City of Ocala Electric Utility
Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2017

1) Introduction

a) Ocala FL/ City of Ocala Electric Utility

b) 1805 NE 30th Ave, Bldg. 400, Ocala, FL 34470

c) Randy Hahn, Interim Regulatory Manager, Office: (352) 351-6638, Fax: (352) 351-6630

2) Number of meters served in calendar year 2017

City of Ocala Electric Utility has a total electric service territory of 162 sq. miles and serves a total of 50,633 active billing electric customer meters.

Customer Break down:

Residential Customers	41,697
General Service Customers	7,838
General Service Demand Customers	1,098

3) Standards of Construction

a) National Electric Safety Code Compliance

City of Ocala Electric Utility standards, policies, guidelines, practices and procedures comply with the NESC. For electric facilities constructed on or after February 1, 2017, the 2017 NESC applies. Electric facilities constructed prior to February 1, 2017 are governed by the NESC edition in effect at the time of their construction. On December 18, 2007, the City of Ocala passed an ordinance requiring all electrical facilities for new developments to be designed and installed using underground construction methods. This ordinance will help lessen exposure to wind damage, and speed restoration efforts after future storm events.

b) Extreme Wind Loading Standards

City of Ocala Electric Utility standards, policies, guidelines, practices and procedures comply with the extreme wind loading standards of the NESC for 110 mph. Based on the *http://windspeed.atcouncil.org/* website, Ocala's ASCE 7-10 MRI 100-year is 105 mph. City of Ocala Electric Utility's self-imposed 110 mph extreme wind loading exceeds this ASCE value. It does not apply risk categories to its poles and conductors design criteria.

The City of Ocala builds all new, rebuilt, or relocated distribution and transmission level facilities to NESC Grade B (highest level) requirements.

The City of Ocala passed an ordinance on December 18, 2007 requiring electric distribution facilities for new developments to be underground. This ordinance will help lessen exposure to wind damage, and speed restoration efforts after future storm events.

c) Flooding and Storm Surges

Ocala is located 80 miles from the west coast of Florida and is not subject to storm surge and has limited exposure to flooding. Both the City of Ocala and Marion County require new developments to provide water retainage for 100 year, 24 hour events. The previous standard was a 10 year, 24 hour event. City of Ocala Electric Utility practices do not allow poles and underground equipment within retention areas, swales or other flood prone areas. Where flooding occurs, Ocala evaluates the facilities for relocation to less flood prone areas.

d) Safe and Efficient Access of New and Replacement Distribution Facilities

Electric construction standards, policies, guidelines, practices, and procedures at the City of Ocala Electric Utility provides for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Our policy is to install all new overhead and underground facilities adjacent to right-or-way or paved areas to allow for access. City of Ocala Electric Utility decides on a case-by-case basis whether existing facilities need to be relocated. If a facility needs to be relocated, it will be placed in the safest, most accessible area available.

e) Attachments by Others

City of Ocala Electric Utility requires attachment agreements with all third-party attachees on its poles and requires permits for all new attachments. The permits include information for City of Ocala Electric Utility to evaluate the impact of the attachment on pole loading. City of Ocala Electric Utility is evaluating all new pole attachments for their impact to pole loading and compliance with the NESC. In addition, as part of our pole inspection cycle, City of Ocala Electric Utility evaluates the impact of third party attachments as part of that inspection.

4. Facility Inspections

a) Describe the utility's policies, guidelines, practices, and procedures for inspecting transmission and distribution lines, poles, and structures including, but not limited to, pole inspection cycles and pole selection process.

Our policy and primary purpose is to be consistent with the Florida Public Service Commission's rules for wood pole inspections and to provide pole restoration where it is economically feasible. Currently we support an eight-year inspection cycle of our system. Our guidelines are selected on geographical areas based on the age of our poles. Practices

and Procedures include Above-Ground Inspection, Excavation, Sounding, Boring, Chipping, Internal Treatment, and Evaluation of each pole to determine remaining strength and reject criteria along with pole loading estimates.

b) Describe the number and percentage of transmission and distribution inspections planned and completed for 2017.

2017 represents the third year in Ocala's second 8-year inspection cycle. The following two tables show distribution and transmission poles inspected by year for the current 8 year inspection cycle. Once 100% of the transmission poles have been inspected in the current cycle, the transmission poles will not be inspected again until the start of our next 8 year inspection cycle (2023).

