Review of Florida's Investor-Owned Electric Utilities 2020 Service Reliability Reports

August 2021

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, LLC
EOC	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 Interruptions (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

The Florida Public Service Commission (FPSC or Commission) has jurisdiction to monitor the reliability of electric service provided by Florida's investor-owned electric utilities (IOUs) for maintenance, operational, and emergency purposes.[1] This report is a compilation of the 2020 electric distribution reliability data filed by Florida's IOUs. The data is presented using tables and figures so that trends in each IOU's service reliability may be easily observed. These data may be used during rate cases, show cause dockets, and in resolving customer complaints.

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. 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 tornadoes and hurricanes. This "adjusted" data provides an indication of the distribution system performance on a normal day-to-day basis.

The active hurricane seasons of 2004 and 2005 revealed the importance of collecting reliability data that reflects the total reliability experience from the customer perspective. 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. These data provide insight concerning the overall reliability performance of each utility.

Also in 2006 and 2007, 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] In 2019, the Florida Legislature enacted Section 366.96, Florida Statutes (F.S.). This statute requires each IOU to file a transmission and distribution storm protection plan (SPP) that covers the immediate 10-year planning period. Section 366.96 (10), F.S., requires that the Commission submit an annual report on the status of the utilities' SPP activities to the Legislature by December 1. As such, IOUs are required to submit an annual status report on their SPP programs and projects to the Commission by June 1.[4] Beginning in

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[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.

[3]Wooden Pole Inspection Orders: FPSC Order No. PSC-06-0144-PAA-EI, issued February 27, 2006, in Docket No. 20060078-EI; and FPSC Order Nos. PSC-06-0778-PAA-EU, issued September 18, 2006, PSC-07-0078-PAA-EU, issued January 29, 2007, in Docket No. 20060531-EU.
Storm Preparedness Initiative Orders: FPSC 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. 20060198-EI.

[4] See Rule 25-6.030(4), Storm Protection Plan, F.A.C.

2021, the updates on storm hardening and preparedness initiatives, that were previously included in this report, will be included in the Commission's report to the Legislature. Since Section 366.96, F.S. only requires IOU's to file a SPP, the Municipal Electric Utilities and Rural Electric Cooperative Utilities continue to provide updates of their storm hardening efforts as indicated in Appendixes B and C of this report.

The March 2021 Distribution Reliability Reports of Duke Energy Florida, LLC (DEF), Florida Power & Light Company (FPL), Florida Public Utilities Company (FPUC), Gulf Power Company (Gulf),[5] and Tampa Electric Company (TECO) and responses to staff's data requests were sufficient to perform the 2020 review.

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

[5] While FPL and Gulf merged in 2020, the systems were not fully integrated by the end of the year, and therefore, separate reports were filed for the 2020 Reliability Report.

Service Reliability of Duke Energy Florida, LLC

The unadjusted data for DEF indicates that its 2020 allowable exclusions accounted for approximately 30 percent of all excluded Customer Minutes of Interruption (CMI). The "Named Storms" category accounted for approximately 14 percent of the total unadjusted CMI. DEF experienced outages associated with six tornadoes and Tropical Storm Eta.

On an adjusted basis, DEF's 2020 System Average Interruption Duration Index (SAIDI) was 88 minutes, decreasing its adjusted SAIDI by 2 minutes from the 2019 results. However, the trend for the SAIDI over the five-year period of 2016 to 2020 is trending upward. The System Average Interruption Frequency Index (SAIFI) in 2020 was 0.94 interruptions, indicating a 3 percent decrease from 2019. The Customer Average Interruption Duration Index (CAIDI) increased for 2020 compared to 2019. Over the five-year period, the SAIFI is trending downward as the CAIDI is trending upward.

In **Figure 2-8**, DEF's Top Five Outage Categories, the category "Defective Equipment" is in the top spot representing 30 percent of the total number of outages. The subsequent categories were "Vegetation" (23 percent) and "Other Causes" (18 percent), followed by "Other Weather" (15 percent) and "Animals" (10 percent). The "Animals" and "Other Causes" outage categories are trending downward for the five-year period of 2016 to 2020 as the "Animals" category had a 24 percent decrease in 2020 and the "Other Causes" category had an 13 percent decrease. The "Defective Equipment" category had an increase between 2019 and 2020 and continued to trend upward for the five-year period. The "Vegetation" and "Other Weather" categories had increases in 2020 and are trending upward for the five-year period.

The percentage of reliability complaints compared to the total number of complaints filed with the Commission for DEF increased to 9.8 percent in 2020 from 3.3 percent in 2019. Over the five-year period from 2016-2020, DEF's reliability related complaints have been trending upward.

Service Reliability of Florida Power & Light Company

The unadjusted data for FPL indicates that its 2020 allowable exclusions accounted for approximately 34 percent of the total CMI. The "Named Storms" category accounted for approximately 26 percent of the CMI excluded. In addition, FPL's service area was affected by 12 tornadoes, Tropical Storms Arthur, Bertha, Cristobal, Laura, and Eta, and Hurricanes Isaias and Sally.

FPL's 2020 metrics on an adjusted basis include SAIDI which was reported as 47 minutes and represents a 2 minute decrease from last year's reported 49 minutes. The SAIFI improved in 2020 and the CAIDI declined in performance. The SAIFI decreased from 0.82 interruptions in 2019 to 0.76 interruptions in 2020 and the CAIDI increased to 62 minutes in 2020 from 60 minutes in 2019.

"Defective Equipment" (42 percent) and "Vegetation" (20 percent) outages were the leading causes of outage events per customer for 2020. The next three outage causes are "Animals" (9 percent), "Other Causes" (8 percent), and "Unknown Causes" (8 percent). **Figure 2-16** shows an increasing trend in the number of outage events attributed to "Defective Equipment," which had increased by 10 percent from 2019 to 2020. The analysis shows a decrease in the number of

outage events caused by "Animals," and "Unknown Causes" in which they are trending downward. In addition, since 2016, "Vegetation" is also trending downward. The analysis shows that the "Other Causes" category is remaining relatively flat.

Complaints related to FPL's reliability increased from 0.6 percent in 2019 to 0.9 percent in 2020. FPL's reliability related complaints appear to be trending upward as shown in **Figure 3-10**.

Service Reliability of Florida Public Utilities Company

The unadjusted data for FPUC indicates that its 2020 allowable exclusions accounted for approximately 73 percent of the total CMI. The "Named Storms" category accounted for approximately 3 percent of the CMI excluded. FPUC reported that during 2020, the Northwest division was impacted by Hurricanes Sally and Zeta, and three tornadoes. The Northeast division was not impacted by any named storms or tornadoes in 2020.

The 2020 adjusted data for FPUC's SAIDI was 158 minutes, a 5 percent decrease from 166 minutes reported in the previous year. The SAIFI increased from 1.70 interruptions in 2019 to 1.74 interruptions in 2020. The CAIDI value in 2020 was 91 minutes, a decrease from the 98 minutes in 2019.

FPUC's top five causes of outages included "Vegetation," "Animals," "Unknown," "Defective Equipment," and "Lightning" events. As shown in **Figure 2-21**, "Vegetation" (34 percent) was the number one cause of outages in 2020 followed by "Animals" (15 percent), "Unknown" (15 percent), "Defective Equipment" (14 percent), and "Lightning" (9 percent). "Animals," "Defective Equipment," and "Lightning," attributed outages decreased in 2020, as "Vegetation" and "Unknown" caused outages increased.

FPUC's reliability related complaints were minimal. In 2020, the Utility had five reliability related complaint filed with the Commission. When comparing reliability complaints per 10,000 customers, the changes 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 appears to be trending downward.

Service Reliability of Gulf Power Company

The adjusted data for Gulf indicates that its 2020 allowable exclusions accounted for 98 percent of exclusion to its CMI. The "Named Storms" category accounted for approximately 96 percent of the total CMI excluded. Gulf explained that Tropical Storm Cristobal and Hurricanes Sally and Zeta affected its service area. In 2020, two tornadoes also affected its service area accounting for 1 percent of the total CMI.

The 2020 SAIDI for Gulf was reported to be 47 minutes, which decreased from the 67 minutes reported in 2019. The SAIFI decreased to 0.71 interruptions from 0.97 interruptions the previous year. The CAIDI decreased to 67 minutes from 69 minutes in 2019.

Gulf's top five causes of outages were "Vegetation" (24 percent), "Animals" (19 percent), "Defective Equipment" (18 percent), "Unknown Causes" (14 percent), and "All Other" (9 percent). As shown in **Figure 2-29**, the number of outages decreased for "Vegetation," "Animals," and "Defective Equipment" in 2020 when compared to 2019.

There were three complaints reported to the Commission against Gulf that were reliability related in 2020. Gulf's percentage of total complaints for the five-year period of 2016 to 2020 is trending upward. Overall, as shown in **Figure 3-10,** Gulf has the lowest percentage of total complaints related to reliability.

Service Reliability of Tampa Electric Company

The adjusted data for TECO indicates that its 2020 allowable exclusions accounted for approximately 23 percent of the CMI. There were no extreme weather events that affected TECO's service area during 2020. The "Planned Service Interruptions" category accounted for approximately 12 percent of the CMI.

The adjusted SAIDI decreased from 76 minutes in 2019 to 68 minutes in 2020 and represents an 11 percent improvement in performance. The SAIFI decreased to 0.94 interruptions from 1.07 interruptions in the previous year. The CAIDI increased 2 percent, to 72 minutes from 71 minutes reported in 2019. TECO reported the decreases in SAIDI and SAIFI were attributed to less severe weather events as the increase to CAIDI was due to slightly slower restoration time.

"Defective Equipment" (27 percent) and "Vegetation" (25 percent) were the largest contributors to TECO's causes of outage events followed by "Lightning" (14 percent), "Animals" (12 percent), and "Unknown Causes" (12 percent). **Figure 2-37** illustrates the top five outage causes. "Defective Equipment," the leading cause of outages, has been trending downward since 2016 even though "Defective Equipment" had a 6 percent increase in outages when compared to the previous year. "Lightning" related causes are also trending downward. "Vegetation" and "Unknown Causes" related causes are trending upward as "Animals" related causes is staying relatively flat.

TECO's percentage of total service reliability related complaints increased from 17.1 percent in 2019 to 22.6 percent in 2020. TECO's percentage of service reliability complaints is trending upward over the period of 2016 to 2020.

Review Outline

This review primarily relies on the March 2021 Reliability Reports filed by the IOUs for the 2020 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:** Each utility's actual 2020 distribution service reliability data and support for each of its adjustments to the actual service reliability data.
- **Section II:** Each utility's 2020 distribution service reliability based on adjusted service reliability data and staff's observations of overall service reliability performance.
- **Section III:** Inter-utility comparisons and the volume of reliability related customer complaints for 2016 to 2020.
- **Section IV:** Appendices containing detailed utility specific data of the IOUs and summaries of the municipal and rural cooperative utilities.

Section I: Actual Distribution Service Reliability

Electric utility customers are affected by all outage and momentary events, regardless of where problems originate. For example, generation events and transmission events, while remote from the distribution system serving a customer, affect the distribution service experience. Actual reliability data is the accumulation of these events.

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:

- ♦ Planned service interruptions.
- ♦ A storm named by the National Weather Service.
- ♦ A tornado recorded by the National Weather Service.
- ♦ Ice on lines.
- ♦ A planned load management event.
- ♦ Any electric generation or transmission event not governed by subsection Rule 25-6.018(2) and (3) F.A.C.
- ♦ An extreme weather or fire event causing activation of the county emergency operation center.

This section provides an overview of each IOU's actual 2020 performance data and focuses on the exclusions allowed by the rule.

Duke Energy Florida, LLC: Actual Data

Table 1-1 provides an overview of key DEF metrics: Customer Minutes of Interruption (CMI) and Customer Interruptions (CI) for 2020. Excludable outage events accounted for approximately 30 percent of the minutes of interruption experienced by DEF's customers. DEF experienced outages associated with Tropical Storm Eta which impacted its service area on November 11-12, 2020. In addition, six tornadoes affected the following regions:

- North Central on January 4, 2020
- South Central on January 4, 2020
- North Coastal on April 20, 2020
- South Central on June 6, 2020
- North Central on August 18, 2020
- South Coastal and North Coastal on December 16, 2020

The "Planned Service Interruptions" events accounted for approximately 8 percent of the excludable minutes of interruptions. "Planned Service Interruptions" include any outages that were part of any work, new customers/load being added to existing services (new revenue), relocations, or upgrades. DEF stated that the transmission events accounted for 5 percent of the minutes of interruptions. DEF asserted that the initiating causes varied from equipment failures to weather. The sustained causes also varied from vegetation to equipment failure.

Table 1-1
DEF's 2020 Customer Minutes of Interruptions and Customer Interruptions

2020	Customer Minutes of Interruption (CMI)		Customer Interruptions (CI)	
	Value	% of Actual	Value	% of Actual
Reported Actual Data	**236,887,701**		**2,622,644**	
Documented Exclusions				
Planned Service Interruptions	18,124,303	7.65%	385,290	14.69%
Named Storms	32,039,791	13.53%	101,413	3.87%
Tornadoes	7,801,218	3.29%	25,891	0.99%
Ice on Lines		0.00%		0.00%
Planned Load Management Events		0.00%		0.00%
Generation/Transmission Events	12,065,644	5.09%	326,065	12.43%
Extreme Weather (EOC Activation/Fire)		0.00%		0.00%
Reported Adjusted Data	**166,856,745**	**70.44%**	**1,783,985**	**68.02%**

Source: DEF's 2020 distribution service reliability report.

Florida Power & Light Company: Actual Data

Table 1-2 provides an overview of FPL's CMI and CI figures for 2020. Excludable outage events accounted for approximately 34 percent of the minutes of interruption experienced by FPL's customers. FPL reported twelve tornadoes, and the following named storms: Tropical Storm Arthur impacted FPL's service territories on May 17, 2020, Tropical Storm Bertha on May 26-27, 2020, Tropical Storm Cristobal on June 6-8, 2020, Hurricane Isaias on July 31-August 3, 2020, Tropical Storm Laura on August 24, 2020, Hurricane Sally on September 12-14 and 17, 2020, and Tropical Storm Eta on November 7-12, 2020. FPL also reported that it had three EOC activations. On February 6-7, 2020, the Union County EOC was activated due to a severe cold front moving through the area. On March 31, 2020, the Union County EOC was again activated due to a severe storm system resulting in a tornado that affected the area. From May 13 to 15, 2020, the Collier County EOC was activated due to wildfires in Naples that were spreading as a results of high winds and low humidity. The 12 tornadoes affected the following regions:

- North Florida region on April 13, 2020
- Central Florida region on April 20, 2020
- Boca Raton region on May 21, 2020
- South Dade region on May 25, 2020
- Manasota region on June 1, 2020
- Manasota region on June 26, 2020
- Manasota region on July 16, 2020
- Manasota region on August 9, 2020
- Brevard region on August 16, 2020
- Central Florida region on August 18, 2020
- North Dade region on August 19, 2020
- North Florida region on December 24 through 25, 2020

Table 1-2
FPL's 2020 Customer Minutes of Interruptions and Customer Interruptions

2020	Customer Minutes of Interruption (CMI)		Customer Interruptions (CI)	
	Value	% of Actual	Value	% of Actual
Reported Actual Data (1)	**367,822,242**		**5,047,166**	
Documented Exclusions				
Planned Service Interruptions	21,313,123	5.79%	289,278	5.73%
Named Storms	94,576,600	25.71%	742,117	14.70%
Tornadoes	4,708,951	1.28%	66,053	1.31%
Ice on Lines	0	0.00%	0	0.00%
Planned Load Management Events	0	0.00%	0	0.00%
Generation/Transmission Events (2)	6,297,190	N/A	541,697	N/A
Extreme Weather (EOC Activation/Fire)	3,139,324	0.85%	40,790	0.81%
Reported Adjusted Data	**244,084,244**	**66.36%**	**3,908,928**	**77.45%**

Source: FPL's 2020 distribution service reliability report.
Notes: (1) Excludes Generation/Transmission Events per Rule 25-6.0455(2), F.A.C., and (2) Information Only, as reported actual data already excludes Generation/Transmission Events.

Florida Public Utilities Company: Actual Data

Table 1-3 provides an overview of FPUC's CMI and CI figures for 2020. Excludable outage events accounted for approximately 73 percent of the minutes of interruption experienced by FPUC's customers. The "Named Storms" events accounted for approximately 3 percent of the minutes of interruption and "Tornadoes" events accounted for approximately 36 percent of the minutes of interruption. FPUC reported that the following weather events impacted its service areas: Three tornadoes affected the Northwest division on February 6-7, 2020, April 12 -13, 2020 and April 24, 2020. Hurricanes Sally and Zeta affected the Northwest division on September 15-16, 2020, and October 28-29, 2020, respectively. The Northeast division was not impacted by any named storms or tornadoes in 2020.

The Northeast division experienced transmission events on January 17, 2020, August 9, 2020, September 25, 2020, October 6, 2020, and October 19, 2020, due to equipment failures and human error. The Northwest division experienced a substation event on March 28, 2020, due to a fallen tree at the City of Blountstown substation. Additionally, both divisions had several planned outages that allowed FPUC to perform maintenance to different sections of the distribution system.

Table 1-3
FPUC's 2020 Customer Minutes of Interruptions and Customer Interruptions

2020	Customer Minutes of Interruption (CMI)		Customer Interruptions (CI)	
	Value	% of Actual	Value	% of Actual
Reported Actual Data	**16,894,291**		**112,157**	
Documented Exclusions				
Planned Service Interruptions	280,464	1.66%	8,410	7.50%
Named Storms	458,073	2.71%	3,373	3.01%
Tornadoes	6,002,435	35.53%	18,434	16.44%
Ice on Lines	0	0.00%	0	0.00%
Planned Load Management Events	0	0.00%	0	0.00%
Generation/Transmission Events	5,523,001	32.69%	30,844	27.50%
Extreme Weather (EOC Activation/Fire)	0	0.00%	0	0.00%
Reported Adjusted Data	**4,630,318**	**27.41%**	**51,096**	**45.56%**

Source: FPUC's 2020 distribution service reliability report.

Gulf Power Company: Actual Data

Table 1-4 provides an overview of Gulf's CMI and CI figures for 2020. Excludable outage events accounted for approximately 98 percent of the minutes of interruption experienced by Gulf's customers. The "Named Storms" accounted for approximately 96 percent of the minutes of interruption. Tropical Storm Cristobal, on June 6-8, 2020, affected all three regions of Gulf's service area. All three regions were also affected by Hurricane Sally on September 15-20, 2020, and Hurricane Zeta on October 28-29, 2020. Gulf reported two tornadoes, which accounted for approximately 1 percent of the minutes of interruption. The tornadoes affected the following regions:

- Pensacola on April 20, 2020
- Fort Walton, Panama City, and Pensacola regions on April 23-24, 2020

Table 1-4
Gulf's 2020 Customer Minutes of Interruption and Customer Interruptions

2020	Customer Minutes of Interruption (CMI)		Customer Interruptions (CI)	
	Value	% of Actual	Value	% of Actual
Reported Actual Data (1)	**917,801,767**		**914,682**	
Documented Exclusions				
Planned Service Interruptions	1,986,126	0.22%	34,989	3.83%
Named Storms	884,945,745	96.42%	492,662	53.86%
Tornadoes	8,623,959	0.94%	52,978	5.79%
Ice on Lines		0.00%		0.00%
Planned Load Management Events		0.00%		0.00%
Generation/Transmission Events (2)	1,559,097	N/A	51,711	N/A
Extreme Weather (EOC Activation/Fire)		0.00%		0.00%
Reported Adjusted Data	**22,245,937**	**2.42%**	**334,053**	**36.52%**

Source: Gulf's 2020 distribution service reliability report.
Notes: (1) Excludes Generation/Transmission Events per Rule 25-6.0455(2), .F.A.C., and (2) Information Only, as reported actual data already excludes Generation/Transmission Events.

Gulf's "Generation/Transmission Events" accounted for less than 1 percent of CMI. The causes for the transmission events included external substation equipment, deterioration, contamination, failed equipment, substation equipment failure, under frequency condition, accidental trip, other and unknown. The causes were corrected by either manual operation of the damaged equipment by field personnel or were corrected remotely through SCADA and implement software updates. Gulf reports that no generation events were excluded.

Tampa Electric Company: Actual Data

Table 1-5 provides an overview of TECO's CMI and CI figures for 2020. Excludable outage events accounted for approximately 23 percent of the minutes of interruption experienced by TECO's customers. There were no extreme weather events that affected TECO's service area during 2020.

The "Planned Service Interruptions" events accounted for approximately 12 percent of the minutes of interruption. TECO reported that when working "Planned Service Interruptions," the affected system is temporarily de-energized to safely complete work that has been requested by customers for various reasons. In addition, "Generation/Transmission Events" accounted for approximately 10 percent of the minutes of interruptions. TECO reported 15 transmission outages in 2020. The causes listed included equipment failure, vegetation, and weather circumstances. TECO reported that all equipment failures were repaired, structures replaced, overgrown vegetation were trimmed, and poles were repaired.

Table 1-5
TECO's 2020 Customer Minutes of Interruptions and Customer Interruptions

2020	Customer Minutes of Interruption (CMI)		Customer Interruptions (CI)	
	Value	% of Actual	Value	% of Actual
Reported Actual Data	**70,936,305**		**1,265,468**	
Documented Exclusions				
Planned Service Interruptions	8,581,218	12.10%	223,824	17.69%
Named Storms	0	0.00%	0	0.00%
Tornadoes	0	0.00%	0	0.00%
Ice on Lines	0	0.00%	0	0.00%
Planned Load Management Events	0	0.00%	0	0.00%
Generation/Transmission Events	7,404,876	10.44%	280,842	22.19%
Extreme Weather (EOC Activation/Fire)	0	0.00%	0	0.00%
Reported Adjusted Data	**54,950,211**	**77.46%**	**760,802**	**60.12%**

Source: TECO's 2020 distribution service reliability report.

Section II: Adjusted Distribution Service Reliability Review of Individual Utilities

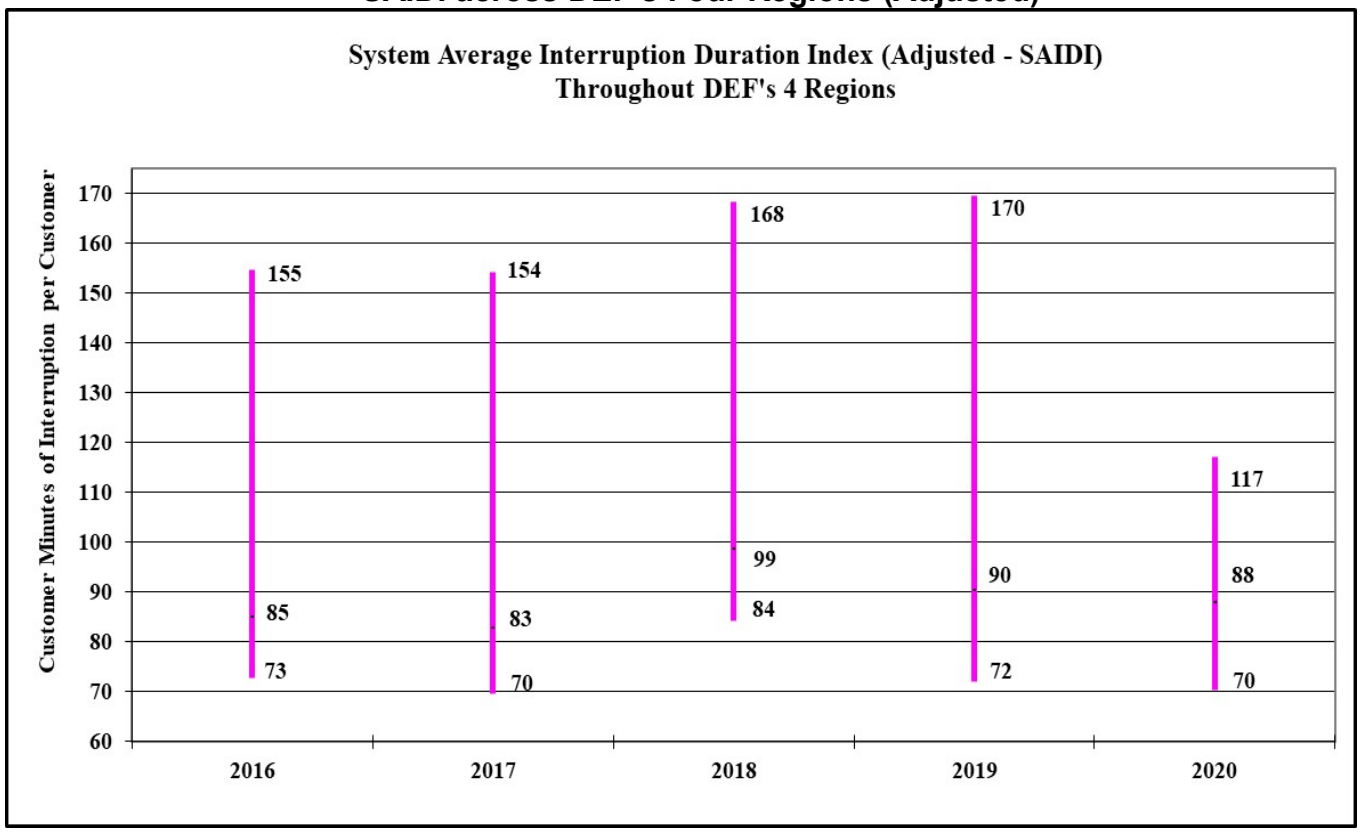
The adjusted distribution reliability metrics or indices provide insight into potential trends in a utility's daily practices and maintenance of its distribution facilities. This section of the review is based on each utility's reported adjusted data.

Duke Energy Florida, LLC: Adjusted Data

Figure 2-1 charts the adjusted SAIDI recorded across DEF's system and depicts decreases in the lowest and the average values in 2020. DEF reported that it experienced six tornadoes and one named storm, which accounted for the increased SAIDI minutes. However, DEF saw a drop in Excluded Weather SAIDI compared to the previous five-year average.

DEF's service territory is comprised of four regions: North Coastal, South Coastal, North Central, and South Central. **Figure 2-1** illustrates that the North Coastal region continues to report the poorest SAIDI over the last five years, fluctuating between 117 minutes and 170 minutes. While the South Coastal and South Central regions have the best or lowest SAIDI for the same period. The North Coastal region is predominantly a rural area and has more square miles when compared to the other regions. This region 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 2-1
SAIDI across DEF's Four Regions (Adjusted)



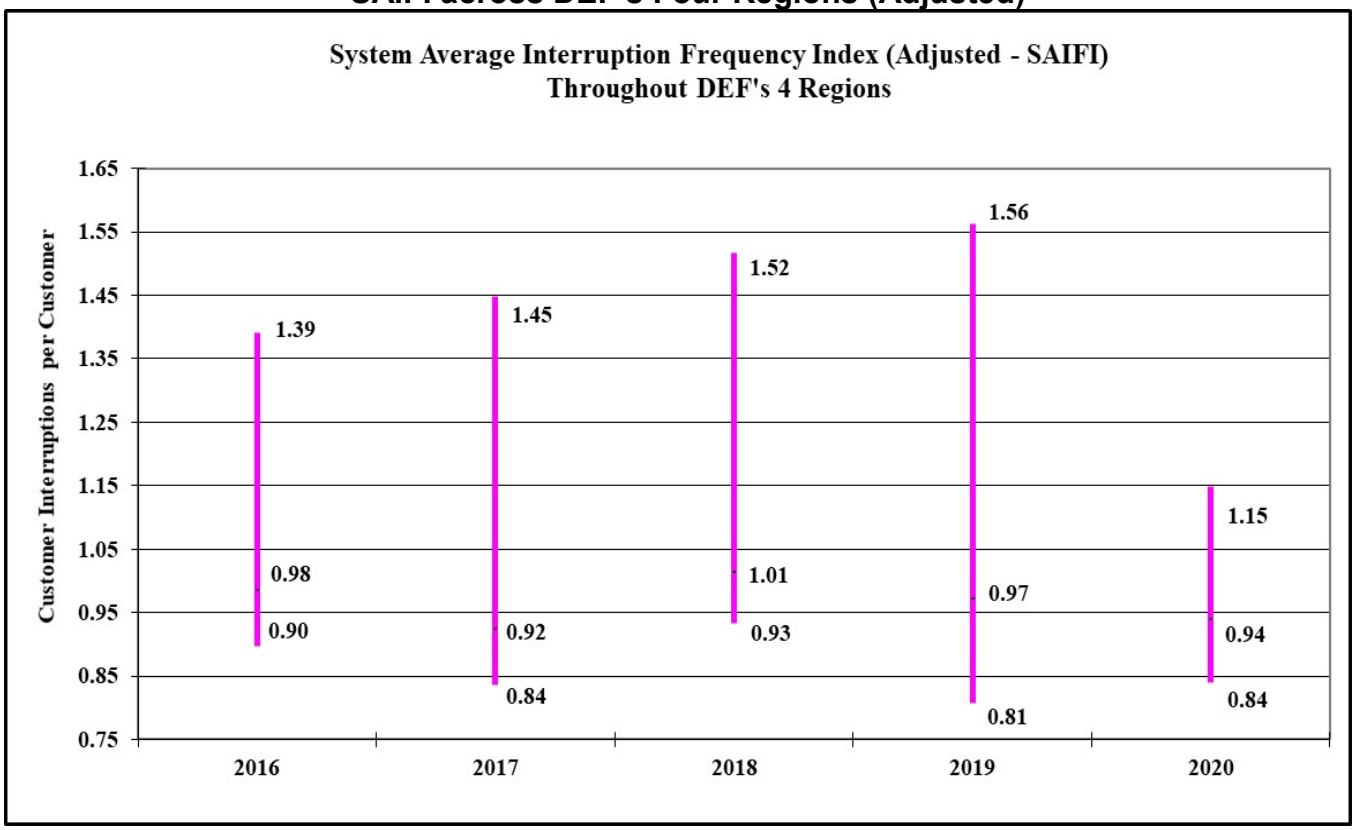
DEF's Regions with the Highest and Lowest Adjusted SAIDI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest SAIDI	North Coastal	North Coastal	North Coastal	North Coastal	North Coastal
Lowest SAIDI	South Coastal	South Central	South Central	South Coastal	South Central

Source: DEF's 2016-2020 distribution service reliability reports.

Figure 2-2 shows the adjusted SAIFI across DEF's system. The minimum, average, and maximum SAIFI are trending downward for the five-year period of 2016 through 2020. There was a 4 percent increase for the minimum value, a 3 percent decrease for the average value, and a 26 percent decrease for the maximum value from 2019 to 2020. The North Central region had the lowest number of interruptions, while the North Coastal region continues to have the highest number of interruptions.

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



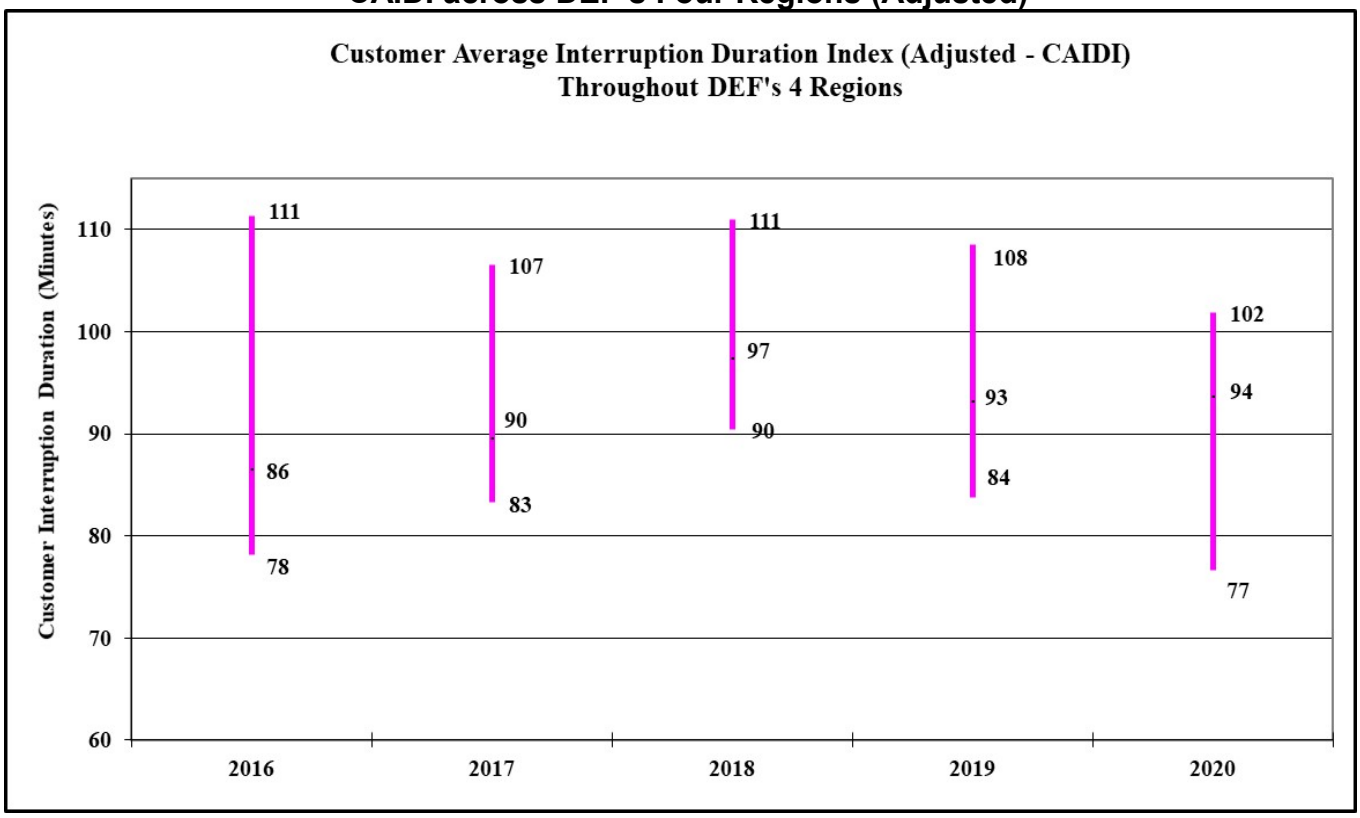
DEF's Regions with the Highest and Lowest Adjusted SAIFI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest SAIFI	North Coastal	North Coastal	North Coastal	North Coastal	North Coastal
Lowest SAIFI	South Coastal	South Central	South Central	North Central	North Central

Source: DEF's 2016-2020 distribution service reliability reports.

Figure 2-3 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 increasing for a five-year period from 86 minutes in 2016 to 94 minutes in 2020. The North Coastal region has continued to have the highest CAIDI level for the past five years; however, the maximum CAIDI is now trending downward. The South Central region had the lowest CAIDI level during the same period with the minimum CAIDI remaining relativity flat.

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



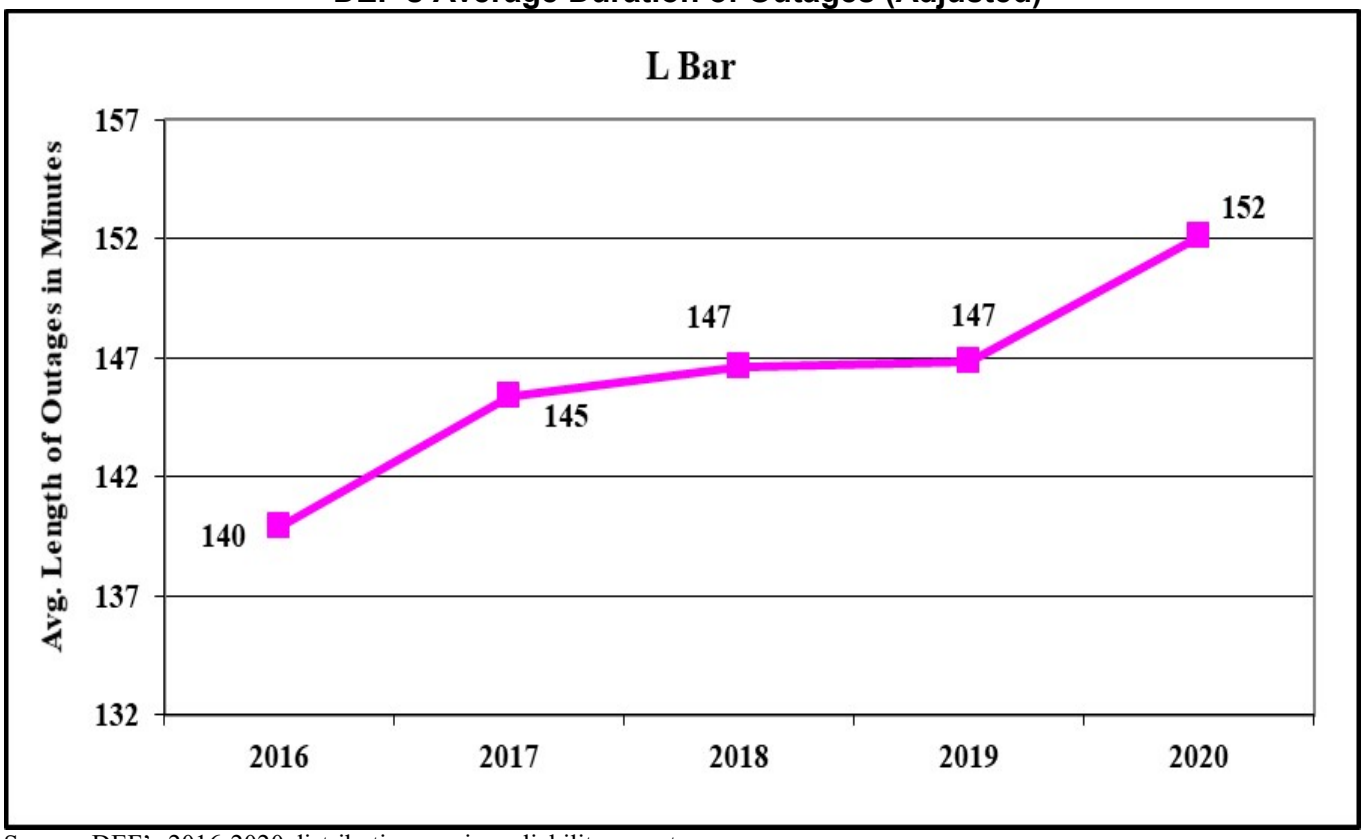
DEF's Regions with the Highest and Lowest Adjusted CAIDI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest CAIDI	North Coastal	North Coastal	North Coastal	North Coastal	North Coastal
Lowest CAIDI	South Central	South Central	South Central	South Coastal	South Central

Source: DEF's 2016-2020 distribution service reliability reports.

