. It is determined by dividing the total Customer Minutes of Interruption by total Number of Customers Served for the respective area of service.

Figure 4-1. System Average Interruption Duration (Adjusted SAIDI)

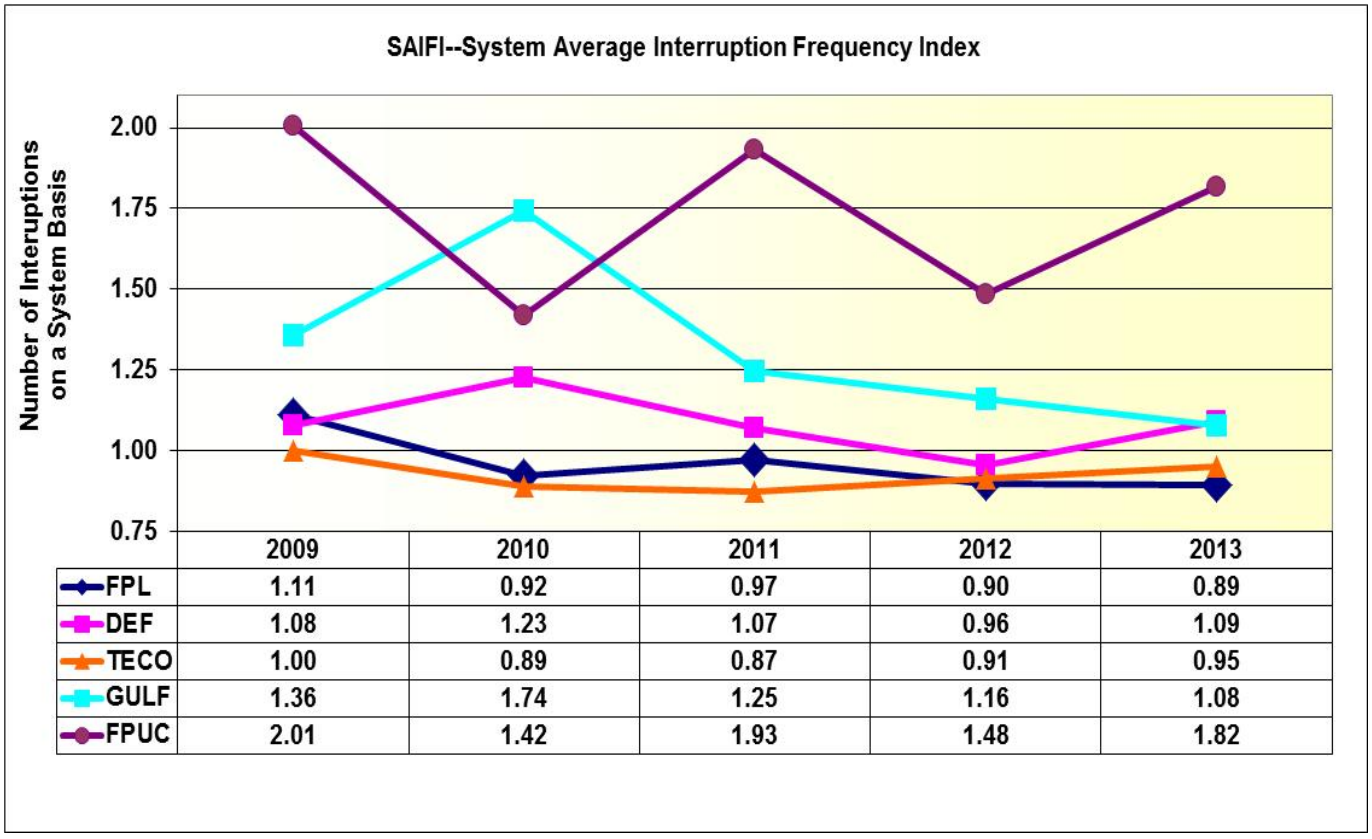


	2009	2010	2011	2012	2013
FPL	78	77	80	63	61
DEF	83	93	87	73	89
TECO	77	84	76	78	85
GULF	140	146	111	113	95
FPUC	218	127	173	152	170

Figure 4-2 is a five-year graph of the adjusted SAIFI for each IOU. The 2013 data shows FPL and Gulf's SAIFI indices decreased (improved) from the 2012 results as DEF, FPUC, and TECO's SAIFI indices increased. Even though TECO's SAIFI increased from 2012 to 2013, over the five-year period of 2009 to 2013, TECO's SAIFI is remaining relatively flat. FPL, DEF, Gulf, and FPUC's SAIFI indices are all trending downward for the period of 2009 to 2013.

SAIFI is the average number of service interruptions per retail customer within a specified area of service over a given period. It is determined by dividing the Sum of Service (aka Customer) Interruptions (CI) by the total Number of Customers Served for the respective area of service.

Figure 4-2. Number of Service Interruptions (Adjusted SAIFI)

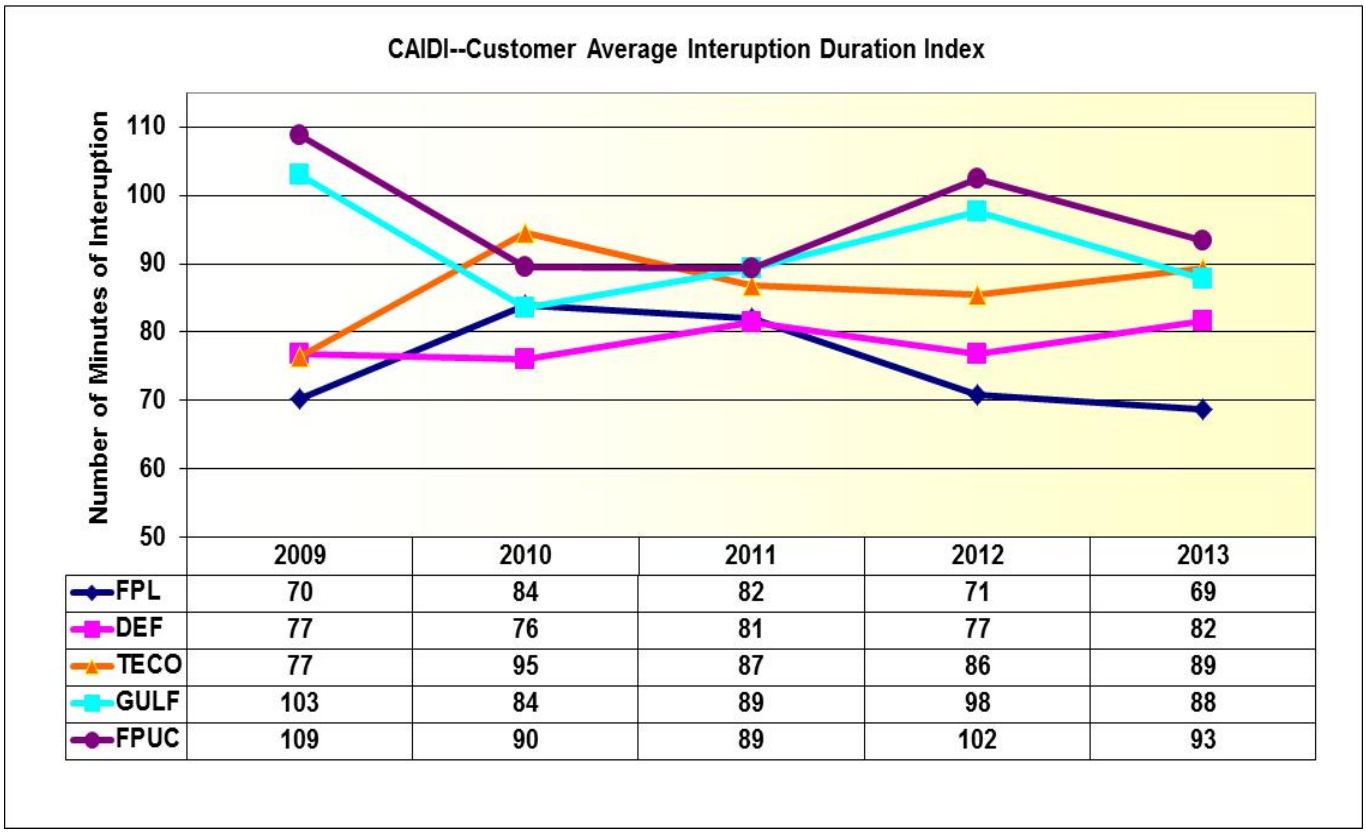


	2009	2010	2011	2012	2013
FPL	1.11	0.92	0.97	0.90	0.89
DEF	1.08	1.23	1.07	0.96	1.09
TECO	1.00	0.89	0.87	0.91	0.95
GULF	1.36	1.74	1.25	1.16	1.08
FPUC	2.01	1.42	1.93	1.48	1.82

Figure 4-3 is a five-year graph of the adjusted CAIDI for each IOU. FPL, FPUC, and Gulf had a decrease in the CAIDI from 2012 to 2013 while DEF and TECO had an increase in the CAIDI. FPL, FPUC, and Gulf's CAIDI indices are trending downward for the five-year period of 2009 to 2013. DEF and TECO's CAIDI indices are trending upward for the same period.

CAIDI is the average interruption duration or the time to restore service to interrupted customers. CAIDI is calculated by dividing the total system CMI by the number of customer interruptions which is also SAIDI divided by SAIFI.

Figure 4-3. Average Service Restoration Time (Adjusted CAIDI)

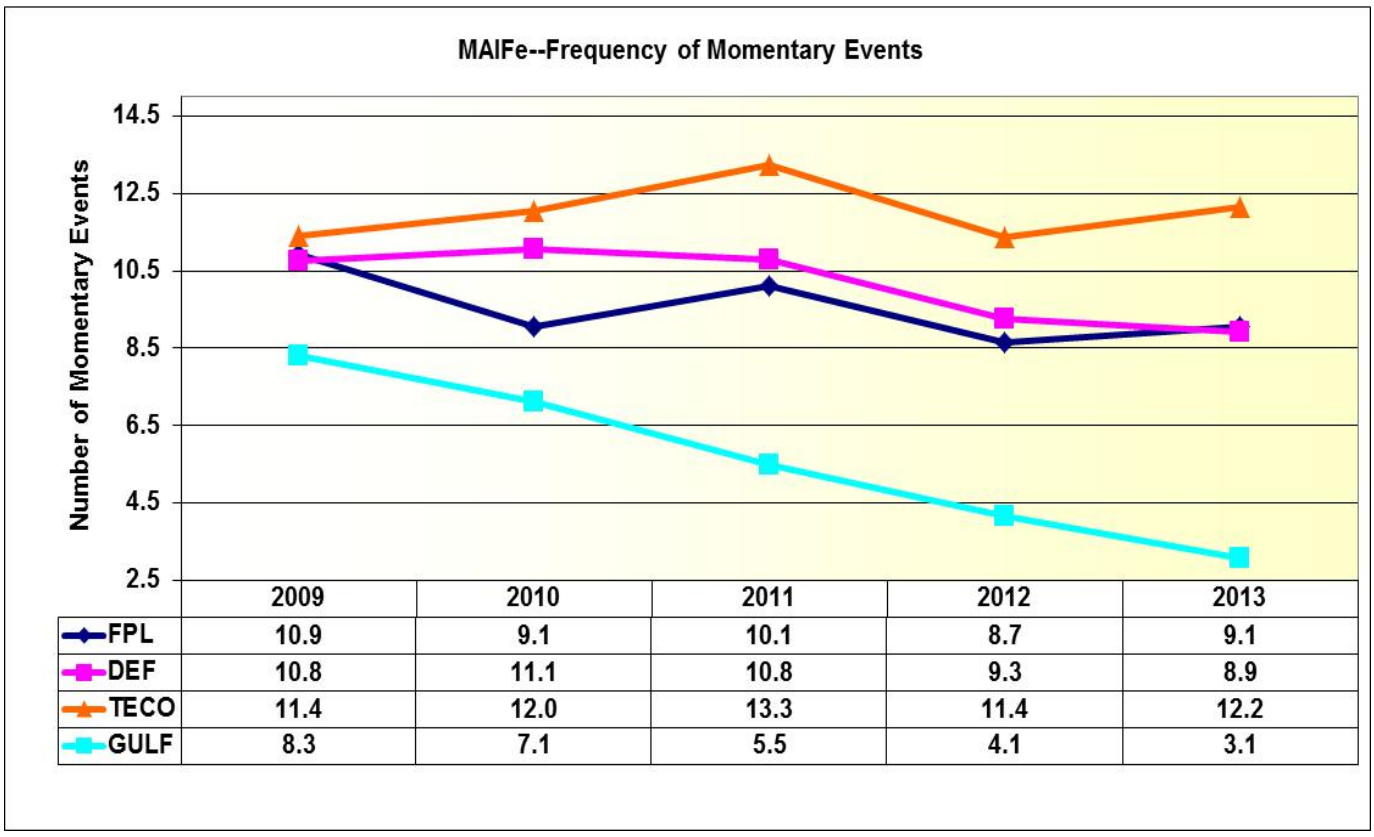


	2009	2010	2011	2012	2013
FPL	70	84	82	71	69
DEF	77	76	81	77	82
TECO	77	95	87	86	89
GULF	103	84	89	98	88
FPUC	109	90	89	102	93

Figure 4-4 shows a five-year graph of the adjusted MAIFIe for DEF, FPL, Gulf, and TECO. DEF, FPL, and Gulf's MAIFIe indices are trending downward for the five-year period of 2009 to 2013 as TECO's MAIFIe is slightly trending upward for the same period. Comparing the MAIFIe for 2012 to 2013, DEF decreased by 4 percent and Gulf decreased by 24 percent. FPL increased the MAIFIe index by 4 percent and TECO increased the MAIFIe index by 7 percent. FPUC is exempt from reporting MAIFIe and CEMI5 because it has fewer than 50,000 customers.

MAIFIe is the average frequency of momentary interruptions or the number of times there is a loss of service of less than one minute. MAIFIe is calculated by dividing the number of momentary interruptions events recorded on primary circuits (CME) by the number of customers served.