Distribution level poles include all poles that have only electric-purpose attachments of less than 35kV phase-to-ground voltage (i.e. distribution primary, secondary, service drops, lighting, and guying). Any pole with attachments above 35kV, are classified as transmission poles.

Ocala Electric Utility has distribution level poles made of wood, concrete, steel, and composite materials. However, distribution inspections are conducted only for wood poles.

YEAR	TOTAL NUMBER OF WOOD **DISTRIBUTION** POLES[1]	WOOD POLES INSPECTED	% OF TOTAL WOOD **DISTRIBUTION** POLES INSPECTED	TOTAL NUMBER OF *Non-WOOD* DISTRIBUTION POLES IN SYSTEM
2015	31,575	4,977	15.7%	6,512
2016	32,518	5,399	16.6%	5,792
2017	32,369	4,657	14.4%	6,182
2018				
2019				
2020				
2021				
2022				
TOTALS		15,033	46.4%	N/A

[1] The total number of poles and inspection percentages change each year based on system growth and shrinkage.

YEAR	TOTAL NUMBER OF WOOD **TRANSMISSION** POLES	WOOD POLES INSPECTED	% OF TOTAL WOOD **TRANSMISSION** POLES INSPECTED	TOTAL NUMBER OF *Non-WOOD* TRANSMISSION POLES IN SYSTEM
2015	498	498[2]	**100 %**	763

[2] All wood transmission poles have now been inspected in the first year of this cycle. Many of the transmission poles requiring replacement, were replaced this year with other pole type materials (concrete, composite, or steel).

c) Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2017 and the reason for the failure.

The following two tables show rejection rates and reason for failure for distribution and transmission poles.

YEAR	NUMBER OF **DISTRIBUTION** WOOD POLES REJECTED[3]	REJECT % (Reject ÷ Total Yr. Insp.)	REASON FOR FAILURE
2015	165	3.3 %	Shell Rot
2015	147	3.0 %	Decayed Top
2015	24	0.5 %	Split top
2015	14	0.3 %	Woodpecker Holes
2015	1	0.0 %	Exposed Pocket
2016	142	2.6%	Shell Rot
2016	14	0.3%	Decayed Top
2016	0	0.0%	Split top
2016	4	0.0%	Woodpecker Holes
2016	13	0.2%	Exposed Pocket
2016	2	0.0%	Other Reason
2017	86	1.8%	Shell Rot
2017	9	0.2%	Decayed Top
2017	0	0.0%	Split top
2017	0	0.0%	Woodpecker Holes
2017	1	0.0%	Exposed Pocket
2017	3	0.1%	Other Reason
2018			
2019			
2020			
2021			
2022			
TOTALS[4]	625	4.1 %	

[3] Rejected poles include poles identified for mitigation by bracing, pole replacement or other field actions as necessary to assure pole integrity sufficient with storm hardening standards.

[4] Totals are based on total Rejections to-date in this 8-year cycle and total Inspections to-date in this 8-year cycle.

YEAR	NUMBER OF **TRANSMISSION** WOOD POLES REJECTED[3]	REJECT % (Reject ÷ Total Yr. Insp.)	REASON FOR FAILURE
2015	5	1.0 %	Shell Rot
2015	6	1.2 %	Decayed Top
2015	2	0.4 %	Split top
2015	37	7.4 %	Woodpecker Holes
2015	1	0.2 %	Exposed Pocket
2015	1	0.2 %	Ground Line Decay
TOTALS[4]	**52**	**10.4 %**	

d) Describe the number and percentage of transmission poles and structures and distribution poles, by pole type and class of structure, replaced or for which remediation was taken after inspection in 2017, including a description of the remediation taken.

The following tables show distribution poles braced and replaced, and transmission poles braced and replaced. Poles remediated by bracing are not counted in the rejection numbers, since they still meet the standards with the immediate bracing applied.

	DISTRIBUTION WOOD POLES	
YEAR	# / % BRACED[5] (% = Braced ÷ Total Yr. Insp.)	# / % REPLACED[6] (% = Total Yr. Repl. ÷ Total Yr. Insp.)
2015	40 / 0.8 %	351 / 7.1 %
2016	69 / 1.3%	175 / 3.2%
2017	32 / 0.7%	67 / 1.4%
2018		
2019		
2020		
2021		
2022		
TOTALS	**141 / 0.9 %**	**593 / 3.9 %**

[5] Bracing occurs at the time of inspection, if required.