Figure 2-4 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 9 percent increase of outage durations since 2016 with a 3 percent increase from 2019 to 2020. DEF's overall L-Bar index is trending upward, indicating that DEF is spending more time restoring service from outage events.

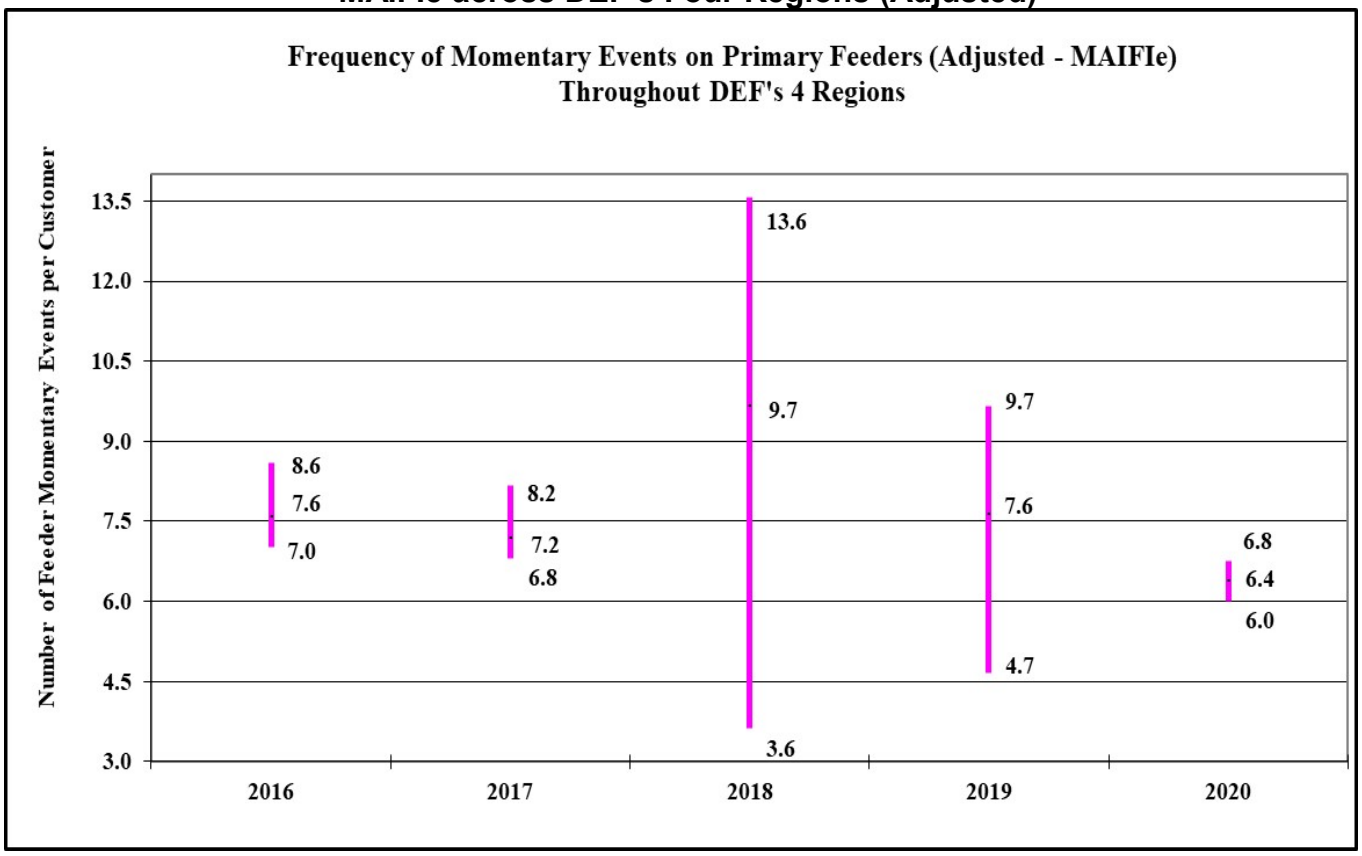
Figure 2-4
DEF's Average Duration of Outages (Adjusted)



Source: DEF's 2016-2020 distribution service reliability reports.

Figure 2-5 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 2016 and 2020 appear to be trending downward showing improvement and there was a decrease in the average MAIFIe of 16 percent from 2019 to 2020. All four regions appear to fluctuate between having the best (lowest) results to having the worst (highest) results. From 2019 to 2020, the highest MAIFIe decreased by 29 percent as the lowest MAIFIe increased by 28 percent.

Figure 2-5
MAIFIe across DEF's Four Regions (Adjusted)



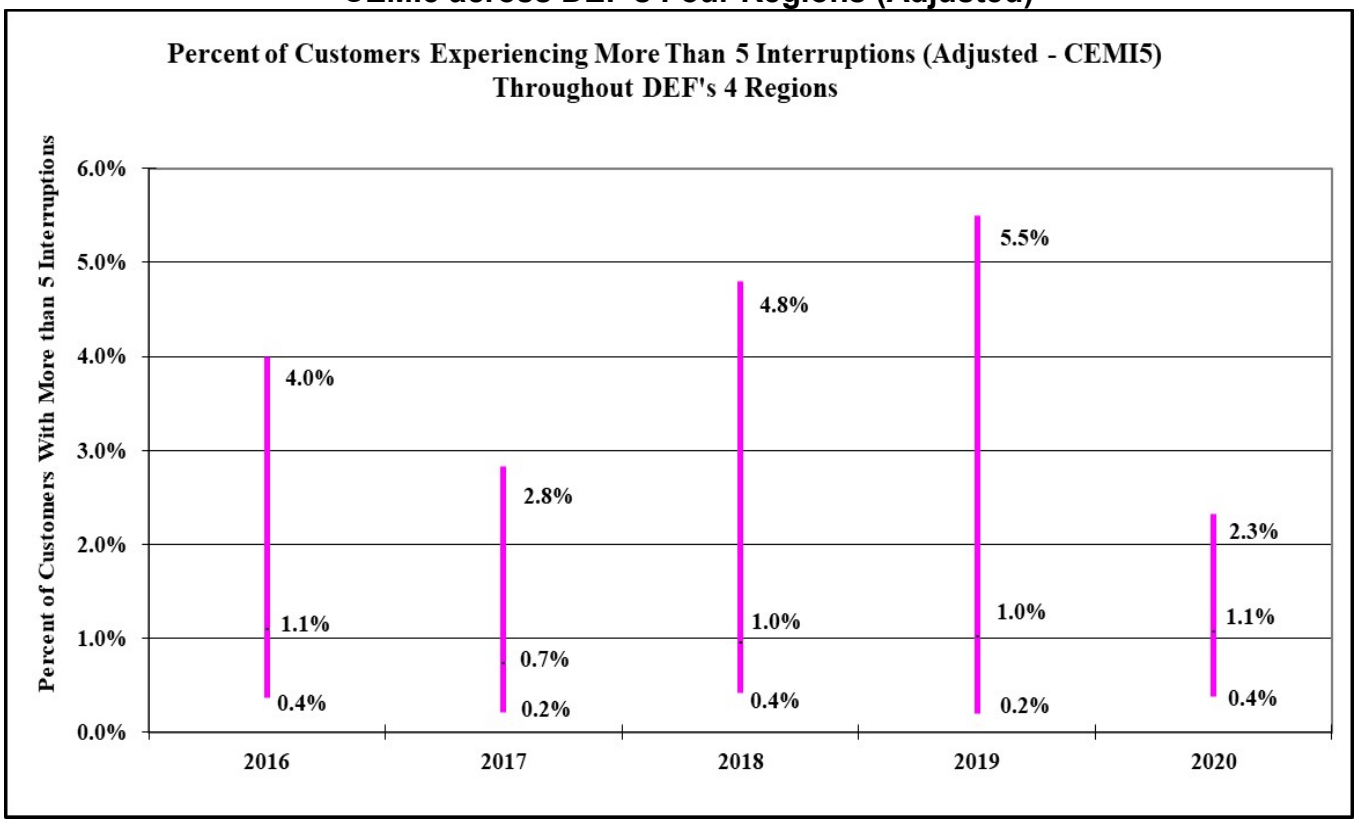
DEF's Regions with the Highest and Lowest Adjusted MAIFIe Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest MAIFIe	North Central	North Coastal	North Coastal	North Coastal	North Central
Lowest MAIFIe	South Central	South Coastal	North Central	North Central	South Coastal

Source: DEF's 2016-2020 distribution service reliability reports.

Figure 2-6 charts the percentage of DEF's customers experiencing more than five interruptions over the last five years. DEF reported a 10 percent increase in the average CEMI5 from 2019 to 2020. The average CEMI5 is trending upward over the past five years. The South Coastal region has the lowest reported percentage for all of DEF's regions and the North Coastal region continues to have the highest reported percentage.

Figure 2-6
CEMI5 across DEF's Four Regions (Adjusted)



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

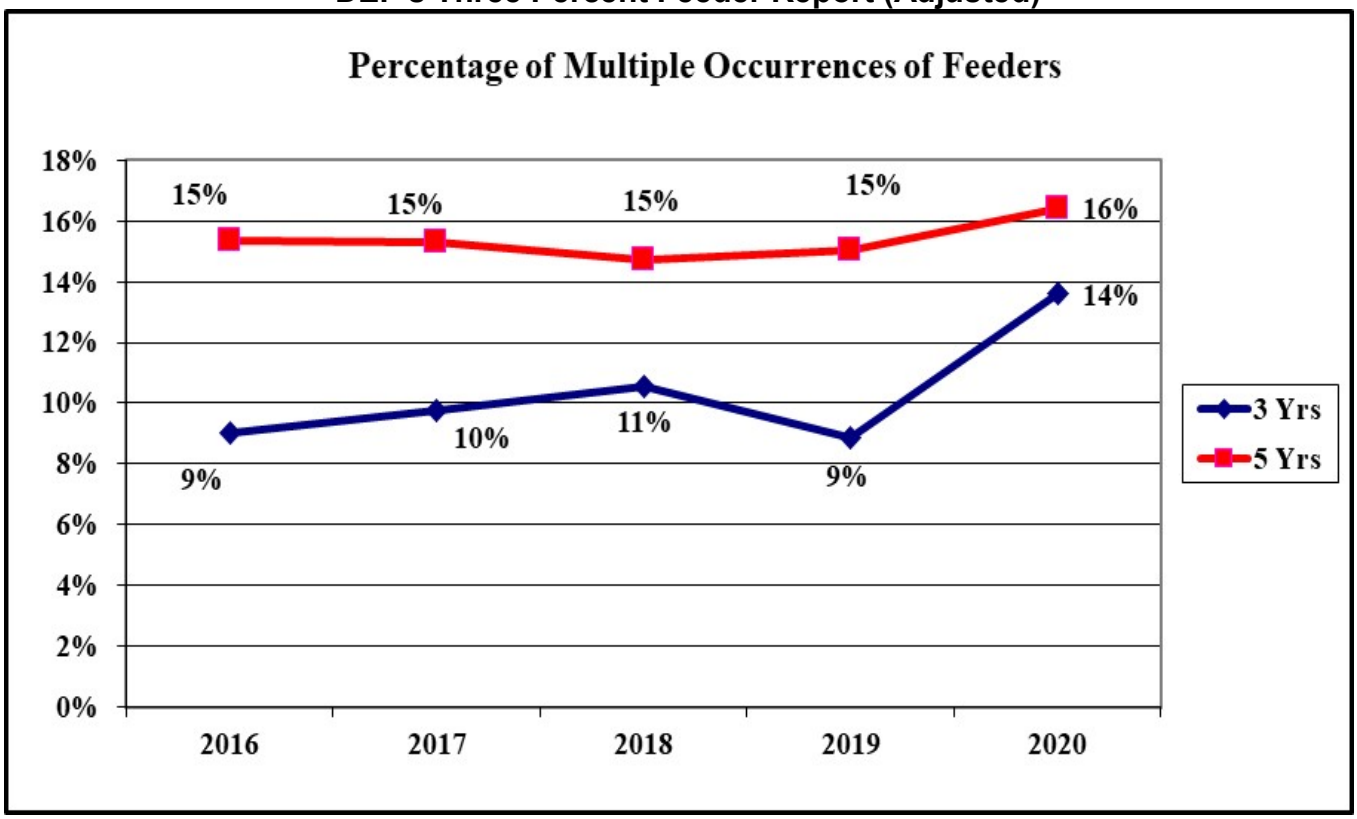
	2016	2017	2018	2019	2020
Highest CEMI5	North Coastal	North Coastal	North Coastal	North Coastal	North Coastal
Lowest CEMI5	North Central	South Coastal	North Central	South Coastal	South Coastal

Source: DEF's 2016-2020 distribution service reliability reports.

Figure 2-7 shows the fraction of multiple occurrences of feeders using a three-year and five-year basis. During the period of 2016 to 2020, 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 3 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.

Six of DEF's feeders have been on the Three Percent Feeder Report for the last two years consecutively. The outages varied from equipment failure and vegetation. DEF replaced the failing equipment, trimmed trees, and performed infrared scans on the feeders. No issues were found during the infrared scans. Two of the three feeders will be part of DEF's Self Optimizing Grid Program set to deploy in 2021. DEF will continue to analyze the feeders and perform in-depth patrols to identify operational issues and initiate mitigation actions.

Figure 2-7
DEF's Three Percent Feeder Report (Adjusted)

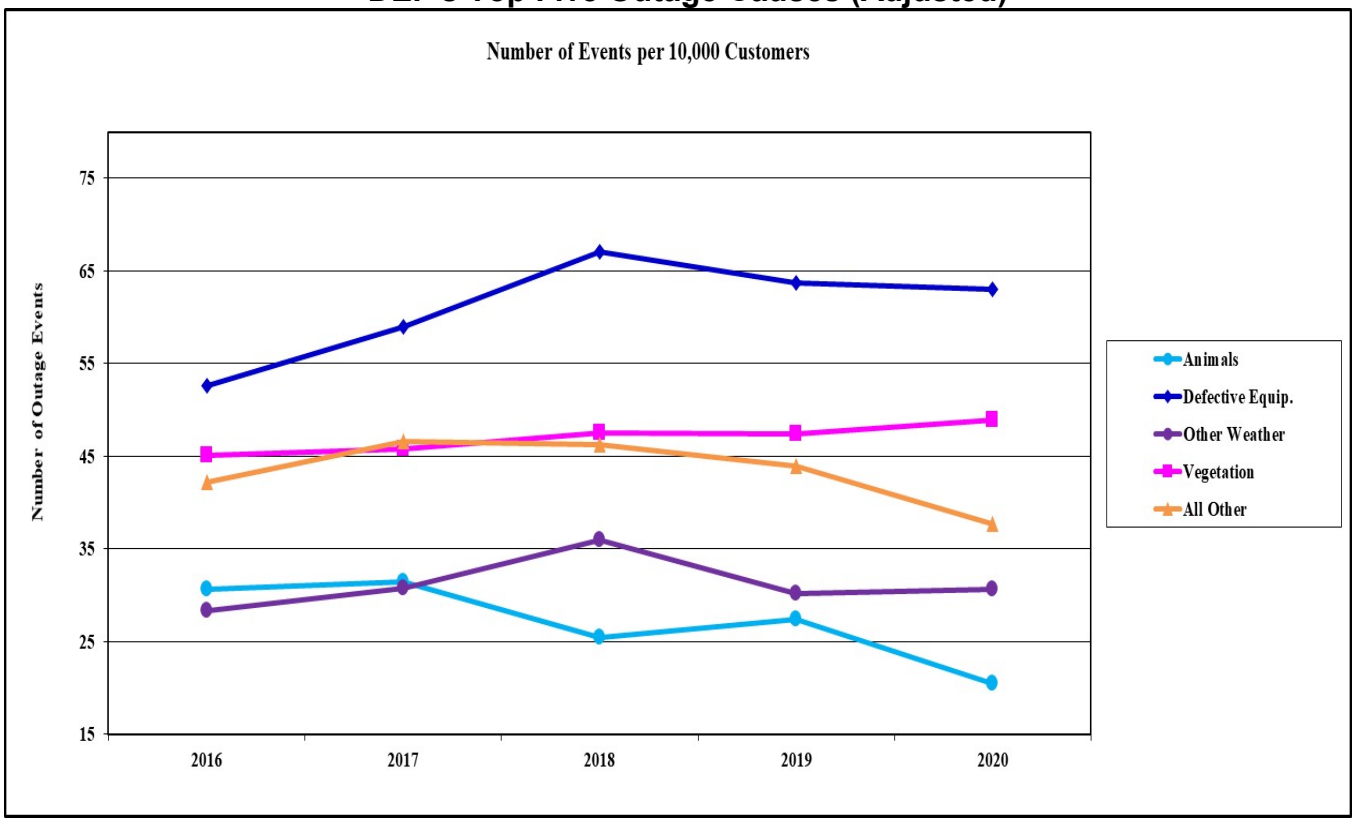


Source: DEF's 2016-2020 distribution service reliability reports.

Figure 2-8 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 95 percent of the top 10 causes of outage events that occurred during 2020. For the five-year period, the top five causes of outage events were "Defective Equipment" (30 percent), "Vegetation" (23 percent), "Other Causes" (18 percent), "Other Weather" (15 percent) , and "Animals" (10 percent) on a cumulative basis. The outage events caused by "Other Causes," and "Animals" are trending downward. The "Other Causes" category had a 13 percent decrease and "Animals" category had a 24 percent decrease in 2020. DEF reported that it prioritizes the reliability improvements action plan by balancing historical and current year performance. In addition, current year performance is monitored monthly to identify emergent and seasonal issues including load balancing for cold weather and the need for foot patrols of devices experiencing multiple interruptions.

DEF will continue several programs that help mitigate outages. The Self-Optimizing Grid Team program will help reduce the impact of all types of outages. The Targeted Underground program will reduce the impact of "Vegetation," "Other Weather," and "Animals" related outages. The Transformer Retrofit Program will reduce the risk of "Defective Equipment" and "Animals" related outages. The Deteriorated Conductor Program will help mitigate the outages caused by "Defective Equipment," "Vegetation," "Animals," and "Other Weather." In addition, DEF is also implementing its Fuse Replacement Program, which will reduce the impact from "Other Weather," "Vegetation," and "Animals" related outages.

Figure 2-8
DEF's Top Five Outage Causes (Adjusted)



Source: DEF's 2016-2020 distribution service reliability reports.

Observations: DEF's Adjusted Data

DEF's SAIFI, and MAIFIe are trending downward over the past five years. The SAIDI, CAIDI, CEMI5, L-Bar, the Five-Year Percent and the Three-Year Percent of Multiple Feeder Outage Events are all trending upward over the five-year period. All of the reliability indices, except for CAIDI, CEMI5, L-Bar, the Five-Year Percent and the Three-Year Percent of Multiple Feeder Outage Events, had decreased from 2019 to 2020. The results for the North Coastal Region have continually demonstrated the highest (poorest) service reliability indices of the five regions within DEF for the past five years; however, there are improvements as the five-year trends for the North Coastal region are trending downward. The North Coastal region is predominantly a rural area and has more square miles compared to DEF's other service territories.

DEF reported that in 2020 it experienced six tornadoes and one named storm, which accounted for the increased SAIDI minutes. However, DEF experienced a drop in Excluded Weather SAIDI compared to the previous five-year average. The drop in Excluded Weather was a result of the decrease in intensity and number of "Named Storms" that made landfall.

In 2020, DEF continued work targeting the North Coastal region. The following are the completed projects:

- 1,566 transformers under the Transformer Retrofit Program
- 15.4 miles under the Deteriorated Conductor Programs
- 17.2 miles under the Targeted Underground Program
- 24 feeders under the Self-Optimizing Grid Program

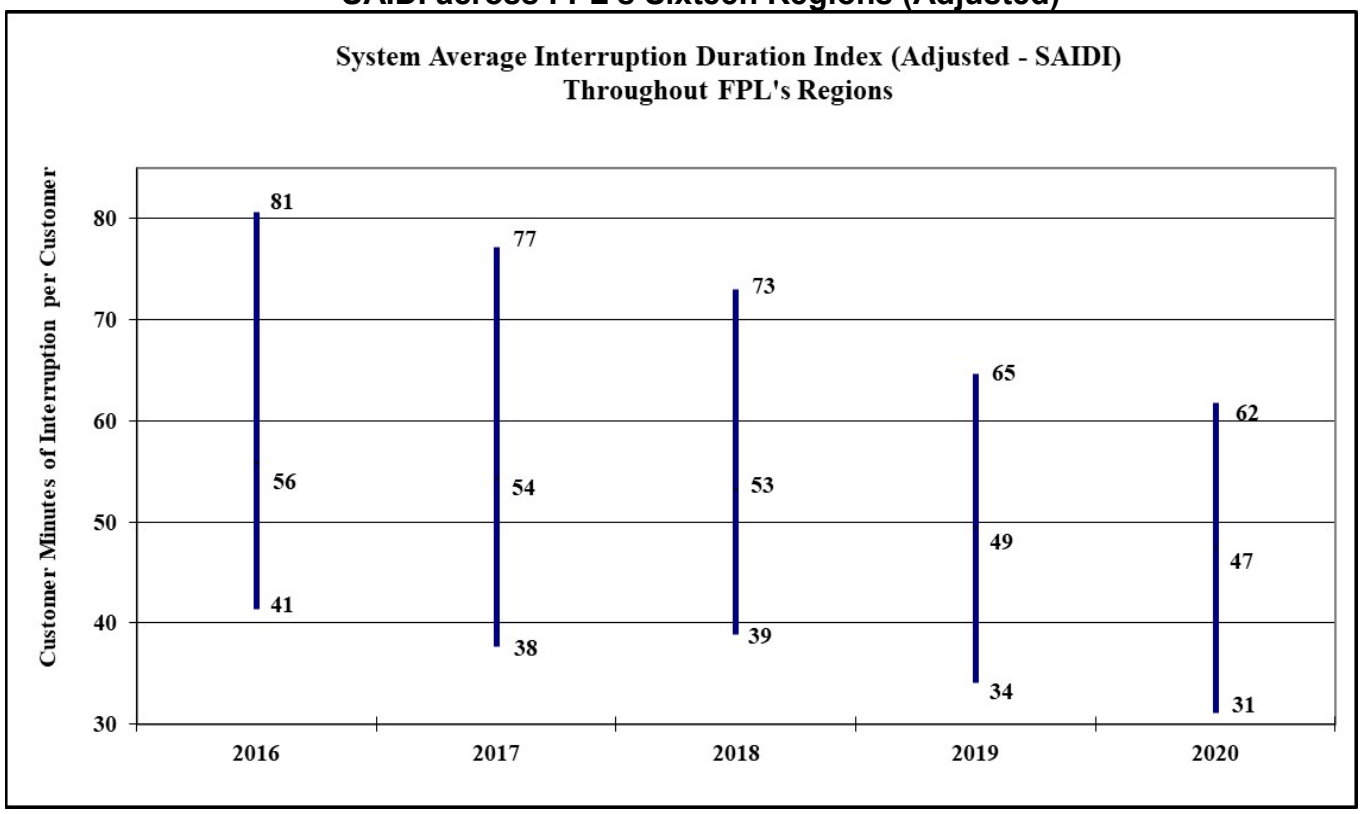
The following projects are planned in 2021:

- 895 transformers under the Transformer Retrofit Program
- 15.2 miles under the Deteriorated Conductor Programs
- 54 feeders under the Fuse Replacement Program
- 37.5 miles under the Targeted Underground Program
- 19 feeders under the Self-Optimizing Grid Program
- 3 feeders under the Storm Protection Plan Feeder Hardening Program

Florida Power & Light Company: Adjusted Data

Figure 2-9 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 2 minute (4 percent) to its average SAIDI results for 2020 compared to 2019. The average SAIDI appears to be trending downward over the five-year period of 2016 to 2020. The North Broward region had the best SAIDI results for 2020.

Figure 2-9
SAIDI across FPL's Sixteen Regions (Adjusted)



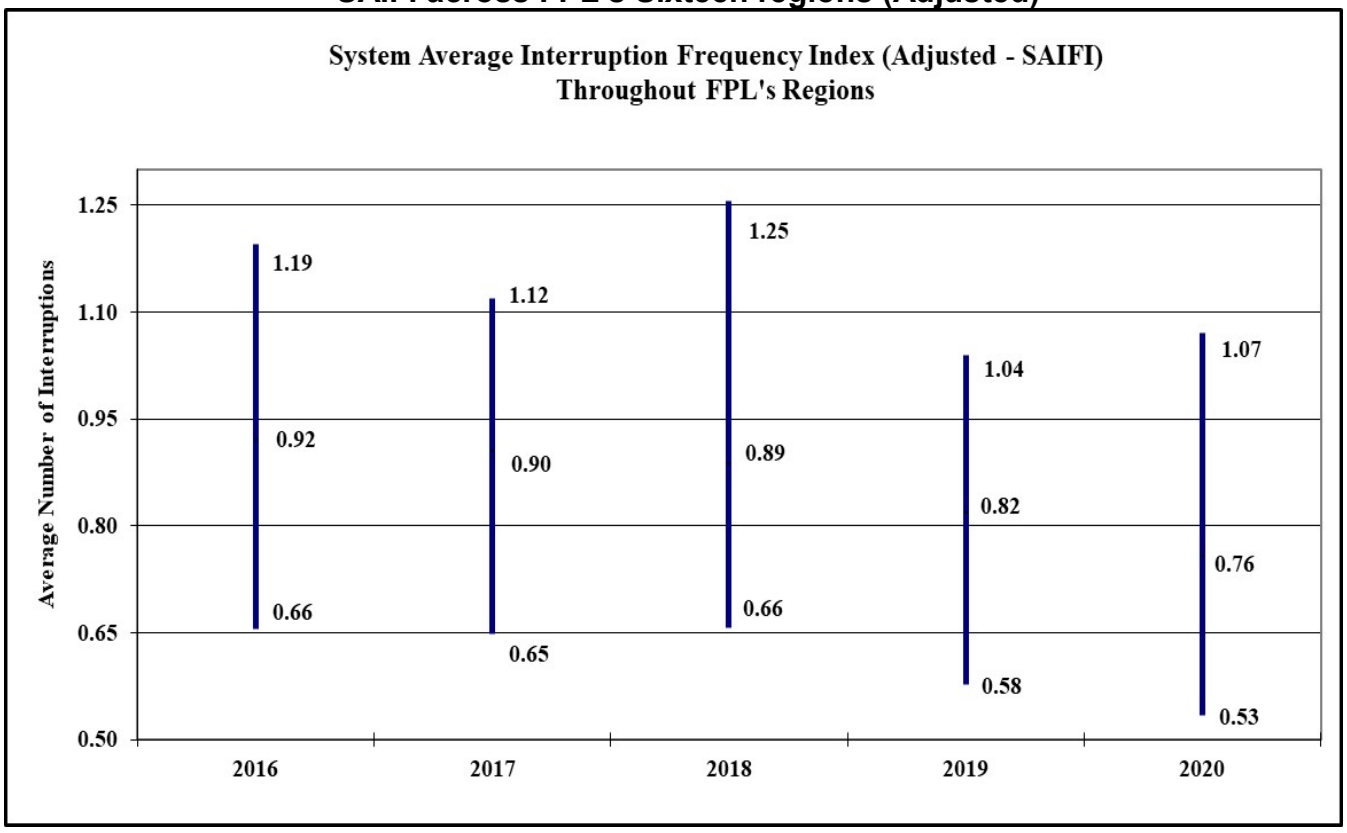
FPL's Regions with the Highest and Lowest Adjusted SAIDI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest SAIDI	Treasure Coast	Toledo Blade	North Florida	Central Broward	North Florida
Lowest SAIDI	Central Dade	North Broward	North Broward	Manasota	North Broward

Source: FPL's 2016-2020 distribution service reliability reports.

Figure 2-10 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 0.76 outages in 2020, compared to 0.82 outages in 2019, which is a 7 percent decrease. FPL reported an increase in the highest SAIFI of 1.07 interruptions in 2020 compared to 1.04 interruptions in 2019. The region reporting the lowest adjusted SAIFI for 2019 was North Broward at 0.53 interruptions compared to 0.58 interruptions in the Manasota region in 2019. During the period of 2016 to 2020 the highest, average, and lowest SAIFI appears to be trending downward.

Figure 2-10
SAIFI across FPL's Sixteen regions (Adjusted)



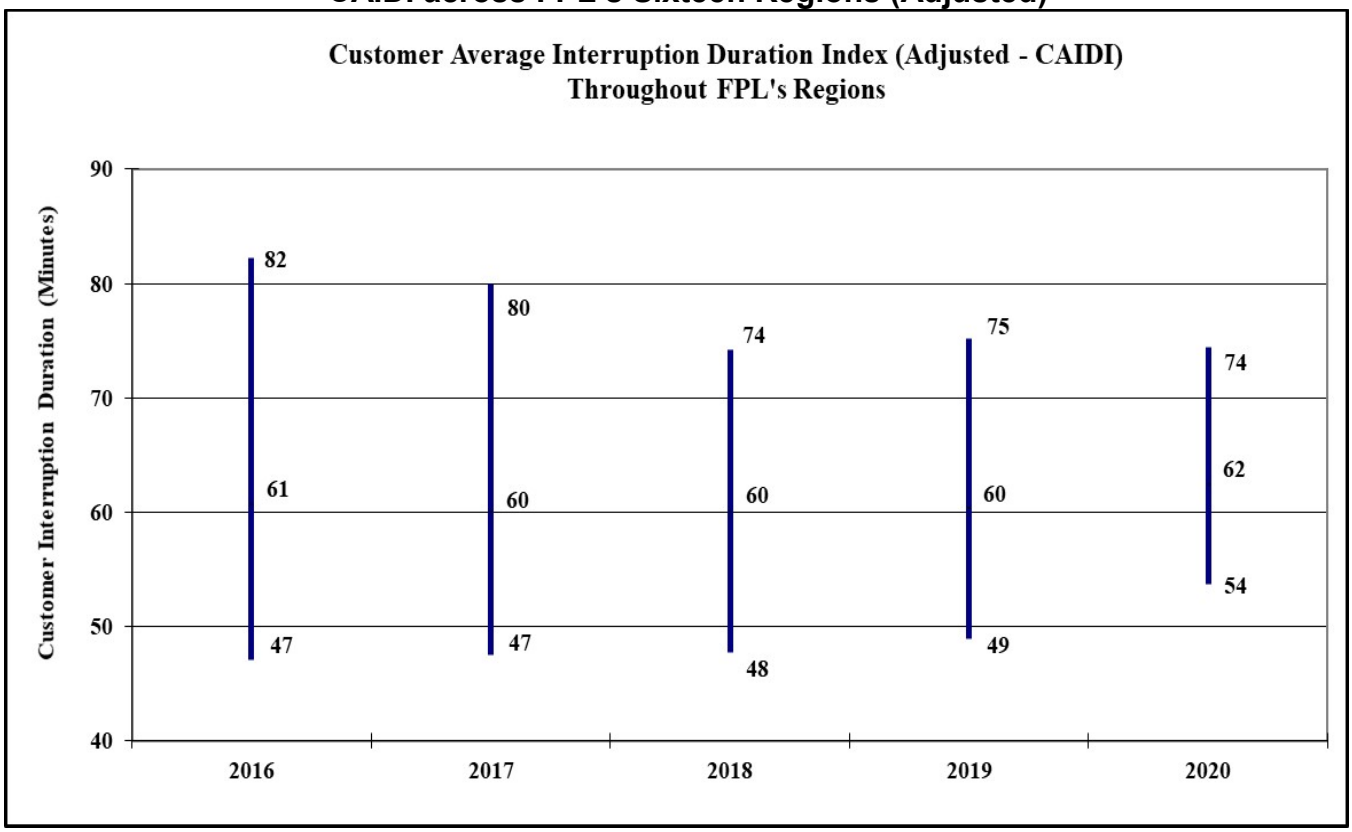
FPL's Regions with the Highest and Lowest Adjusted SAIFI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest SAIFI	Treasure Coast	Toledo Blade	North Florida	North Florida	North Florida
Lowest SAIFI	Central Dade	North Broward	North Broward	Manasota	North Broward

Source: FPL's 2016-2020 distribution service reliability reports.

Figure 2-11 depicts FPL's highest, average, and lowest CAIDI expressed in minutes. FPL's adjusted average CAIDI increased 3 percent from 60 minutes in 2019 to 62 minutes in 2020. The average duration of CAIDI is trending slightly upward. For 2020, the Central Florida service area reported the lowest duration of CAIDI at 54 minutes. The highest duration of CAIDI was 74 minutes for the North Dade service area for 2020.

Figure 2-11
CAIDI across FPL's Sixteen Regions (Adjusted)



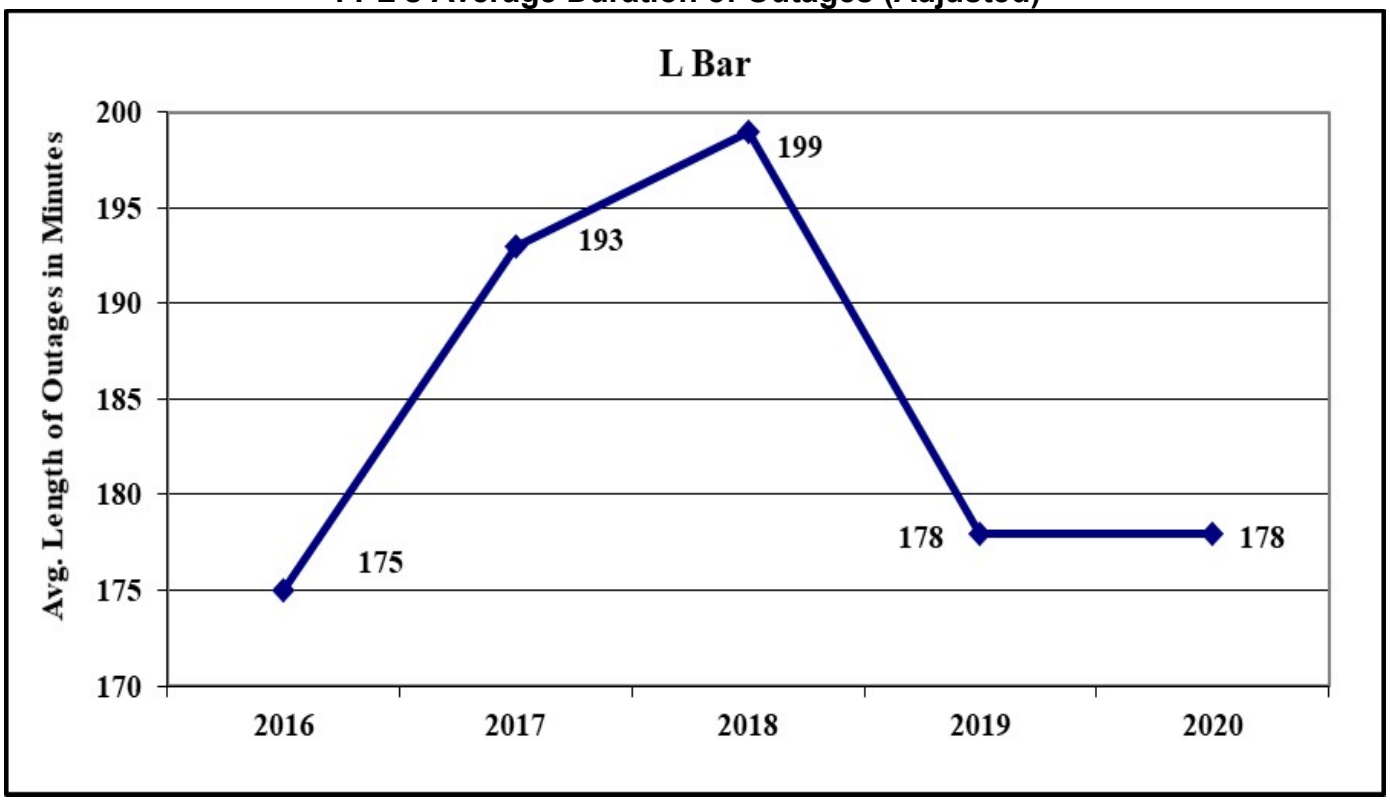
FPL's Regions with the Highest and Lowest Adjusted CAIDI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest CAIDI	North Dade	South Dade	North Dade	South Dade	North Dade
Lowest CAIDI	Boca Raton	West Palm	West Palm	West Palm	Central Florida

Source: FPL's 2016-2020 distribution service reliability reports.