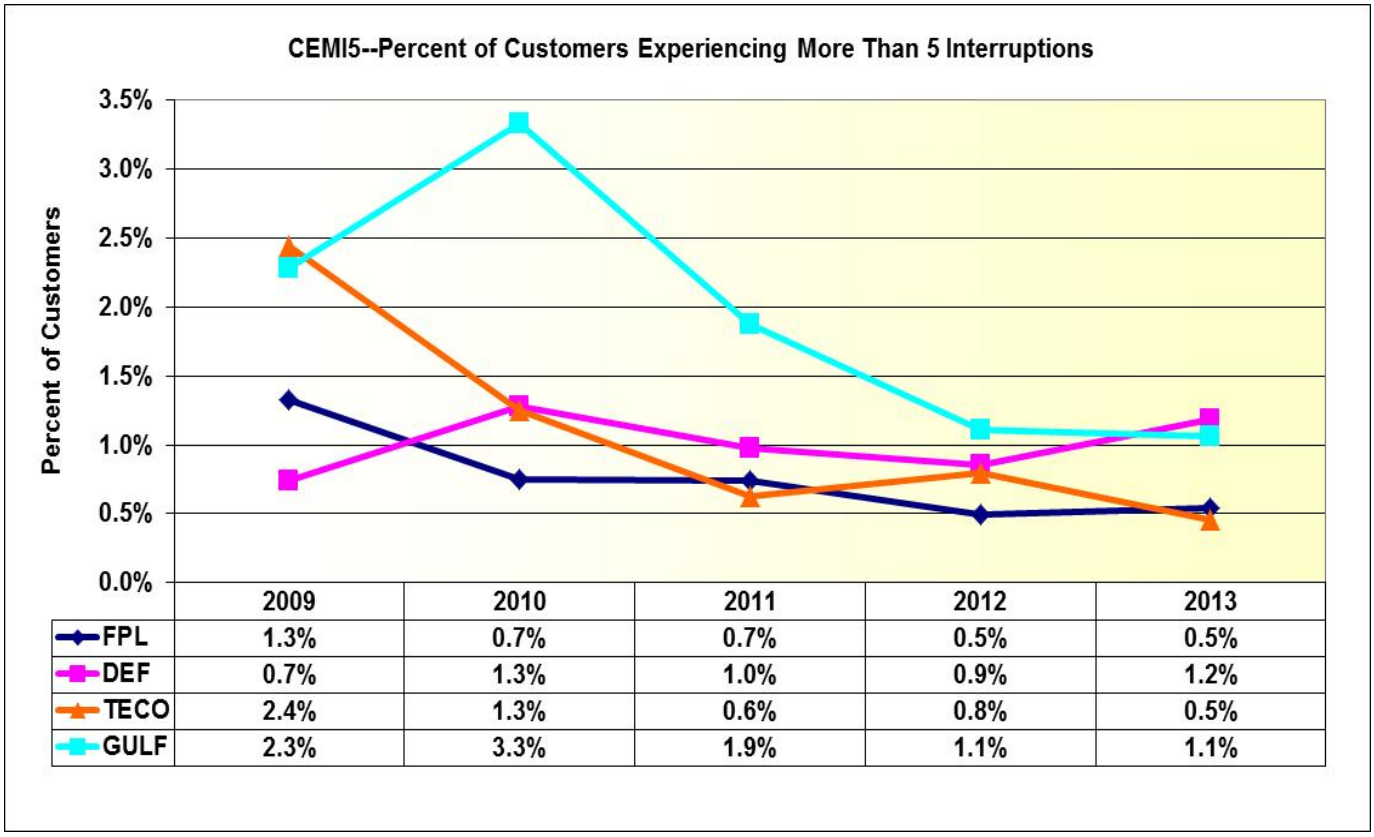
Figure 4-4. Average Number of Feeder Momentary Events (Adjusted MAIFIe)



	2009	2010	2011	2012	2013
FPL	10.9	9.1	10.1	8.7	9.1
DEF	10.8	11.1	10.8	9.3	8.9
TECO	11.4	12.0	13.3	11.4	12.2
GULF	8.3	7.1	5.5	4.1	3.1

Figure 4-5 is a five-year graph of the adjusted CEMI5 for FPL, Gulf, DEF, and TECO. CEMI5 is a percentage. It represents the number of customers that experienced more than five service interruptions in the year divided by the total number of customers. Gulf's adjusted CEMI5 stayed the same at 1.1 percent in 2013 as in 2012. FPL's CEMI5 also stayed the same in 2013 at 0.5 percent as in 2012. DEF's CEMI5 percent increased to 1.2 percent in 2013 from 0.9 percent in 2012 and is slightly trending upward. TECO's CEMI5 had a decrease in the percent of customers experiencing more than five interruptions in 2013 compared to its 2012 results.

Figure 4-5. Percent of Customer with More Than Five Interruptions (Adjusted CEMI5)



	2009	2010	2011	2012	2013
FPL	1.3%	0.7%	0.7%	0.5%	0.5%
DEF	0.7%	1.3%	1.0%	0.9%	1.2%
TECO	2.4%	1.3%	0.6%	0.8%	0.5%
GULF	2.3%	3.3%	1.9%	1.1%	1.1%

Figure 4-6 shows the number of outages per 10,000 customers on an adjusted basis for the five IOUs over the last five years. The graph displays each utility's adjusted data concerning the number of outage events and the total number of customers on an annual basis. The number of FPL outages increased from 92,554 in 2012 to 96,842 in 2013, and the number of outages per 10,000 customers remains flat for the five-year period. TECO's results remain relatively flat for the five-year period. DEF's number of outages increased for 2013 and the results are trending downward for the five-year period. Gulf's number of outages decreased for 2013, and continues to trend downward for the five-year period. FPUC's results decreased in 2009 and 2010, increased for 2010 to 2012, and decreased again for 2012 and 2013. Due to the small customer base, the line graph for FPUC could be subject to greater volatility.

Figure 4-6. Number of Outages per 10,000 Customers (Adjusted)

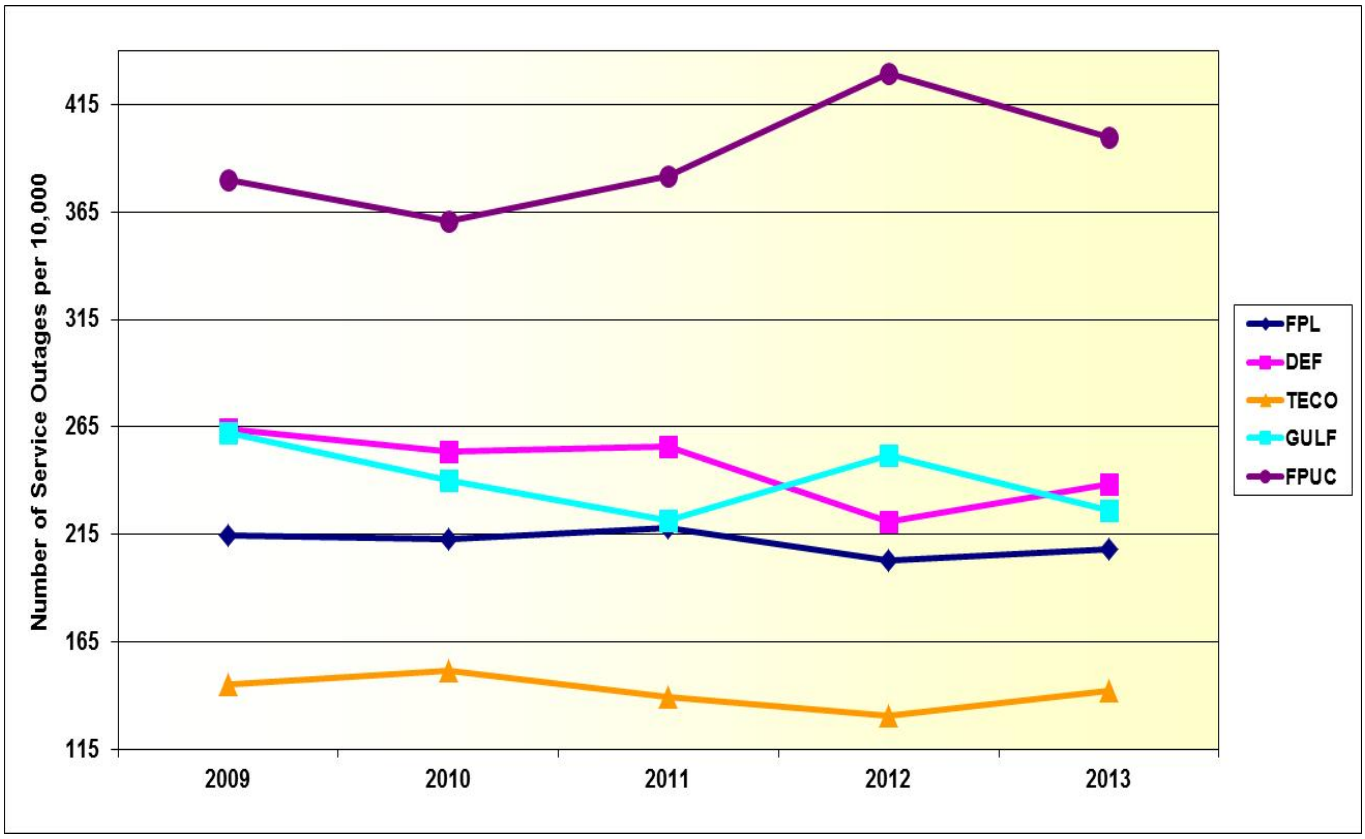
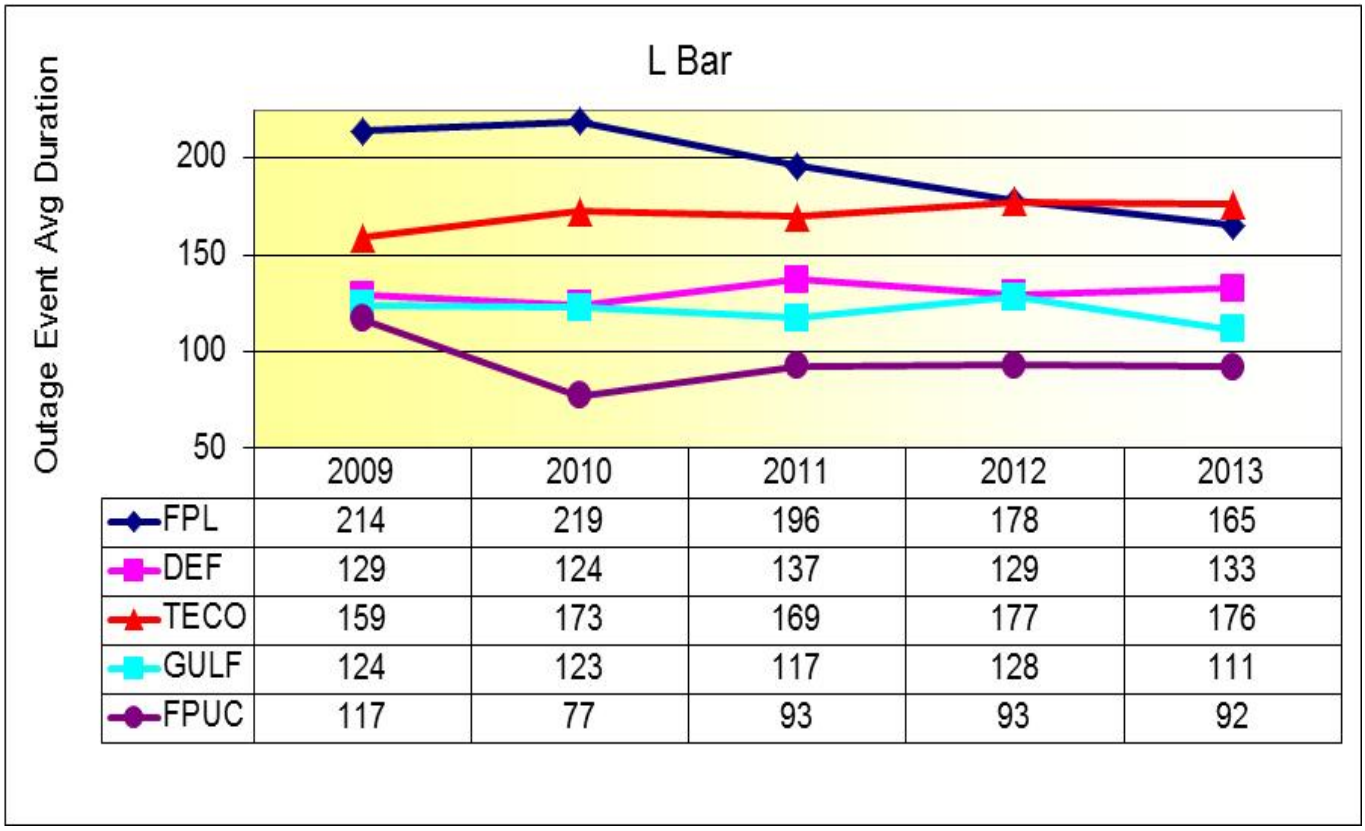


Figure 4-7 represents the average duration of outage events (Adjusted L-Bar) for each IOU. FPL's average outage duration continues to decrease along with the category Equipment Failure which represents approximately 32 percent of FPL's outages. Gulf's outages appear to be decreasing with 50 percent of the outages attributed to Animals (29 percent) and Deterioration (21 percent). DEF and TECO's L-Bar values increased in 2013 with the outages attributed to Animals (14 percent for DEF and 19 percent for TECO) for both companies. FPUC's L Bar decreased in 2013 with Vegetation representing 24 percent of the outages and Animals representing 25 percent of the outages.

Figure 4-7. Average Duration of Outage Events (Adjusted L-Bar)



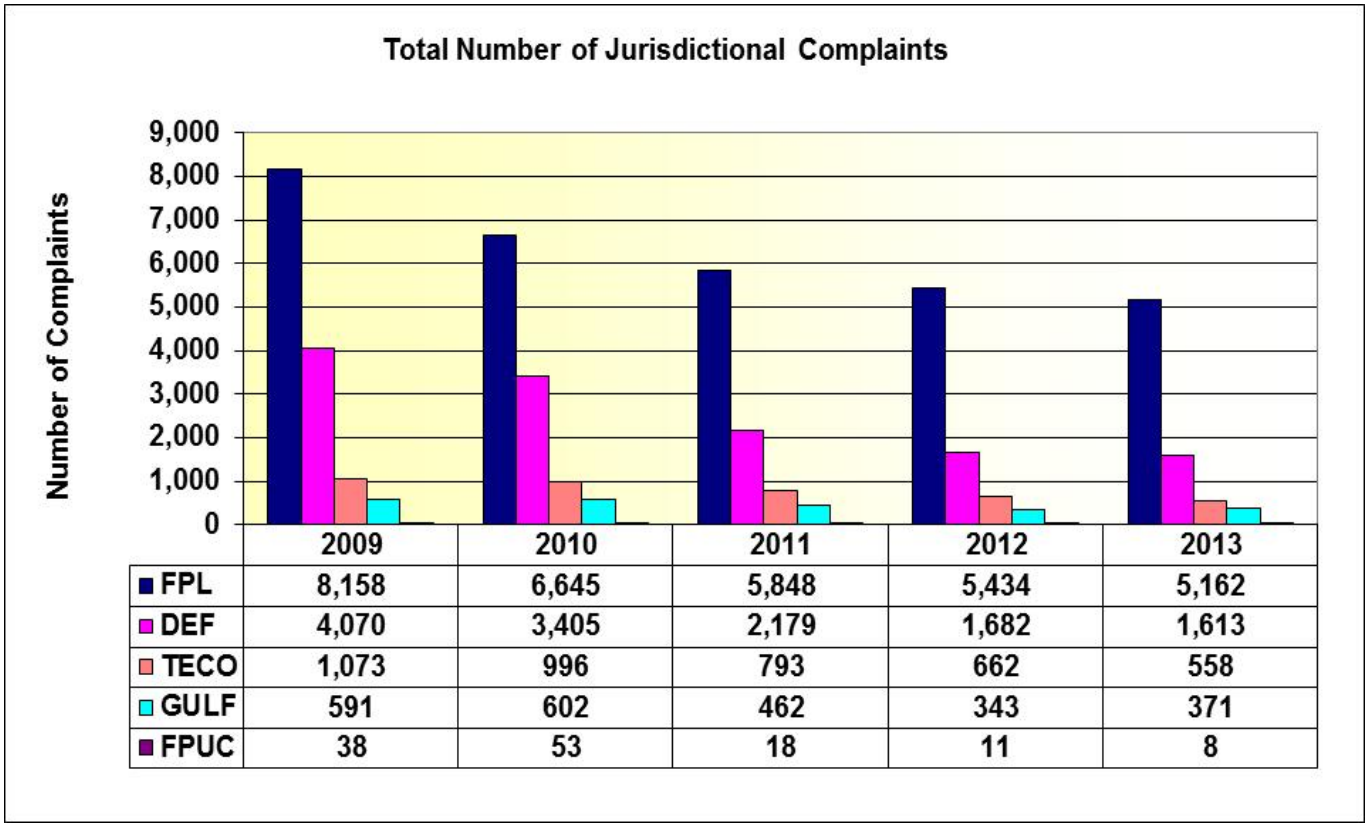
	2009	2010	2011	2012	2013
FPL	214	219	196	178	165
DEF	129	124	137	129	133
TECO	159	173	169	177	176
GULF	124	123	117	128	111
FPUC	117	77	93	93	92

Inter-Utility Comparisons of Reliability Related Complaints

Figures 4-8, **4-9**, **4-10**, and **4-11** represent consumer complaint data that was extracted from the Commission's Consumer Activity Tracking System (CATS). Each consumer complaint received by the Commission is assigned an alphanumeric category after the complaint is resolved. Reliability related complaints have 15 specific category types and typically pertain to Trees, Safety, Repairs, Frequent Outages, and Momentary Service Interruptions. The Quality of Service category was established in July 2003, resulting in a shift of some complaints that previously would have been coded in another complaint category.[17]

Figure 4-8 shows the total number of jurisdictional complaints for each IOU. In comparing the number of complaints by the different companies, the total number of customers should be considered. FPL is showing more complaints, but FPL also has more customers than the other companies.