Figure 2-12 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's L-Bar was 178 minutes in 2020 and 2019. However, there is a 2 percent overall increase since 2016; but, the L-Bar is trending downward, indicating FPL is spending less time restoring service to the last customer for that given outage.

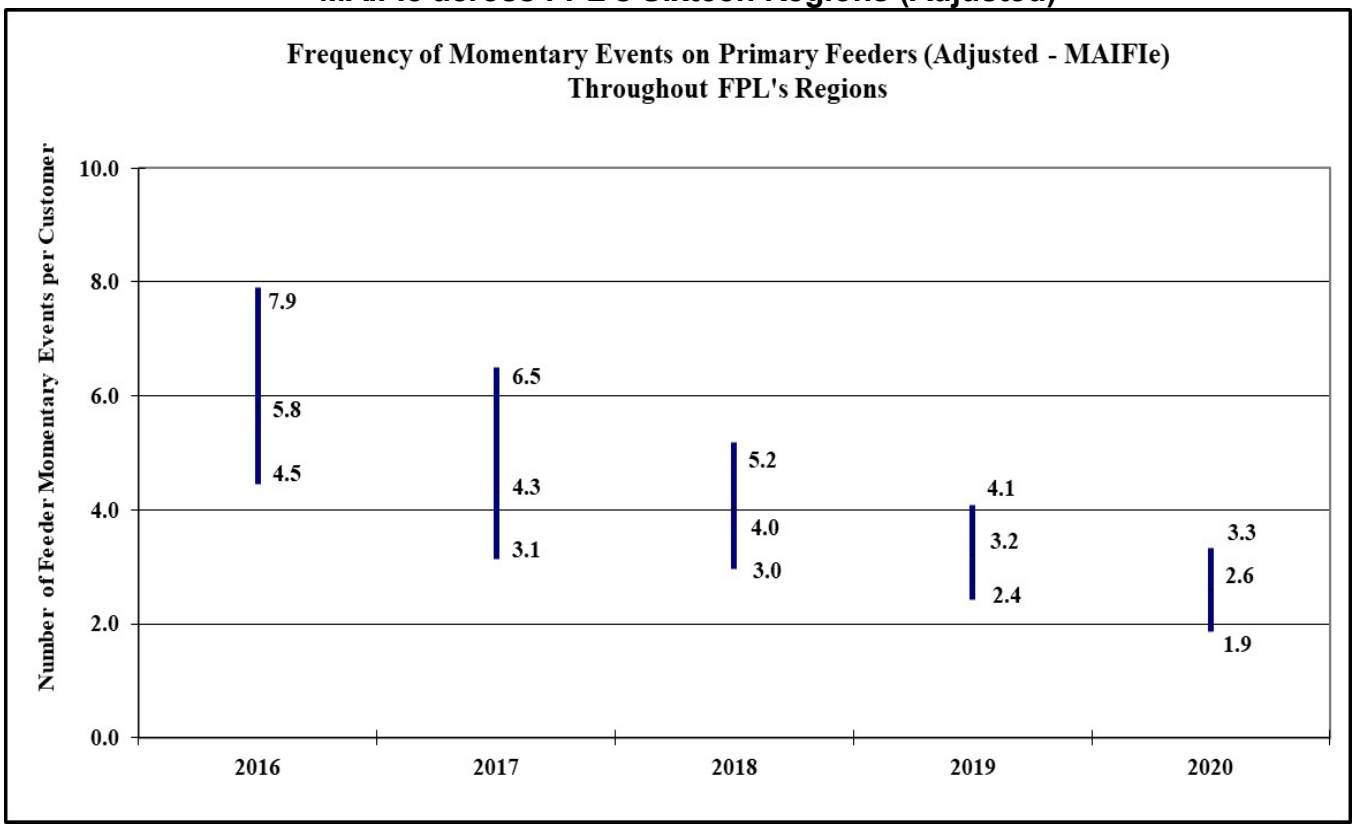
Figure 2-12
FPL's Average Duration of Outages (Adjusted)



Source: FPL's 2016-2020 distribution service reliability reports.

Figure 2-13 is the highest, average, and lowest adjusted MAIFIe recorded across FPL's system. FPL's Central Broward, Toledo Blade, West Palm, and Boca Raton service areas have experienced the least reliable MAIFIe results of the 16 service areas of FPL since 2016. The North Broward, Central Dade, and Manasota service areas had the fewest momentary events since 2016. The results have been trending downward (improving) over the last five years. There is a 19 percent decrease in the average MAIFIe results from 2019 to 2020. As a note, FPL calculates MAIFIe differently. Specifically, if a feeder begins in one region and crosses another region, all customers on that feeder are impacted by the MAIFIe event and are counted in the starting region. Therefore, the number of customers per region will be different.

Figure 2-13
MAIFIe across FPL's Sixteen Regions (Adjusted)



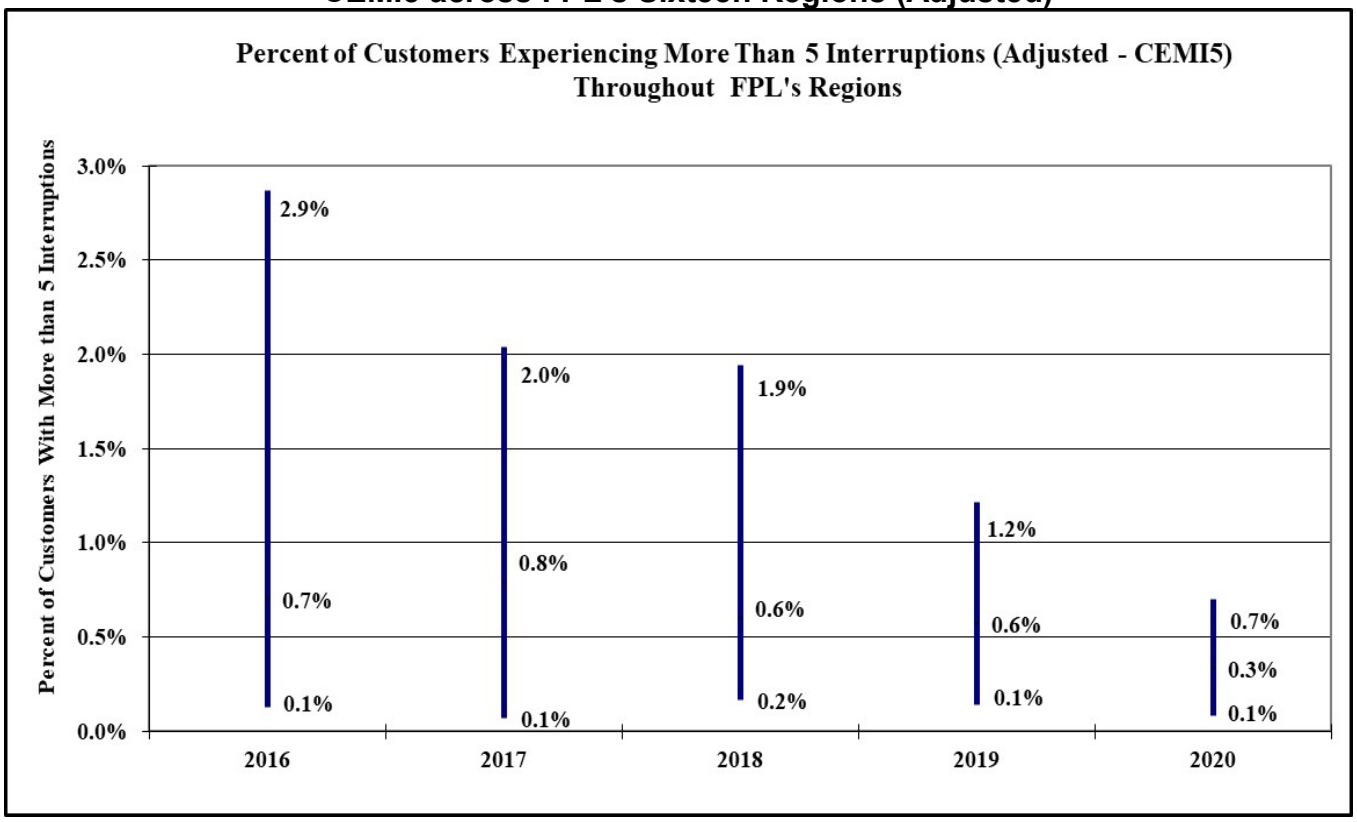
FPL's Regions with the Highest and Lowest Adjusted MAIFIe Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest MAIFIe	Central Broward	Central Broward	Toledo Blade	West Palm	Boca Raton
Lowest MAIFIe	North Broward	North Broward	Central Dade	Manasota	Manasota

Source: FPL's 2016-2020 distribution service reliability reports.

Figure 2-14 shows the highest, average, and lowest adjusted CEMI5. FPL's customers with more than five interruptions per year appear to be slightly trending downward. The service areas experiencing the highest CEMI5 over the five-year period appear to fluctuate among West Dade, Treasure Coast, West Palm, Toledo Blade and North Florida. North Broward, South Broward (Gulf Stream), Central Dade, and North Broward are reported as having the lowest percentages in the last five years. The average CEMI5 result for 2020 was 0.3 percent, which is 50 percent lower than 0.6 percent in 2019.

Figure 2-14
CEMI5 across FPL's Sixteen Regions (Adjusted)



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

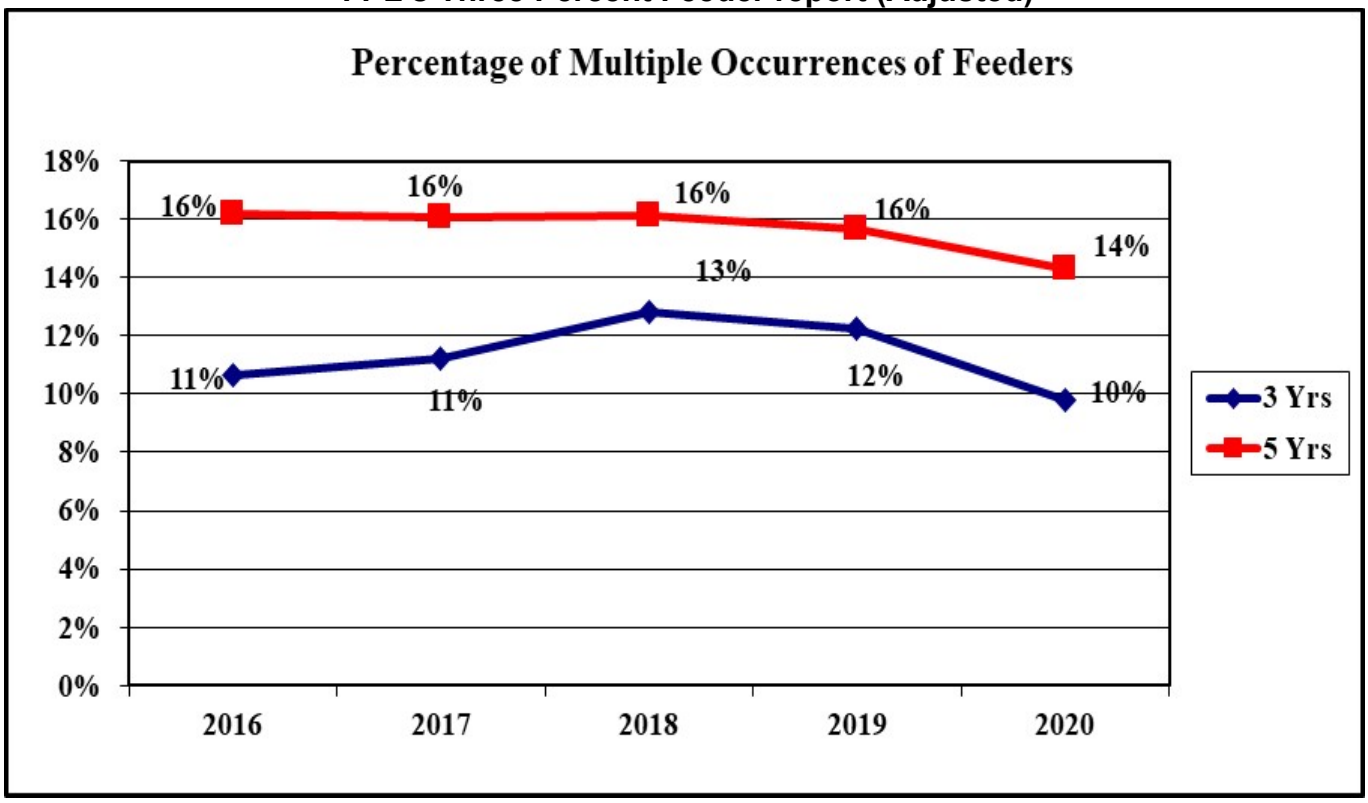
	2016	2017	2018	2019	2020
Highest CEMI5	Treasure Coast	West Palm	Toledo Blade	Treasure Coast	North Florida
Lowest CEMI5	South Broward	North Broward	South Broward	Central Dade	North Broward

Source: FPL's 2016-2020 distribution service reliability reports.

Figure 2-15 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 had a decrease to 10 percent in 2020 from 12 percent in 2019. The five-year percentage was 14 percent in 2020, a decrease from 16 percent in 2019. Both the five-year percentage and the three-year percentage appear to be trending downward.

Staff notes eight feeders were on the Three Percent Feeder Report the last two years. The outages ranged from defective equipment, vegetation, animals, lightning, other weather, and unknown. FPL utilized visual, thermovision, and drone assessments, as well as its CEMI Program to repair feeders. Further, to mitigate future feeder outages, FPL installed automated feeder switches on two feeders in 2020, and intends to install the switches on three additional feeders in 2021. FPL also reported that in 2020, approximately 110 miles of trimming was performed on six feeders, which is about 53 percent of the feeders' overhead facilities. FPL will continue repairs on five of the feeders and plans to harden two of the feeders in 2021.

Figure 2-15
FPL's Three Percent Feeder report (Adjusted)

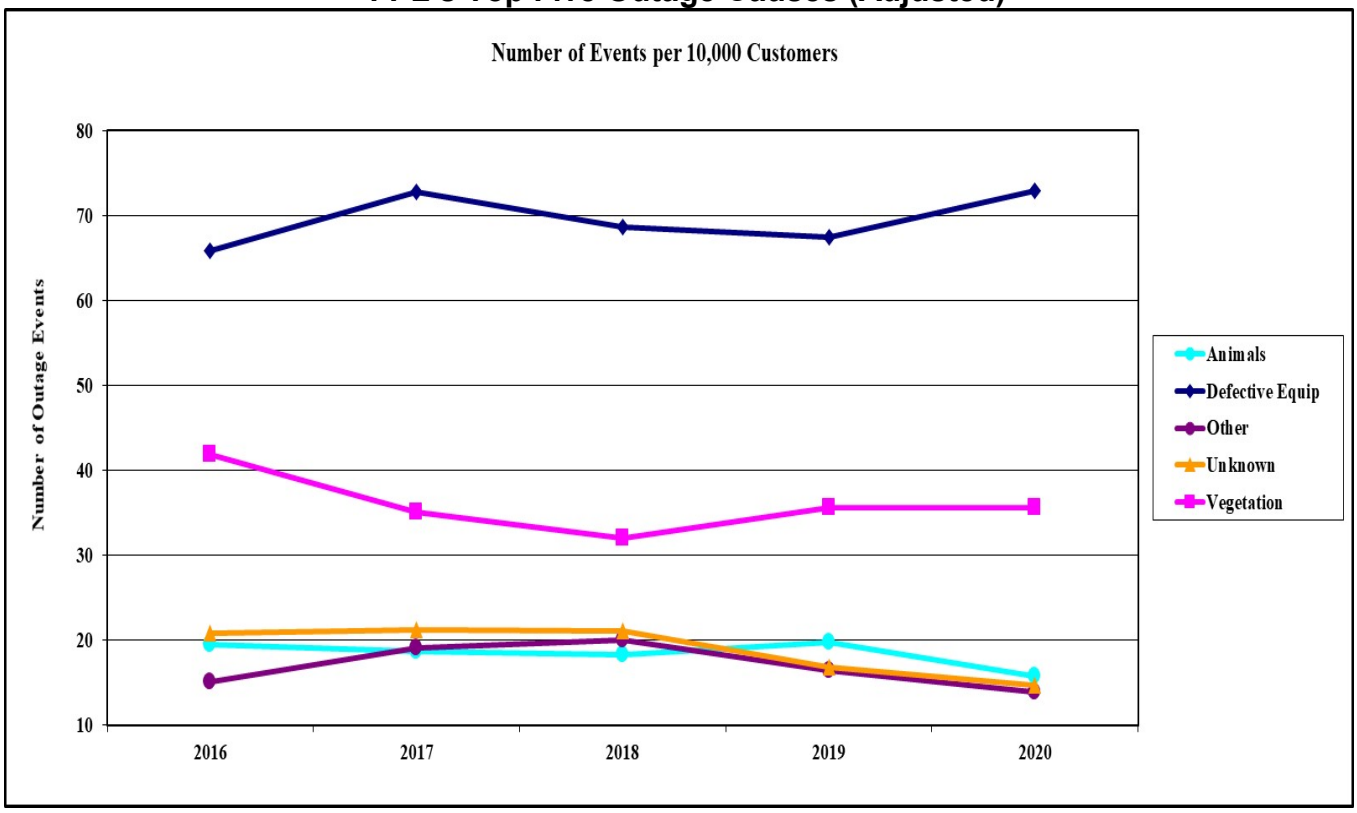


Source: FPL's 2016-2020 distribution service reliability reports.

Figure 2-16 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 10 causes of outage events. For the five-year period, the five top causes of outage events included "Defective Equipment" (42 percent), "Vegetation" (20 percent), "Animals" (9 percent), "Unknown Causes" (8 percent), and "Other Causes" (8 percent) on a cumulative basis. Since 2016, the outage events due to "Vegetation," "Animals," and "Unknown Causes" are trending downward as the "Defective Equipment" categories is trending upward. The category "Other Causes" is remaining relatively flat. The category "Defective Equipment" dominates the highest percentage of outage causes throughout the FPL regions and there was a 10 percent increase in the number of outages from 2019 to 2020.

Annually, FPL evaluates its current reliability remediation programs and verifies the program's need and/or existence. In addition, FPL proposes new reliability remediation programs to improve its reliability performance concentrating on the highest cause codes and those cause codes that have shown trends needing attention. FPL has 22 reliability programs listed for its 2021 budget. The programs include: distribution automation, system expansion, reduce the number of direct buried feeder and lateral cables, install feeder line covers to reduce vegetation related interruptions, and replace oil circuit reclosers with electronic reclosers. Sixteen programs are designed to improve the "Defective Equipment" cause code. Twelve programs will improve the "Vegetation" cause code and nine programs will improve the "Animals" cause code. The "Vegetation" cause code had an increase in 2020 as the "Animals" cause code had a decrease.

Figure 2-16
FPL's Top Five Outage Causes (Adjusted)



Source: FPL's 2016-2020 distribution service reliability reports.

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 2020 report shows the system indices for SAIDI, SAIFI, MAIFe, CEMI5, the Five-Year Percentages, and the Three-Year Percentages of Multiple Feeder Outage events are lower or better than the 2019 results. There was no change in L-Bar and the CAIDI index has increased. 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. FPL is also continuing to increase the utilization of automation to address feeder interruptions.

The North Florida region has had the highest SAIDI for two years, highest SAIFI for three years consecutively, and the highest CEMI5 for one year. However, the SAIFI value for the North Florida region decreased by 7 percent in 2020.

FPL stated that in 2020 the following actions were performed in the North Florida region:

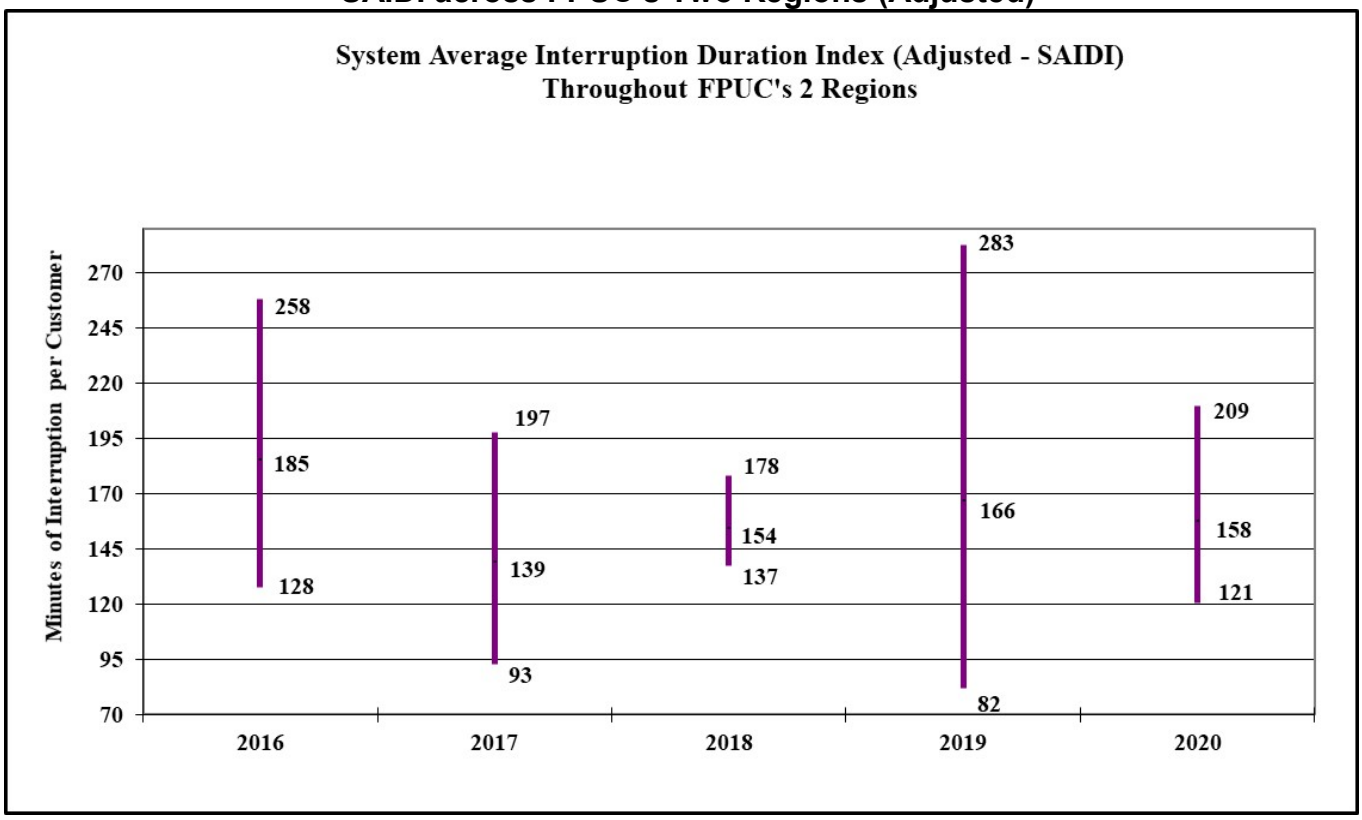
- Vegetation trimming on 780 miles of overhead primary lines
- Commissioned 20 automated feeder switches
- Addressed 15 feeders under the reliability programs
- Completed 27 Immediate Response Jobs (Assess overhead/hybrid feeders visually and perform repairs from the findings)
- Completed 18 CEMI Program Jobs (Conducts trigger based post outage investigation on feeders, which includes thermal and visual assessments, and performs repairs from the findings)
- Completed 116 visual feeder owner assessments

Florida Public Utilities Company: Adjusted Data

FPUC has two electric divisions, the Northwest division, referred to as Marianna (NW) and the Northeast division, referred to as Fernandina Beach (NE). Each division's results is reported separately because the two divisions are 250 miles apart and are 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 2-17 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 2016 to 2020 and there was a 5 percent decrease from 2019 to 2020.

Figure 2-17
SAIDI across FPUC's Two Regions (Adjusted)



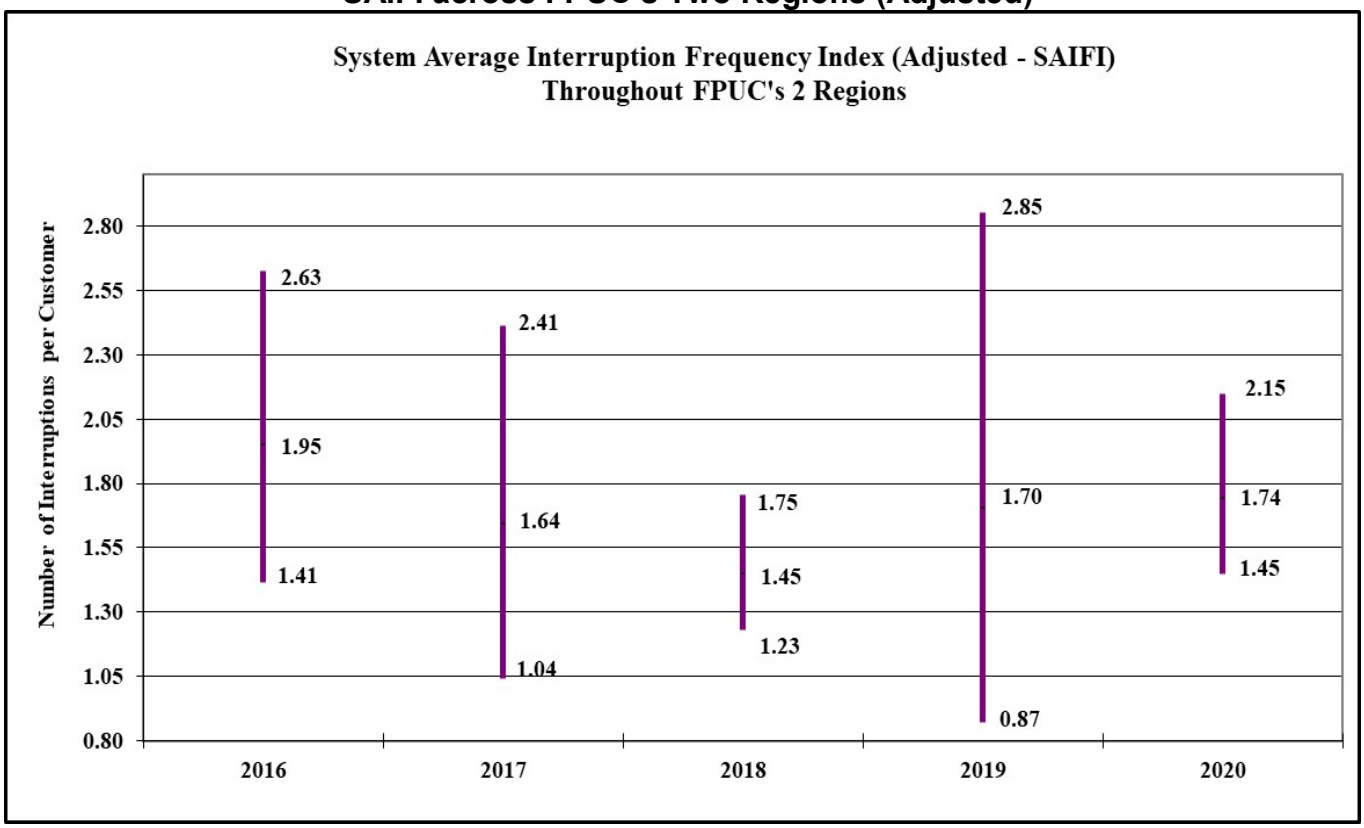
FPUC's Regions with the Highest and Lowest Adjusted SAIDI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest SAIDI	Marianna (NW)	Marianna (NW)	Marianna (NW)	Marianna (NW)	Marianna (NW)
Lowest SAIDI	Fernandina(NE)	Fernandina(NE)	Fernandina(NE)	Fernandina(NE)	Fernandina(NE)

Source: FPUC's 2016-2020 distribution service reliability reports.

Figure 2-18 shows the adjusted SAIFI across FPUC's two divisions. The data depicts a 2 percent increase in the 2020 average SAIFI reliability index from 2019. The data for the minimum, average, and maximum SAIFI values are trending downward over the five-year period of 2016 to 2020.

Figure 2-18
SAIFI across FPUC's Two Regions (Adjusted)



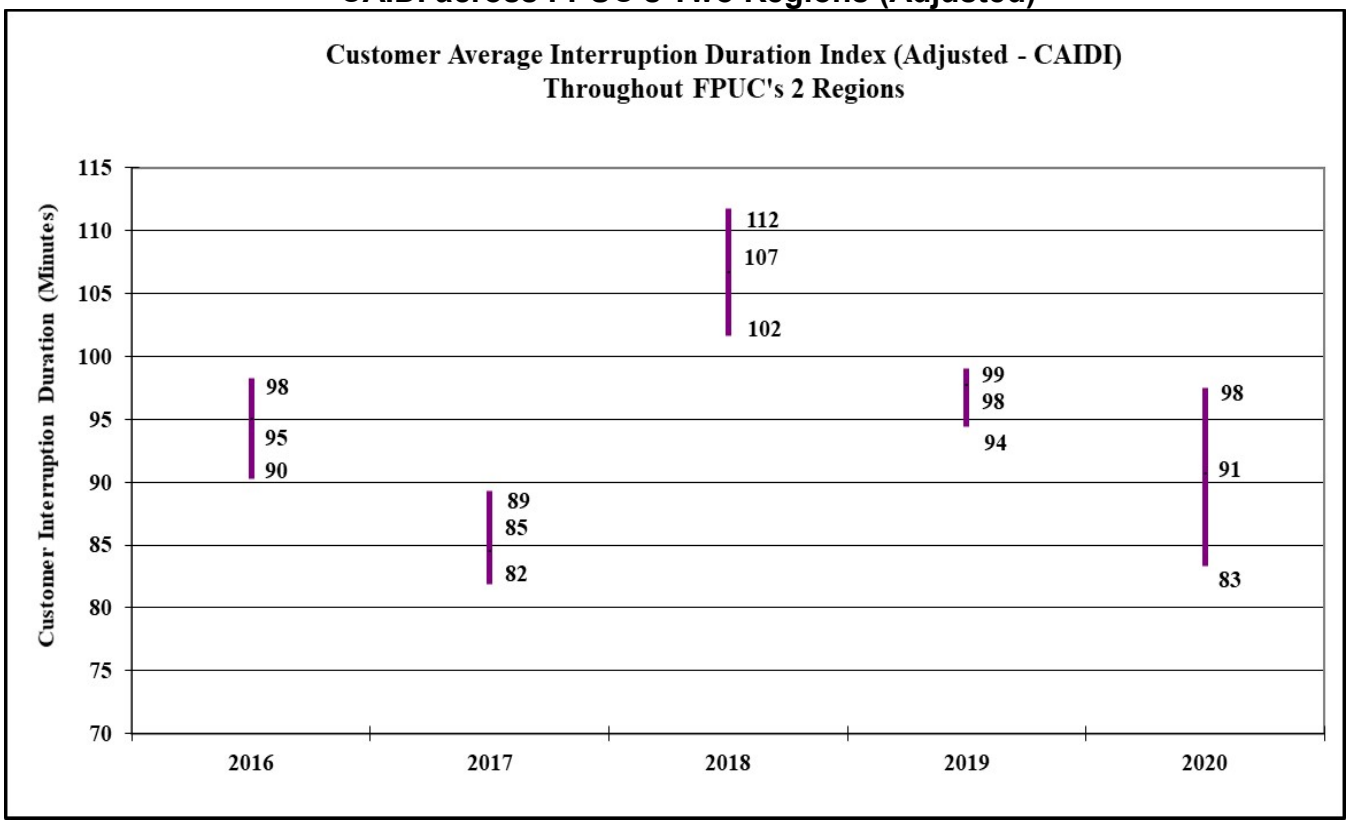
FPUC's Regions with the Highest and Lowest Adjusted SAIFI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest SAIFI	Marianna (NW)	Marianna (NW)	Marianna (NW)	Marianna (NW)	Marianna (NW)
Lowest SAIFI	Fernandina(NE)	Fernandina(NE)	Fernandina(NE)	Fernandina(NE)	Fernandina(NE)

Source: FPUC's 2016-2020 distribution service reliability reports.

Figure 2-19 shows the highest, average, and lowest adjusted CAIDI values across FPUC's system. FPUC's data shows the average CAIDI value decreased by 7 percent for 2020 (91 minutes) when compared to 2019 (98 minutes). For the past five years, the maximum and the average CAIDI values are trending upward as the minimum CAIDI value appears to remain relativity flat.

Figure 2-19
CAIDI across FPUC's Two Regions (Adjusted)



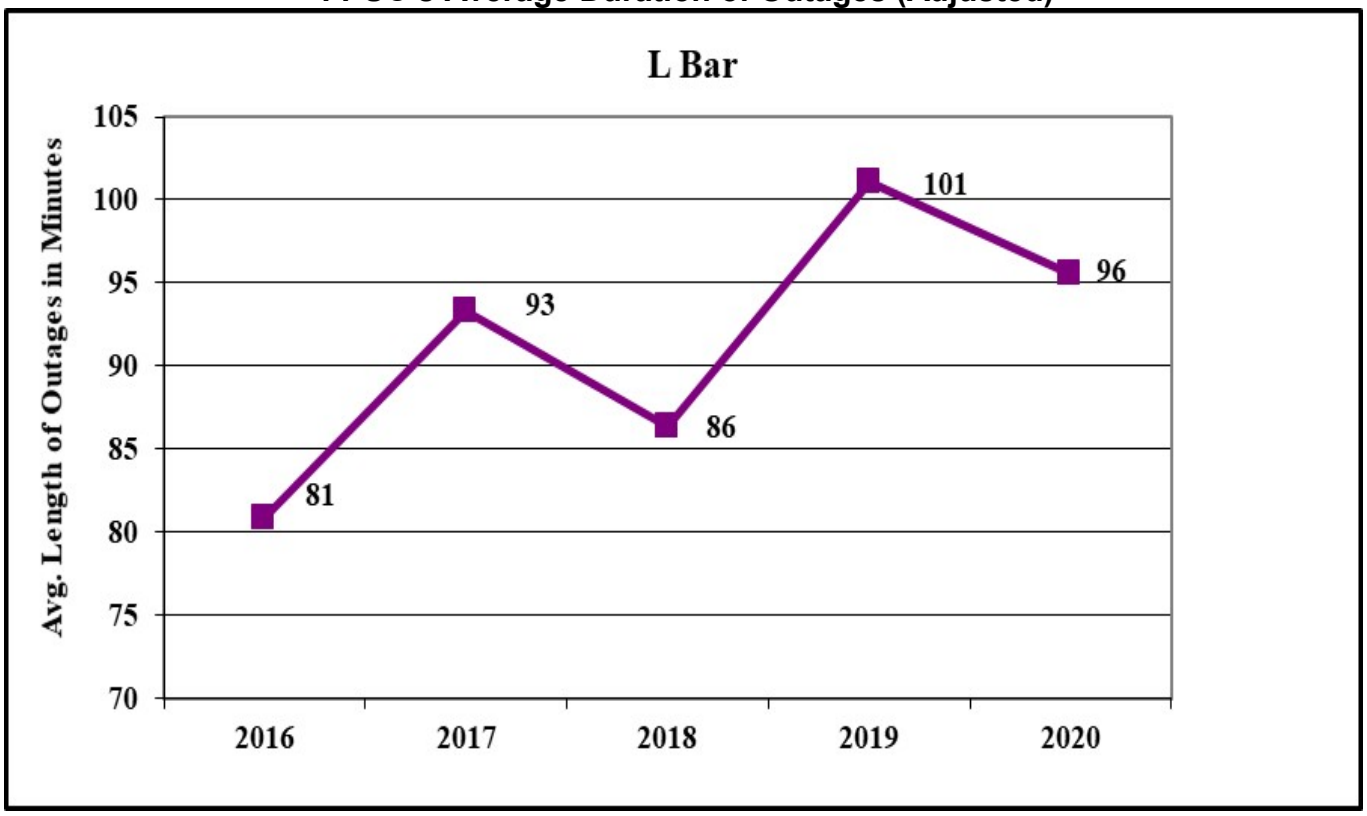
FPUC's Regions with the Highest and Lowest Adjusted CAIDI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest CAIDI	Marianna (NW)	Fernandina(NE)	Fernandina(NE)	Marianna (NW)	Marianna (NW)
Lowest CAIDI	Fernandina(NE)	Marianna (NW)	Marianna (NW)	Fernandina(NE)	Fernandina(NE)

Source: FPUC's 2016-2020 distribution service reliability reports.