Figure 4-8. Total Number of Jurisdictional Complaints

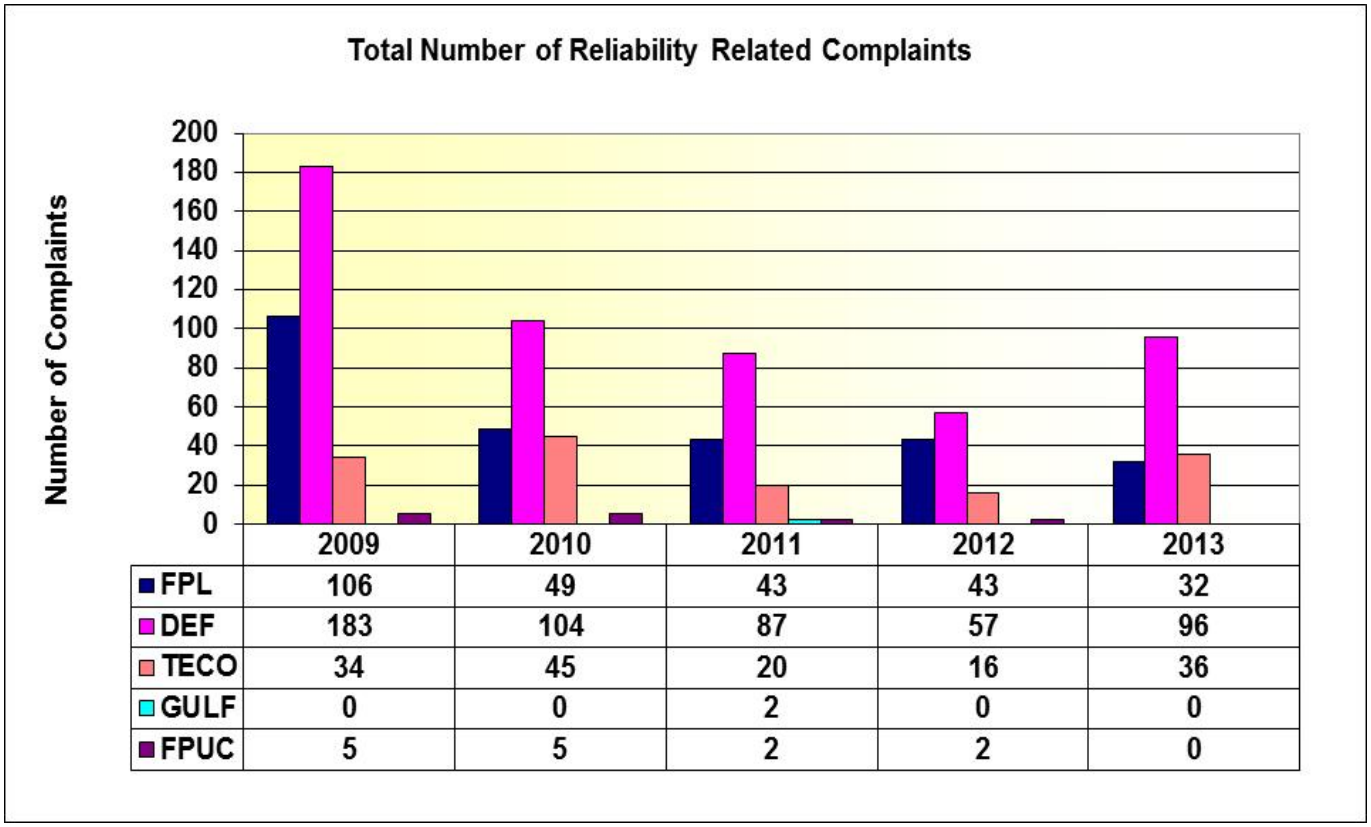


	2009	2010	2011	2012	2013
FPL	8,158	6,645	5,848	5,434	5,162
DEF	4,070	3,405	2,179	1,682	1,613
TECO	1,073	996	793	662	558
GULF	591	602	462	343	371
FPUC	38	53	18	11	8

[17] The Quality of Service category is applied to the customer service experience of the utility customer and not quality of service that typically has a measureable standard such as a voltage level or frequency. Quality of Service, beginning in 2010, is no longer tabulated as a reliability type complaint.

Figure 4-9 charts the total number of reliability related complaints for the IOUs. DEF is showing the largest amount of reliability complaints for the five-year period of 2009 to 2013 with Gulf showing the least amount for four of the last five years. All the companies are trending downward in the number of reliability complaints except for Gulf who is staying relatively flat and consistently at or near zero complaints.

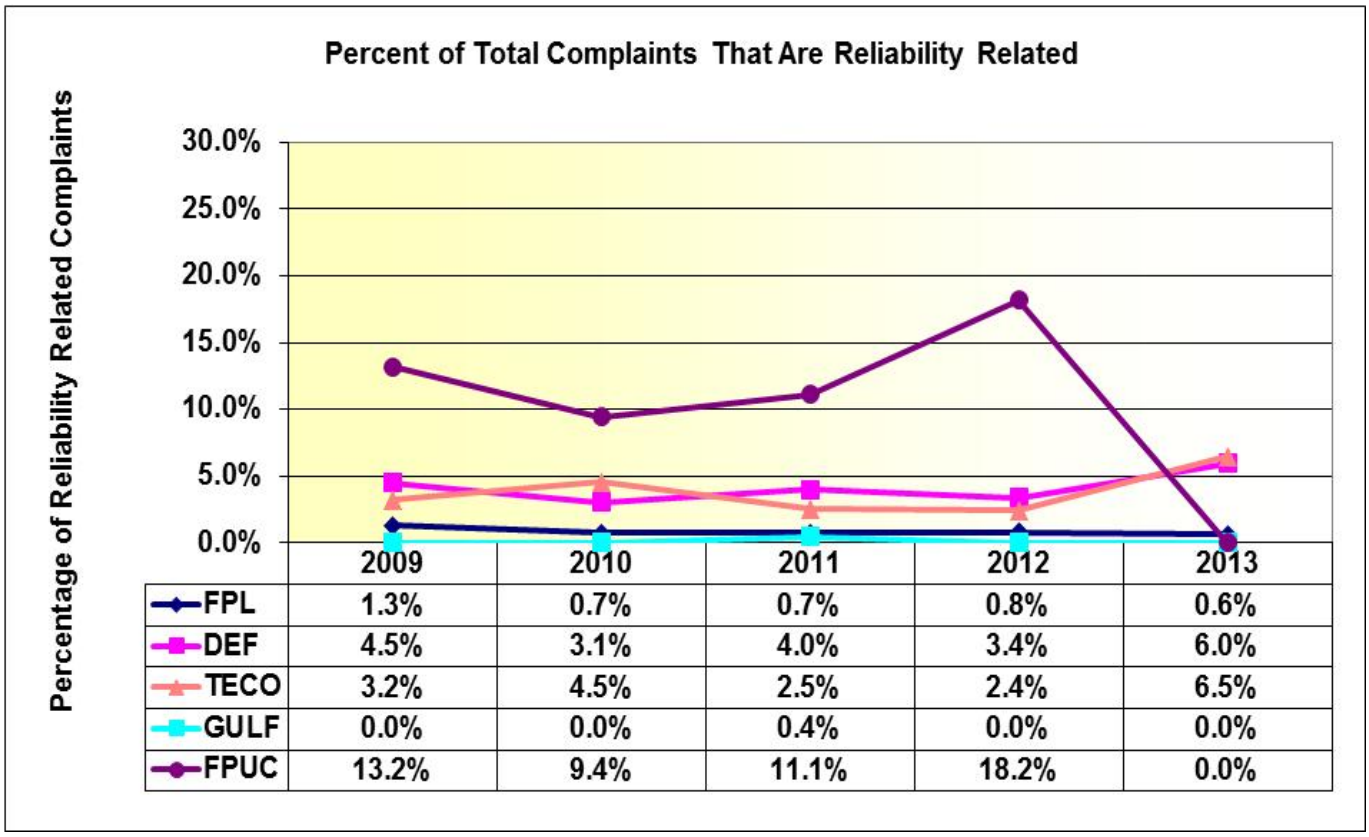
Figure 4-9. Total Number of Reliability Related Complaints



	2009	2010	2011	2012	2013
FPL	106	49	43	43	32
DEF	183	104	87	57	96
TECO	34	45	20	16	36
GULF	0	0	2	0	0
FPUC	5	5	2	2	0

Figure 4-10 shows the percentage of reliability related customer complaints in relation to the total number of complaints for each IOU. FPL and Gulf's trends appear to be staying relatively flat while FPUC is trending downward. DEF and TECO are trending slightly upward. The percentages of FPUC complaints compared to the other companies appears high, however FPUC has fewer customers and fewer complaints in total.

Figure 4-10. Percent of Complaints that are Reliability Related

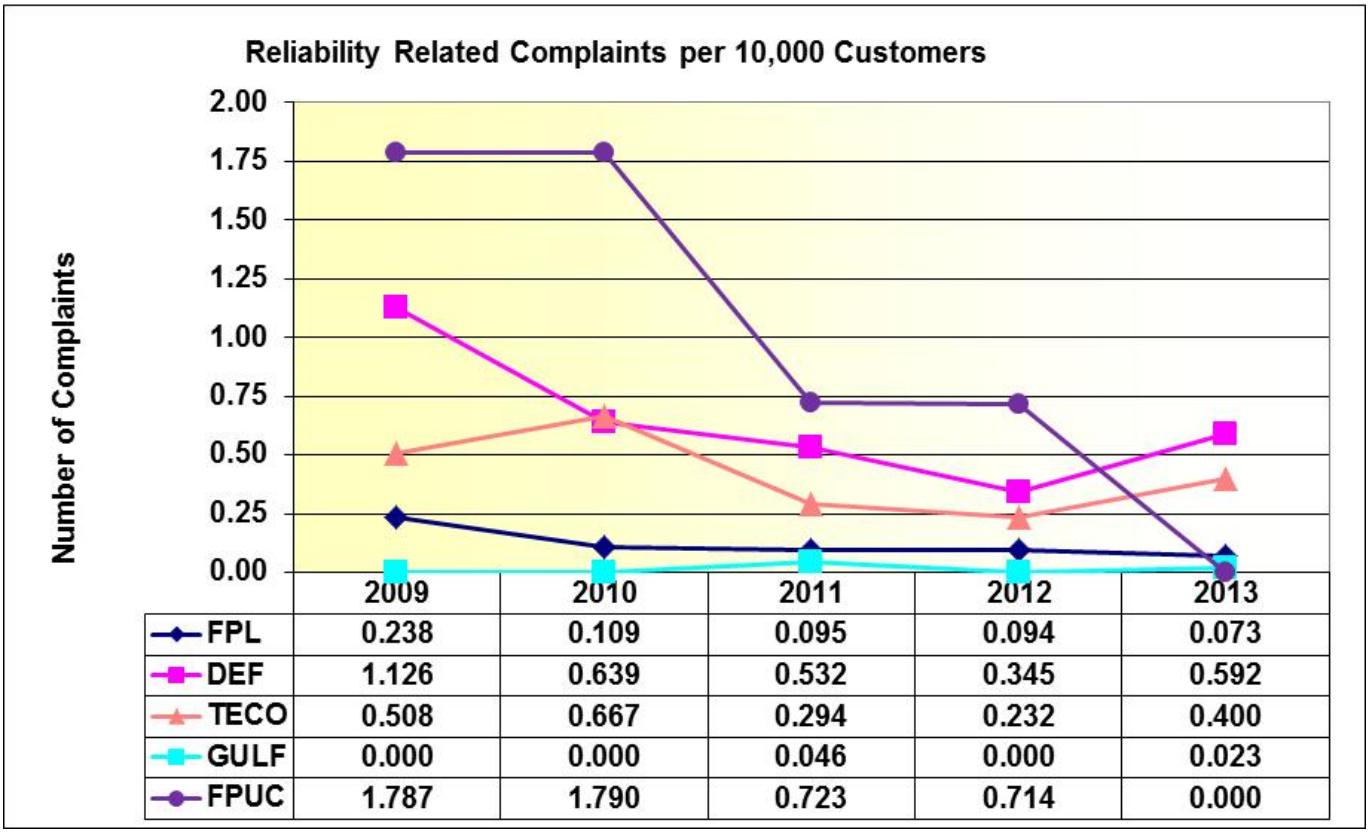


	2009	2010	2011	2012	2013
FPL	1.3%	0.7%	0.7%	0.8%	0.6%
DEF	4.5%	3.1%	4.0%	3.4%	6.0%
TECO	3.2%	4.5%	2.5%	2.4%	6.5%
GULF	0.0%	0.0%	0.4%	0.0%	0.0%
FPUC	13.2%	9.4%	11.1%	18.2%	0.0%

Figure 4-11 charts the volume of reliability related complaints per 10,000 customers for the IOUs. The volume of service reliability complaints is normalized to a 10,000-customer base for comparative purposes. This is calculated for each IOU by dividing the total number of reliability complaints reported to the Commission by the total number of utility's customers. This fraction is then multiplies by 10,000 for graphing purposes.

All the IOUs have less than one reliability complaint per 10,000 customers. For the five-year period, FPL, DEF, TECO, and FPUC appear to be trending downward. Gulf has the fewest reliability complaints in comparison to the other utilities and is staying relatively flat. The volatility of FPUC's results can be attributed to its small customer base, which typically averages 28,000 customers.

Figure 4-11. Service Reliability Related Complaints per 10,000 Customers



	2009	2010	2011	2012	2013
FPL	0.238	0.109	0.095	0.094	0.073
DEF	1.126	0.639	0.532	0.345	0.592
TECO	0.508	0.667	0.294	0.232	0.400
GULF	0.000	0.000	0.046	0.000	0.023
FPUC	1.787	1.790	0.723	0.714	0.000

Section V: Appendices

Appendix A – Adjusted Service Reliability Data

Duke Energy Florida

Table A-1. DEF's Number of Customers (Year End)

	2009	2010	2011	2012	2013
North Central	370,929	372,724	374,978	378,198	383,011
North Coastal	191,826	192,482	192,477	193,049	194,394
South Central	411,992	417,540	422,041	428,891	438,088
South Coastal	650,613	644,765	647,103	650,951	656,073
DEF System	**1,625,360**	**1,627,511**	**1,636,599**	**1,651,089**	**1,671,566**

Table A-2. DEF's Adjusted Regional Indices SAIDI, SAIFI, and CAIDI

	Average Interruption Duration Index (SAIDI)					Average Interruption Frequency Index (SAIFI)					Average Customer Restoration Time Index (CAIDI)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
North Central	81	101	86	79	91	0.97	1.25	1.06	0.98	1.11	83	81	82	81	82
North Coastal	136	145	201	136	147	1.55	1.65	1.89	1.48	1.51	88	88	107	92	97
South Central	71	74	61	63	88	0.90	1.04	0.83	0.80	0.97	79	71	73	79	91
South Coastal	76	86	70	58	71	1.11	1.21	0.98	0.89	1.04	68	71	72	66	69
DEF System	**83**	**93**	**87**	**73**	**89**	**1.08**	**1.23**	**1.07**	**0.96**	**1.09**	**77**	**76**	**81**	**77**	**82**

Table A-3. DEF's Adjusted Regional Indices MAIFIe and CEMI5%

	Average Frequency of Momentary Events on Feeders (MAIFIe)					Percentage of Customers Experiencing More than 5 Service Interruptions (CEMI5%)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
North Central	11.1	11.4	11.0	9.6	8.9	0.53%	1.21%	0.69%	0.82%	1.53%
North Coastal	9.8	8.6	9.1	8.8	8.1	2.60%	4.33%	4.77%	3.46%	4.13%
South Central	9.7	8.5	8.5	7.6	7.8	0.64%	0.66%	0.43%	0.49%	0.80%
South Coastal	11.5	13.2	12.7	10.3	9.9	0.38%	0.81%	0.38%	0.34%	0.38%
DEF System	**10.8**	**11.1**	**10.8**	**9.3**	**8.9**	**0.74%**	**1.28%**	**0.98%**	**0.85%**	**1.19%**

Table A-4. DEF's Primary Causes of Outages Events

	Adjusted Number of Outages Events						Adjusted L-Bar Length of Outages				
	2009	2010	2011	2012	2013	Cumulative Percentages	2009	2010	2011	2012	2013
Animals	4,589	-	7,686	6,168	5,488	13.8%	68	-	70	70	71
Storm	4,405	3,711	4,470	3,826	4,755	11.9%	122	107	131	103	115
Tree-Preventable	4,827	5,469	4,896	3,229	3,938	9.9%	126	128	148	120	123
Unknown	5,582	4,595	3,429	2,909	3,333	8.4%	79	79	81	80	84
All Other	8,248	12,634	6,614	6,577	7,015	17.6%	139	101	144	143	147
Defective Equipment	3,718	3,681	3,296	3,122	3,358	8.4%	183	173	174	177	171
Vehicle-Const. Equipment	353	326	316	303	392	1.0%	210	208	227	239	222
Connector Failure	3,244	3,078	2,905	2,892	3,000	7.5%	113	113	120	114	117
Tree Non-preventable	3,474	3,612	4,930	4,438	5,205	13.1%	149	140	176	150	154
UG Primary	2,521	2,175	2,288	2,076	2,039	5.1%	228	227	249	252	252
Lightning	1,525	1,073	1,093	980	1,344	3.4%	158	187	216	192	178
Overload	-	968	-	-	-	-	-	154	-	-	-
DEF System	**42,486**	**41,322**	**41,923**	**36,520**	**39,867**	**100%**	**129**	**124**	**137**	**129**	**133**

Note: "All Other" category is the sum of diverse causes of outage events which individually are not among the top ten causes of outage events.

Florida Power & Light Company

Table A-5. FPL's Number of Customers (Year End)

	2009	2010	2011	2012	2013
Boca Raton	349,273	351,056	352,382	355,293	361,932
Brevard	283,298	285,276	286,035	287,898	293,491
Central Dade	257,751	263,305	267,582	270,676	277,807
Central Florida	264,524	266,261	267,930	269,890	275,033
Ft. Myers	184,230	186,626	-	-	-
Gulf Stream	315,117	317,296	319,478	322,805	327,898
Manasota	357,938	360,971	363,324	366,379	372,514
North Dade	221,592	223,875	225,457	226,633	232,018
North Florida	139,400	140,248	141,303	143,038	146,184
Naples	236,430	239,150	360,786	364,414	371,866
Pompano	294,184	298,007	300,115	301,639	306,692
South Dade	280,926	283,708	286,068	289,808	295,283
Toledo Blade	167,850	169,698	241,111	243,832	249,533
Treasure Coast	269,792	271,429	272,383	274,197	279,202
West Dade	237,215	240,579	242,334	244,838	249,935
West Palm	337,471	339,417	340,898	344,432	351,875
Wingate	251,991	254,976	256,934	258,480	265,120
FPL System	**4,448,982**	**4,491,878**	**4,524,120**	**4,564,252**	**4,656,383**

Note: Ft. Myers was split into Naples and Toledo Blade starting in the 2011 report.

Table A-6. FPL's Adjusted Regional Indices SAIDI, SAIFI, and CAIDI

	Average Interruption Duration Index (SAIDI)					Average Interruption Frequency Index (SAIFI)					Average Customer Restoration Time Index (CAIDI)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Boca Raton	67	73	58	63	61	1.29	0.93	0.92	1.14	1.10	52	79	63	55	55
Brevard	75	71	115	61	56	1.18	1.01	1.15	0.87	0.89	64	71	100	70	63
Central Dade	75	69	49	62	51	1.16	0.78	0.68	0.72	0.67	65	89	72	86	75
Central Florida	71	69	149	61	67	1.05	0.91	1.19	0.82	0.93	68	76	126	75	71
Ft. Myers	73	79	-	-	-	1.11	1.09	-	-	-	66	73	-	-	-
Gulf Stream	76	77	55	60	59	1.03	0.82	0.81	0.86	0.93	75	94	68	70	63
Manasota	83	78	67	55	58	0.94	0.91	0.84	0.77	0.83	88	86	80	72	70
North Dade	84	84	67	64	60	0.89	0.82	0.78	0.70	0.68	95	103	86	91	88
North Florida	103	82	131	81	84	1.30	1.02	1.34	1.03	1.10	79	80	98	79	76
Naples	73	92	86	57	55	0.98	0.86	0.90	0.86	0.68	74	107	96	66	79
Pompano	57	71	61	62	49	0.82	0.79	0.92	0.84	0.69	70	90	66	73	71
South Dade	122	88	92	81	77	1.52	1.04	1.14	0.96	0.99	80	84	81	85	77
Toledo Blade	79	78	98	62	72	1.02	0.96	1.28	0.91	1.04	78	81	76	68	70
Treasure Coast	70	79	78	61	72	1.10	1.01	0.98	0.95	1.08	63	79	80	64	67
West Dade	86	88	70	79	59	1.19	1.15	0.96	1.20	0.85	72	77	73	66	69
West Palm	62	67	63	55	54	0.98	0.78	0.87	0.82	0.95	67	85	73	66	57
Wingate	88	81	78	70	70	1.42	0.97	1.10	0.99	0.99	62	83	71	71	71
FPL System	**78**	**77**	**80**	**63**	**61**	**1.11**	**0.92**	**0.97**	**0.90**	**0.89**	**70**	**84**	**82**	**71**	**69**

Table A-7. FPL's Adjusted Regional Indices MAIFIe and CEMI5%

	Average Frequency of Momentary Events on Feeders (MAIFIe)					Percentage of Customers Experiencing More than 5 Service Interruptions (CEMI5%)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Boca Raton	10.6	7.1	8.3	8.4	8.4	1.64%	0.37%	0.44%	0.99%	1.31%
Brevard	13.6	11.1	15.1	10.6	10.1	1.09%	0.92%	0.69%	0.23%	0.58%
Central Dade	9.5	7.1	6.7	6.4	6.7	1.32%	0.42%	0.25%	0.28%	0.08%
Central Florida	12.3	10.7	14.0	9.8	10.0	1.16%	0.96%	0.91%	0.99%	0.52%
Ft. Myers	8.5	8.1	-	-	-	0.82%	0.77%	-	-	-
Gulf Stream	9.3	7.7	7.8	7.8	8.7	1.68%	1.04%	0.37%	0.40%	0.45%
Manasota	8.5	8.1	8.8	7.7	7.7	0.65%	0.74%	0.53%	0.22%	0.23%
North Dade	8.8	7.2	7.0	6.8	6.8	1.08%	0.71%	0.94%	0.35%	0.45%
North Florida	15.3	13.0	16.4	11.6	10.8	2.84%	1.81%	1.67%	0.49%	0.47%
Naples	7.7	7.2	7.3	6.3	7.0	1.04%	0.51%	0.49%	0.22%	0.36%
Pompano	7.3	5.7	6.9	6.9	7.5	0.49%	0.16%	0.49%	0.17%	0.07%
South Dade	11.0	8.2	8.9	7.8	8.0	3.91%	0.67%	1.64%	0.27%	0.70%
Toledo Blade	18.2	16.3	15.4	10.9	12.9	1.15%	0.58%	1.33%	0.52%	1.21%
Treasure Coast	15.2	13.4	15.1	12.2	14.3	1.09%	1.46%	1.25%	0.64%	0.87%
West Dade	9.7	9.1	8.7	7.8	7.3	1.26%	1.07%	0.49%	1.97%	0.29%
West Palm	10.7	9.0	10.2	9.0	9.8	0.82%	0.57%	0.51%	0.19%	0.73%
Wingate	13.9	10.2	10.9	11.4	11.6	1.14%	0.52%	0.67%	0.23%	0.22%
FPL System	**10.9**	**9.1**	**10.1**	**8.7**	**9.1**	**1.33%**	**0.75%**	**0.74%**	**0.49%**	**0.54%**

Table A-8. FPL's Primary Causes of Outage Events

	Adjusted Number of Outage Events						Adjusted L-Bar Length of Outages				
	2009	2010	2011	2012	2013	Cumulative Percentages	2009	2010	2011	2012	2013
Equipment Failure	31,933	33,047	28,825	30,801	31,110	32.1%	261	273	231	218	199
Unknown	11,806	11,737	12,404	11,883	12,000	12.4%	172	144	137	130	122
Vegetation	14,866	16,201	18,379	16,636	18,774	19.4%	219	215	229	196	183
Animals	9,343	9,688	11,916	9,870	10,320	10.7%	116	109	105	98	94
Remaining Causes	3,745	5,849	6,072	5,011	5,075	5.2%	214	323	259	211	201
Other Weather	8,185	5,142	7,033	5,708	5,795	6.0%	152	148	177	137	125
Other	7,654	7,297	7,104	6,598	7,826	8.1%	191	182	178	140	143
Lightning	4,292	2,492	1,855	1,528	1,567	1.6%	297	285	270	265	246
Equipment Connect	2,488	3,052	4,176	3,511	3,306	3.4%	253	253	174	157	148
Vehicle	1,088	1,149	1,016	1,008	1,042	1.1%	257	250	236	249	230
Request	-	-	-	-	27	0%	-	-	-	-	80
FPL System	**95,400**	**95,654**	**98,780**	**92,554**	**96,842**	**100%**	**214**	**219**	**196**	**178**	**165**

Notes:

(1) "Other" category is a sum of outages events that require a detailed explanation.

(2) "Remaining Causes" category is the sum of many diverse causes of outage events, which individually are not among the top ten causes of outage events, and excludes those identified as "Other."

Florida Public Utilities Company

Table A-9. FPUC's Number of Customers (Year End)

	2009	2010	2011	2012	2013
Fernandina(NE)	15,254	15,276	15,416	15,461	15,509
Marianna (NW)	12,730	12,654	12,260	12,560	12,602
FPUC System	**27,984**	**27,930**	**27,676**	**28,021**	**28,111**

Table A-10. FPUC's Adjusted Regional Indices SAIDI, SAIFI, and CAIDI

	Average Interruption Duration Index (SAIDI)					Average Interruption Frequency Index (SAIFI)					Average Customer Restoration Time Index (CAIDI)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
NE	225	120	200	141	76	1.29	1.29	2.35	1.32	0.95	116	93	85	107	81
NW	210	136	139	165	284	2.09	1.57	1.40	1.69	2.89	101	86	99	98	98
FPUC System	**218**	**127**	**173**	**152**	**170**	**2.01**	**1.42**	**1.93**	**1.48**	**1.82**	**109**	**90**	**89**	**102**	**93**

Table A-10. FPUC's Primary Causes of Outage Events

	Adjusted Number of Outage Events						Adjusted L-Bar Length of Outages				
	2009	2010	2011	2012	2013	Cumulative Percentages	2009	2010	2011	2012	2013
Vegetation	284	259	345	350	265	23.6%	89	77	83	83	83
Animals	231	315	243	294	275	24.5%	63	59	55	67	56
Lightning	95	47	39	44	48	4.3%	115	88	80	82	85
Unknown	90	101	79	83	95	8.5%	119	65	64	67	64
Corrosion	120	97	85	79	65	5.8%	101	92	103	96	92
All Other	43	50	55	63	32	2.8%	98	104	93	107	96
Other Weather	149	84	167	246	299	26.6%	275	89	177	134	136
Trans. Failure	24	20	18	25	29	2.6%	150	137	100	139	148
Vehicle	27	35	26	19	16	1.4%	63	135	97	150	117
FPUC System	**1,063**	**1,008**	**1,057**	**1,203**	**1,124**	**100%**	**117**	**77**	**93**	**93**	**92**

Notes:

(1) "All Other" category is the sum of many diverse causes of outage events which individually are not one of the top ten causes of outage events.

(2) Blanks are shown for years where the quantity of outages was less than one of the top ten causes of outage event.

Gulf Power Company

Table A-11. Gulf's Number of Customers (Year End)

	2009	2010	2011	2012	2013
Central	109,250	110,040	111,168	111,854	113,179
Eastern	110,532	110,791	111,180	111,481	112,462
Western	208,372	209,827	210,188	211,236	213,748
Gulf System	**428,154**	**430,658**	**432,536**	**434,571**	**439,389**

Table A-12. Gulf's Adjusted Regional Indices SAIDI, SAIFI, and CAIDI

	Average Interruption Duration Index (SAIDI)					Average Interruption Frequency Index (SAIFI)					Average Customer Restoration Time Index (CAIDI)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Central	107	115	90	110	62	1.08	1.58	1.09	1.16	0.79	99	73	83	95	79
Eastern	140	133	110	88	118	1.20	1.64	1.31	0.93	1.25	117	82	84	95	95
Western	157	168	123	128	100	1.59	1.88	1.30	1.28	1.14	99	89	95	100	87
Gulf System	**140**	**146**	**111**	**113**	**95**	**1.36**	**1.74**	**1.25**	**1.16**	**1.08**	**103**	**84**	**89**	**98**	**88**

Table A-13. Gulf's Adjusted Regional Indices MAIFIe and CEMI5%

	Average Frequency of Momentary Events on Feeders (MAIFIe)					Percentage of Customers Experiencing More than 5 Service Interruptions (CEMI5%)				
	2009	**2010**	**2011**	**2012**	**2013**	**2009**	**2010**	**2011**	**2012**	**2013**
Central	8.5	7.6	6.4	4.5	3.0	0.53%	1.12%	0.91%	1.11%	0.17%
Eastern	5.9	5.6	4.4	2.7	2.3	2.83%	4.25%	2.45%	0.74%	2.78%
Western	9.5	7.7	5.6	4.7	3.5	2.91%	4.01%	2.08%	1.30%	0.64%
Gulf System	**8.3**	**7.1**	**5.5**	**4.1**	**3.1**	**2.28%**	**3.33%**	**1.87%**	**1.11%**	**1.07%**

Table A-14. Gulf's Primary Causes of Outage Events

	Adjusted Number of Outage Events						Adjusted L-Bar Length of Outages				
	2009	2010	2011	2012	2013	Cumulative Percentages	2009	2010	2011	2012	2013
Animals	3,112	2,963	3,013	3,585	2,857	28.8%	81	79	72	72	64
Lightning	2,080	1,569	1,527	1,875	1,452	14.6%	155	167	148	187	139
Deterioration	2,333	2,211	1,928	2,219	2,067	20.8%	150	152	154	162	146
Unknown	988	639	691	676	715	7.2%	90	96	96	94	85
Trees	1,293	1,151	1,174	1,195	1,354	13.6%	155	137	138	149	129
Vehicle	275	264	249	275	272	2.7%	173	179	180	187	178
All Other	388	383	285	290	314	3.2%	135	132	119	115	112
Wind/Rain	-	-	-	182	203	2.0%	-	-	-	212	151
Overload	245	414	162	-	-	-	104	113	97	-	-
Vines	150	189	187	159	237	2.4%	108	90	110	95	91
Other	166	288	222	254	249	2.5%	85	85	103	113	102
Contamination Corrosion	212	266	151	240	211	2.1%	116	118	118	110	118
Gulf System	**11,242**	**10,337**	**9,589**	**10,950**	**9,931**	**100%**	**124**	**123**	**117**	**128**	**111**

Notes:

(1) "All Other" category is the sum of many diverse causes of outage events which individually are not among the top ten causes of outages events.