Figure 2-20 is the average length of time FPUC spends recovering from outage events (adjusted L-Bar). There was a 5 percent decrease in the L-Bar value from 2019 to 2020. The data for the five-year period of 2016 to 2020 suggests that the L-Bar index is trending upward indicating FPUC is taking additional time to restore service after an outage event.

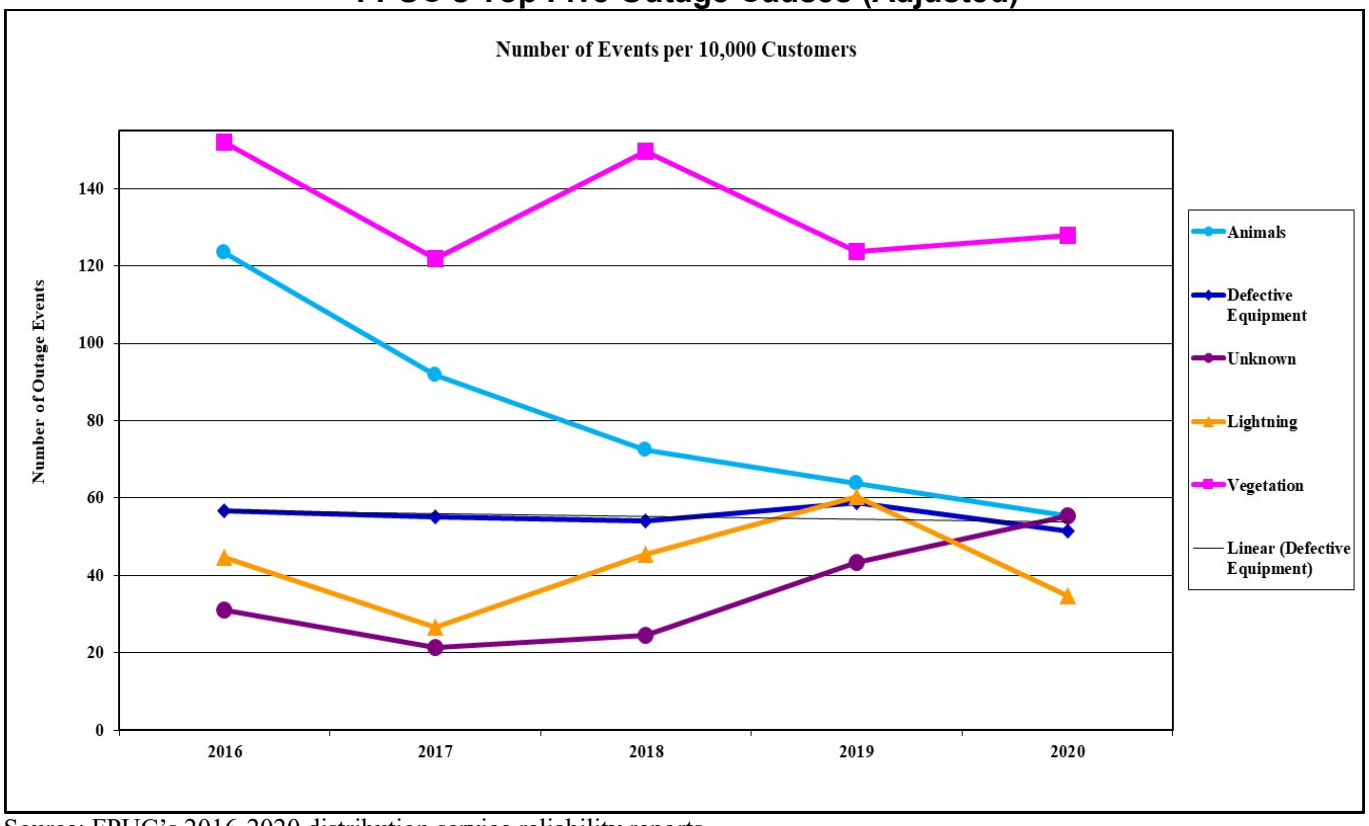
Figure 2-20
FPUC's Average Duration of Outages (Adjusted)



Source: FPUC's 2016-2020 distribution service reliability reports.

Figure 2-21 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 10 causes of outages. For 2020, the top five causes of outage events were "Vegetation" (34 percent), "Animals" (15 percent), "Unknown" (15 percent), "Defective Equipment" (14 percent), and "Lightning" (9 percent). These five factors represent 87 percent of the total adjusted outage causes in 2019. The "Vegetation" category is trending downward even though there was a 5 percent increase from 2019 to 2020. The outage causes by "Animals" is also trending downward. The causes by "Lightning," and "Unknown" are trending upward. "Defective Equipment" is remaining relativity flat decreasing by 11 percent from 2019 to 2020. The "Lightning" category had a 41 percent decrease and the "Unknown" category increased 30 percent during the same time period. The "Animals" category caused outages had an 11 percent decrease from 2019 to 2020. FPUC reported that it added additional tree crews in both Divisions to address the issue with vegetation caused outages. In addition, during Hurricane Michael, a large number of animal guards were destroyed. FPUC is currently replacing the animal guards and also adding new ones to help mitigate the animal caused outages.

Figure 2-21
FPUC's Top Five Outage Causes (Adjusted)



Source: FPUC's 2016-2020 distribution service reliability reports.

FPUC filed a Three Percent Feeder Report listing the top 3 percent of feeders with the outage events for 2020. 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. None of the feeders were listed on the report for the last five years.

Observations: FPUC's Adjusted Data

The SAIFI average index has increased compared to 2019. For the five-year period of 2016 to 2020, the average index for SAIDI and SAIFI is trending downward as the CAIDI, and L-Bar are trending upward. FPUC reported that it continues to invest in its storm hardening initiatives, infrastructure improvements, and system upgrades in both divisions. FPUC believes this will generate reliability improvements in the future. The Utility reviewed its five-year reliability indicator trends, averages and outage causes, and determined the reliability indexes continue to be significantly influenced by weather.

To improve its reliability, in 2018, FPUC planned to implement a new lateral protection strategy by installing cutout-mounted recloser units. This program deploys TripSaver cutout-mounted reclosers on the worst performing laterals over the last three years. The TripSaver recloser works the same as an electronic recloser but for a smaller number of customers. The reclosers offer protection to upstream customers by giving a utility the ability to isolate faults and shorten the outage time experienced by customers. During 2020, FPUC installed 46 devices in the Northwest division and 12 devices in the Northeast division. Preliminary analysis of the performance improvements showed that an estimated 66 lateral outages (50 in the Northwest division and 16 in the Northeast division) were avoided. During 2021, FPUC plans to install 5 additional devices in the Northeast division.

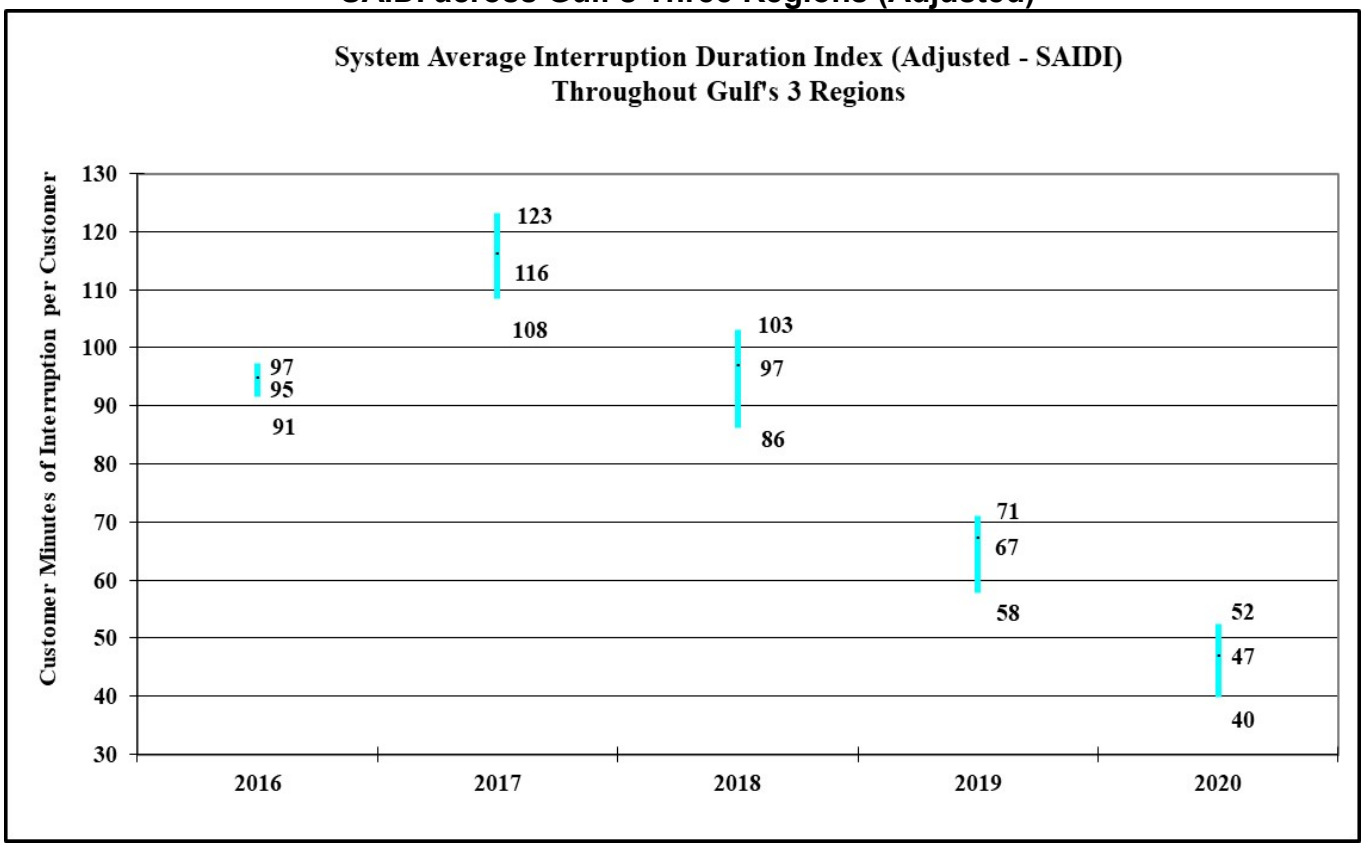
FPUC is not required to report MAIFIe or CEMI5 because Rule 25-6.0455, F.A.C., waives the requirement. The cost for the information systems necessary to measure MAIFIe and CEMI5 has a higher impact on small utilities compared to large utilities on a per customer basis.

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 regions: Pensacola, Fort Walton, and Panama City. The region distribution metrics and overall distribution system metrics are presented in the following figures.

Figure 2-22 illustrates Gulf's SAIDI minutes, or the interruption duration minutes on a system basis. The chart depicts a 30 percent decrease in the average SAIDI in Gulf's combined regions when compared to the 2019 results. Gulf's 2020 average performance was 47 minutes compared to 67 minutes in 2019. The highest SAIDI value for 2020 was the Panama City region as the Fort Walton region had the best or lowest SAIDI value. The maximum, minimum, and average SAIDI indices are trending downward.

Figure 2-22
SAIDI across Gulf's Three Regions (Adjusted)



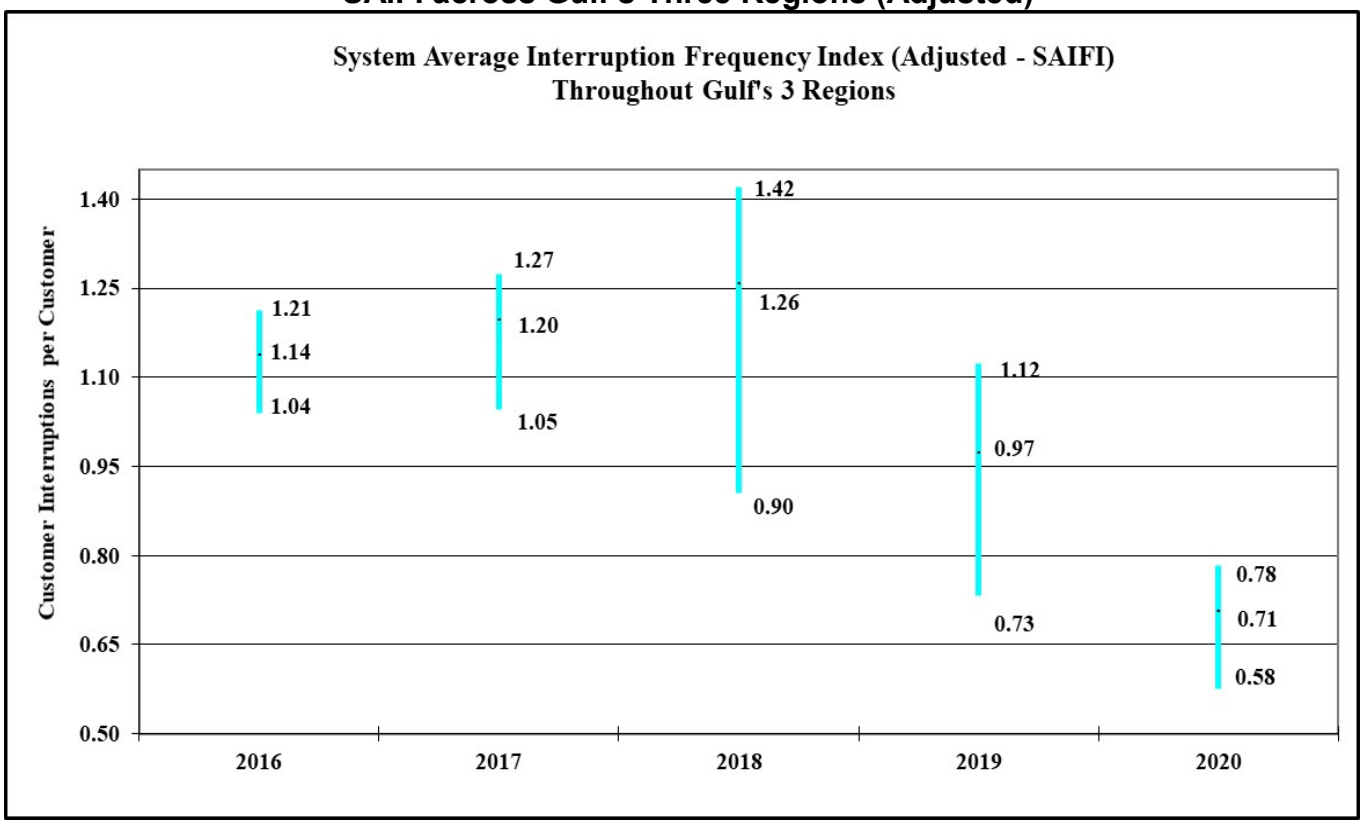
Gulf's Regions with the Highest and Lowest Adjusted SAIDI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest SAIDI	Pensacola	Pensacola	Panama City	Pensacola	Panama City
Lowest SAIDI	Fort Walton	Panama City	Fort Walton	Fort Walton	Fort Walton

Source: Gulf's 2016-2020 distribution service reliability reports.

Figure 2-23 illustrates that Gulf's SAIFI had a 27 percent decrease in 2020 when compared to 2019. The highest SAIFI value for the past five years has fluctuated between the Panama City and Pensacola regions. The lowest values appear to be in the Fort Walton region. The maximum, average, and minimum SAIFI values appear to be trending downward.

Figure 2-23
SAIFI across Gulf's Three Regions (Adjusted)



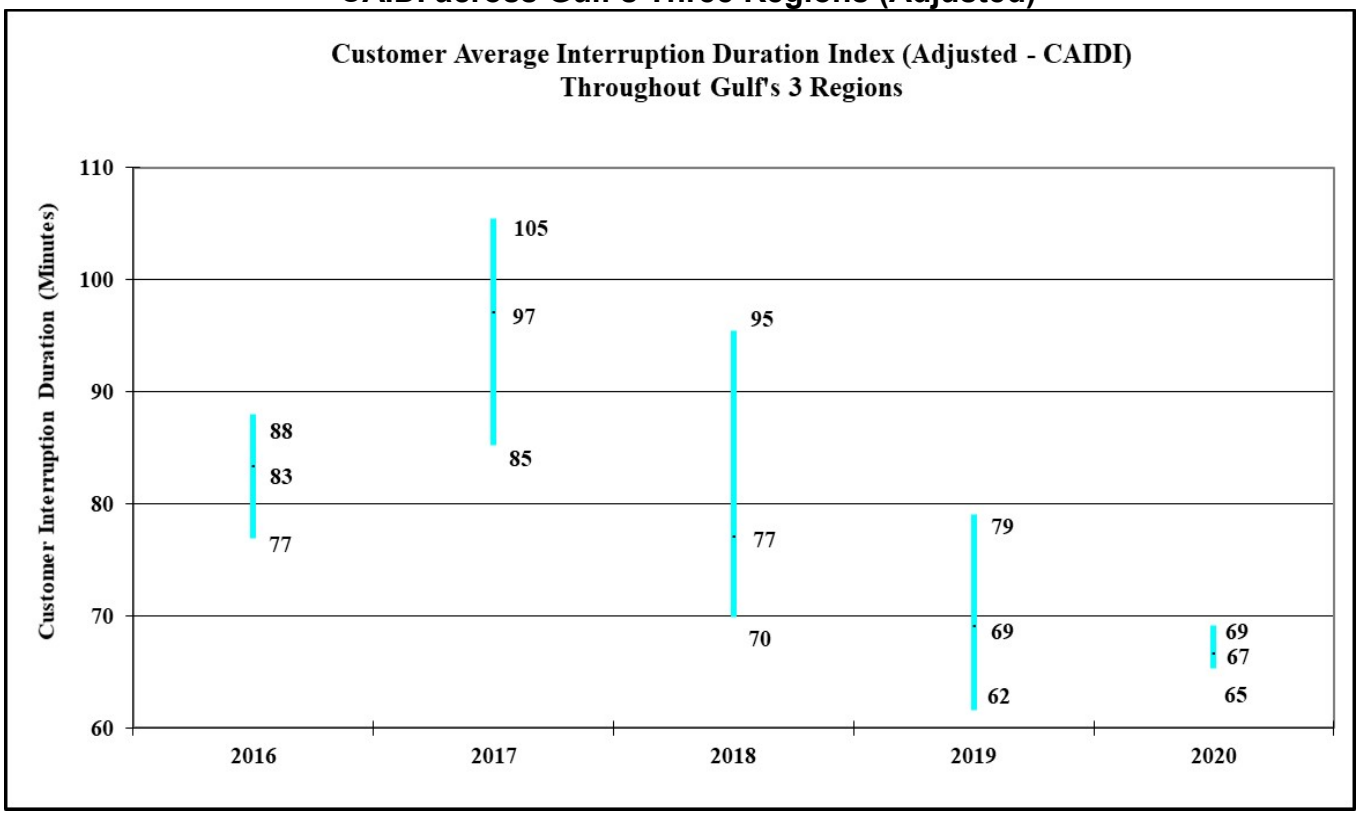
Gulf's Regions with the Highest and Lowest Adjusted SAIFI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest SAIFI	Panama City	Panama City	Pensacola	Panama City	Panama City
Lowest SAIFI	Fort Walton	Fort Walton	Fort Walton	Fort Walton	Fort Walton

Source: Gulf's 2016-2020 distribution service reliability reports.

Figure 2-24 depicts Gulf's adjusted CAIDI. For 2020, the average CAIDI is 67 minutes and represents a 3 percent decrease from the 2019 value of 69 minutes. In 2020, the Fort Walton region continued to have the highest CAIDI value, as the Pensacola region had the lowest CAIDI. Staff notes that the average, maximum, and minimum CAIDI values are trending downward.

Figure 2-24
CAIDI across Gulf's Three Regions (Adjusted)



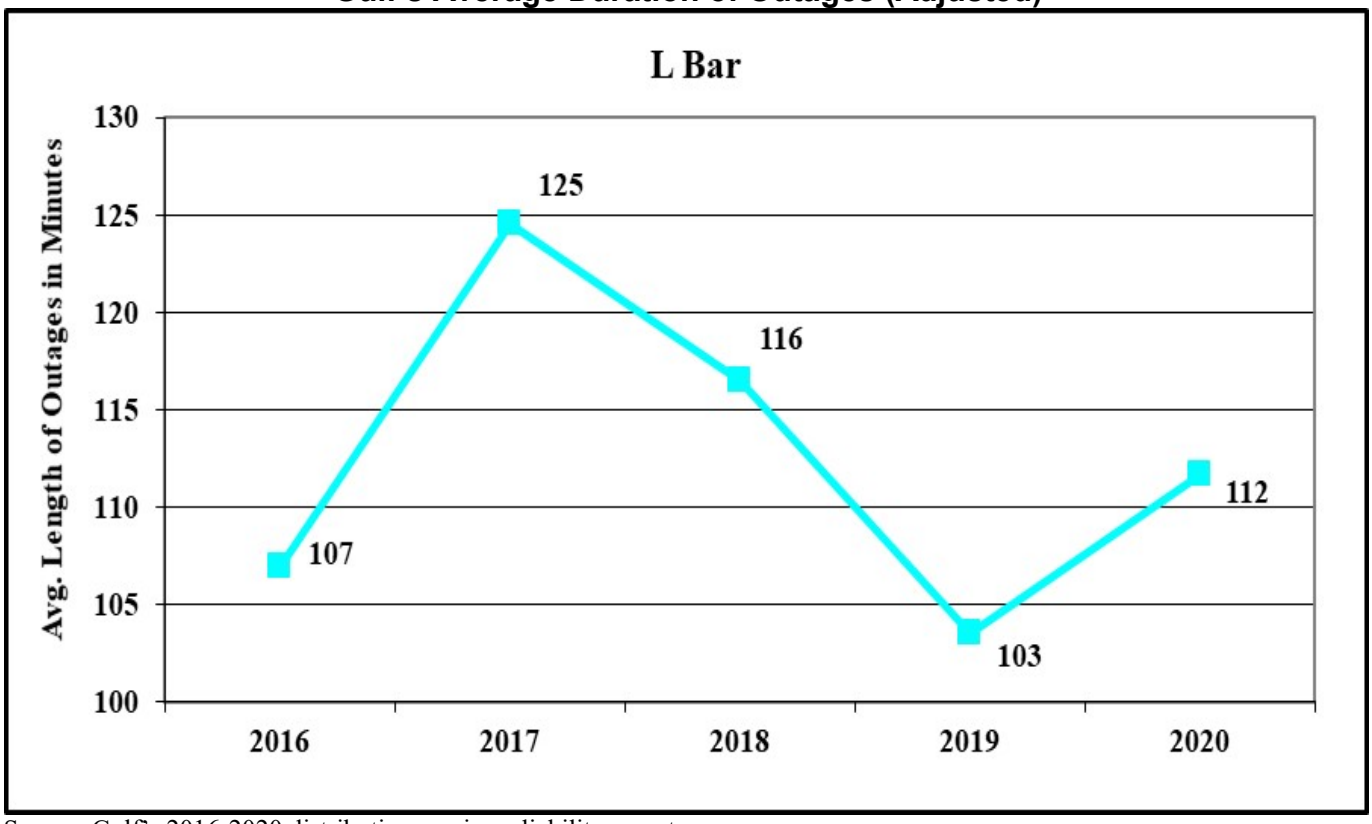
Gulf's Regions with the Highest and Lowest Adjusted CAIDI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest CAIDI	Fort Walton	Fort Walton	Fort Walton	Fort Walton	Fort Walton
Lowest CAIDI	Panama City	Panama City	Pensacola	Panama City	Pensacola

Source: Gulf's 2016-2020 distribution service reliability reports.

Figure 2-25 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 9 percent increase from 2019 to 2020. However, the data for the five-year period of 2016 to 2020 shows a downward trend. This indicates that Gulf is spending less time restoring service to customers.

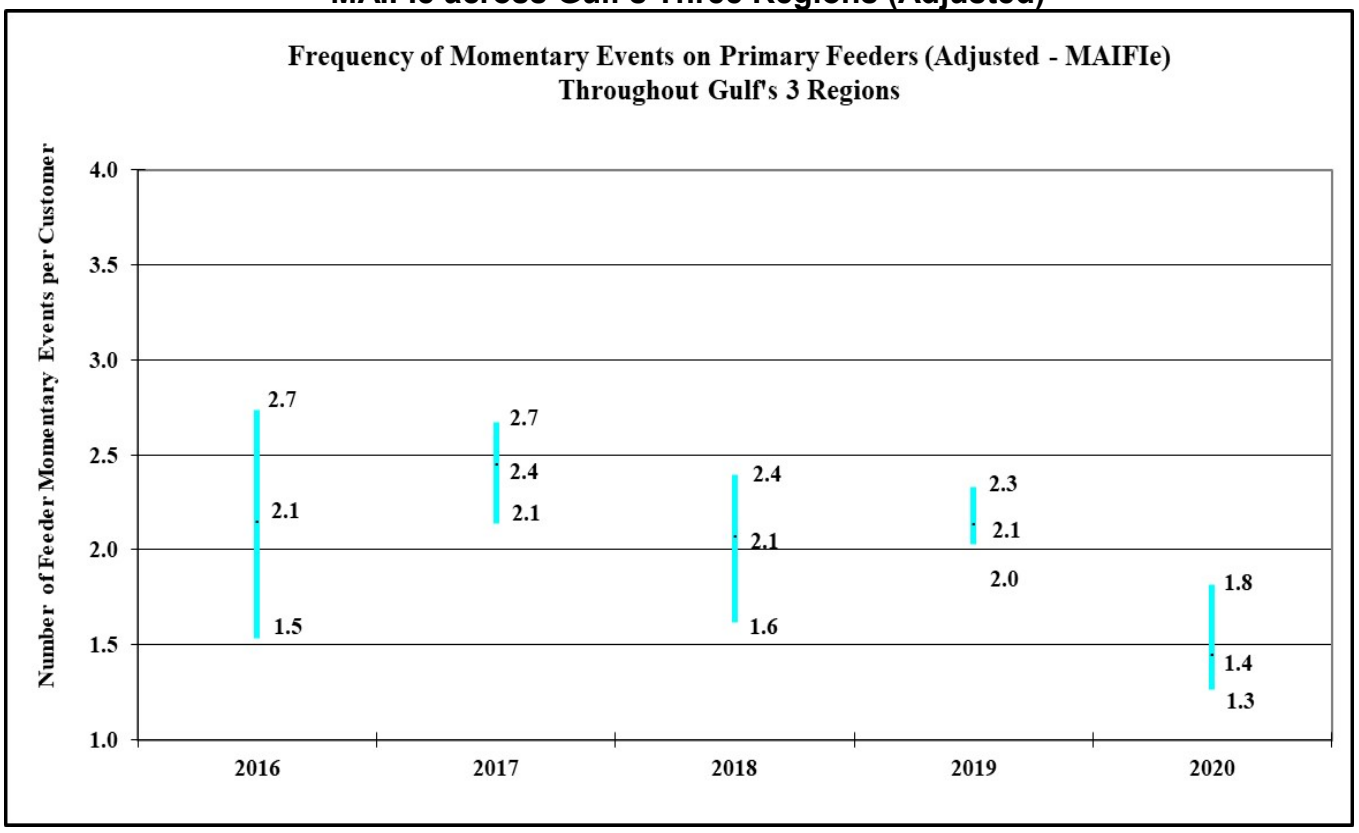
Figure 2-25
Gulf's Average Duration of Outages (Adjusted)



Source: Gulf's 2016-2020 distribution service reliability reports.

Figure 2-26 is the adjusted MAIFIe recorded across Gulf's system. The adjusted MAIFIe results by region show that the Pensacola region had the lowest frequency of momentary events on primary feeders. The Panama City region had the highest MAIFIe index in 2020. The average MAIFIe had a 33 percent decrease of 1.4 events in 2020 compared to 2.1 events in 2019. The data suggest that the highest, average, and lowest MAIFIe are all continuing to trend downward, suggesting improvement.

Figure 2-26
MAIFIe across Gulf's Three Regions (Adjusted)



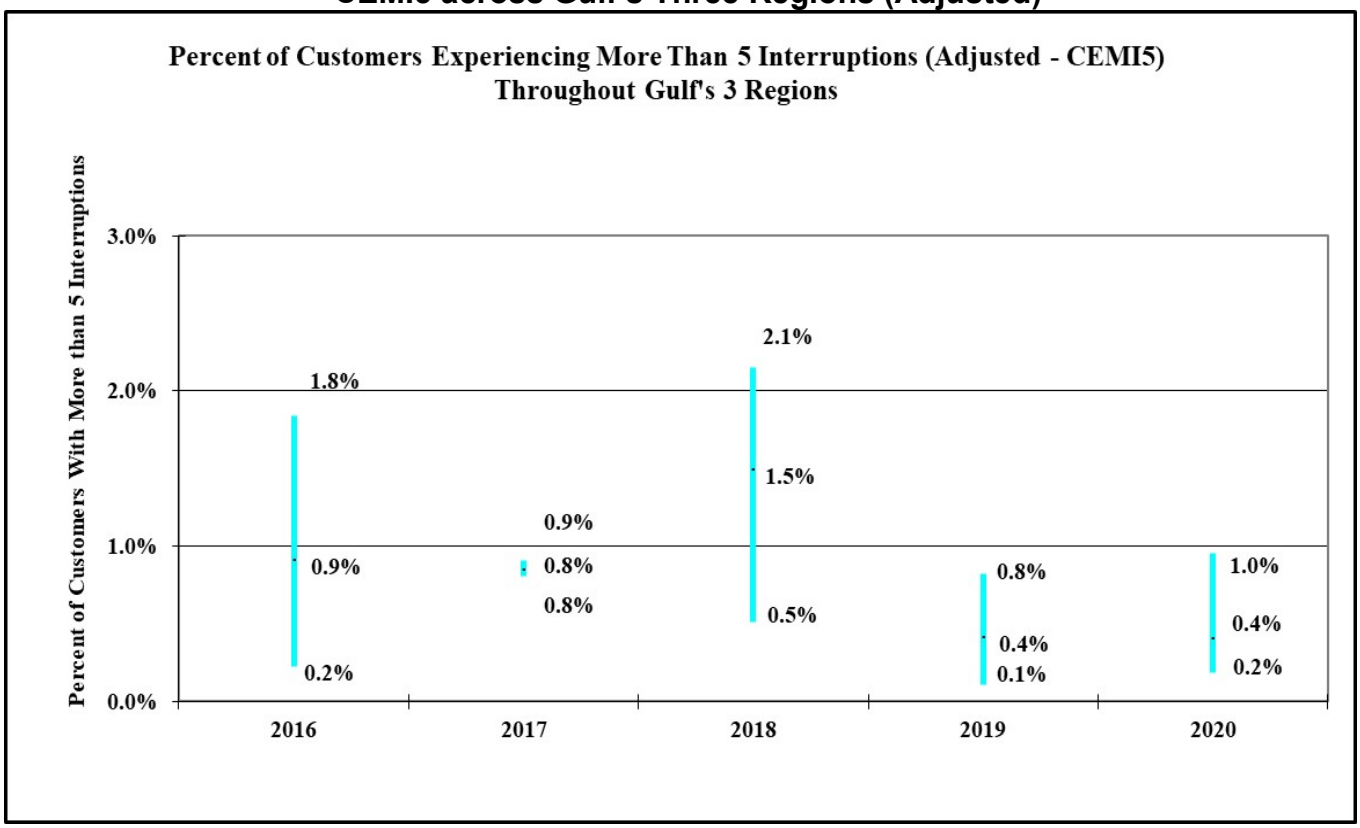
Gulf's Regions with the Highest and Lowest Adjusted MAIFIe Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest MAIFIe	Pensacola	Pensacola	Pensacola	Panama City	Panama City
Lowest MAIFIe	Fort Walton	Fort Walton	Fort Walton	Fort Walton	Pensacola

Source: Gulf's 2016-2020 distribution service reliability reports.

Figure 2-27 shows the highest, average, and lowest adjusted CEMI5 across Gulf's Pensacola, Fort Walton, and Panama City regions. Gulf's 2020 results illustrate no change in the average CEMI5 percentage when compared to 2019, staying at 0.4 percent. The maximum, average, and minimum CEMI5 appears to be trending downward over the five-year period of 2016 to 2020.

Figure 2-27
CEMI5 across Gulf's Three Regions (Adjusted)



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

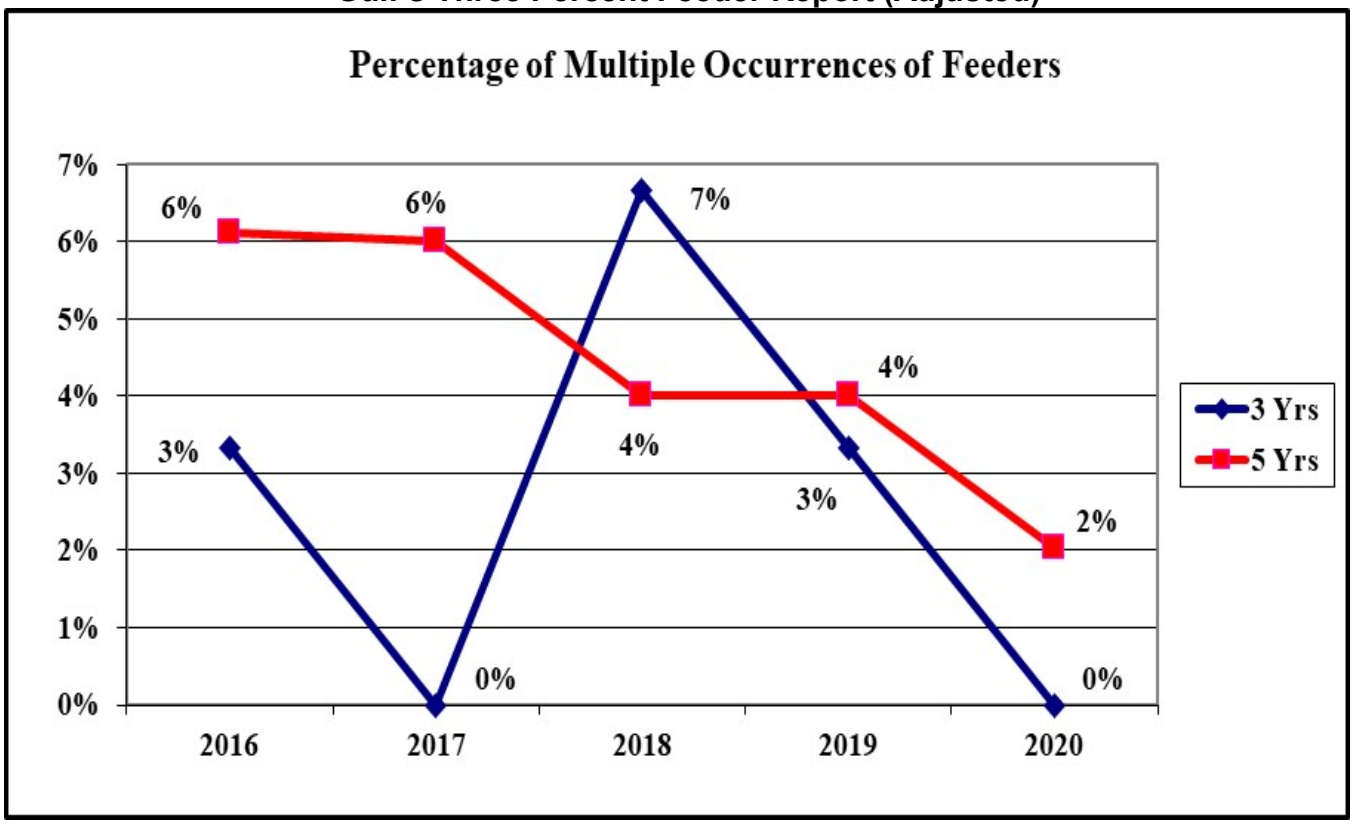
	2016	2017	2018	2019	2020
Highest CEMI5	Panama City	Fort Walton	Panama City	Panama City	Panama City
Lowest CEMI5	Fort Walton	Pensacola	Fort Walton	Fort Walton	Fort Walton

Source: Gulf's 2016-2020 distribution service reliability reports.

Figure 2-28 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 3 percent of feeders that have the most feeder outage events. The supporting data illustrates that the five-year multiple occurrences were decreased by 50 percent from 2019 to 2020 as the three-year multiple occurrences decreased by 100 percent. The five-year period of 2016 to 2020 indicates overall that the five-year index and three-year multiple occurrences index are both trending downward.