(2) Blanks are shown for years where the number of outages was too small to be among the top ten causes of outage events.

Tampa Electric Company

Table A-15. TECO's Number of Customers (Year End)

	2009	2010	2011	2012	2013
Central	179,160	179,810	181,797	185,005	188,161
Dade City	13,686	13,692	13,700	13,822	13,965
Eastern	108,206	109,383	109,876	111,069	113,053
Plant City	54,103	54,470	54,725	55,472	56,438
South Hillsborough	60,356	61,530	62,761	64,530	67,071
Western	186,960	187,932	189,200	191,083	193,320
Winter Haven	66,979	67,560	67,222	67,735	68,529
TECO System	**669,450**	**674,377**	**679,281**	**688,716**	**700,537**

Table A-16. TECO's Adjusted Regional Indices SAIDI, SAIFI, and CAIDI

	Average Interruption Duration Index (SAIDI)					Average Interruption Frequency Index (SAIFI)					Average Customer Restoration Time Index (CAIDI)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Central	62	64	54	76	70	0.82	0.73	0.64	0.86	0.79	75	88	85	88	88
Dade City	138	135	170	161	261	1.85	1.65	2.00	1.67	2.75	75	82	85	97	95
Eastern	64	67	61	57	93	0.90	0.70	0.80	0.73	0.87	70	96	76	78	106
Plant City	141	144	99	110	131	1.85	1.48	1.13	1.34	1.49	76	97	88	82	87
South Hillsborough	85	101	67	90	94	0.89	0.89	0.75	1.06	1.11	95	114	89	85	84
Western	79	89	91	77	75	1.01	0.90	0.97	0.81	0.86	78	99	94	96	88
Winter Haven	59	79	86	67	61	0.84	0.99	1.04	1.01	0.81	70	80	83	66	76
TECO System	**77**	**84**	**76**	**78**	**85**	**1.00**	**0.89**	**0.87**	**0.91**	**0.95**	**77**	**95**	**87**	**86**	**89**

Table A-17. TECO's Adjusted Regional Indices MAIFIe and CEMI5%

	Average Frequency of Momentary Events on Feeders (MAIFIe)					Percentage of Customers Experiencing More than 5 Service Interruptions (CEMI5%)				
	2009	**2010**	**2011**	**2012**	**2013**	**2009**	**2010**	**2011**	**2012**	**2013**
Central	8.8	10.0	11.2	10.2	10.0	1.22%	0.56%	0.60%	0.44%	0.20%
Dade City	13.4	16.5	15.6	15.8	17.4	11.50%	0.60%	0.67%	3.66%	1.48%
Eastern	12.0	13.0	14.4	10.8	13.8	0.59%	1.64%	0.69%	0.37%	0.41%
Plant City	19.9	14.8	17.6	19.8	17.8	11.27%	2.02%	0.85%	0.90%	1.65%
South Hillsborough	13.3	14.2	13.6	11.2	12.9	2.47%	1.05%	0.30%	3.49%	0.84%
Western	10.4	11.8	12.6	10.6	10.9	1.74%	0.73%	0.58%	0.26%	0.33%
Winter Haven	11.2	11.6	14.5	10.0	12.6	1.69%	3.62%	0.80%	0.71%	0.01%
TECO System	**11.4**	**12.0**	**13.3**	**11.4**	**12.2**	**2.45%**	**1.25%**	**0.62%**	**0.79%**	**0.45%**

Table A-18. TECO's Primary Causes of Outage Events

	Adjusted Number of Outage Events						Adjusted L-Bar Length of Outages				
	2009	2010	2011	2012	2013	Cumulative Percentages	2009	2010	2011	2012	2013
Lightning	1,498	1,226	1,392	1,327	1,639	16.5%	82	233	206	225	214
Animals	1,555	2,040	2,157	1,736	1,918	19.3%	198	84	90	87	95
Vegetation	2,059	1,975	1,806	1,677	1,959	19.7%	163	187	207	218	202
Unknown	721	753	849	905	892	9.0%	209	128	128	225	143
Other Weather	636	727	222	260	261	2.6%	149	186	183	191	190
Electrical	1,204	1,380	1,172	1,068	1,154	11.6%	181	193	197	184	186
Bad Connection	880	1,090	848	779	837	8.4%	128	227	226	135	229
Vehicle	234	245	285	315	306	3.1%	145	219	218	221	215
Defective Equipment	396	245	196	181	206	2.1%	203	147	161	182	164
All Other	235	206	223	215	187	1.9%	155	146	138	155	141
Down Wire	301	336	325	525	599	6.0%	-	218	174	165	187
TECO System	**9,719**	**10,223**	**9,475**	**8,988**	**9,958**	**100%**	**159**	**173**	**169**	**177**	**176**

Notes:

(1) "All Other" category is the sum of many diverse causes of outage events which individually are not among the top ten causes of outages events.

(2) Blanks are shown for years where the number of outages was too small to be among the top ten causes of outage events.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Alachua, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes	The City's inspection cycle is on an eight-year cycle (12.5% per year) The City of Alachua owns only distribution poles, no transmission poles.	The City planned 12.5% of distribution system to be inspected and completed 400 poles (17.6%). The City of Alachua has 2,271 distribution poles.	50 (12.5%) poles were rejected. One pole was deemed non-restorable due to shell rot; 25 poles were deemed restorable with C-Truss replacement to be scheduled.	All failed poles were 45-50 foot, Class 3 and were replaced or C-trussed. All other poles were treated and wrapped.	The City continues to use the information from the PURC conference held in 2007 and 2009, to improve vegetation management.	The City trims approximately 62 miles of overhead distribution on a three-year cycle. Approximately 20% of the facilities are trimmed each year.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Bartow, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes	The facilities are inspected on an eight-year cycle. Inspections are visual, and tests are made to identify shell rot, insect infestation, and excavated to determine strength.	1,500 (0.13%) poles were planned, and the City completed 1,657 pole inspections in 2013.	526 (32%) distribution poles failed inspection due to pole top rot or rotten ground decay.	136 poles were replaced ranging in size from 30 to 45 foot; Class 3, 4, and 5. One 35 foot, Class 5 pole was removed.	The City is on a 4.5-year trim cycle with trim out at 6-10 foot clearance depending on the situation and type of vegetation, along with foliage and herbicidal treatments.	The City feels that its four-year cycle and other vegetation management practices are effective in offering great reliability to its customers.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Beaches Energy Services	Yes	Yes, BES uses stronger concrete poles rather than wood poles and eliminates of static lines with shorter distribution structures to reduce moment loads on the structures.	BES is eliminating "line-front" connected transformers and almost all exposed "live-front" connected transformers have been replaced. The high voltage cables are connected to the transformers with sealed "dead front" elbows. Fiberglass foundations for pad mounted equipment have been replaced with thick heavy concrete foundations.	Yes, "Back lot line" construction has been eliminated, all electric kWh meters are located outside & near the front corner of buildings, all replacement or new URD underground cables are being installed in conduits & have a plastic, jacketed sheath, & all pad mounted equipment located near buildings have minimum access clearance.	Yes	The transmission structure is inspected annual, which includes insulators, downguys, grounding, and pole integrity. The distribution poles are inspected on an eight-year cycle using sound and bore method for every wood pole. Poles 10 years old and older were treated at ground level for rot and decay.	355 (100%) transmission structure inspections were planned and completed. There were no routine distribution wood or concrete pole inspections planned for 2013 because the next inspection is scheduled for 2015.	No transmission structures failed the inspection. There were no inspections for the distribution structures.	No transmission structures failed the inspection. There were no inspections for the distribution structures.	The transmission line rights-of-way are mowed and maintained annually. Tree trimming crews work year round to maintain a two to three year VMP cycle for transmission and distribution lines.	All vegetation management activities for 2013 have been fully completed and the vegetation management activities for 2014 are on schedule.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Blountstown, City of	Yes	Yes; the City of Blountstown adopted a larger minimum pole standard in 2007 in an effort to harden facilities.	The City does not have any underground facilities. The City is looking at measures to flood proof substation.	Yes	No. Guidelines do not include written safety, pole reliability, pole loading, capacity and engineering standards and procedures for attachments by others to the transmission and distribution poles.	The City owns 1,704 utility poles and does visual inspections of all poles once a year.	100% of all poles are visually inspected annually.	48 poles required replacement because of ground rot, extreme cracking and warping and splices in the line.	48 Class 5 poles were replaced with Class 3 poles.	The City has a four-year tree trimming cycle with 10-foot clearance of lines and facilities. The City has policies to remove dead, dying, or problematic trees before damage occurs.	The City will trim 25% of the system with a 10-foot clearance in 2014.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Bushnell, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	No written policy. All existing attachments inspected as part of the City's pole program initiated in 2007. An attachment audit was completed in 2009.	The City has no transmission facilities. All distribution poles are on a seven-year cycle. The inspection includes visual, sound/bore, pole condition, and wind loading.	100% of entire system was inspected starting in 2007 and ended in 2011. The next pole inspection interval commences in 2014.	No poles were inspected in 2013.	No poles were inspected in 2013.	Tree removal, power line trim, and right of way clearing are on a three-year cycle. Annual trimming is performed before hurricane season. Distribution lines not located on right of ways are trimmed on an “as needed” basis.	PURC held a vegetation management conference March 2007. Through Florida Municipal Electric Association, the City has a copy of the report and will use the information to continually improve vegetation management practices.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
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Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Chattahoochee, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes	The distribution facilities are on a three-year cycle inspection using visual, excavation around base, sounding, and probing with steel rod.	1,957 distribution poles were inspected in January 2012. There were no inspections in 2013. The next inspection will be in 2015.	In 2012, 58 (3%) poles failed the inspection due to ground line and pole top decay.	Replacement of all 58 poles began in February 2012 and will continue through 2012. The poles ranged in size from 30'-6 to -50 '-3.	The City trims the distribution system on an annual basis. This cuts down on animal outages by limiting their pathways to poles and conductors.	The 2007 and 2009 PURC workshops reports are used to improve vegetation management.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Clewiston, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	The City does not have standard guidelines for pole attachments as all attachments are reviewed by engineers, and place all new construction underground.	The facilities are on a five-year inspection cycle, which will begin in 2014, using sound, prod and visual inspections. The City performs infrared inspections on the facilities on a three-four-year cycle.	No poles were inspected in 2013 because the City completed the entire system inspection in four years. Inspections will begin again in 2014.	No poles were rejected in 2013, because no poles were inspected.	The City has replaced 15 - 40 foot wooden poles from the last inspection.	The City has a City ordinance that prohibits planting in easements. 100% of the distribution system is inspected annually for excessive tree growth. The City trims the entire system continuously as-needed. The City will also accept requests from customers for tree trimming.	All transmission and feeders checked and trimmed in 2013 as every year, and The City completed 72 customer requests for tree trimming.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
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Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Fort Meade, City of	Yes	Yes	The current procedures address flooding & storm surges. Participant in PURC study on conversion of OH to UG.	Yes	Yes	The City's facilities are on an eight-year cycle using visual and sound and probe technique.	The City has distribution lines only. The City replaced 32 poles in 2013.	The City has approximately 2,730 dist. poles. Of those poles 21 (0.6%) poles failed inspection. The poles failed inspection due to age deterioration & animal infestation.	The City replaced 32 (1.2%) poles with 2- size 55 foot, Class 1, 1-50 foot, Class 3, 14-45 foot, class 4, 7- 35 foot, Class 5 and 8 – 30 foot Class 5 poles.	The facilities are on a three-year inspection cycle, and have a low outage rate due to problem vegetation.	The City has completed approximately 33% of trimming. The city reported 118 outages in 2013, with 20.3% (24) due to vegetation.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

Utility	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)		Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares									
Fort Pierce Utilities Authority	Yes	Yes	Yes, FPUA references FEMA 100 Year Flood Zone for pad mounted equipment installation and alternatively, may elect to install fully-submersible equipment at grades that do not meet the minimum requirement.	Yes	Yes	FPUA utilizes a contractor to perform inspection of all wood distribution and transmission poles on an eight-year cycle. The inspection includes visual inspection from ground line to the top and some excavation is performed on older poles.	2,867 (18%) of distribution and transmission poles were inspected in 2013 with a target of 2,000.	No transmission poles failed inspection in 2013. 483 (17%) distribution pole failed inspection in 2013.	FPUA replaced 35 wood distribution poles in 2013, most were either Class 4 or Class 5). FPUA expects to replace the remainder of the poles by the 2nd quarter of 2014.	FPUA maintains a three-year VM cycle for transmission and distribution system with a goal of maintaining foliage cut back at a minimum to a three-year level. FPUA also aggressively seeks to remove problem trees when trimming is not an effective option.	FPUA spent $300,000 for the trimming, removal and disposal of vegetation waste in fiscal year 2013, which was sufficient to meet the yearly target of addressing one-third of the system.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
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Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Gainesville Regional Utilities	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes; GRU has instituted a Continuous Improvement Program, which identifies the worst performing devices, circuits and most compromised primary voltage underground cable.	Yes	The facilities are on an eight-year cycle for all lines and includes visual, sound, and bore, and includes below ground line inspection to 18 inches around the base of each pole.	No transmission poles were scheduled for inspection in 2013. GRU planned 3,123 distribution pole inspections and completed 3,151 (101%) inspections.	No transmission poles were planned or identified for replacement. 14 (0.04%) distribution poles failed due to shell rot, mechanical damage, and exposed pockets.	There were no transmission poles inspected. 14 (0.04%) distribution poles were replaced in 2013, ranging in size from 25 feet to 50 feet Class 1 to Class 4.	The VMP includes 560 miles of overhead distribution lines on a three-year cycle. The VMP includes an herbicide program and standards from NESC, ANSI A300, and Shigo-Tree Pruning.	The VMP is an on going and year round program. 100% of the transmission facilities were inspected. 194 distribution circuit miles were trimmed in 2013 with an additional six circuit miles associated with renewal and replacement work.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Green Cove Springs, City of	Yes	Yes	Yes, all facilities are installed a minimum 8 inches above the roadway.	Yes	Yes	The distribution facilities are on an eight-year cycle, which includes sound and bore techniques. The City does not have transmission lines as defined by 69kV and above.	The City visually inspects any distribution pole it interfaces with under normal maintenance workflow patterns. In 2013, the City inspected 584 (19%) poles.	In 2013, 11 (1.9%) wood distribution poles were replaced on visual inspection.	Two – 30 feet Class 3 poles, one – 35 feet Class 3 pole, one – 35 feet Class 5 pole, six – 40 feet Cass 3 poles, one – 40 feet Class 5 pole were replaced due to rot.	The City contracts annually to trim 100% of the system three phase primary circuits including all sub-transmission and distribution feeder facilities. Problem trees are trimmed and removed as identified.	100% of system was trimmed in 2013, with scheduled trim cycle of the system for 2014 to begin in the spring. PURC held two vegetation management workshops in 2007 and 2009 and the City has a copy of the report and will use the information.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
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Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Havana, Town of	Yes	No. Participating in PURC granular wind research study through the Florida Municipal Electric Assoc.	Non-coastal utility; therefore storm surge is not an issue	Yes	Yes	Total system is 1,173 poles; inspected several times annually using sound and probe method.	100% planned and completed in 2013.	12 (1.02%) poles failed inspection.	Five - 40 feet Class 4 poles, one - 30 feet Class 4 pole, four - 35 feet Class 4 poles, and two - 45 feet Class 4 poles for a total of 12 were replaced. 1,332 feet of single phase overhead transmission was replaced due to old age.	Written policy requires one-third of entire system trimmed annually.	33% of the system was trimmed in 2013.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