There were nine feeders on the Three Percent Feeder Report. Gulf reported that the three top causes of the outages associated with the nine feeders listed were "Vegetation," "Defective Equipment," and "Vehicle." Gulf will continue to use the feeder patrols and other type programs to preemptively eliminate and mitigate "Defective Equipment" type failures in the future. Gulf also maintains its vegetation trimming cycle on feeders to reduce tree related outages and continues working with customers to remove trees before they impact the system.

Figure 2-28
Gulf's Three Percent Feeder Report (Adjusted)

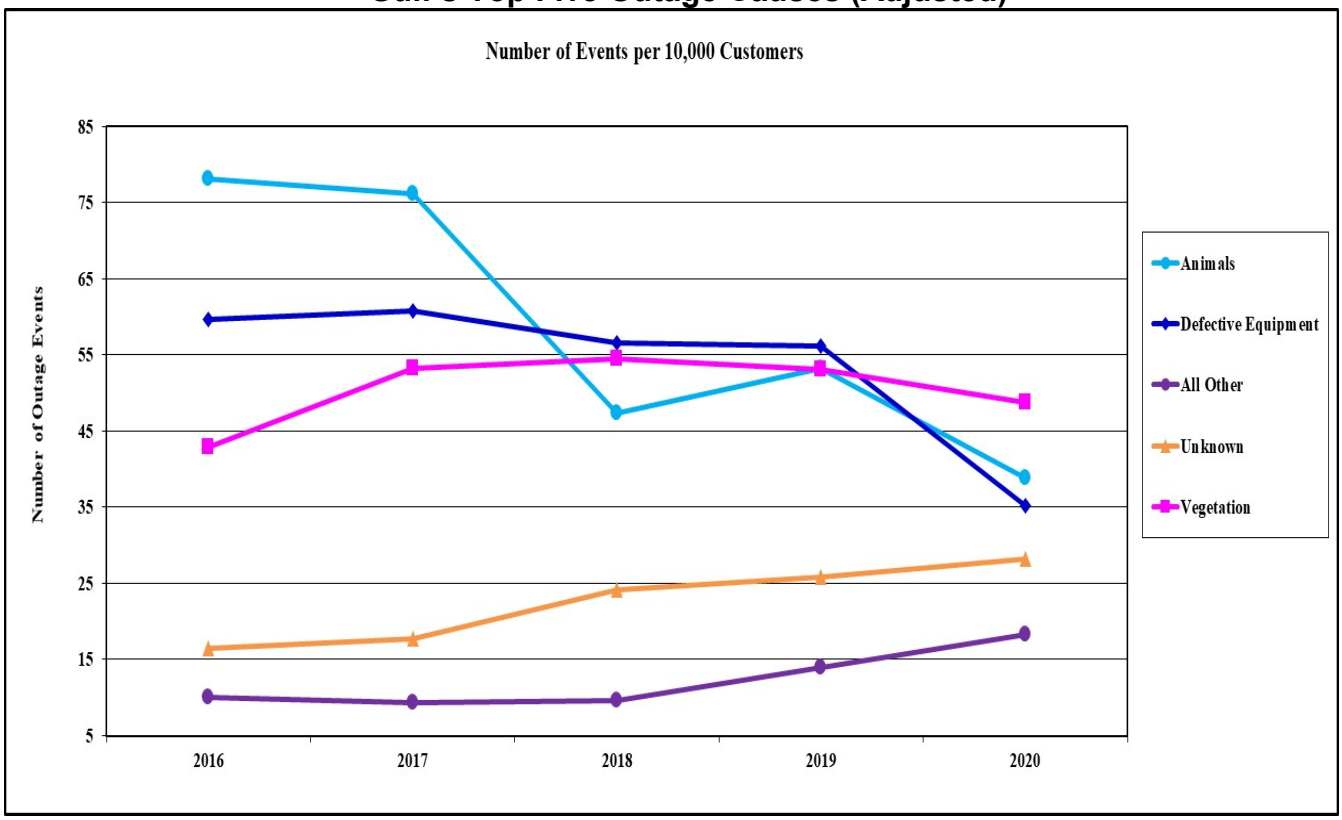


Source: Gulf's 2016-2020 distribution service reliability reports.

Figure 2-29 shows 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 10 causes of outage events and represents 84 percent of the total adjusted outage events that occurred during 2020. The top five causes of outage events were "Vegetation" (24 percent), "Animals" (19 percent), "Defective Equipment" (18 percent), "Unknown Causes" (14 percent), and "Other Causes" (9 percent). The percentage of outages due to "Vegetation" was the highest cause of outages. The number of outage events due to "Vegetation" is trending upward even though there was a 7 percent decrease in 2020. The number of outage events due to "Unknown Causes" and "Other Causes" are also trending upward. The number of outages due to "Animals" and "Defective Equipment" are trending downward.

Gulf annually evaluates its current reliability remediation programs. Gulf is proposing 11 different reliability programs aimed at reducing customer interruptions caused by "Vegetation," "Defective Equipment," "Animals," and "Unknown Causes." These programs include, adding automated equipment to reduce temporary faults and outages, and replacing and modernizing aging equipment.

Figure 2-29
Gulf's Top Five Outage Causes (Adjusted)



Source: Gulf's 2016-2020 distribution service reliability reports.

Observations: Gulf's Adjusted Data

There were improvements seen in Gulf's SAIDI, SAIFI, CAIDI, MAIFe, the Three-Year Percentages of Multiple Feeder Outage events and the Five-Year Percentages of Multiple Feeder Outage events indices in 2020. The L-Bar increased while the CEMI5 did not change in 2020. Overall it appears that the trend lines of the reliability indices for the five-year period of 2016 to 2020 are primarily trending downward.

Gulf tracks the following data associated with each individual interruption: customers affected, minutes interrupted, cause of outage, percentage of customers partially restored, device affected by interruption, and location of the device. Gulf produces daily reports with detailed information such as previous day interruptions by device, as well as month-to-date and year-to-date reliability indices. Management reviews the report to identify lessons learned, any areas for improvement, assessment of upcoming weather, and potential impacts and operational risks. In 2020, Gulf's reliability data detail had been increased to be in line with FPL's standards based on industry practices, internal needs, and external requirements.

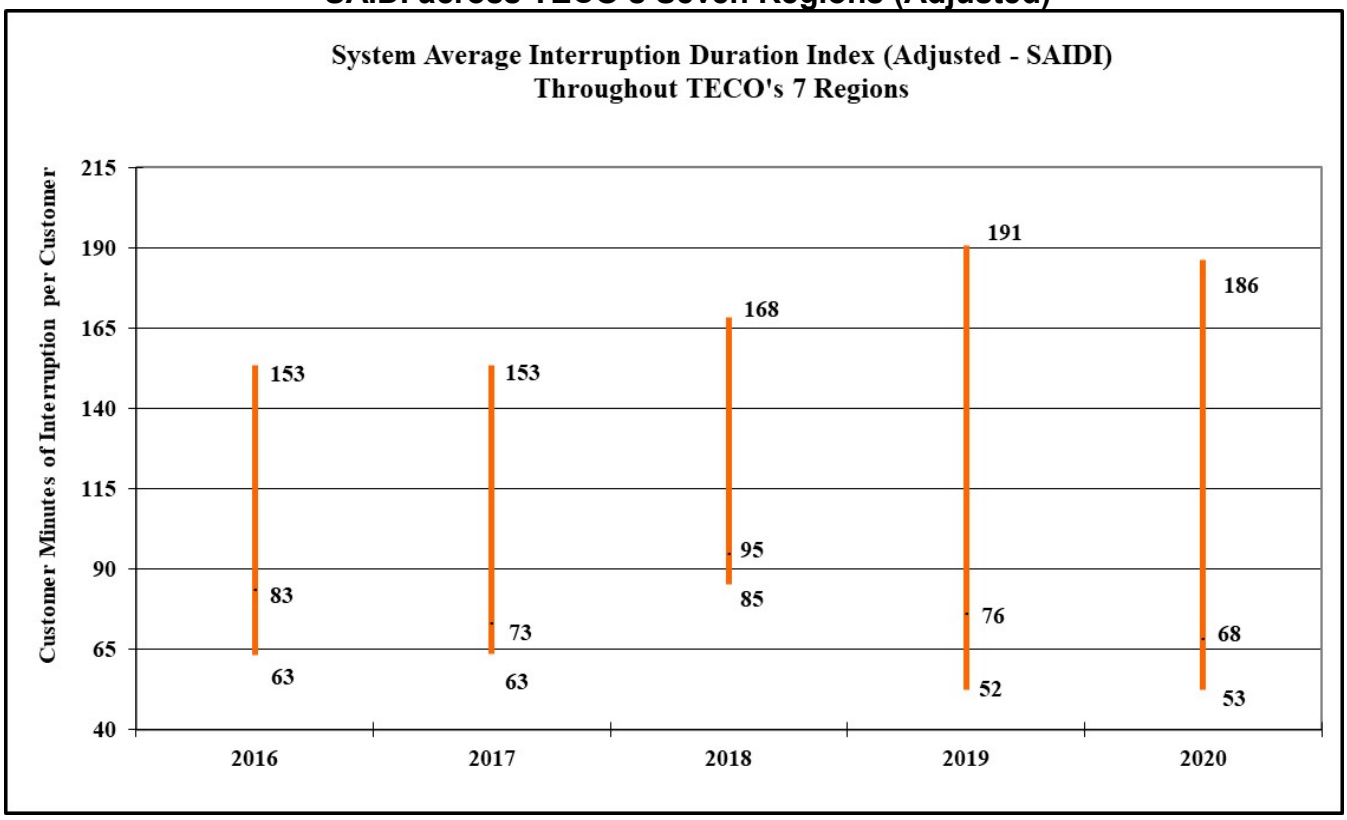
Gulf's Panama City region was the highest region in four out of five indices in 2020. Gulf reported that its reliability performance improved greatly in 2020 for all regions; however, it should be noted that the Panama City region is still experiencing some residual impacts from Hurricane Michael. Gulf will continue to invest in the Panama City region with the following programs:

- Installation of Automated Lateral and Feeder Switches
- Performs Feeder patrols and Infrared Feeder Inspections
- Several Feeder Hardening Protects are planned as part of Gulf's Storm Protection Plan

Tampa Electric Company: Adjusted Data

Figure 2-30 shows the adjusted SAIDI values recorded by TECO's system. Five of the seven TECO regions had improvements in SAIDI performance during 2020, with the South Hillsborough region having the lowest SAIDI performance results. The Dade City region continues to have the poorest SAIDI performance results for the five-year period of 2016 to 2020. The lowest SAIDI index for the seven regions appears to be trending downward. The average SAIDI index decreased 11 percent from 2019 to 2020. The average SAIDI index appears to be trending downward. The Central, Eastern, and South Hillsborough 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 regions.

Figure 2-30
SAIDI across TECO's Seven Regions (Adjusted)



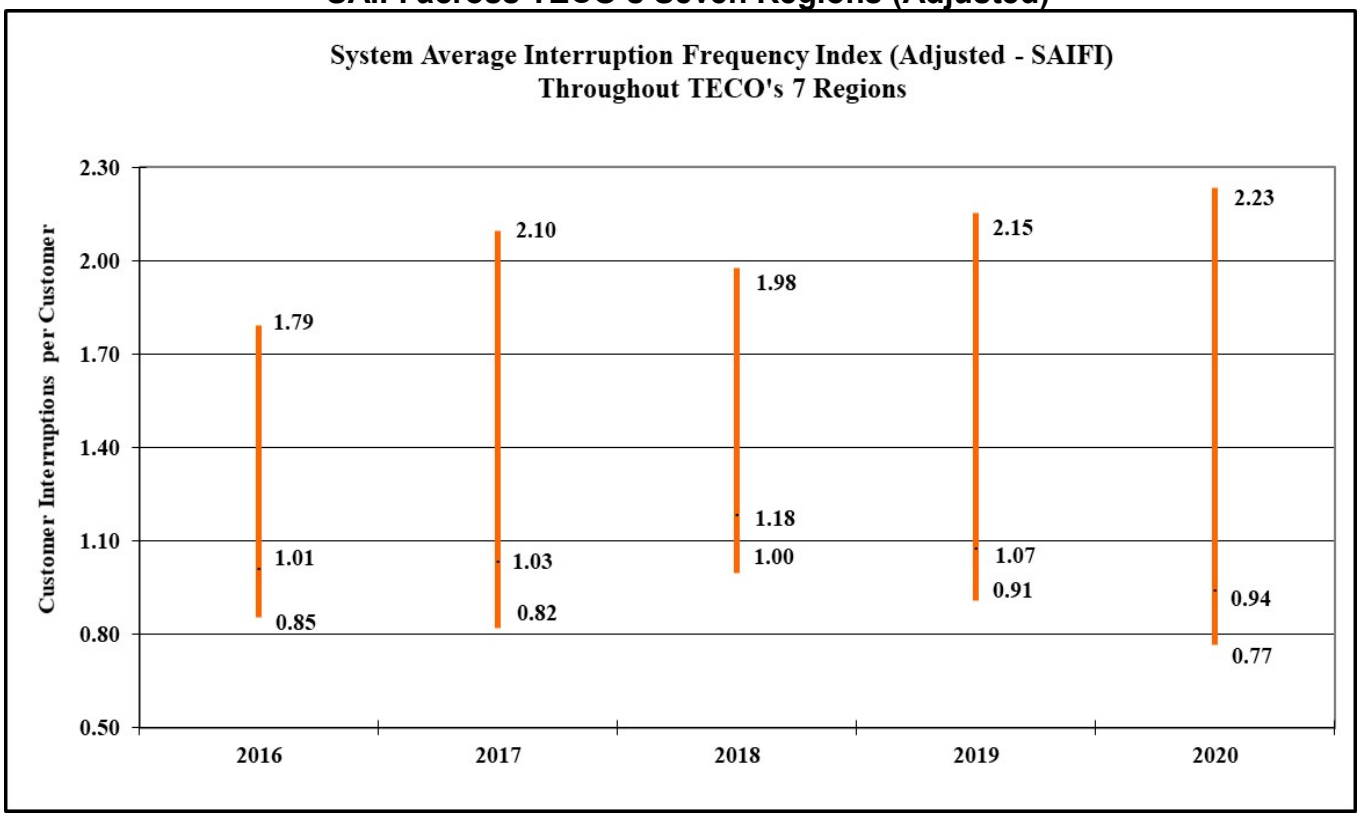
TECO's Regions with the Highest and Lowest Adjusted SAIDI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest SAIDI	Dade City	Dade City	Dade City	Dade City	Dade City
Lowest SAIDI	Central	Eastern	Eastern	South Hillsborough	South Hillsborough

Source: TECO's 2016-2020 distribution service reliability reports.

Figures 2-31 illustrates TECO's adjusted frequency of interruptions per customer reported by the system. TECO's data represent a 12 percent decrease in the SAIFI average from 1.07 interruptions in 2019 to 0.94 interruptions in 2020. TECO's Dade City region continues to have the highest frequency of service interruptions when compared to TECO's other regions. The maximum SAIFI is trending upward as the average SAIFI is trending downward. The minimum SAIFI appears to remain flat.

Figure 2-31
SAIFI across TECO's Seven Regions (Adjusted)



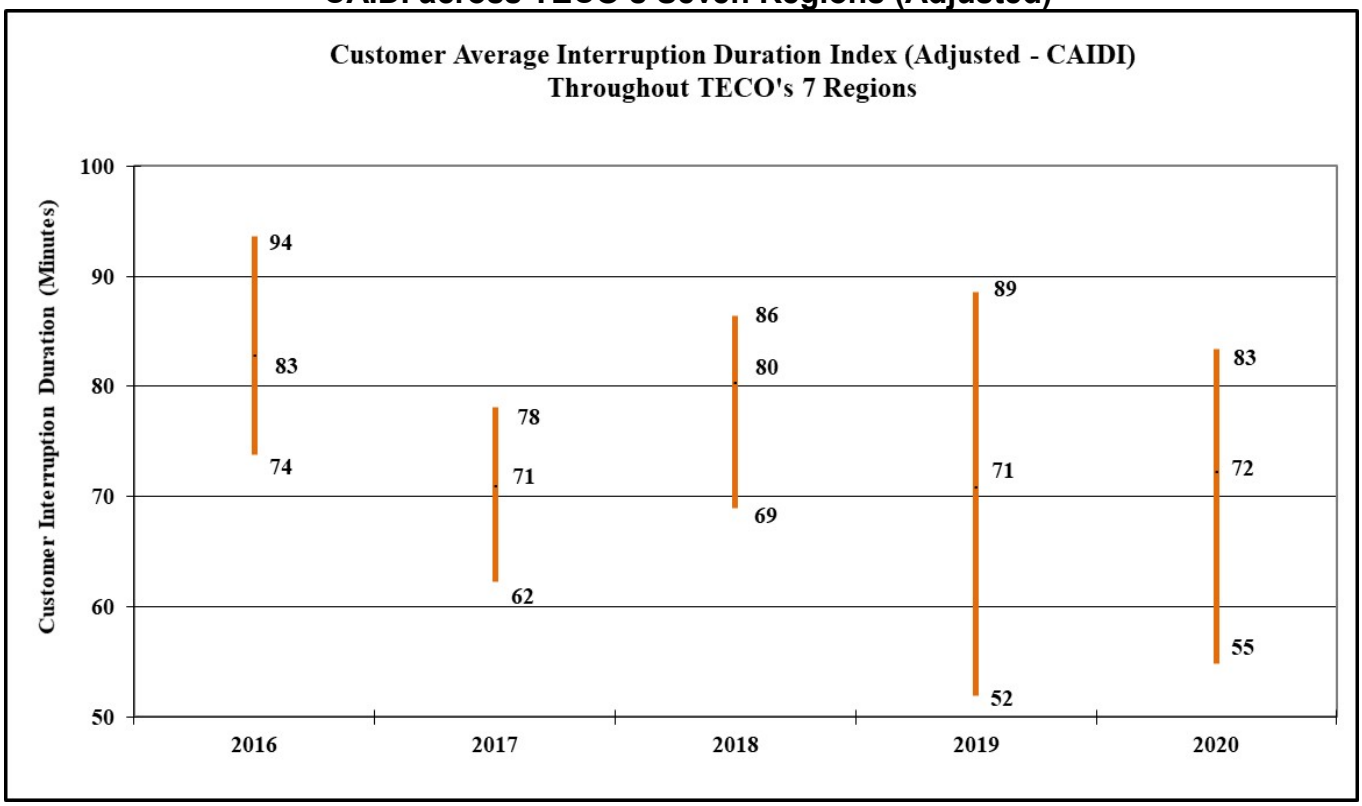
TECO's Regions with the Highest and Lowest Adjusted SAIFI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest SAIFI	Dade City	Dade City	Dade City	Dade City	Dade City
Lowest SAIFI	Central	Central	Eastern	Central	Central

Source: TECO's 2016-2020 distribution service reliability reports.

Figure 2-32 charts the length of time that a typical TECO customer experiences an outage, which is known as CAIDI. The highest CAIDI minutes appear to be confined to the Dade City, Plant City, Central, and Western regions. Winter Haven, Central, and South Hillsborough regions have had the lowest (best) results for the last five years. The average CAIDI is trending downward at this time suggesting TECO's customers are experiencing shorter outages, even with the 2 percent increase in the average CAIDI when comparing 2019 to 2020.

Figure 2-32
CAIDI across TECO's Seven Regions (Adjusted)



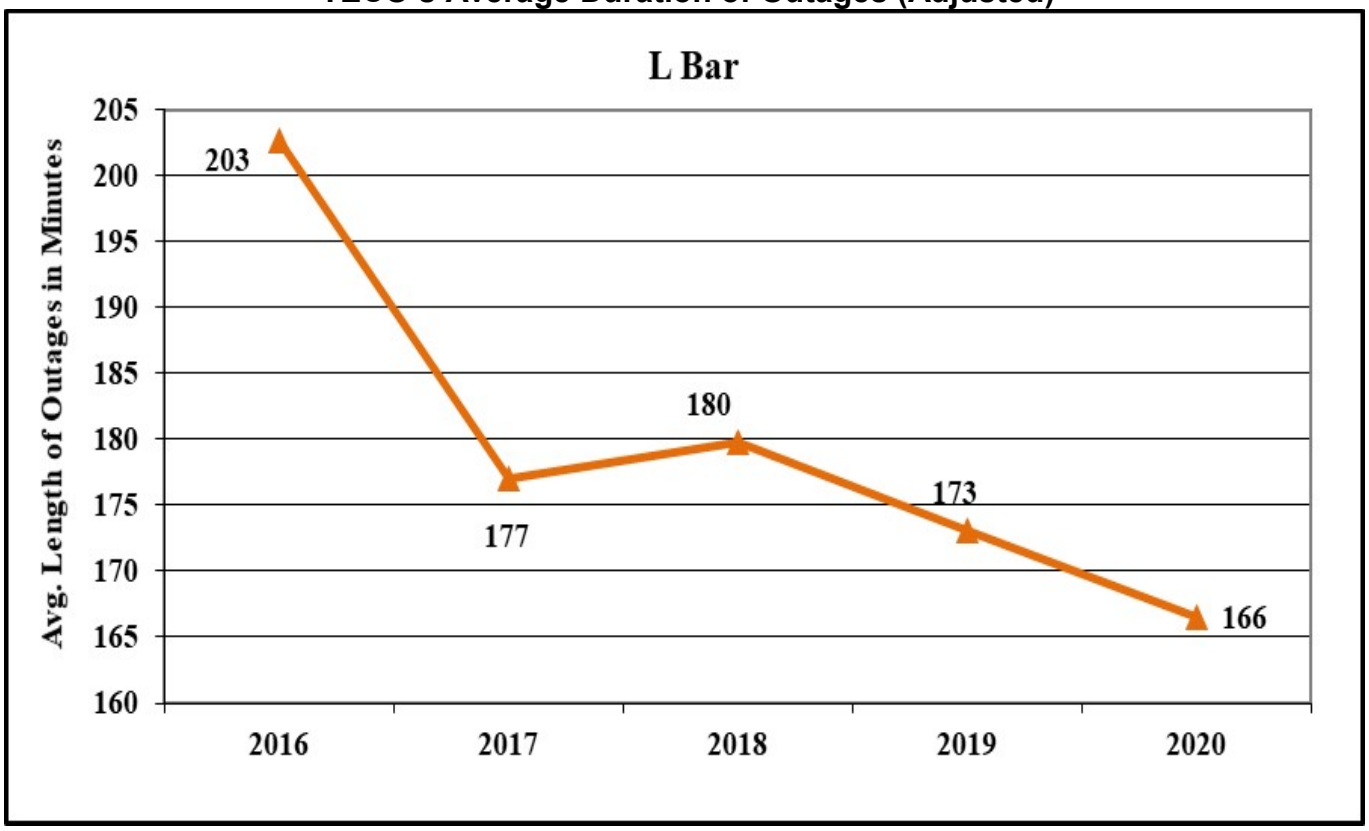
TECO's Regions with the Highest and Lowest Adjusted CAIDI Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest CAIDI	Plant City	Central	Western	Dade City	Dade City
Lowest CAIDI	Central	Winter Haven	South Hillsborough	South Hillsborough	South Hillsborough

Source: TECO's 2016-2020 distribution service reliability reports.

Figure 2-33 denotes a 4 percent decrease in outage durations for the period from 2019 to 2020 for TECO. 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 L-Bar index. The L-Bar index appears to trend downward for the five-year period of 2016 to 2020, suggesting shorter restoration times.

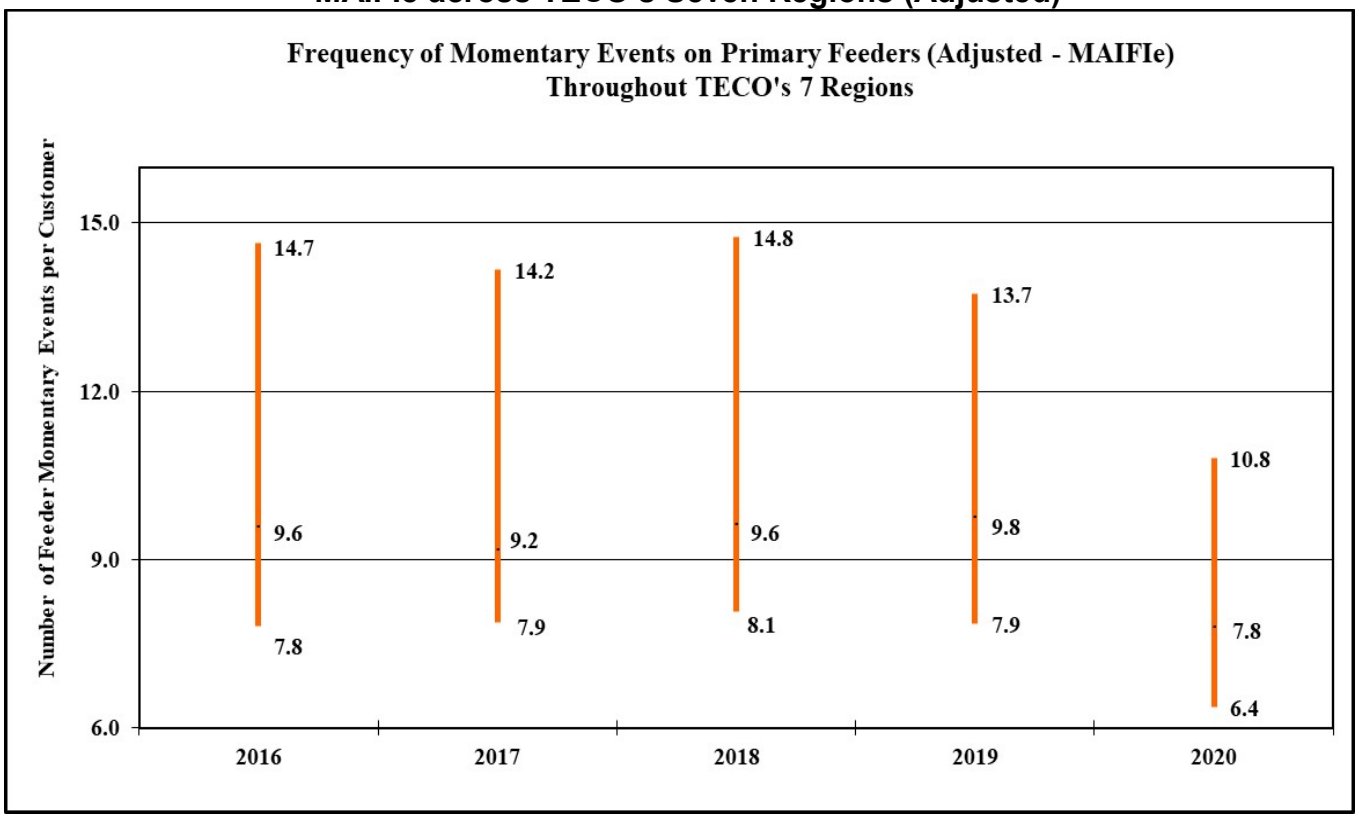
Figure 2-33
TECO's Average Duration of Outages (Adjusted)



Source: TECO's 2016-2020 distribution service reliability reports.

Figure 2-34 illustrates TECO's number of momentary events on primary circuits per customer recorded across its system. In 2020, the MAIFIe performance improved over the 2019 results in all regions. The average MAIFIe decreased by 20 percent from 2019 to 2020. Figure 2-34 also indicates that the average MAIFIe is trending downward, which suggests an improvement in performance over the five-year period of 2019 to 2020.

Figure 2-34
MAIFIe across TECO's Seven Regions (Adjusted)



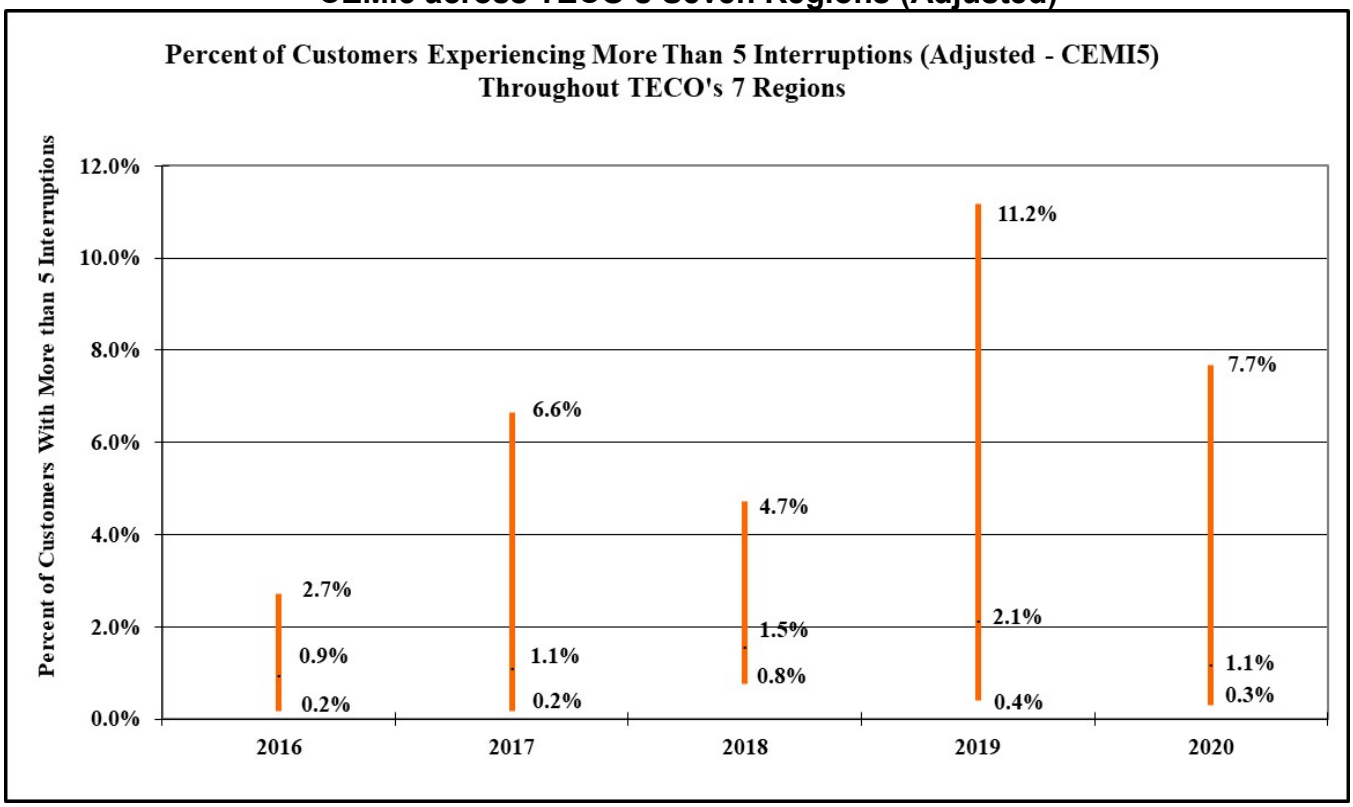
TECO's Regions with the Highest and Lowest Adjusted MAIFIe Distribution Reliability Performance by Year

	2016	2017	2018	2019	2020
Highest MAIFIe	Dade City	Dade City	Dade City	Plant City	Plant City
Lowest MAIFIe	Central	Central	Central	Central	Central

Source: TECO's 2016-2020 distribution service reliability reports.

Figure 2-35 indicates that the percent of TECO's customers experiencing more than five interruptions. All of the regions in TECO's territory experienced a decrease in the CEMI5 results for 2020. Dade City reported the highest CEMI5 percentage for 2020. With TECO's results for this index varying for the past five years, the average CEMI5 index appears to be trending upward indicating a decline in performance, even with a 47 percent decrease in the average CEMI5 index from 2019 to 2020.

Figure 2-35
CEMI5 across TECO's Seven Regions (Adjusted)



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

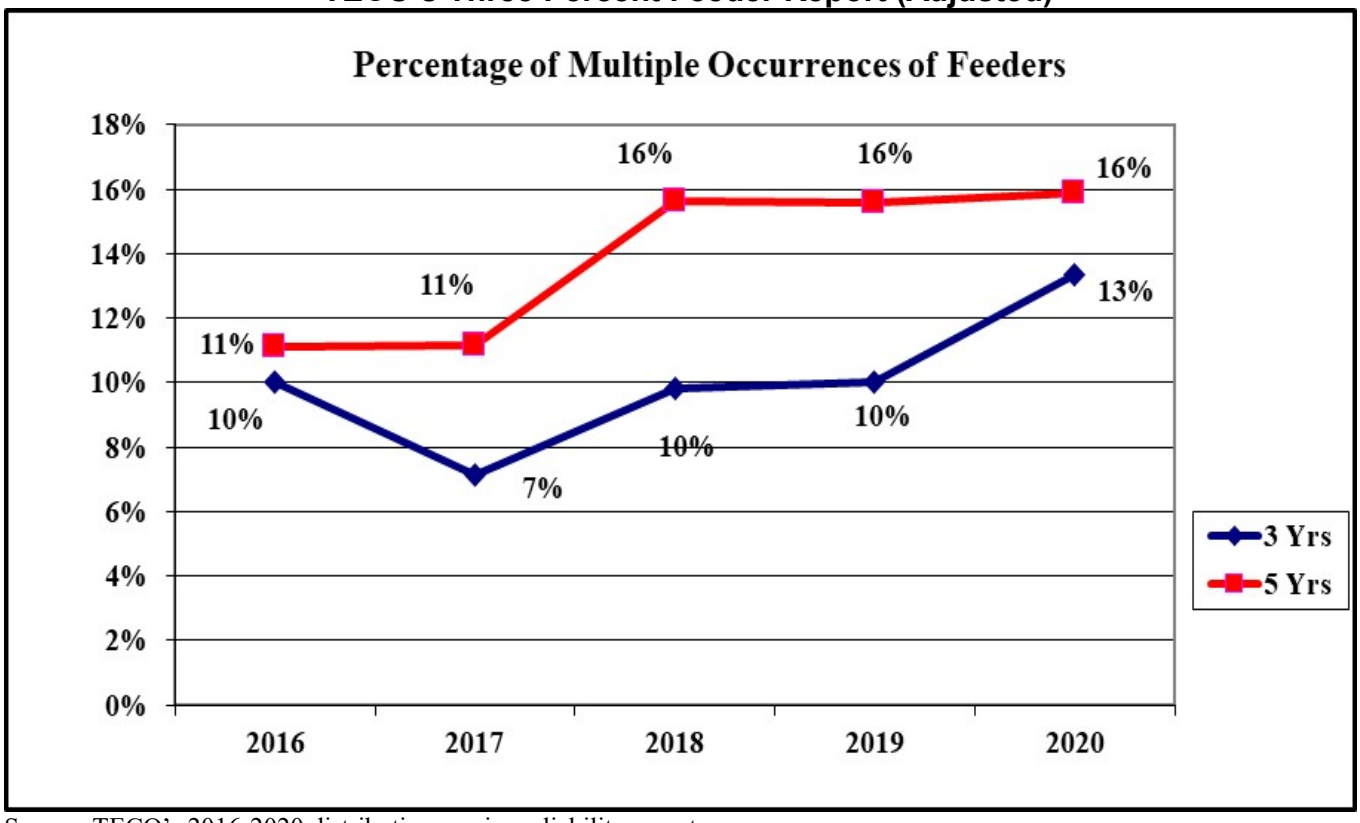
	2016	2017	2018	2019	2020
Highest CEMI5	Dade City	Dade City	Dade City	Dade City	Dade City
Lowest CEMI5	South Hillsborough	Central	Eastern	Winter Haven	Central

Source: TECO's 2016-2020 distribution service reliability reports.

Figure 2-36 represents an analysis of TECO's top 3 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 remained the same from 2019 to 2020. The three-year average of outages had an increase from 10 percent in 2019 to 13 percent in 2020. However, both the five-year average of outages per feeder and the three-year average of outages appear to continue to trend upward for the five-year period of 2016 to 2020.

Staff notes that there were three feeders on the Three Percent Feeder Report for the last two years consecutively. Six, three, and one circuit outages were reported for these feeders in 2020. The causes for the outages varied from lightning to vehicle accidents that resulted in electrical wire/pole damage. Damaged equipment was repaired, poles were replaced, and trees and vegetation were trimmed in 2020. 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.

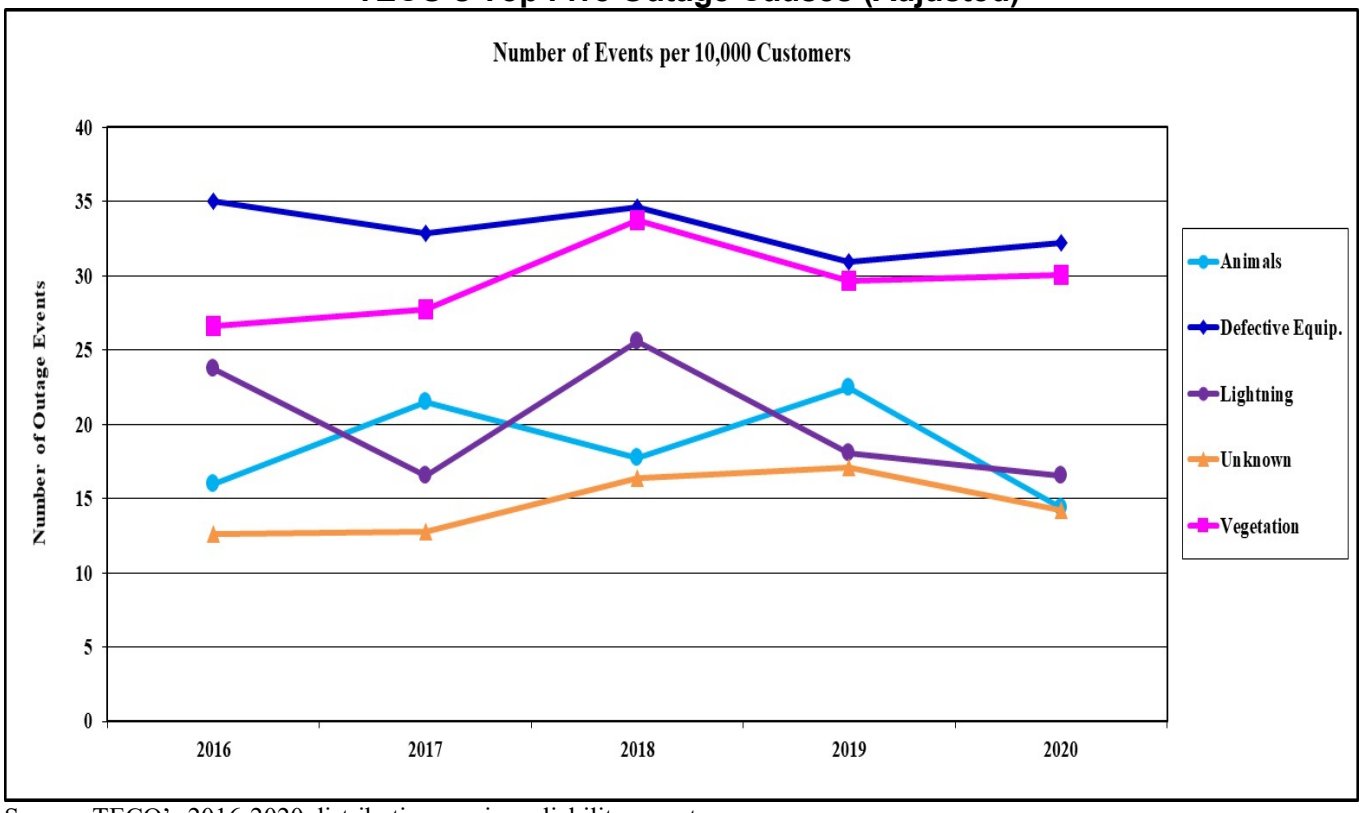
Figure 2-36
TECO's Three Percent Feeder Report (Adjusted)



Source: TECO's 2016-2020 distribution service reliability reports.

Figure 2-37 indicates that 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 10 causes of outage events and represents 89 percent of the total outage events that occurred during 2020. For the five-year period, the five top causes of outage events included "Defective Equipment" (27 percent), "Vegetation" (25 percent), "Lightning" (14 percent), "Animals" (12 percent), and "Unknown Causes" (12 percent) on a cumulative basis. "Defective Equipment" is the highest cause of outages for 2020. "Vegetation" and "Lightning" causes are the next two top problem areas for TECO. The outages due to "Defective Equipment" and "Vegetation" increased 6 percent and 3 percent, respectfully, from 2019 to 2020. The outages from "Lightning" decreased 7 percent, the outages from "Animals" decreased 35 percent, and the outages from "Unknown" decreased 15 percent, all for the same time period. The number of outages due to "Vegetation," and "Unknown Causes" are trending upward while the number of outages due to "Defective Equipment" and "Lightning" are trending downward. The number of outages due to "Animals" remain relativity flat.

Figure 2-37
TECO's Top Five Outage Causes (Adjusted)



Source: TECO's 2016-2020 distribution service reliability reports.

Observations: TECO's Adjusted Data

One of TECO's 2020 reliability indices declined in performance compared to 2019. For the five-year period of 2016 to 2020, the indices for CEMI5, the Three-Year Percent of Multiple Feeder outage events, and the Five-Year Percent of Multiple Feeder outage events are all trending upward. The indices for SAIDI, SAIFI, CAIDI, MAIFIe, and L-Bar are trending downward. TECO reported the increase in CAIDI was due to slightly slower restoration time. TECO reported that the improvements in SAIDI, SAIFI, MAIFIe and L-Bar were attributed to less severe weather events combined with much quicker restoration times, decreases in outages that customers experienced, and a decrease of breaker events. TECO notes that the Dade City, Plant City, and Winter Haven regions have the fewest customers and represent the most rural, lowest customer density per line mile. TECO indicated that the rural areas typically have higher reliability indices due to the greater distance of travel for service restoration.

In 2020, the Dade City region had the highest reliability indices in four of the five categories. The Dade City region has a total of 14 feeders/circuits and averages 32 customers per mile. TECO's other service areas average 69 customers per mile. In 2018, TECO installed new reclosers along with other activities to improve the reliability of the Dade City region. In 2019, TECO installed additional reclosers and trimmed trees in the Dade City area. In 2020, TECO trimmed 175 miles of trees in the Dade City area and plans to trim another 99 miles in 2021. In addition, as part of TECO's Storm Protection Plan Distribution Lateral Undergrounding Program, TECO is planning on converting approximately four miles of overhead laterals to underground in the Dade City area in 2021.

Section III: Inter-Utility Reliability Comparisons

Section III 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.

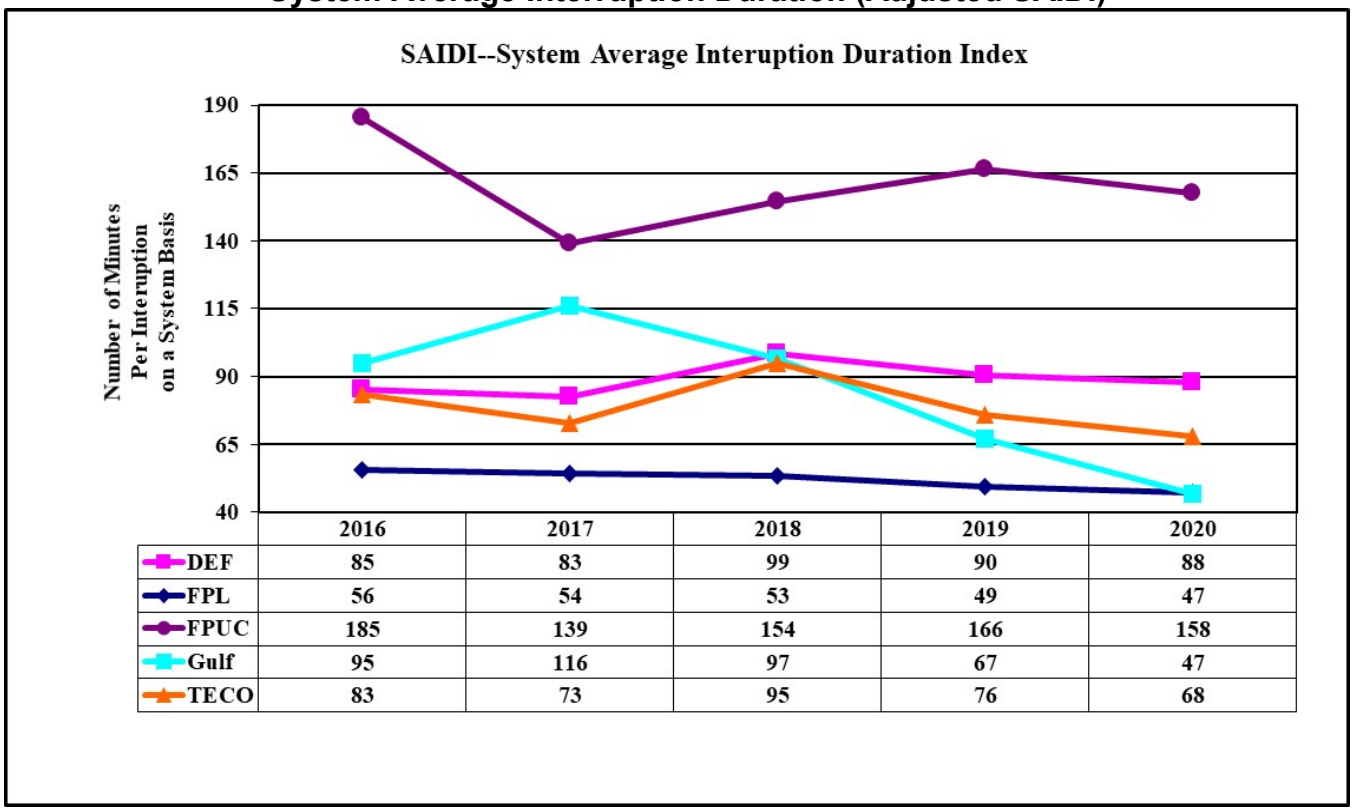
Inter-Utility Reliability Trend Comparisons: Adjusted Data

The inter-utility trend comparison focuses on a graphical presentation that combines all of the IOUs' distribution reliability indices for the years 2016 to 2020. **Figures 3-1** through **3-3** apply to all five utilities while **Figures 3-4** and **3-5** 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 3-1 indicates that FPL's, FPUC's, Gulf's, and TECO's SAIDI has been trending downward since 2016, while DEF is trending upward. Comparing the 2019 and 2020 SAIDI values, all utilities have improved. DEF's SAIDI value decreased 2 percent, FPL decreased 4 percent, FPUC increased by 5 percent, Gulf decreased 30 percent, and TECO decreased 11 percent from 2019 to 2020.

SAIDI is the average amount of time a customer is out of service per retail customers 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 3-1
System Average Interruption Duration (Adjusted SAIDI)



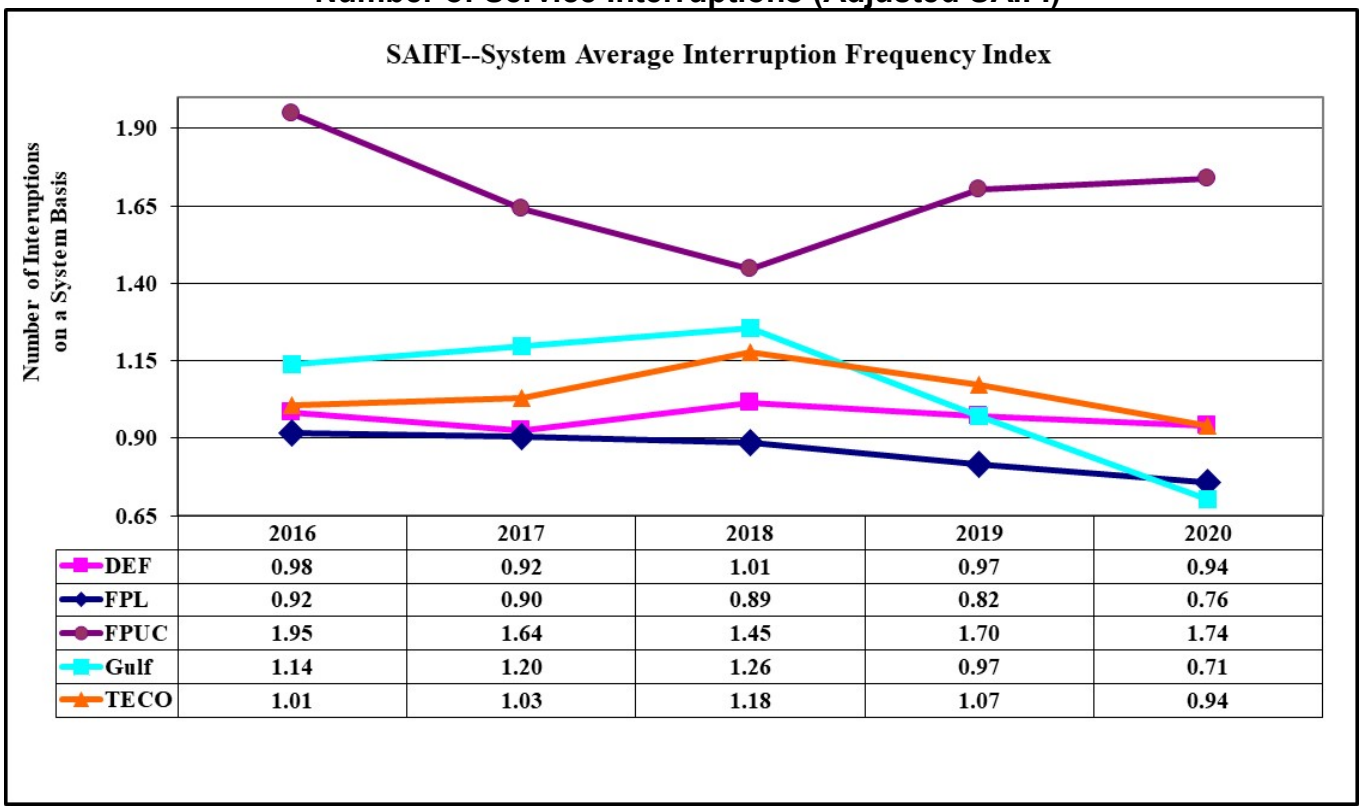
	2016	2017	2018	2019	2020
DEF	85	83	99	90	88
FPL	56	54	53	49	47
FPUC	185	139	154	166	158
Gulf	95	116	97	67	47
TECO	83	73	95	76	68

Source: The IOUs' 2016-2020 distribution service reliability reports.

Figure 3-2 shows a five-year graph of the adjusted SAIFI for each IOU. The 2020 data shows FPL, Gulf, DEF, and TECO's SAIFI values decreased (improved) from the 2019 results as FPUC's SAIFI values increased. Over the five-year period of 2016 to 2020, DEF, FPL, FPUC, Gulf and TECO's SAIFI values are all trending downward.

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 (a/k/a Customer) Interruptions (CI) by the total Number of Customers Served for the respective area of service.

Figure 3-2
Number of Service Interruptions (Adjusted SAIFI)



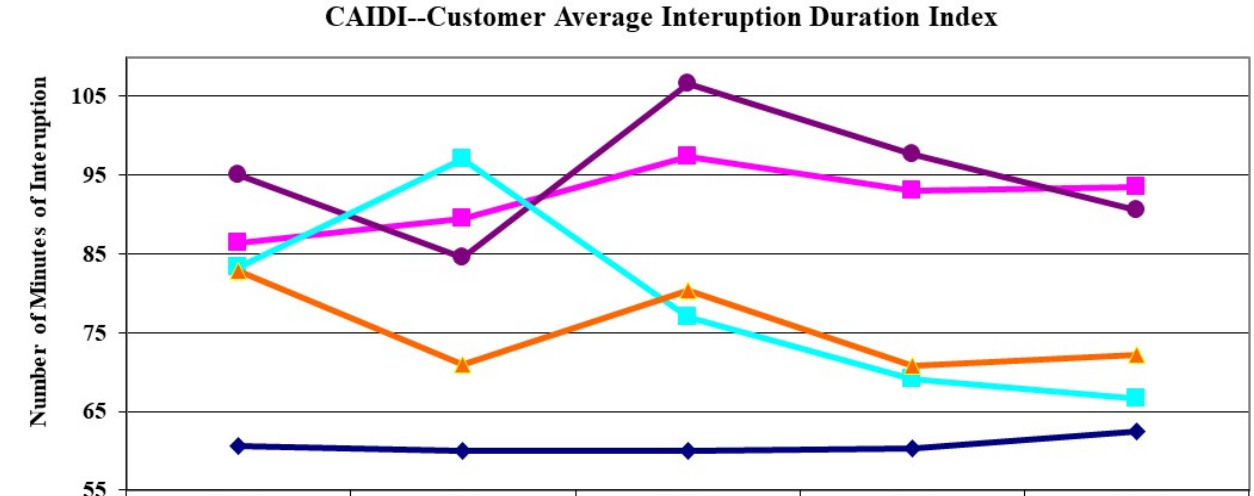
	2016	2017	2018	2019	2020
DEF	0.98	0.92	1.01	0.97	0.94
FPL	0.92	0.90	0.89	0.82	0.76
FPUC	1.95	1.64	1.45	1.70	1.74
Gulf	1.14	1.20	1.26	0.97	0.71
TECO	1.01	1.03	1.18	1.07	0.94

Source: The IOUs' 2016-2020 distribution service reliability reports.

Figure 3-3 shows a five-year graph of the adjusted CAIDI for each IOU. DEF, FPL, and TECO had increases in CAIDI from 2019 to 2020 as FPUC and Gulf had decreases. Gulf and TECO's CAIDI values are trending downward for the five-year period of 2016 to 2020. DEF's, FPL's and FPUC's CAIDI value is 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 3-3
Average Service Restoration Time (Adjusted CAIDI)



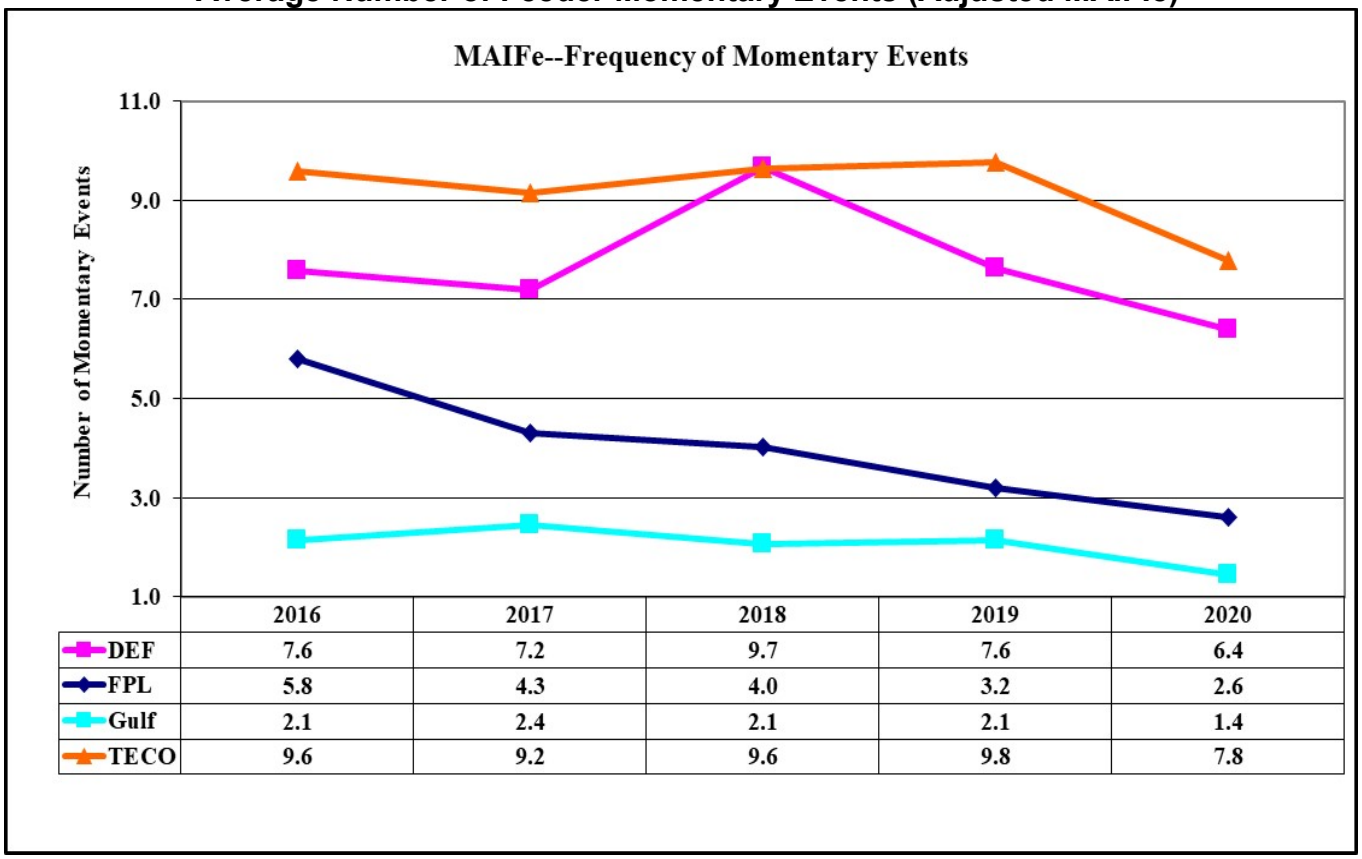
	2016	2017	2018	2019	2020
DEF	86	90	97	93	94
FPL	61	60	60	60	62
FPUC	95	85	107	98	91
Gulf	83	97	77	69	67
TECO	83	71	80	71	72

Source: The IOUs' 2016-2020 distribution service reliability reports.

Figure 3-4 shows a five-year graph of the adjusted MAIFIe for DEF, FPL, Gulf, and TECO. DEF, FPL, Gulf's, and TECO's MAIFIe indices are all trending downward for the five-year period of 2016 to 2020. Comparing the MAIFIe for 2019 to 2020, DEF decreased by 16 percent, FPL decreased by 19 percent, Gulf decreased by 33 percent and TECO decreased by 20 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 events 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 3-4
Average Number of Feeder Momentary Events (Adjusted MAIFIe)

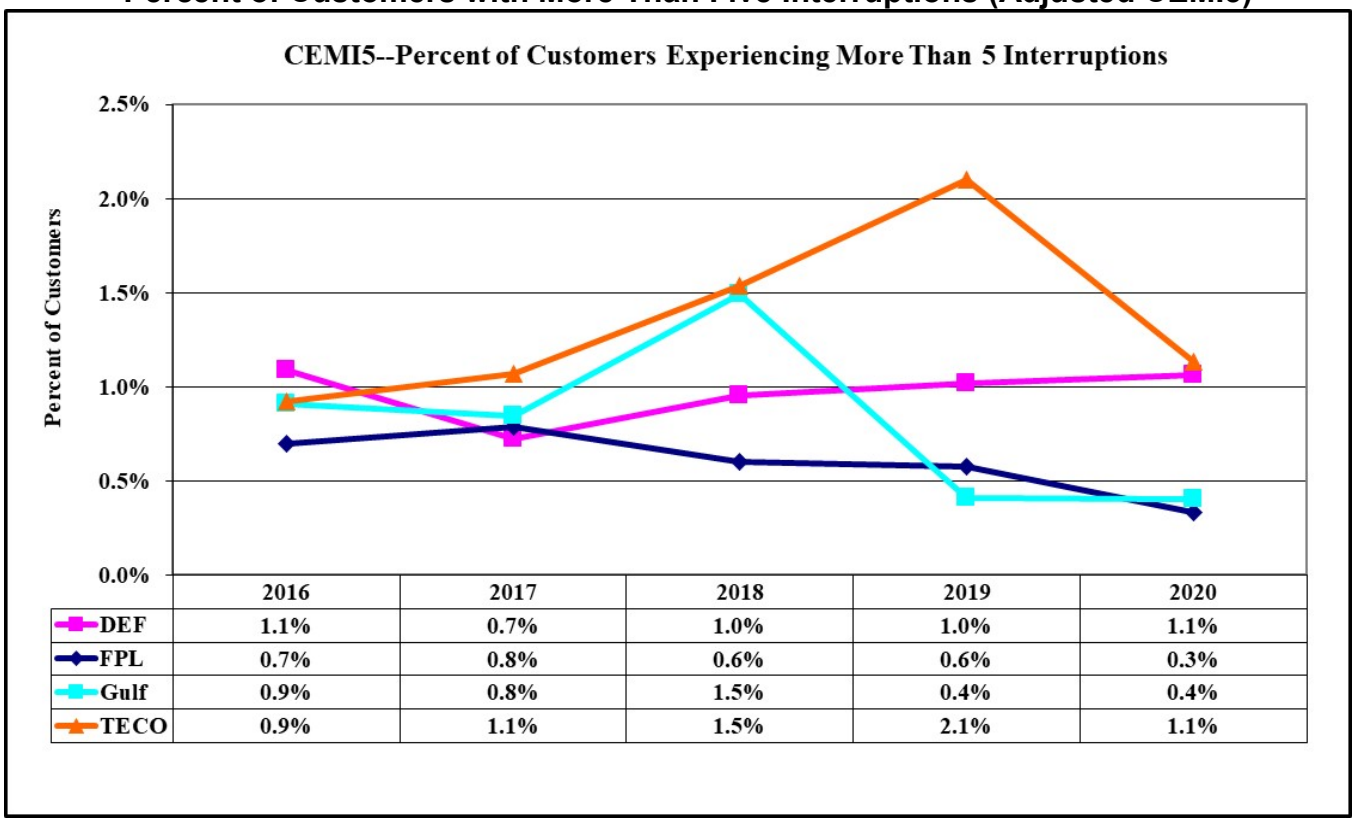


	2016	2017	2018	2019	2020
DEF	7.6	7.2	9.7	7.6	6.4
FPL	5.8	4.3	4.0	3.2	2.6
Gulf	2.1	2.4	2.1	2.1	1.4
TECO	9.6	9.2	9.6	9.8	7.8

Source: The IOUs' 2016-2020 distribution service reliability reports.

Figure 3-5 shows 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. In 2020, TECO's CEMI5 percent decreased to 1.1 percent from 2.1 percent in 2019 as Gulf's CEMI5 percentage stayed at 0.4 percent. DEF's CEMI5 percentage increased to 1.1 percent in 2020 from 1.0 percent in 2019 as FPL's CEMI5 percentage decreased to 0.3 percent in 2020 from 0.6 percent in 2019. FPL and Gulf are trending downward as DEF and TECO are trending upward for the period of 2016 to 2020.

Figure 3-5
Percent of Customers with More Than Five Interruptions (Adjusted CEMI5)

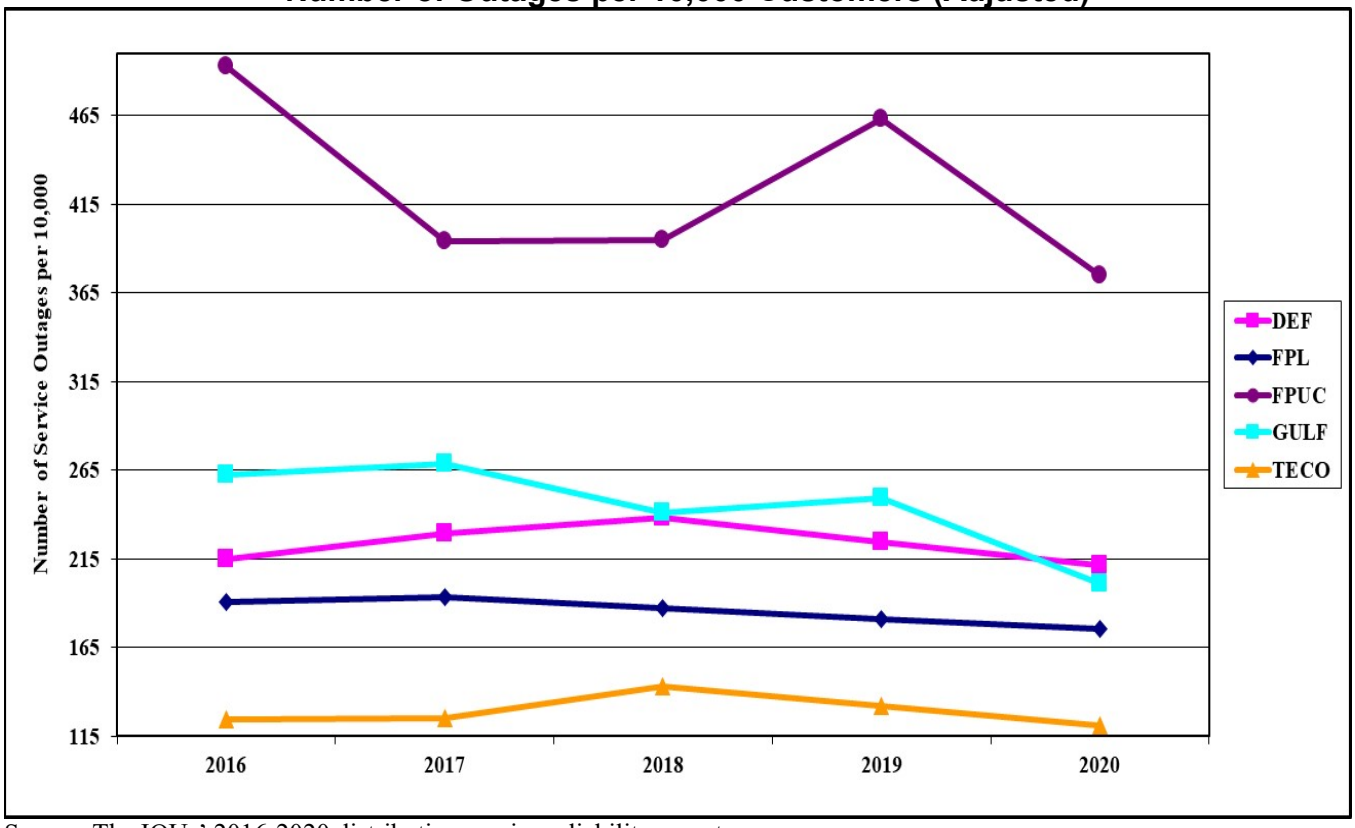


	2016	2017	2018	2019	2020
DEF	1.1%	0.7%	1.0%	1.0%	1.1%
FPL	0.7%	0.8%	0.6%	0.6%	0.3%
Gulf	0.9%	0.8%	1.5%	0.4%	0.4%
TECO	0.9%	1.1%	1.5%	2.1%	1.1%

Source: The IOUs' 2016-2020 distribution service reliability reports.

Figure 3-6 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 decreased from 91,979 in 2019 to 90,418 in 2020, and the number of outages per 10,000 customers is trending downward for the five-year period. TECO's results are remaining flat for the five-year period. DEF's number of outages decreased for 2020 and the results are relatively flat for the five-year period. Gulf's number of outages decreased for 2020, and is trending downward for the five-year period. FPUC's results decreased for 2016 to 2017, decreased for 2017 to 2018, increased for 2018 to 2019, and decreased from 2019 to 2020. Due to its small customer base, FPUC's number of outages per 10,000 customers may be more volatile.

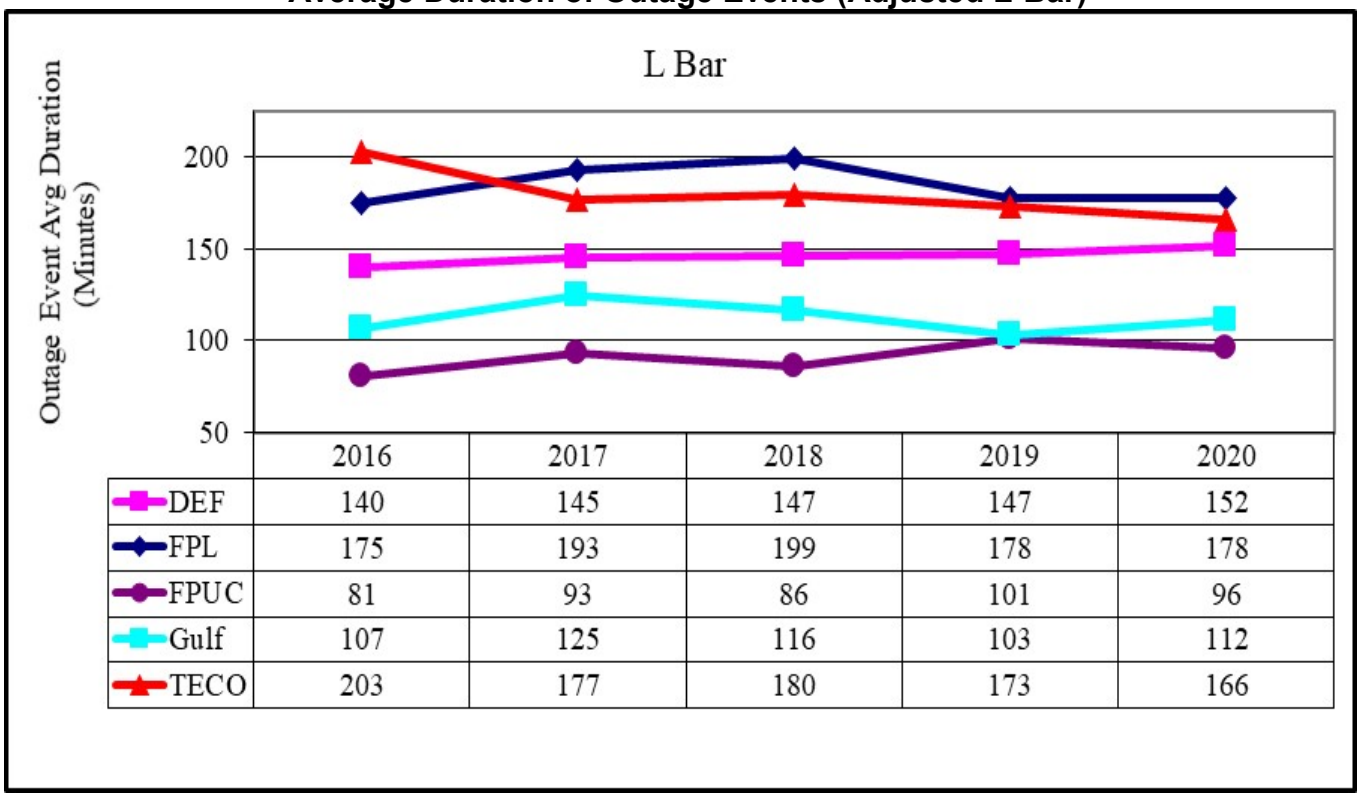
Figure 3-6
Number of Outages per 10,000 Customers (Adjusted)



Source: The IOUs' 2016-2020 distribution service reliability reports.

Figure 3-7 represents the average duration of outage events (Adjusted L-Bar) for each IOU. From the data shown, it appears that the utilities have been consistent with their restoral times for the five-year period of 2016 to 2020, even with increases from 2019 to 2020.

Figure 3-7
Average Duration of Outage Events (Adjusted L-Bar)



	2016	2017	2018	2019	2020
DEF	140	145	147	147	152
FPL	175	193	199	178	178
FPUC	81	93	86	101	96
Gulf	107	125	116	103	112
TECO	203	177	180	173	166

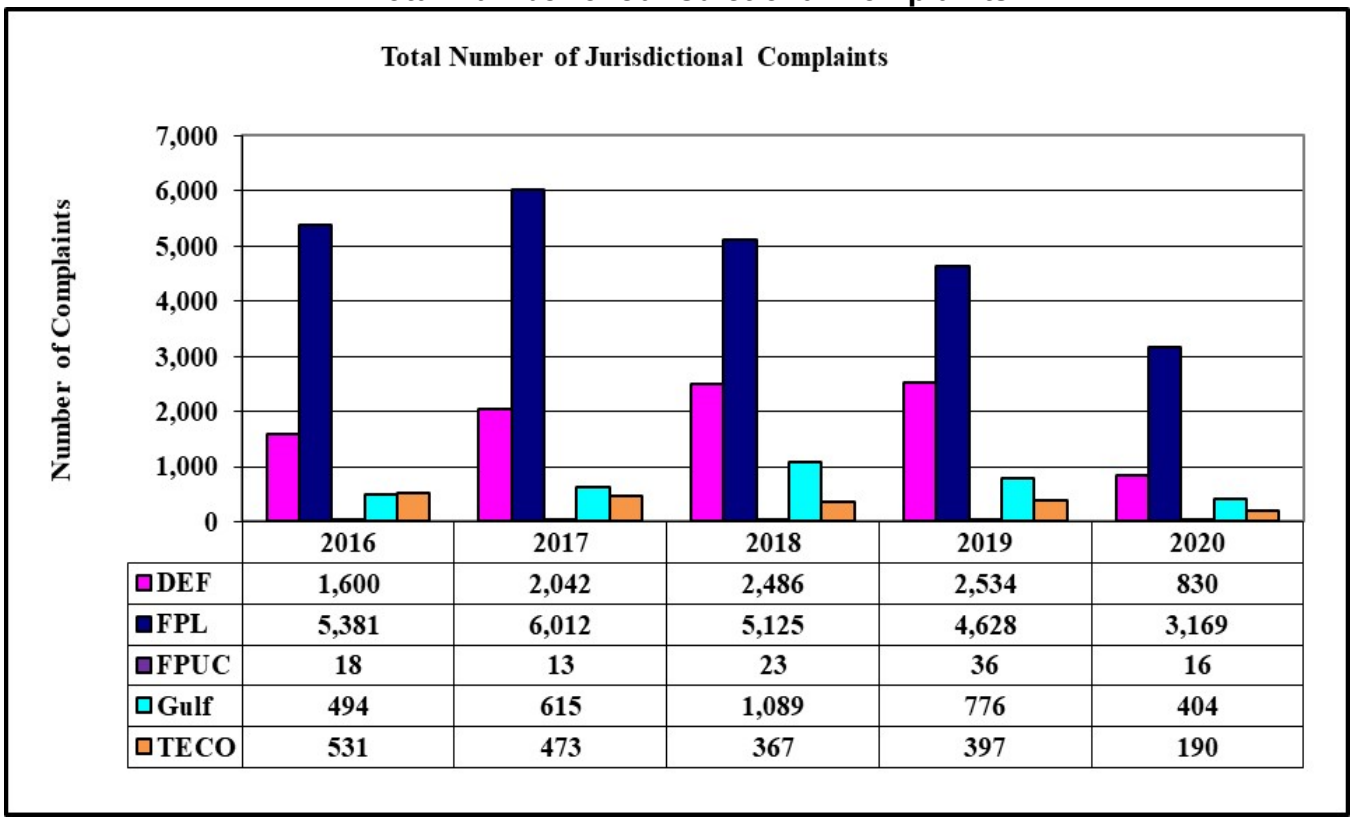
Source: The IOUs' 2016-2020 distribution service reliability reports.