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Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Homestead Energy Services	Yes	Yes	Yes; participating in PURC's study on the conversion of overhead to underground facilities through Florida Municipal Electric Association.	Yes	Yes	All transmission poles concrete. The distribution facilities are on an 8-year cycle using sound and bore and loading evaluations and the annual thermographic inspection was completed September, 2013.	During 2013/2014 pole inspection cycle, 741 distribution poles were inspected. The entire transmission system was inspected in 2005. The transmission was not inspected in 2013.	120 (16.9%) distribution poles failed the inspection due to interior decay, shell rot and decayed/split tops.	HES removed five Class 3 poles that failed, (they were no longer needed in the system,) replaced 39 Class 3 - 40 feet poles with Class 2 poles, and cut tops and lowered facilities on 16 Class 3 - 40 feet poles.	Trimming services are contracted out and entire system is trimmed on a two-year cycle. There are no issues for transmission facilities.	HES enacted code changes which require property owners to keep vegetation trimmed to maintain 6-feet of clearance from city utilities.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

Utility	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
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	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Jacksonville Electric Authority (JEA)	Yes	Yes	Yes, currently has written Storm Policy and associated procedures addressed for Category 3 storms or greater.	Yes	Yes	Transmission circuits are on a four-year cycle, except for the critical N-1 240kV, which is on a two-year cycle. Distribution poles are on an eight-year inspection cycle, using sound and bore with excavation.	29 transmission circuits were inspected in 2013. In 2013, JEA completed approximately 24 distribution circuits.	Based on 2013 inspection: 35 (1%) transmission wooden poles failed inspection due to ground decay, wood pecker damage and pole top decay. Based on 2013 inspection: 4% distribution poles failed inspection due to ground decay and pole top decay.	50 transmission wood poles were replaced in 2013. In 2013, 923 distribution poles were replaced. The poles listed as danger poles (around 1%) are replaced in a 15-day cycle. Since 2006, 14,711 poles have been replaced.	The transmission facilities are in accordance with NERC FAC-003-1. The distribution facilities are on a three-year trim cycle with 2.5 years completed by the end of 2013.	JEA fully completed all 2013 VM activities and is fully compliant with NERC standard for vegetation management in 2013. VMP activities are on schedule for 2013.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

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Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Keys Energy Services, City of Key West	Yes	Yes	Yes	Yes	Yes	The Keys does not have any wooden transmission poles. The concrete and metal transmission poles are inspected every two years by helicopter and infrared survey. 100% of the distribution poles were inspected in 2007 by Osmose, Inc.	An inspection of all transmission facilities was done in 2012. There are no issues or concerns. From the 2007 inspection, 7,453 wooden distribution poles were inspected with 2,232 rejected.	The rejected poles in the 2007 inspection are on a five-year contract to be replaced. In 2012, 218 rejected poles were replaced. The Keys has replaced all rejected / failed poles. The Keys will start a field check of all poles in 2015.	Keys have a contract to replace approximately 2,200 poles over five years; with 2,474 poles replaced 2007 thru 2012. All rejected/failed poles have been replaced. Keys will start a field check of all poles in 2015.	The Keys' 230 miles 3 phase distribution lines and 66 miles of transmission lines are on a two-year trim cycle. KEYS tree crews remove all invasive trees in the right-of-way and easements. The trees are cut to ground level and sprayed with an herbicide to prevent re-growth.	In 2013, The Keys had two recloser outages, two feeder outages, & eleven lateral outages due to trees. Keys will strive to continue to improve its VMP to further reduce outages.

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Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Kissimmee Utility Authority	Yes	Yes; replaced 22 distribution poles and 41 wooden transmission poles with spun concrete to meet or exceed extreme wind loading requirements.	Non-coastal utility; therefore storm surge is not an issue. Low areas susceptible to flooding have been identified and are monitored.	Yes	Yes	All transmission and distribution inspections are outsourced to experienced pole inspector who utilizes sound and bore and ground-line excavation method for all wood poles. Transmission poles are inspected on a biennial cycle and distribution poles are inspected on an eight-year cycle.	129 transmission poles were inspected in 2013, which is 100% of the system. 51 distribution poles were inspected in 2013 which is 16.2% of the system.	8 (6.2%) transmission poles failed inspection due to exposed pocket, enclosed pocket, heart rot, and woodpecker holes. 29 (2.4%) distribution poles failed inspection due to split top, decayed top, woodpecker holes, shell rot, and exposed pocket.	8 transmission poles were replaced and 22 poles were replaced in 2013. The transmission poles were 85 feet and class H1. The distribution poles ranged from 30 to 45 feet and Classes 3 to 4.	KUA has a written Transmission Vegetation Management Plan (TVMT) where it conducts visual inspection of all transmission lines semi-annually. The guidelines for KUA's distribution facilities are on a three-year trim cycle.	100% required remediation during the transmission facilities inspection was completed in 2013. Approximately 107 miles of distribution facilities were inspected and remediated in 2013.

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Lake Worth Utilities Administration, City of	Yes	The facilities are not designed to be guided by the extreme loading standards on a system wide basis. However, CLW is guided by the extreme wind-loading standard for new construction, major planned work, etc. after 12/10/2006.	Underground distribution construction practices require installation of dead front pad mounted equipment in areas susceptible to flooding.	Yes	Yes	Visual inspections are performed on all CLW transmission facilities on an annual basis. The transmission poles are concrete and steel. CLW performs an inspection of the distribution facilities on an eight-year cycle. Pole tests include hammer sounding and pole prod penetration 6 inches below ground.	CLW inspected 860 poles in 2013, and rotation was completed in 2014.	109 poles were deemed unsatisfactory in 2013. Poles are replaced when pole prod penetration exceeds two inches or there is evidence of pole top shell rot.	CLW replaced 86 poles in 2013, with 23 poles pending replacement.	CLW has an on-going VMP on a system wide, two-year cycle. Minimum clearance of 10 feet in any direction from CLW conductors is obtained.	Contractor attempts to get property owners permission to remove trees which are dead or defective and are a hazard; fast growing soft-wooded or weed trees, small trees which do not have value but will require trimming in the future, tress that are unsightly as a result of trimming and have no chance for future development, and trees that are non native and invasive.

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Lakeland Electric	Yes	Yes, for all pole heights 60 feet and above; and meet or exceed Grade B construction below this height.	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes	The facilities are on an eight-year inspection cycle using visual, sound and bore, with ground line excavation and in addition; visual inspection during normal course of daily activities.	There were 147 (12.5%) transmission poles planned for inspection and 58 (4.9%) were completed. There were 7,500 (12.5%) distribution poles planned for inspection and 4,525 (7.5%) completed.	2 (3.4%) transmission poles failed inspection due to decay. 638 (14.1%) distribution poles failed inspection due to decay.	All poles recommended in 2012 assessed for appropriate action. 19 distribution poles reinforced and 485 replaced, repaired, or removed in 2013. Seven transmission poles were replaced in 2013 and five were deferred to 2014.	The facilities are on a three-year inspection cycle for transmission and distribution circuits. VMP also provides in between cycle trim to enhance reliability.	27 miles of 230kV transmission lines were planned, trimmed and inspected in 2013. LE planned and completed 29 miles of transmission lines while completing 345 of the planned 400 miles of distribution lines for 2013.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Leesburg, City of	Yes	Yes, and Participation in PURC granular wind research study through the Florida Municipal Electric Assoc.	Leesburg is approximately 60 miles inland from the Atlantic and Gulf coasts and is not subject to major flooding or storm surge.	Yes	Yes; Foreign utility attachments are inspected on an eight-year cycle.	No transmission facilities. The Distribution facilities are on an eight-year cycle using visual, sound/bore, excavation method, and ground level strength test.	Leesburg plans an eight year inspection cycle. Leesburg electric facilities are attached to approximately 16,197 poles of which approximately 9,300 are wood poles and approximately 3,304 are concrete poles.	With the inspection of 16,483 poles during the period from 2007 to 2010, Leesburg has now completed the inspection of all poles for this eight-year cycle. Pole inspections are planned to resume in 2015.	45 poles were replaced. 40 wood poles were replaced with concrete poles.	Four-year trim cycle for feeder and lateral circuits. Problem trees are trimmed or removed as identified.	VMP activities were completed as scheduled during 2013. An additional Tree Crew was added as planned during April 2008 and has been continuously maintained.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Moore Haven, City of	Yes	At this time, the facilities are not designed to be guided by the extreme loading standards on a system wide basis. The City is participating in PURC granular wind research study through Florida Municipal Electric Assoc.	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes	The City inspects all the distribution facilities annually by visual and sound inspections.	The City continuously inspects the distribution facilities in 2013. The City is one square mile and easily inspected during routine activities. The City does not own any transmission facilities. The City is upgrading its 3 Phase poles.	The City is working on the rear-of secondary, making them more accessible. The City has approximately 410 poles in the distribution system and streetlights.	The City replaced ten 40 foot poles, twelve 35 foot poles, and three 30 foot poles.	The City is continuous tree trimming in easements and right of way. 100% of distribution system is trimmed each year.	The City expended approximately 20% of Electric Dept. Resources to vegetation management. All vegetation management is performed in house.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Mount Dora, City of	The City retained an engineering firm and developed construction standards for 12 kV distribution poles.	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	A new construction standard was developed to use guy wires for all levels on poles. The standards for poles that the City developed in 2012 reflect the impact of pole attachments on pole loading capacity.	The City does not own any transmission lines. Distribution lines and structures are visually inspected for cracks and a sounding technique used to determine rot annually.	The City completed 100% of planned distribution inspections in 2013.	The City had 12 distribution poles in 2013 that failed inspection. All 12 wood poles were replaced with concrete poles.	The city had 1,840 wooden poles in 2013 and with the replacement of 12 wooden poles, as of 12/31/13, the count for wooden poles was 1,828. The wooden replaced range from 30 foot to 45 foot.	An outside contractor working two crews 40 hours per week completes tree trimming on a 12-month cycle.	The City trimmed trees on a 12-month cycle, and removed limbs from trees in right of way and easements that could create clearance problems.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
New Smyrna Beach, City of	Yes	Yes	Yes. The City only installs stainless steel dead front pad mounted transformers in its system and existing pad mounted transformers are being upgraded to dead front stainless steel transformers.	Yes	Yes	The transmission and distribution facilities are on an eight-year inspection cycle. Additionally, distribution facilities are inspected as part of the City's normal maintenance when patrolling distribution facilities.	No transmission poles were inspected during 2013. 100% of the transmission poles inspections were completed in 2012. 1,503 (12.5%) distribution poles were inspected in 2013.	No transmission poles were inspected in 2013. 434 (28.9%) failed inspection due to decay, split top, and woodpecker damage.	The City replaced/ repaired 267 distribution poles. The poles are sizes 30-60 feet and Class 2-6.	The City maintains two crews on continuous basis to do main feeder and hot spot trimming.	The City trimmed approximately 20% of distribution system in 2013, and performed clear cutting on 20% of the transmission lines. The City mows its transmission lines on a yearly basis.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

Utility	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)		Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares									
Newberry, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes	Distribution poles are inspected on a three-year inspection cycle at ground line for deterioration, entire upper part of the pole for cracks, and soundness of upper part of pole.	The City inspected 1,539 (100%) of the poles in 2013.	93 (6%) of the poles were rejected due to top rot and 71 (4.6%) were rejected due to bottom rot.	28 distribution poles were replaced in 2013: six Class 3 45 foot poles, ten Class 3 40 foot poles, and six Class 3 30 foot poles.	The City trims all distribution lines on a three-year trim cycle, with attention given to problem trees during the same cycle. Problem trees not in the right of way are addressed with the property owner.	One third of distribution facilities are trimmed each year to obtain a three-year cycle.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Ocala Utility Services, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes	The City inspects its system on an eight-year inspection cycle, which include above ground inspection, sounding, boring, excavation, chipping, internal treatment, and evaluation of each pole to determine strength.	4,953 (15.27%) distribution poles were inspected in 2013; 100% of transmission poles were completed in 2007; will not be inspected again until 2015.	278 (5.6%) distribution poles failed inspection due to shell rot or decayed top.	260 (93.5%) of the rejected distribution poles were replaced and 18 (6.5%) distribution poles braced. The replaced poles were 30 to 50 foot, Class 1, 3, & 5. C-trusses were used to brace the 18 poles.	The City is on a three-year trim cycle, with additional pruning over areas allowed minimal trimming. Contractor performs annual VMP over one-third of the system. In 2013, an IVM style pruning program was implemented, which uses manual, mechanical, and chemical control methods for managing brush.	The schedule for 2012 & 2013 included a combination of trimming, mowing, and herbicide. Approximately five miles of one-third of the 230kV easement and over 200 miles of primary 69 kV lines were cleared. For 2014, the City plans on clearing one-third of both distribution and transmission system.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Orlando Utilities Commission, City Orlando	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes	OUC facilities are on an eight-year inspection cycle, which includes visual inspection, sounding & boring, excavation, removal of exterior decay, ground line and internal treatments.	OUC planned 6,400 (12%) inspection for distribution and transmission facilities and completed 6,415 (13%) inspections in 2013.	352 poles (5.5%) failed inspection. Failure causes include: decay and others. (Detailed Osmosis Report included).	5 poles were replaced, 56 poles were restored, and the remaining 296 poles have work orders being generated for replacement in 2014 and 2015. (See the detailed Osmosis report for size and classes.)	200 miles of transmission facilities are on a three-year trim cycle. 1,261 miles of distribution facilities are on a four-year trim cycle. OUC follows safety methods in ANSI A300 & Z133.1.	For 2013, 287 distribution miles were planned and 100% were completed. For 2013 107 transmission miles were planned and 100% were completed.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