Inter-Utility Comparisons of Reliability Related Complaints

Figures 3-8, **3-9**, **3-10**, and **3-11** 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 a code after the complaint is resolved. Reliability related complaints have 10 specific category types and typically pertain to "Trees," "Safety," "Repairs," "Frequent Outages," and "Momentary Service Interruptions."

Figure 3-8 shows the total number of jurisdictional complaints[6] for each IOU. In comparing the number of complaints by the different companies, the total number of customers should be considered. FPL has the higher number of complaints, but FPL also has more customers than the other companies.

Figure 3-8
Total Number of Jurisdictional Complaints



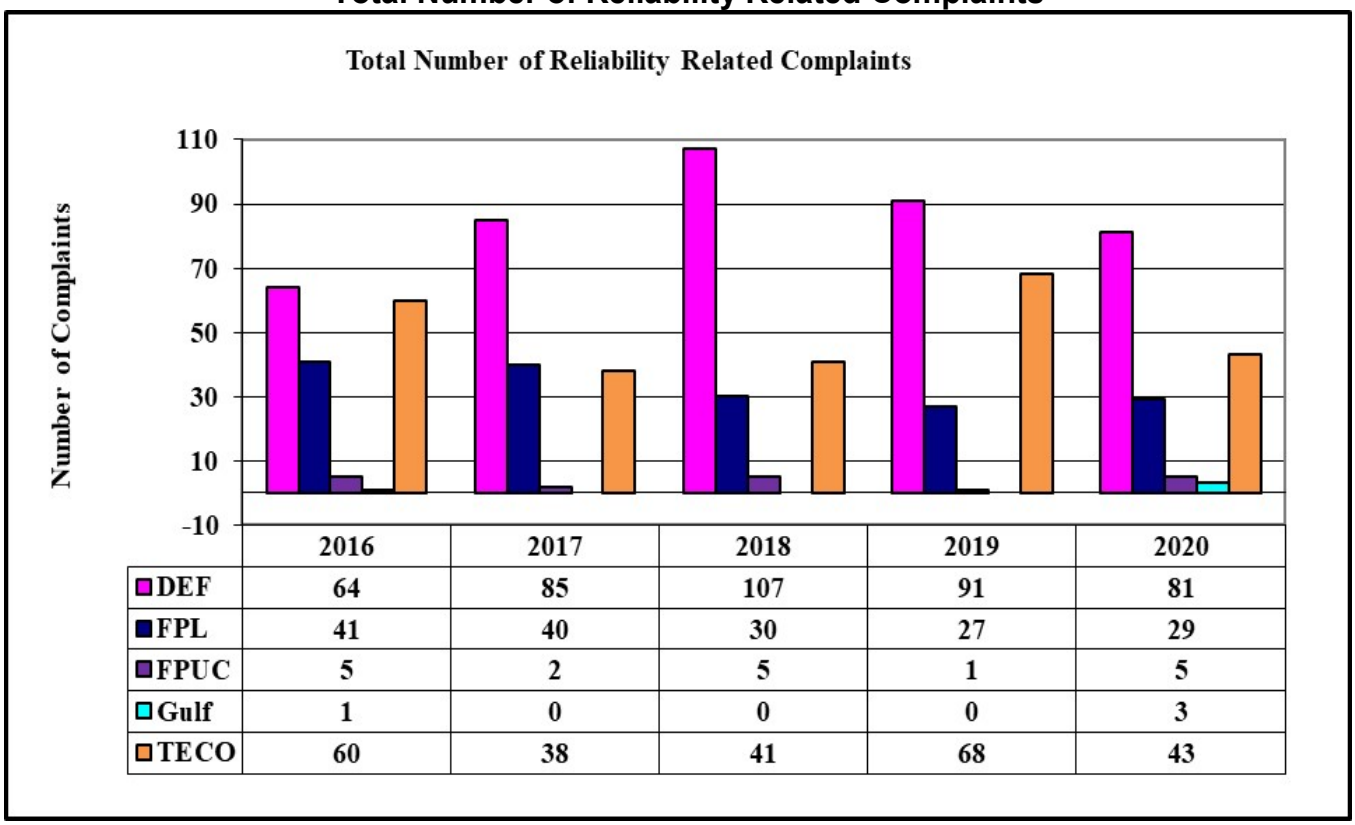
	2016	2017	2018	2019	2020
DEF	1,600	2,042	2,486	2,534	830
FPL	5,381	6,012	5,125	4,628	3,169
FPUC	18	13	23	36	16
Gulf	494	615	1,089	776	404
TECO	531	473	367	397	190

Source: FPSC CATS.

[6]Non-jurisdictional complaint codes include load management, hurricanes, and damage claims.

Figure 3-9 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 2016 to 2020 with FPUC and Gulf showing the least amount. FPL is trending downward in the number of reliability complaints, while DEF are trending upward. FPUC, Gulf, and TECO remain relatively flat.

Figure 3-9
Total Number of Reliability Related Complaints

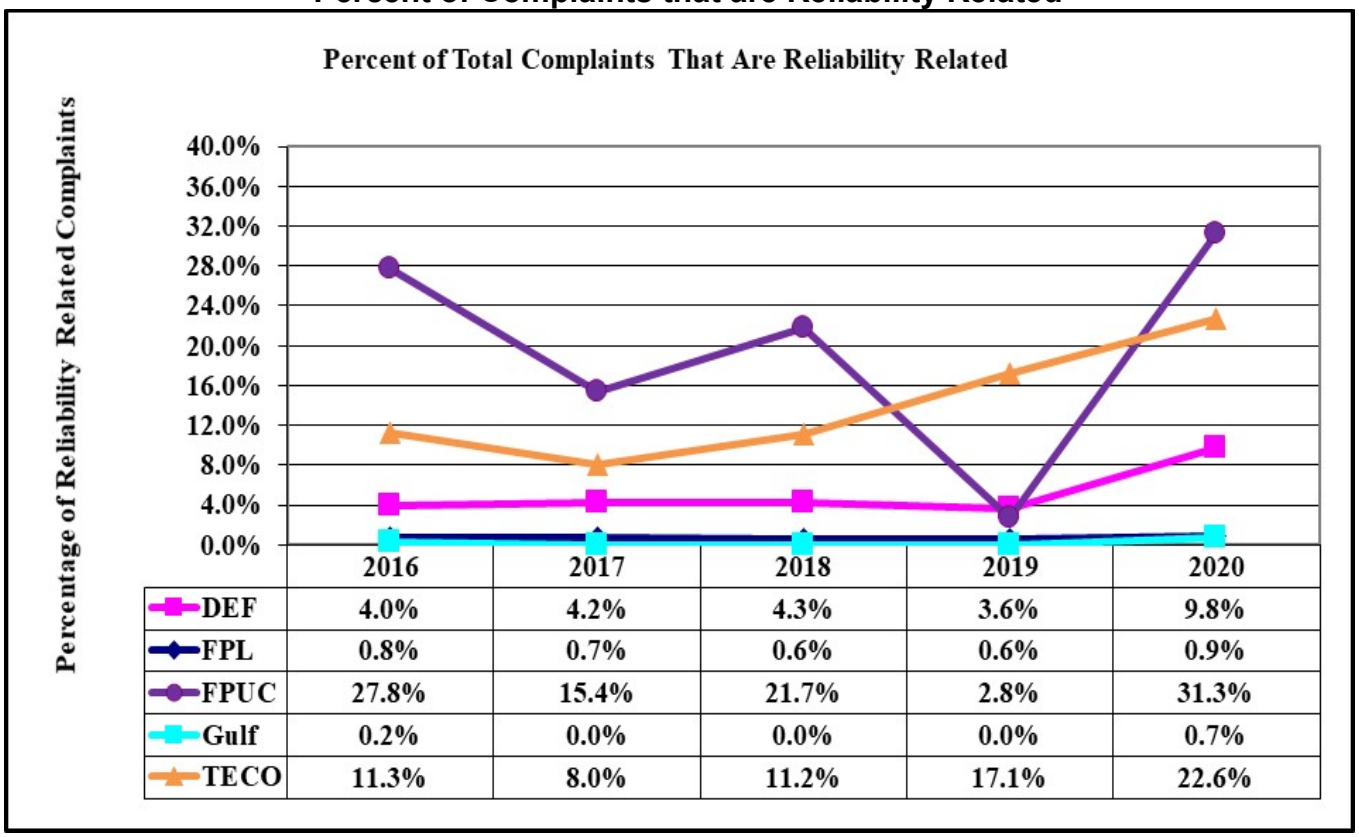


	2016	2017	2018	2019	2020
DEF	64	85	107	91	81
FPL	41	40	30	27	29
FPUC	5	2	5	1	5
Gulf	1	0	0	0	3
TECO	60	38	41	68	43

Source: FPSC CATS.

Figure 3-10 shows the percentage of reliability related customer complaints in relation to the total number of complaints for each IOU. FPUC appears to be trending downward as DEF, FPL, Gulf, and TECO are trending upward. The percentages of FPUC complaints compared to the other companies appears high, however, FPUC has fewer customers and fewer complaints in total.

Figure 3-10
Percent of Complaints that are Reliability Related



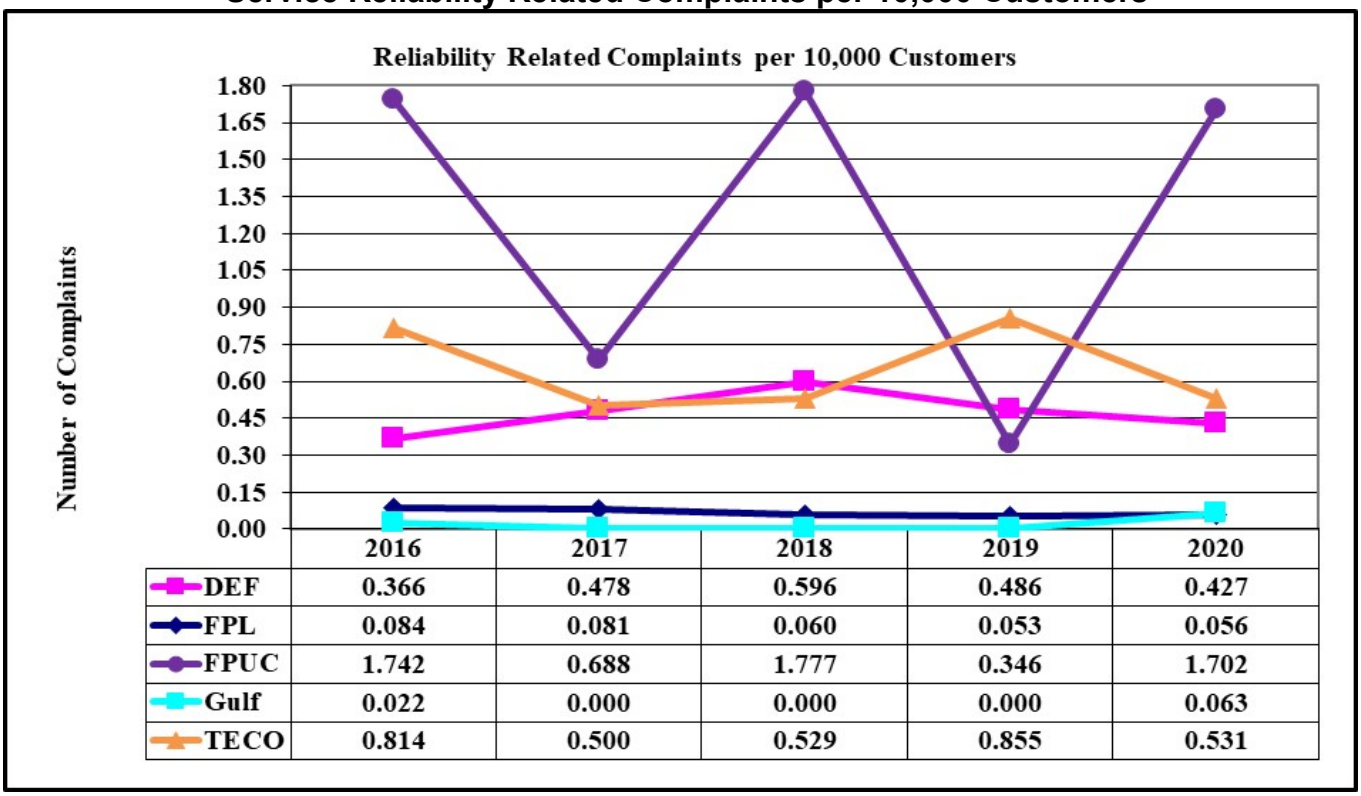
	2016	2017	2018	2019	2020
DEF	4.0%	4.2%	4.3%	3.6%	9.8%
FPL	0.8%	0.7%	0.6%	0.6%	0.9%
FPUC	27.8%	15.4%	21.7%	2.8%	31.3%
Gulf	0.2%	0.0%	0.0%	0.0%	0.7%
TECO	11.3%	8.0%	11.2%	17.1%	22.6%

Source: FPSC CATS.

Figure 3-11 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 the utility's customers. This fraction is then multiplied by 10,000 for graphing purposes.

All the IOUs have less than one reliability complaint per 10,000 customers since 2016 except FPUC. For the five-year period, Gulf and FPL remain relatively flat. DEF is trending upward for the five-year period while FPUC and TECO are trending downward. The volatility of FPUC's results can be attributed to its small customer base, which typically averages 28,500 customers.

Figure 3-11
Service Reliability Related Complaints per 10,000 Customers



	2016	2017	2018	2019	2020
DEF	0.366	0.478	0.596	0.486	0.427
FPL	0.084	0.081	0.060	0.053	0.056
FPUC	1.742	0.688	1.777	0.346	1.702
Gulf	0.022	0.000	0.000	0.000	0.063
TECO	0.814	0.500	0.529	0.855	0.531

Source: The IOUs' 2016-2020 distribution service reliability reports and FPSC CATS.

Section IV: Appendices

Appendix A – Adjusted Service Reliability Data

Duke Energy Florida, LLC

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

	2016	2017	2018	2019	2020
North Central	400,510	406,483	409,949	425,895	429,896
North Coastal*	200,565	203,300	204,915	214,245	445,321
South Central	470,534	484,848	493,782	520,699	532,367
South Coastal*	677,255	682,618	686,076	710,806	490,952
DEF System	**1,748,864**	**1,777,249**	**1,794,722**	**1,871,645**	**1,898,536**

Source: DEF's 2016-2020 distribution service reliability reports.
Note: *DEF reorganized its Zone boundaries where two operation centers were moved from the South Coastal region to the North Coastal region.

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)				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
North Central	78	75	86	87	85	0.90	0.84	0.96	0.81	0.84	87	90	90	108	102
North Coastal*	155	154	168	170	117	1.39	1.45	1.52	1.56	1.15	111	107	111	108	102
South Central	79	70	84	86	70	1.01	0.84	0.93	1.02	0.92	78	83	90	85	77
South Coastal*	73	75	95	72	83	0.90	0.88	0.95	0.86	0.86	81	85	100	84	96
DEF System	**85**	**83**	**99**	**90**	**88**	**0.98**	**0.92**	**1.01**	**0.97**	**0.94**	**86**	**90**	**97**	**93**	**94**

Source: DEF's 2016-2020 distribution service reliability reports.
Note: *DEF reorganized its Zone boundaries where two operation centers were moved from the South Coastal region to the North Coastal region.

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)				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
North Central	8.6	7.6	3.6	4.67	6.76	0.36%	0.37%	0.42%	0.41%	0.42%
North Coastal*	7.8	8.2	13.6	9.66	6.36	4.00%	2.83%	4.80%	5.50%	2.32%
South Central	7.0	6.9	11.4	8.78	6.47	1.06%	0.87%	0.44%	0.79%	1.17%
South Coastal*	7.3	6.8	10.8	7.93	6.00	0.68%	0.21%	0.49%	0.19%	0.37%
DEF System	**7.6**	**7.2**	**9.7**	**7.62**	**6.39**	**1.09%**	**0.73%**	**0.95%**	**1.02%**	**1.06%**

Source: DEF's 2016-2020 distribution service reliability reports.
Note: *DEF reorganized its Zone boundaries where two operation centers were moved from the South Coastal region to the North Coastal region.

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

	Adjusted Number of Outages Events						Adjusted L-Bar Length of Outages				
	2016	2017	2018	2019	2020	Percentages	2016	2017	2018	2019	2020
Animals	5,369	5,597	4,566	5,127	3,882	9.7%	80	80	82	82	82
Unknown	1,097	998	766	859	556	1.4%	90	94	83	85	88
All Other	7,390	8,287	8,310	8,223	7,170	17.8%	174	180	173	169	181
Defective Equipment	9,195	10,475	12,038	11,921	11,973	29.8%	147	150	152	146	146
Lightning	1,216	1,261	1,517	943	994	2.5%	150	151	157	168	157
Vegetation	7,879	8,143	8,522	8,883	9,291	23.1%	145	150	148	160	160
Other Weather	4,965	5,478	6,463	5,658	5,826	14.5%	134	145	144	153	159
Vehicle	429	505	599	445	509	1.3%	235	223	233	250	245
DEF System	**37,540**	**40,744**	**42,781**	**42,059**	**40,201**	**100%**	**140**	**145**	**147**	**147**	**152**

Source: DEF's 2016-2020 distribution service reliability reports.
Note: (1) "Other Causes" category is the sum of diverse causes of outage events which individually are not among the top 10 causes of outage events.

Florida Power & Light Company

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

	2016	2017	2018	2019	2020
Boca Raton	374,080	378,125	380,552	383,429	386,305
Brevard	305,151	307,825	312,017	316,529	322,070
Central Broward*	273,692	276,218	278,910	282,135	285,678
Central Dade	292,421	297,237	314,448	320,532	323,326
Central Florida	286,492	289,426	293,507	298,186	305,247
Manasota	390,400	395,636	401,766	408,944	416,122
Naples	394,355	399,295	406,500	414,696	421,646
North Broward*	317,731	319,630	321,508	323,531	325,075
North Dade	240,194	241,259	248,900	251,793	253,181
North Florida	157,967	161,216	166,703	171,801	177,889
South Broward*	337,828	339,518	342,226	344,502	346,004
South Dade	309,022	311,692	299,375	303,306	306,719
Toledo Blade	265,547	269,787	275,688	281,994	289,643
Treasure Coast	291,334	294,545	299,495	340,658	346,884
West Dade	261,484	264,888	266,629	270,975	275,635
West Palm	364,292	366,570	370,077	373,533	376,620
FPL System	**4,861,990**	**4,912,867**	**4,978,301**	**5,086,544**	**5,158,044**

Source: FPL's 2016-2020 distribution service reliability reports.
Note: *Three management regions were renamed: Pompano became North Broward, Wingate became Central Broward and Gulf Stream became South Broward.

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)				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Boca Raton	51	45	50	42	41	1.08	0.89	1.00	0.80	0.73	47	50	49	52	56
Brevard	53	56	44	44	49	0.87	1.04	0.87	0.81	0.88	60	54	50	55	56
Central Broward*	58	61	60	65	54	0.86	1.11	0.90	0.88	0.75	67	55	66	74	72
Central Dade	41	42	42	54	41	0.66	0.79	0.77	0.78	0.57	63	53	54	69	72
Central Florida	49	46	47	40	41	0.80	0.85	0.84	0.77	0.76	61	54	56	53	54
Manasota	52	50	52	34	37	0.91	0.77	0.73	0.58	0.64	57	65	72	59	57
Naples	56	64	55	50	45	0.97	0.92	0.89	0.82	0.69	57	69	62	61	66
North Broward*	48	38	39	37	31	0.80	0.65	0.66	0.61	0.53	60	58	59	61	58
North Dade	59	69	69	64	58	0.72	0.96	0.94	1.00	0.78	82	72	74	64	74
North Florida	64	64	73	60	62	1.00	1.04	1.25	1.04	1.07	64	62	58	58	58
South Broward*	43	42	51	51	46	0.83	0.79	0.90	0.85	0.73	51	54	56	60	63
South Dade	68	63	59	56	55	0.99	0.79	0.83	0.74	0.79	69	80	71	75	69
Toledo Blade	75	77	70	56	50	1.14	1.12	1.01	0.88	0.79	66	69	69	64	63
Treasure Coast	81	66	47	54	52	1.19	1.11	0.81	0.97	0.85	68	59	59	55	61
West Dade	56	54	67	61	48	0.99	0.85	1.03	0.96	0.77	57	63	65	63	63
West Palm	51	46	46	41	59	0.88	0.96	0.97	0.83	0.96	58	47	48	49	62
FPL System	**56**	**54**	**53**	**49**	**47**	**0.92**	**0.90**	**0.89**	**0.82**	**0.76**	**61**	**60**	**60**	**60**	**62**

Source: FPL's 2016-2020 distribution service reliability reports.
Note: *Three management regions were renamed: Pompano became North Broward, Wingate became Central Broward and Gulf Stream became South Broward.

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)				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Boca Raton	5.6	4.6	4.3	3.8	3.3	1.36%	0.37%	0.90%	1.01%	0.18%
Brevard	5.2	4.0	3.5	3.0	2.3	0.17%	0.86%	0.27%	0.21%	0.42%
Central Broward*	7.9	6.5	4.5	3.5	2.8	0.53%	0.66%	0.17%	0.47%	0.22%
Central Dade	5.0	3.6	3.0	2.8	2.3	0.55%	0.78%	0.73%	0.14%	0.18%
Central Florida	5.2	3.4	3.8	2.8	2.3	0.15%	0.24%	0.84%	0.37%	0.35%
Manasota	5.3	4.0	3.8	2.4	1.9	0.21%	0.34%	0.26%	0.27%	0.17%
Naples	6.8	6.0	4.7	3.3	2.4	0.44%	0.34%	0.35%	1.00%	0.38%
North Broward*	4.5	3.1	3.4	2.4	2.0	1.23%	0.07%	0.54%	0.20%	0.08%
North Dade	5.3	3.3	3.2	2.8	2.3	0.28%	1.23%	0.70%	1.03%	0.44%
North Florida	5.8	4.2	3.2	2.8	2.3	0.44%	0.72%	1.44%	0.74%	0.70%
South Broward*	5.1	4.0	4.4	3.4	2.8	0.13%	0.60%	0.17%	0.34%	0.19%
South Dade	5.8	4.3	3.8	3.3	2.8	0.24%	0.67%	0.29%	0.72%	0.12%
Toledo Blade	7.8	4.5	5.2	3.5	3.0	1.57%	1.48%	1.94%	0.66%	0.52%
Treasure Coast	6.4	4.0	3.5	3.2	3.1	2.87%	1.73%	0.51%	1.22%	0.62%
West Dade	6.4	4.4	4.5	3.9	2.9	0.57%	0.72%	0.49%	0.61%	0.57%
West Palm	5.5	4.4	4.7	4.1	3.0	0.50%	2.04%	0.63%	0.26%	0.46%
FPL System	**5.8**	**4.3**	**4.0**	**3.2**	**2.6**	**0.70%**	**0.78%**	**0.60%**	**0.57%**	**0.33%**

Source: FPL's 2016-2020 distribution service reliability reports.
Note: *Three management regions were renamed: Pompano became North Broward, Wingate became Central Broward and Gulf Stream became South Broward.

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

	Adjusted Number of Outage Events						Adjusted L-Bar Length of Outages				
	2016	2017	2018	2019	2020	Percentages	2016	2017	2018	2019	2020
Unknown	10,139	10,436	10,482	8,593	7,619	8.4%	133	163	145	132	136
Vegetation	20,331	17,264	15,949	18,123	18,375	20.3%	197	205	199	193	196
Animals	9,506	9,219	9,131	10,046	8,165	9.0%	100	109	104	105	104
Remaining Causes	2,821	3,308	3,394	3,449	3,560	3.9%	158	167	172	147	141
Other Weather	7,978	7,458	7,335	6,592	5,529	6.1%	173	215	194	190	178
Other	7,340	9,402	9,959	8,367	7,183	7.9%	161	217	198	171	167
Lightning	1,647	1,192	1,902	1,644	1,493	1.7%	255	245	282	260	254
Vehicle	911	1,026	954	883	895	1.0%	248	253	275	259	259
Defective Equipment	32,013	35,772	34,200	34,282	37,599	41.6%	195	206	238	198	194
FPL System	**92,686**	**95,077**	**93,306**	**91,979**	**90,418**	**100%**	**175**	**193**	**199**	**178**	**178**

Source: FPL's 2016-2020 distribution service reliability reports.
Notes: (1) "Other Causes" 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 10 causes of outage events, and excludes those identified as "Other Causes."

Florida Public Utilities Company

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

	2016	2017	2018	2019	2020
Fernandina(NE)	16,037	16,286	16,410	16,727	17,138
Marianna (NW)	12,663	12,764	11,729	12,135	12,242
FPUC System	**28,700**	**29,050**	**28,139**	**28,862**	**29,380**

Source: FPUC's 2016-2020 distribution service reliability reports.

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)				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
NE	128	93	137	82	121	1.41	1.04	1.23	0.87	1.45	90	89	112	94	83
NW	258	197	178	283	209	2.63	2.41	1.75	2.85	2.15	98	82	102	99	98
FPUC System	**185**	**139**	**154**	**166**	**158**	**1.95**	**1.64**	**1.45**	**1.70**	**1.74**	**95**	**85**	**107**	**98**	**91**

Source: FPUC's 2016-2020 distribution service reliability reports.

Table A-11
FPUC's Primary Causes of Outage Events

	Adjusted Number of Outage Events						Adjusted L-Bar Length of Outages				
	2016	2017	2018	2019	2020	Percentages	2016	2017	2018	2019	2020
Vegetation	436	354	421	357	376	34.1%	78	83	86	100	91
Animals	354	267	204	184	163	14.8%	51	56	62	66	64
Lightning	128	77	128	174	102	9.3%	82	81	98	115	107
Unknown	89	62	69	125	163	14.8%	75	89	88	78	92
Corrosion	12	-	-	-	-	-	102	-	-	-	-
All Other	58	44	61	64	36	3.3%	65	86	76	89	84
Other Weather	148	152	55	130	75	6.8%	147	168	101	140	133
Vehicle	26	30	21	132	36	3.3%	121	94	148	95	135
Defective Equipment	163	160	152	170	151	13.7%	94	117	101	123	112
FPUC System	**1,414**	**1,146**	**1,111**	**1,336**	**1,102**	**100%**	**81**	**93**	**86**	**101**	**96**

Source: FPUC's 2016-2020 distribution service reliability reports.
Notes: (1) "Other Causes" category is the sum of many diverse causes of outage events which individually are not one of the top 10 causes of outage events.
(2) Blanks are shown for years where the quantity of outages was less than one of the top 10 causes of outage event.

Gulf Power Company

Table A-12
Gulf's Number of Customers (Year End)

	2016	2017	2018	2019	2020
Fort Walton*	116,745	118,010	119,219	120,399	119,990
Panama City*	116,702	117,847	114,413	115,446	119,041
Pensacola*	221,968	225,949	229,351	232,438	234,599
Gulf System	**455,415**	**461,806**	**462,983**	**468,283**	**473,630**

Source: Gulf's 2016-2020 distribution service reliability reports.
Note: *Gulf renamed its regions: Central is Fort Walton, Eastern is Panama City, and Western is Pensacola.

Table A-13
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)				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Fort Walton*	91	110	86	58	40	1.04	1.05	0.90	0.73	0.58	88	105	95	79	69
Panama City*	93	108	103	69	52	1.21	1.27	1.30	1.12	0.78	77	85	79	62	67
Pensacola*	97	123	99	71	48	1.15	1.24	1.42	1.02	0.73	85	100	70	69	65
Gulf System	**95**	**116**	**97**	**67**	**47**	**1.14**	**1.20**	**1.26**	**0.97**	**0.71**	**83**	**97**	**77**	**69**	**67**

Source: Gulf's 2016-2020 distribution service reliability reports.
Note: *Gulf renamed its regions: Central is Fort Walton, Eastern is Panama City, and Western is Pensacola.

Table A-14
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)				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Fort Walton*	1.5	2.1	1.6	2.0	1.4	0.22%	0.91%	0.51%	0.11%	0.19%
Panama City*	1.6	2.3	1.9	2.3	1.8	1.84%	0.86%	2.15%	0.82%	0.96%
Pensacola*	2.7	2.7	2.4	2.1	1.3	0.77%	0.80%	1.68%	0.36%	0.23%
Gulf System	**2.1**	**2.4**	**2.1**	**2.1**	**1.4**	**0.91%**	**0.84%**	**1.49%**	**0.41%**	**0.40%**

Source: Gulf's 2016-2020 distribution service reliability reports.
Note: *Gulf renamed its regions: Central is Fort Walton, Eastern is Panama City, and Western is Pensacola.

Table A-15
Gulf's Primary Causes of Outage Events

	Adjusted Number of Outage Events						Adjusted L-Bar Length of Outages				
	2016	2017	2018	2019	2020	Percentages	2016	2017	2018	2019	2020
Animals	3,557	3,514	2,189	2,495	1,838	19.3%	65	70	69	65	65
Lightning	1,913	1,633	1,623	1,437	479	5.0%	138	164	131	117	114
Unknown	748	818	1,121	1,211	1,333	14.0%	82	101	102	89	96
Vehicle	381	377	389	443	247	2.6%	164	171	181	150	146
All Other	457	428	442	652	863	9.1%	100	113	110	98	147
Vegetation	1,954	2,460	2,521	2,485	2,311	24.3%	116	144	119	102	112
Other Weather	220	366	257	331	766	8.1%	126	243	145	116	148
Defective Equipment	2,714	2,804	2,618	2,630	1,669	17.6%	132	140	140	132	134
Gulf System	**11,944**	**12,400**	**11,160**	**11,684**	**9,506**	**100%**	**107**	**125**	**116**	**103**	**112**

Source: Gulf's 2016-2020 distribution service reliability reports.
Notes: (1) "Other Causes" category is the sum of many diverse causes of outage events, which individually are not among the top 10 causes of outages events.

Tampa Electric Company

Table A-16
TECO's Number of Customers (Year End)

	2016	2017	2018	2019	2020
Central	196,431	202,572	205,611	209,057	211,631
Dade City	14,492	14,801	14,954	15,305	15,604
Eastern	119,286	122,667	125,030	127,437	129,781
Plant City	59,381	61,187	62,131	63,502	63,954
South Hillsborough	75,450	80,194	84,636	91,219	96,568
Western	199,891	203,805	206,962	210,151	211,714
Winter Haven	71,888	74,403	75,778	78,282	80,016
TECO System	**736,819**	**759,629**	**775,102**	**794,953**	**809,268**

Source: TECO's 2016-2020 distribution service reliability reports.

Table A-17
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)				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Central	63	64	87	63	58	0.85	0.82	1.04	0.91	0.77	74	78	83	70	75
Dade City	153	153	168	191	186	1.79	2.10	1.98	2.15	2.23	86	73	85	89	83
Eastern	85	63	85	83	56	0.99	0.89	1.00	1.15	0.85	86	72	86	72	66
Plant City	113	92	112	114	107	1.20	1.44	1.55	1.60	1.51	94	64	72	71	71
South Hillsborough	104	84	99	52	53	1.35	1.20	1.43	1.01	0.96	77	70	69	52	55
Western	81	71	97	77	71	0.94	0.99	1.12	1.00	0.86	86	72	86	78	83
Winter Haven	82	76	93	67	71	0.94	1.21	1.27	1.01	1.03	87	62	73	67	68
TECO System	**83**	**73**	**95**	**76**	**68**	**1.00**	**1.03**	**1.18**	**1.07**	**0.94**	**83**	**71**	**80**	**71**	**72**

Source: TECO's 2016-2020 distribution service reliability reports.

Table A-18
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)				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Central	7.8	7.9	8.1	7.9	6.4	0.96%	0.18%	1.41%	0.81%	0.29%
Dade City	14.7	14.2	14.8	12.3	10.5	2.72%	6.64%	4.73%	11.17%	7.67%
Eastern	9.2	8.8	10.2	10.8	6.4	0.47%	1.79%	0.77%	2.10%	1.00%
Plant City	13.4	12.8	14.7	13.7	10.8	2.15%	3.02%	1.10%	4.03%	3.38%
South Hillsborough	12.8	10.8	11.1	9.4	8.3	0.17%	2.43%	2.93%	4.62%	2.92%
Western	8.8	8.4	8.3	9.5	7.8	0.63%	0.30%	1.19%	1.69%	0.33%
Winter Haven	9.7	9.7	10.0	10.7	10.4	1.81%	0.20%	2.23%	0.39%	0.47%
TECO System	**9.6**	**9.2**	**9.6**	**9.8**	**7.8**	**0.92%**	**1.07%**	**1.54%**	**2.10%**	**1.13%**

Source: TECO's 2016-2020 distribution service reliability reports.

Table A-19
TECO's Primary Causes of Outage Events

	Adjusted Number of Outage Events						Adjusted L-Bar Length of Outages				
	2016	2017	2018	2019	2020	Percentages	2016	2017	2018	2019	2020
Lightning	1,751	1,258	1,258	1,436	1,340	13.7%	255	206	207	222	175
Animals	1,178	1,632	1,632	1,788	1,162	11.8%	97	105	96	94	84
Vegetation	1,959	2,108	2,108	2,357	2,434	24.8%	214	195	200	197	180
Unknown	931	972	972	1,356	1,152	11.7%	144	141	134	129	116
Vehicle	363	401	401	387	398	4.1%	211	214	78	231	205
Defective Equipment	2,581	2,494	2,494	2,459	2,606	26.6%	243	203	190	190	189
All Other	428	649	408	721	718	7.3%	173	147	188	148	128
TECO System	**9,191**	**9,514**	**9,273**	**10,504**	**9,810**	**100%**	**203**	**177**	**180**	**173**	**166**

Source: TECO's 2016-2020 distribution service reliability reports.
Notes: (1) "Other Causes" category is the sum of many diverse causes of outage events which individually are not among the top 10 causes of outages events.