Utility	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)		Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares									
Quincy, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue	Yes	Yes	The City's pole inspection procedures include visual and sound and bore methods for an inspection cycle of eight years.	Visual inspections were carried out on all 2,842 distribution poles in 2013. Detailed inspections were carried out on all 31 transmission poles. All transmission poles are made of concrete and found to be in good condition.	19 poles (0.7%) failed inspection. The poles showed signs of rotting around the base of the pole. The poles were replaced with wood poles. No transmission poles failed inspection.	19 distribution poles were replaced. The poles ranged from 25 feet to 50 feet, Classes 3, 6, and 7.	The City trims its electric system right of way on a regular basis using in-house crews. The City strives to trim 25% of the system per year.	Approximately 15 miles (20%) of vegetation trimming was planned and completed on the distribution system in 2013. 100% of the City's transmission lines were inspected in 2013.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Reedy Creek Improvement District	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	The District does not have any foreign attachments on the facilities.	The District performs visual inspection monthly, and inspects the distribution facilities every five years. Reedy Creek in not a transmission owner or operator.	All distribution poles were inspected and treated by an outside contractor in 2013. The District has 13 wooden distribution poles.	All distribution poles passed inspection.	The District's transmission system has no wooden poles in service. The transmission system includes approximately 15 miles of overhead transmission ROW. The distribution system is essentially an underground system with very limited amount of overhead.	15 miles of transmission right-of-way is ridden monthly for visual inspection. The District contracts tree trimming each spring to clear any issues on right-of-ways.	Periodic inspections in 2013 identified several areas of encroachment in early stages and those areas were addressed to restore to acceptable conditions.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Starke, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	The City is in the process of studying this issue.	The City is in process of having all their poles GIS mapped. To date, they have approximately one-third of their poles mapped and inspected. The poles are replaced as needed on a visual basis.	One third of the City's poles (1188) poles were inspected.	In 2013, four poles (0.14%) were found to be rotten.	The City has no transmission poles. Two distribution poles (0.07%), Class 2, 30 feet and two (0.07%) Class 2, 45 feet, poles were replaced in 2013.	The City trims their trees upon visual inspection. The City trims 33% of their electrical distribution system annually.	The City trims distribution lines throughout the year as needed and when applicable removes dead or decayed trees. The City trimmed 33% of distribution system in 2013. The City will use the information from PURC's VM workshops to improve their VM.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

Utility	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)		Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares									
Tallahassee, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes	Every eight years a new pole inspection cycle is initiated to inspect all poles over a three-year period. The inspection includes visual inspection, sound & bore, internal & fumigant treatment, assessment & evaluation for strength standards.	220 (7.14%) transmission poles were inspected in 2013 & 3,079 (100%) transmission poles/structures were treated & inspected by Osmose. 26,476 (55.8%) distribution poles were treated & inspected by Osmose in 2013. Remaining 44.2% are currently being treated & inspected by Osmose with a completion date by June 2014.	The annual climbing inspection identified no poles/structures to be rejected. Osmose found 12 (0.389%) transmission poles failed due to internal/external wood decay. During 2013, 379 distribution poles / structures were rejected due to wood decay, woodpecker and other damage. 107 of these poles will be restored by use of C-truss installation.	12 transmission poles were replaced. 143 (0.3%) distribution poles (ranging in size from 40’3 to 60’2) were replaced due to construction and 251 distribution poles (ranging in size from 40’3 to 60’2) were added to serve new customer load.	The transmission facilities are on a 3-year trim cycle with target of 20 feet horizontal clearance on lines. The distribution facilities are on an 18 month trim cycle on overhead lines to 4-6 feet clearances.	The transmission rights of way & easements were mowed in 2013. Approximately 1,037 miles of overhead distribution lines were managed in 2012 and 2013. The City is currently working on the 11th trim cycle.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Vero Beach, City of	Yes	Yes	Facilities installed a minimum of 8 inches above roadway and grading required preventing erosion.	Yes	Yes	The transmission lines are driven and inspected visually every two-three months. There is a total of 41.5 total miles of transmission lines. The distribution poles and lines are inspected on five-year cycle by sound and bore method with some excavation.	The transmission system was inspected one time in 2013 with no poles failing. The city has 700 concrete, 65 steel, 125-spun concrete, 65 wooden and 5 hybrid concrete/steel poles. In 2013, approximately 25% (2,640 poles) of the distribution system was inspected.	There were no transmission poles failures in 2013. 2,650 distribution poles were inspected with 15 (0.5%) failures due to ground rot and hit by a vehicle.	There were no transmission poles failures in 2013. 17 distribution poles were replaced by the City. The sizes ranged from 30 foot to 45 foot, Class 3, 4, & 5.	The City's VMP is on a three-year cycle that includes trimming tree limbs within 3 feet of neutral or 5 feet of the primary and topping trees in the right of way. In 2013, the City received approximately eight calls per week from customers requesting tree trimming.	The City has approximately 40 square miles of service territory. The territory is broken down into 60 blocks of equal size and the City's goal is to complete all 60 blocks every three years. The transmission facilities are mowed twice a year.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

Utility	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)		Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares									
Wauchula, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes	The City of Wauchula does a sound and bore inspection.	The facilities are on a three-year cycle. No inspections were completed in 2013. The inspection will be completed in 2014 and 2015.	Less than 1% (out of 1800 poles) has failed due to poles rotting at the ground line.	Eight poles were replaced in 2013, three were due to damage caused by traffic accidents and five were rotten at ground line.	The policy on vegetation management is on a three-year cycle that includes trimming trees and herbicides for vines.	The City completes one-third of the system every year. The City also uses PURC's 2007 and 2009 vegetation management reports to help improve its practices.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Williston, City of	Yes	Yes	Not applicable, the City of Williston is an inland community located 45 miles from a coastal area.	Yes	As a result of employee turnover within the management ranks the City has not established any data on pole reliability, pole loading capacity, or engineering standards and procedures for attachments by others to our distribution poles. The City anticipates outsourcing this function in the 2013–2014 budget years.	All distribution poles are visual and sound inspection on a three-year cycle. The city uses both the bore method and the visual and sound method to inspect poles.	33% of 1,100 poles were inspected in 2013. This is the first year of the three-year cycle.	Three (0.05%) poles found defective due to wood decay at or below ground level.	Three poles failing inspection were 40 foot, Class 5, which both have been replaced with the same type of pole.	The distribution lines are on a three-year trim cycle with attention to problem trees during the same cycle. Any problem tree not in right of way is addressed to the property owner to correct.	One-third of distribution facilities are trimmed every year to obtain a three-year cycle.

Appendix B. Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Winter Park Electric Utility, City of	The city has an initiative to put its entire distribution system underground The city requires new residential service to be installed underground and to date, 62% of the system is underground.	The facilities are not designed to meet extreme loading standards on a system wide basis. The City participates in PURC's granular wind research study through Florida Municipal Electric Association.	Non-coastal utility; therefore storm surge is not an issue	Yes	Yes	The city does not own transmission poles or lines. The distribution facilities are on an eight-year cycle, which the city is evaluating the cycle for length. The inspection includes visual, assessment prior to climbing and sounding with a hammer.	The city does not own transmission poles. The City did not conduct pole inspections in 2013; however WPE routinely inspect poles that are involved with daily jobs and work orders.	From the 2011 inspection, 5% poles failed due to base rot, 4.8% failed due to top rot or split rot.	Based on the 2007 full system inspections, all repairs and replacements have been made. The next full system inspection will begin 2015. The City routinely inspects the poles involved with daily jobs and work orders. Poles requiring remediation or replacement were Class 1 to three wood poles with damage from decay or insects.	Vegetation Management is performed by an outside contractor on a three-year trim cycle, which is augmented as needed between cycles.	The trimming crews trimmed approximately 33.5 miles of distribution lines in 2013. The city is using the PURC 2007 and 2009 reports to improve VMP practices.

Appendix C. Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Central Florida Electric Cooperative, Inc.	Yes	Central Florida's facilities are not designed to be guided by the extreme loading standards on a system wide basis.	Central Florida continues to participation in evaluation of PURC study to determine effectiveness of relocating to underground.	Yes	Yes	100% of the transmission facilities are inspected annually using above and ground level inspections. The distribution facilities are on a nine-year cycle for inspections using above and ground level inspections.	Central Florida planned and inspected 30 miles of the transmission facilities in 2013. 10,303 (11.7%) distribution poles were inspected in 2013.	Of the 10,303 distribution poles inspected in 2013, 142 were rejected due to deterioration.	142 rejected distribution poles are scheduled for replacement.	Trees are trimmed or removed within 15 feet of main lines, taps, and guys on a five-year plan.	In 2013, 464 miles of 3,192 miles of primary overhead line on the system were cleared.

Appendix C. Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	**Major Planned Work Expansion, Rebuild or Relocation**	**Targeted Critical Infrastructures and major thoroughfares**	**Effects of flooding & storm surges on UG and OH distribution facilities**	**Placement of distribution facilities to facilitate safe and efficient access**	**Written safety, pole reliability, pole loading capacity and engineering standards for attachments**	**Description of policies, guidelines, practices, procedures, cycles, and pole selection**	**Number and percent of poles and structures planned and completed**	**Number and percent of poles and structures failing inspections with reasons**	**Number and percent of poles and structures by class replaced or remediated with description**	**Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation**	**Quantity, level, and scope of planned and completed for transmission and distribution**
Choctawhatchee Electric Cooperative, Inc.	Yes	Yes	Yes	Yes	Yes; also inspect and physically count every attachment on a three-year cycle.	The Coop inspects new construction of power lines on a monthly basis and has an eight-year cycle to cover all poles.	During 2013, 7,897 poles or 13.22% of 59,703 poles were inspected.	473 poles or 6.0% of the poles failed inspection ranging from spit top to wood rot.	100% of 473 failed poles were replaced.	Current right of way program is to cut, mow, or otherwise manage 20% of its right of way on an annual basis. Standard cutting is 10 feet on either side of primary from ground to sky.	500 miles were cut on primary lines and the Coop worked to remove problem tress under the primary lines, which reduces hot-spotting requirements between cycles. The company also established herbicidal spraying program.

Appendix C. Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Clay Electric Cooperative, Inc.	Yes	Clay's distribution facilities are not designed to be guided by the extreme wind loading standards specified by Figure 250-2(d) except as required by rule 250-C, but Clay's transmission facilities are guided by the extreme wind loading. Clay is participating in the PURC's granular wind research study through the Florida Municipal Electric Association.	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes	Clay's transmission facilities are on a ten-year cycle, which includes sound/bore techniques, excavation, climbing inspection, and ground and helicopter visual patrol. Clay's distribution system is on an eight-year cycle using excavation, sound and bore at the ground line and visual inspection.	Clay completed the transmission ground patrol inspection in 2010 & the next inspection will be done in 2014. Two helicopter inspections were performed in 2013. A total of 3,680 transmission structures were inspected consisting of 5,220 poles. In 2013, 15,057 poles were inspected, which began the eight-year cycle.	The inspection found 42 (0.805%) of the total transmission poles inspected required some form of maintenance. 116 (0.77%) distribution poles were rejected due to ground rot, top decay, holes high, split, split top, and int rot.	8 (0.31%) transmission poles of the 2,610 total system poles were replaced of height-class as follows: two 50-1; four 55-1; one 60-1 and one 65-1. All rejected distribution poles were replaced in 2013. 116 poles that were replaced ranged from 25 feet to 50 feet, Class 3 to 6.	Clay's VMP for the transmission facilities is on a three-year cycle and includes mowing, herbicide spraying and systematic recutting. Clay's VMP for the distribution facilities is on a three-year cycle for city, a four-year cycle for urban and five-year cycle for rural and includes mowing spraying and recutting.	In 2013, Clay mowed 73.94 miles of transmission right-of-way, sprayed 71.56 miles of transmission right-of-way, and recut 67.31 miles of transmission right-of-way. In 2013, Clay mowed 3,174.20 miles of its distribution circuits, sprayed 3,112.33 miles of distribution circuits, and recut 2,079.8 miles of distribution circuits.

Appendix C. Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	**Major Planned Work Expansion, Rebuild or Relocation**	**Targeted Critical Infrastructures and major thoroughfares**	**Effects of flooding & storm surges on UG and OH distribution facilities**	**Placement of distribution facilities to facilitate safe and efficient access**	**Written safety, pole reliability, pole loading capacity and engineering standards for attachments**	**Description of policies, guidelines, practices, procedures, cycles, and pole selection**	**Number and percent of poles and structures planned and completed**	**Number and percent of poles and structures failing inspections with reasons**	**Number and percent of poles and structures by class replaced or remediated with description**	**Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation**	**Quantity, level, and scope of planned and completed for transmission and distribution**
Escambia River Electric Cooperative	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes	Escambia River inspects its distribution facilities on an eight-year cycle using visual, sound, and bore techniques in accordance with RUS standards.	4,211 (12.5%) distribution poles were planned and 8,387 (26%) inspections were completed 2013. Escambia River does not own any transmission poles.	61 (.1%) of the inspected poles failed due to pole decay and were replaced, in 2013.	61 (.1%) of the inspected poles failed due to pole decay and were replaced, in 2013.	Escambia River's distribution facilities are on a five-year trim cycle. Distribution lines and right-of-way is cleared 20 feet; 10 feet on each side.	In 2013, approximately 280 miles (18%) of the power lines were trimmed with 300 miles (20%) planned.

Appendix C. Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	**Major Planned Work Expansion, Rebuild or Relocation**	**Targeted Critical Infrastructures and major thoroughfares**	**Effects of flooding & storm surges on UG and OH distribution facilities**	**Placement of distribution facilities to facilitate safe and efficient access**	**Written safety, pole reliability, pole loading capacity and engineering standards for attachments**	**Description of policies, guidelines, practices, procedures, cycles, and pole selection**	**Number and percent of poles and structures planned and completed**	**Number and percent of poles and structures failing inspections with reasons**	**Number and percent of poles and structures by class replaced or remediated with description**	**Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation**	**Quantity, level, and scope of planned and completed for transmission and distribution**
Florida Keys Electric Cooperative Association, Inc.	Yes	The facilities were not designed to the extreme loading standards on a system wide basis. However, the company has adopted the extreme wind loading standard in April 2007.	Yes	Yes	Yes	The company inspects 100% of the transmission structures annually by helicopter. The distribution poles are on a four-year cycle. The four-year cycle was completed in 2010 and is scheduled to resume 2015.	100% of the transmission: poles were inspected in 2013 by helicopter. The inspection of all distribution poles were completed in 2010.	No transmission structures failed inspection in 2013. No distribution poles were inspected in 2013.	No transmission poles were replaced in 2013. All pole replacements identified in the 2007 – 2010 inspection were replaced prior to 2013.	100% of the transmission system is inspected and trimmed annually. The distribution system is on a three-year trimming cycle. The trade-a-tree program was implemented in 2007 for problem trees within the right of way.	Annual transmission line right-of-way clearing from mile marker 106 to County Road 905 to the Dade/Monroe County line was completed in 2013. The remainder of the transmission system was spot trimmed. Approximately 200 circuit miles of distribution lines were trimmed in 2013.

Appendix C. Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Glades Electric Cooperative, Inc.	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue; GEC participated in a workshop hosted by Florida Catastrophic Planning that addressed flooding and storm surges.	Yes	Yes	The facilities are on a ten-year sound and bore inspection cycle with excavation inspection cycle for all wood poles in addition to System Restoration Plan inspections.	100% of total 83 miles of transmission lines were planned and completed by aerial inspections. 2,430 miles of distribution lines and 116 miles of underground distribution lines were planned and inspected in 2013.	546 distribution poles failed due to decay, rot and top splits.	100% distribution poles rejected in 2013 were replaced. The distribution poles ranged from 35 foot to 40 foot, Class 5 to 6. GEC also replaced 455 lightning arrestors. GEC upgraded wood cross arms and suspension insulators on approximately 30 transmission structures.	All trimming is on a three-year cycle. The right-of-way is trimmed for 10 foot clearance on both sides, and herbicide treatment is used where needed.	GEC completed all planned right of way trimming in 2013 which included 11 distribution circuits from 7 substations. The transmission right-of-ways are inspected annually and trimmed if necessary. Vegetation growth is not an issue for the transmission lines.