Appendix B. - Summary of Municipal Electric Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

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									
Alachua, City of	Yes	Yes. The City design is based on 110 mph wind load with a 1.25 (minimum) safety factor for wind gusts.	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. In October 2015, the City completed its first eight-year cycle.	Due to Covid-19, the 2020 inspections were postponed to 2021. Approximately 400 poles (16%) are scheduled to be inspected in 2021.	No inspections were completed in 2020.	No inspections were completed in 2020.	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 30% of the facilities are trimmed each year. GIS mapping system is used to track trimming annually and to budget annual trimming projects.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

	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. The City is currently guided by the EWL standards as specified in the 2017 edition of the NESC. The City lies within the 100-110 mph region.	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.	The City began round two of its eight-year pole inspection cycle in 2016 and elected to perform pole inspections every other year. In 2020, the City inspected 1,330 poles.	220 (16%) distribution poles failed inspection in 2020. The reasons for failure were ground decay, rotten pole, shell rot, split top, woodpecker holes, and top decay.	112 poles were replaced in 2020 ranging in size from 30 to 50 feet Classes 3 to 5.	The City is on a four-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. The City is currently contracting additional line clearance personnel to maintain the four-year cycle.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

	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
City of Jacksonville Beach d/b/a Beaches Energy Services	Yes. BES has a program in place where all OH distribution lines, roughly three city blocks inland of the Atlantic Ocean, will be replaced with UG conductors, pad mounted transformers, switches, and junction cabinets.	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 has a distribution wooden pole replacement program where BES will replace the wooden poles with concrete. To date, 774 concrete poles have been placed in service.	BES eliminated all exposed "live-front" connected transformers. 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.	424 (100%) transmission structure inspections were planned and completed. In 2020, 485 (9.25%) distribution poles were inspected.	No transmission structures failed the inspection. In 2020, 16 distribution structures failed inspection due to decay.	No transmission structures failed the inspection. In 2020, 16 poles were replaced.	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 2020 have been fully completed and the vegetation management activities for 2021 are on schedule.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

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									
Blountstown, City of	Yes	Yes. The City of Blountstown adopted a larger minimum pole standard of a Class 3 pole in 2007 in an effort to harden facilities.	The City does not have any underground facilities. The City raised its substation facilities above historical flooding so that the components at the facilities will not suffer directly from flooding.	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 2,084 utility poles and does visual inspections of all poles once a year. The City took a direct hit from Hurricane Michael, which resulted in a rebuild of its system. The City is retagging all poles due to this event.	100% of all poles are visually inspected annually.	53 (2.5%) poles required replacement because of ground rot, extreme cracking and warping and upgrading the lines. The City also reconductored about 3,500 linear feet of distribution line.	53 Class 5 poles were replaced with Class 3 poles.	The City has a four-year tree trimming cycle with a 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 2021.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

	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	The agreements include language that specifies that the third-party attacher, not the City, has the burden of assessing pole strength and safety before attaching to the pole. The City performs follow-up audits on the attachments.	The City has no transmission facilities. All distribution poles are on a five-year cycle. The inspection includes visual, sound/bore, pole condition, and wind loading.	Due to Covid-19, no poles were inspected.	Due to Covid-19, no poles were inspected.	Due to Covid-19, no poles were inspected.	The City checks vegetation throughout the year and trims on a case-by-case basis. Outside of easement is done on an as needed basis.	The City completed major additions (16 miles) to the system which has and will continue to increase the City's VM area. The City has contracted with Davey Tree Service.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

	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
Chattahoochee, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue.	Yes	Yes. The pole attachment language states that the third-party affiliates, not the City, has the burden of assessing pole strength and safety before attachment to a pole. The City has the right to inspect, at any time, all construction work that is performed.	The distribution facilities are on a three-year cycle inspection using visual, excavation around base, sounding, and probing with steel rod. The City does not have any transmission facilities.	1,957 distribution poles were inspected in 2020.	In 2020, 36 (2%) poles failed the inspection due to ground line and pole top decay.	No poles were replaced. A schedule has yet to be determined.	The City trims the distribution system on an annual basis. This cuts down on animal related 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 2020

	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.	In 2020, the City contracted with Power Pole Maintenance Company to perform the pole inspections, using sound and bore with calculations. Due to the City's small size, the entire system was completed in three months. The City performs infrared inspections on the facilities on a three- to four-year cycle.	In 2020, 2,300 (100%) poles were inspected.	180 (7.8%) poles did not pass inspection, due to rot below the ground or excessive split top.	10 (0.4%) poles were replaced. 1,668 poles were excavated to 18 inches and remedial paste treatment and paper barrier were applied. 419 poles were bored in a step pattern beginning at ground line and Cobra Rods were placed for treatment.	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 2020 as every year.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

	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
Fort Meade, City of	Yes	Yes	The City is not a coastal utility and is not located in a flood zone.	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 inspected 350 (12.5%) poles in 2020. The City has approximately 2,800 distribution poles.	70 (20%) poles failed inspection. The poles failed inspection due to ground decay, pot rot, top decay and damage caused by wildlife.	The City replaced 70 (20%) poles with poles ranging from 45 feet to 30 feet, Class 5 to Class 4.	The facilities are on a three-year inspection cycle. All vegetation within a 6-foot clearance of the distribution lines are cleared to 6-foot or greater distance.	The City has completed approximately 33% of trimming in 2020.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

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 as deemed necessary.	Yes	Yes	FPUA utilizes a contractor to perform inspection of all wood distribution poles on an eight-year cycle and the transmission poles on a three-year cycle. The inspection includes visual inspection from ground line to the top and some excavation is performed on older poles.	1,656 distribution and 34 transmission poles were planned for inspection in 2020. However, due to Covid-19, no inspections were completed.	Due to Covid-19, no inspections were completed.	FPUA replaced 232 wood distribution poles in 2020.	FPUA maintains a three-year VM cycle for transmission and distribution system. FPUA also aggressively seeks to remove problem trees when trimming is not an effective option.	FPUA spent $330,000 for the trimming, removal and disposal of vegetation waste in fiscal year 2020, 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 2020

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									
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 below ground line inspection to 18 inches around the base of each pole.	No transmission poles were inspected 2020. GRU inspected 4,116 distribution poles in 2020.	No transmission poles were rejected. 52 (1.26%) distribution poles failed due to shell rot, mechanical damage, exposed pocket, enclosed pocket, split top, woodpecker damage, and decayed tops.	52 distribution poles were replaced in 2020, ranging in size from 30 feet to 50 feet Class 3 to Class 6.	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 in 2020, with 42 trees identified for trimming and /or removal. 200 distribution circuit miles were trimmed in 2020.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

	The extent to which Standards of construction address:					Transmission & Distribution Facility Inspections				Vegetation Management Plan (VMP)	
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Green Cove Springs, City of	Yes	Yes	Yes. All facilities are installed a minimum 8 inches above the roadway.	Yes	Yes	The City does not have transmission lines as defined by 69kV and above. The City's goal is to ride its electric distribution system once a year and identify poles that will need to be replaced in the following year budget process.	In 2020, the City planned to inspect 25% of its poles and actually inspected approximately 1,400 or 30% of its poles.	In 2020, 137 (10%) wood distribution poles were replaced. The poles failed visual inspection due to base rot and wood decay.	The poles that were replaced ranged from 35 feet to 60 feet, all Class 2.	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 3 phase circuits was trimmed in 2020. 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 2020

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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 2020.	6 (0.051%) poles failed inspection.	All 6 poles were replaced. The poles were 30 feet, Class 3. The Town did not change out any conductors in 2020.	Written policy requires one-third of entire system trimmed annually.	10% of the system was trimmed in 2020. The Town is reviewing its vegetation management practices and policies and they will be revised for the fiscal year 2020/2021.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

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Homestead Energy Services	Yes	Yes	Yes. Participating in PURC's study on the conversion of overhead to underground facilities through the Florida Municipal Electric Association. In addition, HES implemented new policies to minimize the impact of flooding.	Yes	Yes. Pole attachment policy includes language in which the third-party attacher has the burden of assessing pole strength and safety before attaching to a pole. HES performs follow-up audits to ensure the attachment is properly installed and maintained.	All transmission poles concrete. With the use of drone technology, the transmission system will be on a three-year cycle performing thermographic inspection. The distribution facilities are on an eight-year cycle using sound and bore and loading evaluations and the annual thermographic inspection was completed March 2020.	50% of the transmission system was scheduled for inspection during the 2018/2019 fiscal year with 25% of the transmission system inspected. HES completed 7.6% (2,382 poles) of its distribution poles drone inspection during the 2018/2019 fiscal year. Pole inspections and drone inspections are scheduled to resume in 2021.	From the 2017 and 2019 inspections, 4 (1.5%) transmission poles of the 135 poles inspected failed inspection due to cracks in the concrete top and damaged insulators. From the 2017 and 2019 inspections, 101 (2.1%) distribution poles of the 4,713 poles inspected failed inspections due to ground rot, upper roof rot, and split tops.	Two transmission poles were remediation in 2020 and the other two are scheduled to be remedied in 2021. Based on the results of the 2016 and 2017 inspections, HES installed 2 new poles and replaced 30 poles in 2020. The poles ranged from 40 to 45 feet, Class 2 to Class 4. 15 poles were removed and the facilities were placed underground, which is approximately ½ mile.	Trimming services are contracted out and entire system is trimmed on a two-year cycle. HES added an additional tree trimming crew at the end of 2016. 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.

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JEA	Yes	Yes	JEA does not have specific policies or guidelines to address distribution facilities; however, JEA does currently have written Storm Policy and associated procedures for Category 3 storms or greater regarding its generating plants.	Yes	Yes	Transmission circuits are on a five-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.	34 transmission circuits (which includes many poles on each circuit) and 6,757 distribution poles were inspected in 2020.	Based on 2020 inspection: 4 transmission wooden poles failed inspection and 1,290 (19%) distribution poles failed inspection due to ground decay, pole top decay, and middle decay.	In 2020, 53 transmission wood poles and 1,117 distribution poles were replaced. The poles listed as emergency poles (under 1%) are replaced immediately.	The transmission facilities are in accordance with NERC FAC-003-1. The distribution facilities are on a 2.5-year trim cycle as requested by their customers to improve reliability.	JEA fully completed all 2020 VM activities and is fully compliant with NERC standard for vegetation management.

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	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares									
Keys Energy Services, City of Key West	Yes	Yes	Yes	Yes. The Keys will ensure all future construction occurs adjacent to public roads, will relocate all primary high voltage facilities that are currently inaccessible over a three-year period, and will develop a multi-year program to relocate all secondary facilities that are currently inaccessible. Phase I was completed in 2018 and Phase II was completed in 2019. Phase III is a multi-year program.	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. The Keys distribution poles are on an eight-year inspection cycle. 100% of the distribution poles were visually inspected and 50% were sound and bore inspected in 2020 by Osmose, Inc.	An inspection of all transmission facilities was completed in 2019. From the 2020 inspection, 5,826 concrete poles, 1,336 ductile iron poles, and 15,740 wooden distribution poles were inspected. In addition, 344 concrete, 67 ductile iron, and 3,267 AT&T distribution poles were inspected in 2020.	No transmission poles failed inspection. 44 (0.8%) concrete poles and 144 (3.4%) wooden poles failed inspection in 2020. The reasons for the failures are decayed top, excessive cracking, hollow, mechanical damage, rotten ground rot, ground shell rot, woodpecker damage and fire damage. 1 concrete and 119 wooden AT&T poles failed inspection.	No transmission facilities failed inspection. The Keys repaired concrete spalling on transmission structures in 2019. The Keys applied for a Hurricane Irma Hazard Mitigation Grant to install lifejacket technology on concrete pole structures not currently exhibiting spalling. This is to proactively prevent the spalling. The Keys will issue a bid for replacement on the failing distribution poles in 2021.	The Keys' 241 miles 3 Phase distribution lines are on a two-year trim cycle and 68 miles of transmission lines are a quarterly cycle. The Keys tree crews remove all invasive trees in the rights-of-way and easements. The trees are cut to ground level and sprayed with an herbicide to prevent re-growth.	In 2020, the Keys had 3 feeder outages and 15 lateral outages due to vegetation. The Keys will strive to continue to improve its VMP to further reduce outages.

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	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares									
Kissimmee Utility Authority	Yes	Yes	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 three-year cycle and distribution poles are inspected on an eight-year cycle.	94 (100%) wooden transmission poles were inspected in 2020. 1,663 distribution poles were inspected in 2020, which is 11.77% of the system.	One (0.06%) distribution pole failed inspection due to shell rot. No new failures were identified during the transmission inspection.	In 2020, no transmission poles were replaced and 1 distribution pole is scheduled for replacement. The distribution pole was 35 feet, Class 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 2020. Approximately 104 miles (33%) of distribution facilities were inspected and remediated in 2020.

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	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares									
Lake Worth Utilities, City of	Yes	The facilities are not designed to be guided by the extreme loading standards on a system wide basis. However, now, CLW is guided by EWL standards for new construction and major planned work.	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.	In 2020, CLW inspected 490 poles.	185 poles were deemed unsatisfactory in 2020. Poles are replaced when pole prod penetration exceeds 2 inches or there is evidence of pole top shell rot.	CLW replaced 170 poles in 2020, with 15 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. Lakeland Electric initiated its second eight-year cycle in 2017.	There were 81 (12.5%) transmission poles planned for inspection and 76 (11.7%) were completed. There were 7,080 (12.5%) distribution poles planned for inspection and 6,836 (12.1%) completed.	4 (5.2%) transmission poles failed inspection due to decay. 518 (7.6%) distribution poles failed inspection due to decay.	All poles recommended in 2020 were assessed for appropriate action. Zero distribution poles were reinforced and 580 distribution poles were replaced, repaired, or removed in 2020. 1,733 distribution poles were deferred to 2021. One transmission pole was repaired or replaced in 2020 and 12 replacements were deferred to 2021.	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 inspected in 2020. 22 miles of 69kV transmission lines were inspected in 2020. LE completed 233 miles of distribution lines for 2020.

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Leesburg, City of	Yes	Yes.	Leesburg is approximately 60 miles inland from the Atlantic and Gulf coasts and is not subject to major flooding or storm surge.	Yes	Yes. The written procedures include pole loading and safety clearances for attachments by others on the distribution poles.	No transmission facilities. The Distribution facilities are on an eight-year cycle using visual, sound/bore, excavation method, and ground level strength test.	No poles were inspected in 2020. The current inspection cycle was started in 2016. The city has one section, with approximately 3,000 poles, left to inspect.	No inspections were completed in 2020.	During 2020, 125 poles were replaced. In some areas, underground distribution facilities were installed in place of the rejected poles.	Five-year trim cycle for feeder and lateral circuits. Problem trees are trimmed or removed as identified.	In 2020, 38.8 miles of distribution lines were trimmed as planned.

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	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares									
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. However, using consulting engineers, all current Extreme Wind Loading Standards are incorporated into designs for new construction, major rebuilds, or targeted critical infrastructure facilities. The City is 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. The pole attachment language includes that the third-party attacher has the burden of assessing the impact on pole strength and safety before attaching to the pole.	The City inspects all the distribution facilities annually by visual and sound inspections.	The City continuously inspected the distribution facilities in 2020 by visual and sound method. 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 two 30-foot poles, three 35-foot poles, and, seven 40-foot poles.	The City is continuous tree trimming in easements and rights-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.

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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
Mount Dora, City of	The City retained an engineering firm and developed construction standards for 12kV 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 engaged a contractor to inspect and treat all wood poles on December 5, 2017. The project was completed in 2019.	The City completed 100% of planned distribution inspections in 2020.	Detailed records are not available at this time; however field inspections were completed between March and June 2020 and all poles in need of minor maintenance were repaired.	The city had 1,742 wooden poles as of January 1, 2020. The City's table shows 35 wooden poles were replaced. The wooden replaced range from 30 feet to 45 feet. The wooden poles were replaced with 35 to 55 feet concrete, fiberglass, or steel poles.	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 rights-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 2020

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									
New Smyrna Beach Utilities Commission, City of	Yes	Yes	Yes	Yes	Yes. The third party attachment agreements include language in which the attacher, not the City, has the burden of assessing pole strength and safety before attaching to the pole. The City performs follow-up audits of attachments.	The transmission and distribution facilities are on an eight-year inspection cycle. Additionally, the facilities are inspected as part of the City's normal maintenance when patrolling the facilities.	0 (0%) transmission poles were inspected during 2020 as 100% transmission poles were inspected in 2012 and 18% were inspected in 2017. 1,502 (12.5%) distribution poles were inspected in 2020.	0 (0%) transmission poles were rejected in 2020. 532 (35%) distribution poles failed inspection due to decay.	No transmission poles were replaced in 2020. The City replaced/ repaired 260 distribution poles. The poles are sizes 30-55 feet and Class 2-3.	In 2020, the City transitioned its VM to a 3-year programmatic power line clearing plan for distribution overhead facilities. This includes professional trimming, clear cutting ROW/Easements and removing trees and other vegetation near distribution power lines. In 2021, the City transmission lines, ROWs, easements will be put on the 3-year schedule similar to the distribution system.	The City trimmed approximately 104 (45%) distribution line miles in 2020. 110 trees were removed. In 2020, transmission lines were patrolled and "hot spot" trimmed, as needed.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

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 an eight-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 has no transmission poles.	The City inspected 129 (8.25%) of 1,562 the poles in 2020.	1 (0.8%) of the poles was rejected due to rod and split top from the inspection in 2020.	One 40 foot, Class 2 distribution pole was replaced in 2020.	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 rights-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 2020

	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 Electric Utility, 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. 2020 is the sixth year in the second eight-year cycle.	No transmission poles were inspected in 2020, since 100% were inspected in 2015. The transmission poles will again be inspected in 2023, which is the beginning of the next cycle. 3,122 (9.8%) of the 31,602 wood distribution poles were inspected in 2020.	28 (0.9%) distribution poles failed inspection due to shell rot.	25 (0.8%) of the distribution poles were braced and 28 (0.9%) poles were replaced. Ocala noted that poles remediated by bracing are not counted in the rejection numbers, since they still meet the standards with the immediate bracing applied. Bracing occurs at the time of inspection.	The City is on a four-year trim cycle for distribution and three-year trim cycle for transmission, with additional pruning over areas allowed minimal trimming. In 2013, an IVM style-pruning program was implemented which uses manual, mechanical, and chemical control methods for managing brush.	In 2020, the City trimmed one-fourth of the distribution system and 100% the transmission system. Ocala uses mechanical trimmer, trim lifts and herbicide methods for its VM.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

	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.	Due to Covid-19, OUC's contractor performing the inspections did not inspect any poles in 2020. OUC is currently in the process of performing 2020 and 2021 pole inspections.	No pole inspections were completed in 2020.	OUC replaced 70 wood poles that were identified in previous year's inspections in 2020.	222 miles of transmission facilities are on a three-year trim cycle. 1,323 miles of distribution facilities are on a three-year trim cycle. OUC follows safety methods in ANSI A300 & Z133.1.	For 2020, 446 distribution miles were planned and 348 miles (78%) were completed. For 2020, 99 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 2020

	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
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 2,869 distribution poles in 2020. Detailed inspections were carried out on all 31 transmission poles for 2020. All transmission poles are made of concrete and found to be in good condition.	18 distribution poles (0.6%) failed inspection. The poles showed signs of rotting around the base of the pole or the top of the pole. In addition, some poles had stress fractures near third-party attachments. The poles were replaced with wood poles. No transmission poles failed inspection.	18 (0.6%) distribution poles were replaced. The poles ranged from 25 feet to 50 feet, Class 3 to Class 7.	The City trims its electric system rights-of-way on a regular basis using in-house crews. The City strives to trim 25% of the system per year. The City employed a contractor in 2020 to trim and remove trees on the transmission system.	Approximately 30 miles (33%) of vegetation trimming was planned and completed on the distribution system in 2020. 100% of the City's transmission lines were inspected in 2020.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

	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. The District has less than 2 miles of overhead distribution lines and roughly 297 miles of underground distribution.	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 a visual inspection monthly of its overhead transmission system and inspects the distribution facilities every eight years.	All distribution poles were inspected and treated by an outside contractor in 2013. The District has 8 wooden distribution poles. No inspections were completed in 2020. The next inspection is scheduled to begin in 2021.	All distribution poles passed inspection.	The District's transmission system has no wooden poles in service. The transmission system includes approximately 14 miles of overhead transmission ROW. The distribution system is essentially an underground system with 8 wooden poles.	14 miles of transmission rights-of-way is ridden monthly for visual inspection. The District contracts tree trimming each spring to clear any issues on rights-of-way.	Periodic inspections in 2020 yielded minimal instances of vegetation encroachment. In each scenario, tree-trimming services were engaged to remove any concerns. The District continues its long-term vegetation management plan to ensure all clearances remain within acceptable tolerances.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

	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. The City participates in the PURC granular wind research study through the Florida Municipal Electric Association.	Non-coastal utility; therefore storm surge is not an issue.	Yes	The City allowed pole attachments from three third-party attachers.	The City is in process of having all their poles GIS mapped. To date, they have approximately two-thirds of their poles mapped and inspected. The poles are replaced as needed on a visual basis.	One-half of the City's poles (1,861) were inspected.	In 2020, 28 poles (1.5%) were found to be rotten or needed support.	The City has no transmission poles. The distribution poles that were replaced in 2020 ranged from Class 2 50-foot poles to Class 2 30-foot poles.	The City trims their trees upon visual inspection along with utilizing tree trimming contractors. The City trims 33% of their electrical distribution system annually. The City uses the standard of trimming 15 feet on both sides of the poles and installing "squirrel guards."	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 2020. 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 2020

	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
Tallahassee, City of	Yes	Yes	Non-coastal utility; therefore storm surge is not an issue. However, the City's Electric Purdom Generation Station in St. Marks is subject to storm surge and flooding. There is a plan in place to address flooding and storm surge that is reviewed annually.	Yes	Yes	Every 8 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. The City performs a climbing and physical inspection of its transmission structures on a five-year cycle.	In 2020, a complete inspection of the City's transmission poles was completed. All distribution poles were inspected in 2020.	The annual climbing inspection identified 0 (0.0%) transmission steel or concrete poles/structures to be rejected. The City found 11 (0.4%) wooden transmission poles failed inspection due to woodpecker damage and plans to replace them in 2020. 1,301 (2.4%) distribution wooden poles were rejected during the 2020 inspections.	28 transmission poles were replaced. The poles ranged from 65 feet to 75 feet, all were Class 2. The City replaced 311 distribution poles and structures in 2020. The poles ranged from 25 feet to 65 feet, Classes 2 to 7. These poles were replaced with a stronger Class size pole.	The transmission facilities are on a 3-year trim cycle with target of 20 feet clearance on lines. The distribution facilities are on an 18-month trim cycle on overhead lines to 12 feet clearances.	The transmission rights-of-way & easements were mowed in 2020. Approximately 1,040 miles of overhead distribution lines were managed in 2020. Tallahassee uses a mechanical trimmer and trim lifts to trim vegetation. In addition, Tallahassee does periodic spot spraying and vegetation maintenance.

Appendix B. Summary of Municipal Electric Utility Reports
Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

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 pole attachment agreements include language that the third-party attacher has the burden of assessing pole strength and safety before attaching to the pole. The City will perform follow-up audits of attachments to ensure the attachment is properly installed and maintained.	The City of Wauchula has a third-party contractor inspect its substation yearly and 100% of distribution poles in 2016-18. The next scheduled pole inspection will be in 2023.	The City of Wauchula has a third-party contractor inspect its substation yearly and 100% of distribution poles in 2016-2018. The poles have been treated and are expected to have a minimum of 10 years of service left.	Approximately 3% (out of 3,200 poles) have failed due to poles rotting.	47 distribution poles were replaced in 2020 ranging from 35 feet to 55 feet, all Class 4 and two 60-foot Class 3 poles.	The policy on vegetation management includes trimming trees and herbicides for vines annually or as needed.	The City completed herbicide spraying in 2020. 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 2020

	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 a non-costal utility; therefore storm surge/flooding is not an issue.	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.	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.	100% of 1,102 poles were inspected from 2018-2020. This is the third year of the three-year cycle.	In 2020, no poles were found defective during the inspection.	No poles were replaced in 2020 since no poles were found defective.	The distribution lines are on a three-year trim cycle with attention to problem trees during the same cycle. Any problem tree not in rights-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 2020

	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, 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 the 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 2020; however, WPE routinely inspect poles that are involved with daily jobs and work orders.	The City did not replace any wood poles in 2020. The City completed replacement of one concrete streetlight pole in 2020 required due to a vehicle accident.	Based on the 2007 full system inspections, all repairs and replacements have been made. The City routinely inspects the poles involved with daily jobs and work orders. The concrete pole replaced in 2020 was a 35 feet Type 1.	Vegetation management is performed on a three-year trim cycle, which is augmented as needed between cycles.	The trimming crews trimmed approximately 17.5 miles of distribution lines in 2020.

Appendix C. - Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

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									
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. However, the wind standard for Central Florida's facilities is between 100 mph inland and 130 mph at the coast.	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 43 miles of the transmission facilities in 2020. 10,958 (12.55%) distribution poles were inspected in 2020.	Of the 10,958 distribution poles inspected in 2020, 102 (0.93%) were rejected. These poles are scheduled to be replaced.	218 distribution poles were replaced in 2020. The poles varied from 30 feet to 45 feet, Class 3 to Class 7.	Trees are trimmed or removed within 15 feet of main lines, taps, and guys on a four-year plan.	In 2020, 640 miles of the 3,170 miles of primary overhead line on the system were trimmed.

Appendix C. - Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

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									
Choctawhatchee Electric Cooperative, Inc.	Yes	Yes	Yes	Yes	Yes. The language in the third-party attachment agreements include that the third-party attachers have the burden of assessing pole strength and safety before attaching to a pole. In addition, CHELCO inspects and physically counts 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 2020, 7,484 poles or 8.7% of 60,835 total poles were inspected.	368 poles or 4.9% of the poles failed inspection ranging from spit top to wood rot.	During 2020, CHELCO replaced 1,037 poles, which included failed poles from the 2020 inspection and remaining poles from the 2019 inspection.	Current rights-of-way program is to cut, mow, or otherwise manage 20% of its rights-of-way on an annual basis. Standard cutting is 10 feet on either side of primary from ground to sky. In 2015, the Coop increased the standard overhead primary line easement area from 20 feet to 30 feet.	In 2020, 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 Coop 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 2020

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									
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. The pole attachment agreements include language which specifies that the third-party attachers have the burden of assessing pole strength and safety before attaching to a pole. Clay will perform a complete attachment inspection and count. The audit for 2020 was postponed due to the Covid-19 pandemic.	Clay's transmission facilities are on a ten-year cycle, which includes sound/bore techniques, excavation, climbing inspection (four-year cycle), and ground (two-year) patrol. Clay's distribution system is now on a ten-year cycle using excavation, sound and bore at the ground line and visual inspection (five-year cycle) and system feeder inspection excluding ground line (five-year cycle).	Clay completed the transmission ground patrol inspection in 2016 & the next inspection will be done in 2026. A climbing and helicopter inspection was completed on the transmission system in 2020. Additionally, in 2020, Clay performed the system feeder and ground line pole inspection. The total number of distribution poles inspected was 46,025.	The inspection found 35 (1.8%) of 1,855 transmission poles inspected required some form of maintenance. 2,369 (5.1%) distribution poles were rejected due to various reasons including ground rot, top decay, holes high, and split.	29 transmission poles were replaced with 45 to 80 feet, Class 1 poles. Six transmission poles are scheduled to be replaced in 2021. 2,544 distribution poles were replaced with poles ranging from 20 feet to 55 feet, Class 1 to 7. Clay notes that work completed in 2020 may include carryover work from 2019 inspections.	Clay's VMP for the transmission facilities is on a three-year cycle and includes mowing, herbicide spraying and systematic re-cutting. 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 re-cutting.	In 2020, Clay mowed 58.19 miles, sprayed 53.62 miles, and recut 45.49 miles of its transmission rights-of-way. In 2020, Clay mowed 2,512.43 miles, sprayed 2,313.41 miles, and recut 1,969.9 miles of its distribution circuits.

Appendix C. - Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

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									
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.	4,200 (12%) distribution poles were planned and 3,612 (10.3%) inspections were completed in 2020. Escambia River had contractor delays. Escambia River does not own any transmission poles.	Approximately 132 (3.6%) poles failed inspection in 2020. The common cause was pole rot at the top and bottom of the poles.	In 2020, Escambia River replaced 352 poles. The majority of these poles were reported from the 2019 inspection and carried over to 2020. These numbers reflect various pole sizes and Classes.	Escambia River's distribution facilities are on a five-year trim cycle. Distribution lines and rights-of-way is cleared 20 feet, 10 feet on each side.	In 2020, approximately 381 miles (22.4%) of the power lines were trimmed with 340 miles (20%) planned.

Appendix C. - Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

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									
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 an eight-year cycle and was completed in 2018. All 11,808 distribution poles have been inspected and 10,698 wood poles were tested and treated with a reject rate of 3.85%.	100% of the transmission poles were inspected in 2020 by helicopter. Routine distribution pole replacement continues as new construction, upgrades and relocations efforts require.	No transmission structures failed inspections in 2020. 114 transmission water structures were inspected in 2017 and are scheduled for foundation repairs in 2021.	The inspections resulted in no transmission or distribution structures replacement in 2020.	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 rights-of-way.	100% of the transmission facilities are inspected annually and VM tasks are performed as needed. In addition, all substation properties are inspected annually and VM tasks are performed as needed. Approximately 256 circuit miles of distribution lines were trimmed in 2020. Additional distribution spot trimming was conducted as necessary.

Appendix C. - Summary of Rural Electric Cooperative Utility Reports Pursuant to Rule 25-6.0343, F.A.C. – Calendar Year 2020

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									
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 10-year sound and bore inspection cycle with excavation inspection cycle for all wood poles in addition to System Improvement Plan inspections.	100% of total 83 miles of transmission lines were planned and completed by visual inspections. 2,378 miles of distribution lines and 139 miles of underground distribution lines were planned and inspected in 2020. GEC inspected 7,347 poles in 2020.	550 (7.5%) distribution poles failed during the 2020 inspection due to decay, rot and top splits.	550 distribution poles rejected in the 2020 inspection were replaced. The poles varied in height and Classes.	All trimming is on a three-year cycle. The rights-of-way are trimmed for 10-foot clearance on both sides, and herbicide treatment is used where needed.	GEC trimmed 523 miles of distribution circuits in 2020 which included “hot spot” trimming. The transmission rights-of-way 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 2020

	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
Utility	**Major Planned Work Expansion, Rebuild or Relocation**	**Targeted Critical Infrastructures and major thoroughfares**									
Gulf Coast Electric Cooperative, Inc.	Not bound by the extreme loading standards due to system is 99.9% under the 60 feet 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. 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. Also, GCEC inspects underground transformers and other padmount equipment on a four-year cycle.	As a result of Hurricane Michael, in 2018, GCEC focused on field inventory and re-mapping of its distribution system. In 2020, GCEC completed this effort and inventoried 51,510 poles.	Of the 27,712 poles inventoried in 2020, 622 (2.2%) poles were rejected. The poles were rejected due to mechanical damage.	After Hurricane Michael, GCEC replaced over 3,000 wood poles and in 2020, GCEC replaced 404 additional wooden poles.	GCEC owns approximately 2,181 miles of overhead and 451 miles of underground distribution lines. GCEC strives to clear the entire ROW on a five-year cycle. GCEC clears between 20 and 30 feet width, from ground to sky.	GCEC trimmed approximately 500 miles of ROW in 2020. 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 2020

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									
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 ever two years for 138kV 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 climbing inspection cycle for splitting, cracking, decay, twisting, and bird damage.	In 2020, 1,300 (56.03%) transmission poles were inspected, which was 97% of the poles that were scheduled. 26,009 (16%) distribution poles were inspected, which was over 100.0% of the inspections scheduled.	0 (0%) transmission poles failed inspection due to rot. 3,064 (12%) distribution poles failed inspection due to rot/split top and woodpecker damage.	2 transmission poles were replaced with concrete and steel poles. 159 (5%) distribution poles were repaired through re-plumbing and patching. 508 poles were replaced in 2020. The sizes varied by Class 1 to Class 6.	VMP strategies include cultural, mechanical, manual, & chemical treatments and the plan is on a five-year cycle for 1 Phase distribution facilities and three years for 2 & 3 Phase distribution facilities. The 138kV transmission systems are on an annual cycle.	LCEC completed 20.6 miles (100% planned) of Transmission trimming, 360 miles (102% planned) three-phase trimming, and 668 (102% planned) miles of single-phase trimming,

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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									
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. The pole inspections are on an eight-year cycle.	In 2020, OREMC performed inspections on 9,326 (15.8%) poles. OREMC has 58,957 wood poles as of December 31, 2020.	In 2020, 39 (0.5%) poles were rejected. The cause of the rejection was ground rot and above ground damage.	The 39 poles failing inspection in 2020 are scheduled to be replaced in 2021. During the course of other projects, 695 new poles were added and 498 poles were retired in 2020.	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 rights-of-way for trimming and completed 395.7 miles in 2020. Also in 2020, contractors sprayed 512 miles of rights-of-way.

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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
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.	393 transmission (172 concrete, 23 steel, 198 wooden) poles are inspected every two years. 5,543 (8.7%) of 63,927 distribution poles were inspected.	Peace River did not replace any transmission poles in 2020. 332 (5.9%) distribution poles were rejected in 2020.	Peace River replaced 135 poles in 2020. The distribution poles receiving remediation in 2020 varied from 25 feet to 75 feet, Class 1 to 7. In addition, 20 transmission poles were changed out for storm hardening.	Peace River utilized guidelines in either RUS bulletins or other materials available through RUS. In addition, Peace River uses a Georgia Rights-of-way program, which uses a ground to sky method by removing trees. The VMP is on a four- to five-year cycle.	In 2020, the Company completed rights-of-way maintenance on 2,400 (86%) of its 2,804 miles of overhead distribution.

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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)		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
Utility	Major Planned Work Expansion, Rebuild or Relocation	Targeted Critical Infrastructures and major thoroughfares									
Sumter Electric Cooperative, Inc.	Yes	Transmission and distribution facilities are designed to withstand winds of 110 MPH in accordance with 2017 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.	Zero transmission poles were planned and inspected in 2020. 14,205 (10.5%) distribution poles were planned and inspected in 2020. 6,702 (10.6%) distribution underground structures were planned and inspected in 2020.	Zero transmission poles failed inspection. 1,192 (8%) distribution poles failed inspection. The causes are due to ground rot and top deterioration	Zero wooden transmission poles were replaced with spun-concrete poles. 2,625 distribution poles were replaced. The transmission and distribution poles ranged from 25 to 55 feet and Class 1 to Class 7. The poles replaced include pole failures from both 2019 and 2020 inspections.	Distribution and transmission systems are on a three-year trim cycle for feeder and laterals. SECO's VM includes tree trim cycles, tree removals, and herbicide treatment with a minimum 10-foot clearance and a desired clearance of 15 feet from its distribution system. The transmission system specification is a 30-foot clearance.	In 2020, SECO trimmed 412 miles for its cycle and an extra 29 miles of its transmission and distribution system. SECO removed 41,973 trees in 2020.

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Utility	**Major Planned Work Expansion, Rebuild or Relocation**	**Targeted Critical Infrastructures and major thoroughfares**									
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 2020. 14,329 (16%) distribution structures were inspected in 2020.	709 (5%) inspections of distribution poles failed due to ground line decay, excessive splitting, and woodpecker damage. Zero inspections of transmission poles failed.	826 (6%) distribution poles of total inspected were remediated by ground line treatment and 560 (4%) distribution poles were replaced. Zero transmission structures were remediated.	SVEC's facilities are on a four- to three-year inspection cycle includes cutting, spraying and visual on as-needed basis.	In 2020, 901 (20%) miles of rights-of-way were cut and in 2021, there are plans to cut an additional 905 (20%) miles. In 2020, zero miles were reported being sprayed (herbicide), nor are there any plans for spraying in 2021.

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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
Talquin Electric Cooperative, Inc.	Yes	Yes	Talquin has a very small percentage subject to storm surge. The anchoring system that Talquin applied to padmount transformers did not perform well during Hurricane Michael. Talquin is now applying a different method used by other utilities. The method involves attaching the surface equipment to a below grade vault that acts as the anchoring system.	Yes	Yes. The pole attachment agreements include language which specifies that the third-party attacher has the burden to pay the cost for assessing pole strength. Talquin and the third-party attacher will jointly inspect the attachments 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 an eight-year rotation cycle since 2007.	8,620 distribution poles were inspected in 2020. Talquin did not inspect any transmission poles in 2020.	172 (1.99%) of the distribution poles inspected were rejected.	The priority poles were replaced and the rejected poles are being inspected and repaired or replaced if necessary. Talquin replaces 30-feet Class 7 poles with stronger 35-feet Class 6 poles with guys and 35-feet Class 6 poles with 40 feet Class 4 poles as a minimum standard.	Talquin maintains its rights-of-way by mechanical cutting, mowing, and herbicidal applications.	418 (15%) miles of distribution and 1.5 (2.8%) miles of transmission rights-of-way were treated in 2020. In addition, Talquin received 1,425 non-routine requests for tree maintenance.

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Tri-County Electric Cooperative, Inc.	Yes	Yes	The current standard practice is to restrict electrification of flood prone areas. Due to natural landscape within the 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 2020, the transmission poles were visually inspected. Tri-County inspected 6,881 (12%) distribution poles in 2020.	78 (1.13%) distribution poles were rejected. The Coop repaired broken ground wires.	The 78-rejected distribution poles found during the 2020 inspection, which required replacement, are in the process of being changed out. 60 wooden transmission poles were replaced with steel poles in 2020.	The Coop attempts to acquire 30-foot rights-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.	In 2020, approximately 677 distribution miles were trimmed and 550 miles were sprayed. The Coop has approximately 2,791 miles of overhead distribution lines in four counties.

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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. In addition, WFEC contracted with Osmose Utilities Services to enhance the pole inspection program.	Prior to Hurricane Michael, WFEC inspected 7% of its poles.	Out of the 7% inspected, 5% required maintenance or replacement.	West Florida suspended its pole inspection in 2019 to concentrate on repairing the damage caused by Hurricane Michael. West Florida expects to restart the program in 2022.	West Florida's VM includes ground to sky side trimming along with mechanical mowing and tree removal.	During 2020, WFEC mowed and side trimmed 720 miles of its distribution system. Also, WFEC chemically sprayed approximately 0 miles of rights-of-way.

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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. In addition to using stainless steel construction for pad mounted equipment, WREC uses Ethylene-Propylene-Rubber insulated cable for all underground primary distribution installation.	Yes. In 2020, WREC relocated 6 miles 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 3,985 miles for 2020) by line patrol, physical and visual inspections.	68 miles or 100% of transmission facilities were inspected by walking, riding or aerial patrol. 3,985 miles of distribution facilities were inspected annually by line patrol, voltage conversion, rights-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.	3,414 wooden, composite, cement, concrete, steel, aluminum, and fiberglass poles ranging in size from 12 to 65 feet were added; 2,140 poles were retired.	In 2017, WREC contracted with an arborist company to assist with the aggressive VMP that includes problem tree removal, horizontal/vertical clearances and under-brush to ground. WREC maintains over 180 overhead feeder circuits (over 7,100 miles of line) on a trim cycle between four to five years.	All transmission lines are inspected annually. 6.0 miles of transmission rights-of-way issues were addressed in 2020. In addition, during 2020, WREC addressed 4,102 rights-of-way service orders ranging from trimming a single account to trimming an entire subdivision or area.