Appendix C. Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	**Major Planned Work Expansion, Rebuild or Relocation**	**Targeted Critical Infrastructures and major thoroughfares**	**Effects of flooding & storm surges on UG and OH distribution facilities**	**Placement of distribution facilities to facilitate safe and efficient access**	**Written safety, pole reliability, pole loading capacity and engineering standards for attachments**	**Description of policies, guidelines, practices, procedures, cycles, and pole selection**	**Number and percent of poles and structures planned and completed**	**Number and percent of poles and structures failing inspections with reasons**	**Number and percent of poles and structures by class replaced or remediated with description**	**Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation**	**Quantity, level, and scope of planned and completed for transmission and distribution**
Gulf Coast Electric Cooperative, Inc.	Not bound by the extreme loading standards due to system is 99.9% under the 60 foot extreme wind load requirements.	The method of construction used by GCEC does, however, meet the "design to withstand, without conductors, extreme wind loading in Rule 250C applied in any direction on the structure."	Yes, and GCEC continues to evaluate the PURC study to determine effectiveness of relocating to underground	Yes	Yes	No transmission lines. Performs general distribution pole inspections on an eight-year cycle	Inspected 6,446 (13.2%) distribution poles, in house, in 2013 with 83 rejects.	83 (1.3%) poles were rejected due to decay pockets, decay tops, butt rot, heart rot, shell rot, excessive cracking, mechanical damage, woodpecker holes and split top.	In 2013, GCEC replaced 730 wooden poles. This number reflects 1.5% of the poles owned by GCEC.	GCEC owns approximately 2,158 miles of overhead and 435 miles of underground distribution lines. GCEC strives to clear the entire ROW on a five-year cycle. GCEC clears between 20 and 30 foot width, from ground to sky.	GCEC cut 400 miles of ROW in 2012 and 2013. GCEC also works closely with property owners for danger tree removal.

Appendix C. Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Lee County Electric Cooperative, Inc.	Yes	Yes	Yes, the majority of LCEC's underground facilities, excluding conduits and cables, are at or above existing/surrounding grade.	Yes	Yes	Transmission facilities are inspected annually for 230 kV systems and ever two years for 138 kV systems. The inspections are done by climbing or the use of a bucket truck. The distribution facilities are on a two year visual inspection cycle and on a ten-year cycle for splitting, cracking, decay, twisting, and bird damage.	In 2013, 1,706 transmission poles were inspected. This includes 100% of the 230 kV facilities and 54% of the 138 kV facilities and was 100% of the poles that were scheduled. 109,485 distribution poles were inspected. This was 100% of the inspections scheduled and 89.3% of the total poles.	186 (0.06%) transmission poles failed inspection due to rot, woodpecker damage, bad arm, and grounds. 238 (0.145%) distribution poles failed inspection due to rot/split top, out of plumb, and woodpecker damage.	118 transmission poles were replaced with concrete and steel poles. 15 (11.4%) distribution poles were repaired through re-plumbing, 28 (4.45%) were repaired through patching. 180 poles were replaced in 2013. The sizes varied by Class 1 to Class 6.	VMP strategies include cultural, mechanical, manual, & chemical treatments and the plan is on a six-year cycle for 3,947 miles of distribution facilities.	Transmission and distribution VMP was completed 100% (930 miles) as planned for 2013.

Appendix C. Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	**Major Planned Work Expansion, Rebuild or Relocation**	**Targeted Critical Infrastructures and major thoroughfares**	**Effects of flooding & storm surges on UG and OH distribution facilities**	**Placement of distribution facilities to facilitate safe and efficient access**	**Written safety, pole reliability, pole loading capacity and engineering standards for attachments**	**Description of policies, guidelines, practices, procedures, cycles, and pole selection**	**Number and percent of poles and structures planned and completed**	**Number and percent of poles and structures failing inspections with reasons**	**Number and percent of poles and structures by class replaced or remediated with description**	**Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation**	**Quantity, level, and scope of planned and completed for transmission and distribution**
Okefenoke Rural Electric Membership Cooperative	Yes	The facilities are not designed to be guided by the extreme loading standards on a system wide basis. OREMC is participating in PURC's granular wind research study.	OREMC is continuing the evaluation of the PURC study to determine effectiveness of relocating to underground.	Yes	Yes	OREMC owns no transmission facilities. The inspections for the distribution systems include visual, sound/bore with excavations, and chemical treatment.	In 2013, 2,225 distribution poles were inspected. OREMC also inspected 728 pieces of underground equipment.	198 poles were either repaired and 24 poles were replaced in 2013. Of the underground equipment, 147 required maintenance and 22 were replaced.	198 poles required minor repairs such as repairing guy wires, grounds, and etc. 24 poles were replaced. 147 pieces of underground equipment required maintenance and 22 were replaced. All repairs, maintenance, and replacements were completed during 2013.	Vegetation control practices consist of complete clearing to the ground line, trimming, and herbicides. The VMP is on a five-year trim cycle. OREMC utilizes contractors for its VM programs.	OREMC planned 500 miles of right-of-ways for trimming and completed 577 miles in 2013. This equates to 23% of the 2,509 miles of facilities.

Appendix C. Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Peace River Electric Cooperative, Inc.	Yes	The facilities are not designed to be guided by the extreme loading standards on a system wide basis. Peace River is currently participating in PURC granular wind research study.	Peace River is continuing the evaluation of PURC study to determine effectiveness of relocating to underground to prevent storm damage and outages.	Yes	Yes	Peace River currently uses RDUP bulletin 1730B-121 for planned inspection and maintenance. The facilities are located in Decay Zone 5 and are inspected on an eight-year cycle. The transmission poles are visually inspected every two years.	309 transmission (89 concrete, 2 steel, 218 wooden) poles are inspected every two years. 4,987 (8.8%) of 56,246 distribution poles were inspected.	218 transmission poles were visual inspected in 2013 with 5 transmission poles replaced. 109 (2.19%) distribution poles were rejected which were replaced in 2013.	The distribution poles receiving remediation in 2013 varied from 25 foot to 60 foot, Class 1 to 7. The transmission pole that received remediation was 65 foot Class 2 pole.	Peace River renewed its vegetation maintenance plan in December 2012, to cut the system in a three-year period from the substation to the consumer's meter. In January 2013, Peace River started their first year of the three year renewed VM contract.	In 2013, the company completed right-of-way maintenance on 1,018 (36.8%) of its 2,765 miles of overhead distribution. This is year one of their VM plan at 36.8%.

Appendix C. Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	**Major Planned Work Expansion, Rebuild or Relocation**	**Targeted Critical Infrastructures and major thoroughfares**	**Effects of flooding & storm surges on UG and OH distribution facilities**	**Placement of distribution facilities to facilitate safe and efficient access**	**Written safety, pole reliability, pole loading capacity and engineering standards for attachments**	**Description of policies, guidelines, practices, procedures, cycles, and pole selection**	**Number and percent of poles and structures planned and completed**	**Number and percent of poles and structures failing inspections with reasons**	**Number and percent of poles and structures by class replaced or remediated with description**	**Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation**	**Quantity, level, and scope of planned and completed for transmission and distribution**
Sumter Electric Cooperative, Inc.	Yes	Transmission and distribution facilities are designed to withstand winds of 110 MPH in accordance with 2012 NESC extreme wind load	Non-coastal utility; therefore storm surge is not an issue	Yes	Yes	The transmission facilities are on a five-year cycle using ground line visual inspections, which includes sounding and boring and excavation. The distribution facilities are on an eight-year cycle using sound, bore, & excavation tests.	292 (22%) transmission poles were planned and 292 (100%) were inspected in 2013. 18,572 (13.5%) distribution poles were planned and 18,572 (100%) were inspected in 2013. 4,910 (9.2%) distribution underground structures were planned and 4,910 (100%) were inspected in 2013.	179 (61%) transmission poles failed inspection. 3,237 (17%) distribution poles failed inspection. The causes are due to ground rot and top deterioration.	172 (96%) wooden transmission poles were replaced or remediated. 3,072 distribution poles were replaced and 165 poles were retired (100%). The transmission and distribution poles ranged from 20 to 85 foot and Class 1 to Class 7.	Distribution is on a three-year trim cycle for feeder and laterals. In 2013, Sumter trimmed 1,707 circuit miles & removed 29,667 trees.	Sumter plans to meet current tree trim cycles, tree removals, and herbicide treatment. An estimated 1,560 miles of underbrush treatment is being scheduled for 2014.

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	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	**Major Planned Work Expansion, Rebuild or Relocation**	**Targeted Critical Infrastructures and major thoroughfares**	**Effects of flooding & storm surges on UG and OH distribution facilities**	**Placement of distribution facilities to facilitate safe and efficient access**	**Written safety, pole reliability, pole loading capacity and engineering standards for attachments**	**Description of policies, guidelines, practices, procedures, cycles, and pole selection**	**Number and percent of poles and structures planned and completed**	**Number and percent of poles and structures failing inspections with reasons**	**Number and percent of poles and structures by class replaced or remediated with description**	**Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation**	**Quantity, level, and scope of planned and completed for transmission and distribution**
Suwannee Valley Electric Cooperative, Inc.	Yes	SVEC facilities are not designed to be guided by the extreme loading standards on a system wide basis. SVEC participates in PURC wind study.	Non-coastal utility; therefore storm surge is not an issue	Yes	Yes	SVEC inspects all structures on an eight-year cycle using sound/bore and visual inspection procedures.	SVEC inspected five (100%) transmission structures in 2013. 4,882 (5.7%) distribution structures were inspected in 2013.	246 (5%) inspections of distribution poles failed due to ground line decay, excessive splitting, & woodpecker damage. Zero inspections of transmission poles failed.	702 (14.4%) distribution poles of total inspected were remediated by ground line treatment and 84 (1.7%) distribution poles were replaced. Zero transmission structures were remediated.	SVEC's facilities are on a five-year inspection cycle includes cutting, spraying and visual on as-needed basis.	In 2013, 665 (15.59%) miles were cut and 742 miles right-of-way sprayed. 979 (21%) miles are planned for cutting and 742 miles are planned for spraying in 2014.

Appendix C. Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2013

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Talquin Electric Cooperative, Inc.	Yes	Yes	Talquin has a very small percentage subject to storm surge. Stronger anchoring systems are in place to better secure pad-mount transformers and installation of grounding sleeves to secure underground cabinets.	Yes	Yes, inspecting on a five-year cycle.	Annual inspections in house of transmission lines are performed by checking the pole, hardware, and conductors. An outside pole-treating contractor inspects distribution and transmission poles each year. The poles are inspected on eight-year rotation since 2007.	18,214 poles were inspected in 2013, which included 158 transmission poles.	385 (2.1%) of 18,056 distribution poles were rejected with 6 being priority poles. 3 transmission poles were rejected out of the 158 poles inspected.	The priority poles rejected were replaced in 2013 and the rejected poles are being inspected and repaired if possible or replaced if not.	Talquin maintains its right-of-ways by mechanical cutting, mowing, and herbicidal applications.	672 (18%) miles of distribution and 34 (44%) miles of transmission right of ways were treated in 2013. In addition, Talquin received 761 member requests for tree maintenance.

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	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	**Major Planned Work Expansion, Rebuild or Relocation**	**Targeted Critical Infrastructures and major thoroughfares**	**Effects of flooding & storm surges on UG and OH distribution facilities**	**Placement of distribution facilities to facilitate safe and efficient access**	**Written safety, pole reliability, pole loading capacity and engineering standards for attachments**	**Description of policies, guidelines, practices, procedures, cycles, and pole selection**	**Number and percent of poles and structures planned and completed**	**Number and percent of poles and structures failing inspections with reasons**	**Number and percent of poles and structures by class replaced or remediated with description**	**Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation**	**Quantity, level, and scope of planned and completed for transmission and distribution**
Tri-County Electric Cooperative, Inc.	Yes	Yes	The current standard practice is to restrict electrification of flood prone areas. Due to natural landscape within area, storm surge issues are low.	Yes	Yes	The transmission facilities are inspected on a five-year cycle by both ground line and visual inspections. The distribution facilities are on an eight-year cycle using both ground line and visual inspections.	During 2013, the transmission poles were visually inspected. The Coop completed the eight-year cycle inspection for the distribution poles. Of the 55,857 poles in their system, 24,302 have been inspected.	Of the 6,845 poles inspected in 2013, 61 (0.89%) distribution poles were rejected. The Coop replaced 148 guy guards and repaired 160 broken ground wires.	The 61 rejected distribution poles found during the 2013 inspection which required replacement are in the process of being changed out.	The Coop attempts to acquire 30 foot right-of-way easement for new construction. The entire width of the obtained ROW easement is cleared from ground level to a maximum height of 60 feet in order to minimize vegetation and ROW interference with the facilities.	Approximately 528 distribution miles were trimmed in 2013. 491.37 miles received herbicide treatment in 2013.

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	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
West Florida Electric Cooperative Association, Inc.	Yes	Yes	Non-coastal utility; therefore, storm surge is not an issue. Some areas in territory are subject to flooding. In these areas, line design is modified to compensate for known flooding conditions.	Yes	Yes. General inspections are completed on an eight-year cycle.	West Florida continues to use RUS Bulletin 1730B-121 as its guideline for pole maintenance and inspection.	During 2013, West Florida inspected 9% of entire system.	Out of the 9% inspected, 13% required maintenance or replacement.	During the 2013 year, 1144 poles were replaced. five miles of single phase line was converted to 3 Phase to correct loading issues. The company re-insulated and upgraded approximately 108 miles of distribution lines from 12.5 KV to 25 KV. The company relocated 3 miles of line to accommodate the upgrade and widening of local roads.	West Florida's VM includes ground to sky side trimming along with mechanical mowing and tree removal.	During 2013, the company mowed and side trimmed 426 miles of its distribution system. Also during 2013, the company chemically sprayed approximately 588 miles of right-of-way. Approximately 550 miles will be sprayed and approximately 1100 miles will be trimmed and mowed during 2014.

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	Guided by Extreme Wind Loading per Figure 250-2(d)										
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares	Effects of flooding & storm surges on UG and OH distribution facilities	Placement of distribution facilities to facilitate safe and efficient access	Written safety, pole reliability, pole loading capacity and engineering standards for attachments	Description of policies, guidelines, practices, procedures, cycles, and pole selection	Number and percent of poles and structures planned and completed	Number and percent of poles and structures failing inspections with reasons	Number and percent of poles and structures by class replaced or remediated with description	Description of policies, guidelines, practices, procedures, tree removals, with sufficient explanation	Quantity, level, and scope of planned and completed for transmission and distribution
Withlacoochee River Electric Cooperative, Inc.	Yes	The facilities are not designed to be guided by the extreme wind loading standards on a system wide basis. However, most new construction, major planned work and targeted critical infrastructure meets the design criterions that comply with the standards.	Yes	Yes; in 2013, WREC relocated 59,000 feet of overhead primary lines from rear lots to street, changing out hundreds of older poles and facilities; this will continue until older areas are all upgraded.	Yes	WREC inspects the transmission and distribution facilities annually (approximately 5,076 miles for 2013) by line patrol, physical and visual inspections.	62 miles or 100% of transmission facilities were inspected by walking, riding or aerial patrol. 5,076 miles of distribution facilities were inspected annually by line patrol, voltage conversion, right-of-way, and Strategic Targeted Action and Repair (S.T.A.R.).	OSMOSE (a contractor for pole inspection and treatment) found 6.2% poles with pole rot and 1.0% poles were rejected in 2003 to 2004. WREC discontinued this type of inspection/ treatment plan and now data is unavailable on the exact failure rates.	2,576 wooden, composite, concert, steel, and fiberglass poles ranging in size from 12 to 120 feet were added; 2,003 poles were retired.	WREC has an aggressive VMP that includes problem tree removal, horizontal/vertical clearances and under-brush to ground.	All transmission lines are inspected annually. 1,721 miles of right-of-way issues were addressed in 2013.