[6] The replacement data represents poles identified for replacement in that inspection year, actual engineering and construction work may be completed in a following year.

	TRANSMISSION WOOD POLES	
YEAR	# / % BRACED[5] (% = Braced ÷ Total Yr. Insp.)	# / % REPLACED[6] (% = Total Yr. Repl. ÷ Total Yr. Insp.)
2015	3 / 0.6 %	52 / 10.4%
TOTALS	**3 / 0.6 %**	**52 / 10.4 %**

The rejection data represents poles identified in a given inspection year. In order to complete inspection work ahead of the 8 year cycle, and to allow for needed remediation time, Ocala Electric Utility may complete inspections ahead of the 8-year cycle end date.

Poles that have been identified for replacement are then engineered as work orders. Work order engineering may span calendar years, and may not occur in the same year as the inspection. Ocala Electric Utility is reporting total engineered pole replacement work orders released for construction, within the calendar year. NOTE – Some work orders may include

multiple identified pole replacements, if they are adjacent to each other. So total work orders numbers likely will not equal the actual total number of poles identified for replacement.

YEAR	POLE REPLACEMENT WORK ORDERS ENGINEERING COMPLETED
2015	68
2016	108
2017	23
2018	
2019	
2020	
2021	
2022	
TOTALS	199

Work order construction for a given replacement pole(s), may occur in a following year, after inspection, and may depend on other operational factors. Transmission pole replacements are given the highest priority.

YEAR	POLE REPLACEMENT WORK ORDERS CONSTRUCTION COMPLETED[7]
2015	128
2016	135
2017	42
2018	
2019	
2020	
2021	
2022	
TOTALS	305

[7] Construction completion may represent work engineered and started in a previous calendar year. This may be due to material acquisition time, access limitations, coordination with other attachees or utilities, customer needs, or in some cases line outage scheduling.

5. Vegetation Management

a) Describe the utility's policies, guidelines, practices, and procedures for vegetation management, including programs addressing appropriate planting, landscaping, and problem tree removal practices for vegetation management outside of road right-of-ways or easements, and an explanation as to why the utility believes its vegetation management practices are sufficient.

The City of Ocala Electric Utility maintains an annual Transmission Vegetation Management Plan (TMVP), which provides specific allowable distances, work methods, practices, and an annual work schedule for all vegetation adjacent to transmission conductors operating over 100kV phase-to-phase.

A staff Utility Arborist is employed to plan and coordinate the work schedule and make contact with adjacent property owners when problem and hazard trees are identified along the 13 mile 230kV Transmission easement corridor, the 69kV Transmission System, and across the Distribution System.

The work set forth in the work schedule is completed using a combination of manual, machinery, and chemical control methods performed by professional contractors and/or the City of Ocala's three (3) man in-house Tree crew.

The Utility's in-house Tree Crew performs most new-construction clearing and tree related emergency response work required by the Utility. Additionally, they perform demand work including pruning or removal of problem and hazard trees, customer requests, hotspot work, and routine vegetation maintenance.

A professional tree company is contracted primarily to perform routine vegetation maintenance over approximately one fourth of the entire distribution system annually. The contract contains specifications set forth to ensure quality tree work and designated clearances as discussed during FMEA Storm Hardening research meetings.

Ocala Electric Utility applies annually for Tree Line USA designation, which has been awarded for the past 14 years by the Arbor Day Foundation and Florida Forest Service.

The designation is based on the Utility following guidelines set forth in ANSI A300, and includes requirements for annual crew training, quality pruning and integrated vegetation management, as well as participating in a tree planting program, an Arbor Day celebration, and providing customer education.

All pruning is required to conform to the guidelines set forth in the ISA's Best Management Practices "Utility Pruning of Trees" and the ANSI A300 Standards, and is overseen by an ISA Certified Arborist/ Utility Specialist on staff who provides information and guidance to Utility personnel, plans and participates in the Arbor Day Festival, and oversees line clearance operations as well as providing education and training to utility tree crews.

The City's Tree Ordinance (included in the City of Ocala Land Development Regulations) contains wording requiring specific planting distances from utility lines that depend on species natural growth habits. The City Planning Department uses these as a guide when approving site development plans.

In 2006 the Utility renewed its' affiliation with the American Public Power Association and committed to budget for a "Remove and Replace" tree voucher program. The program addresses problem and hazard trees on property adjacent to utility easements by providing

removal services, and rewarding customers who cooperate with replacement vouchers and educational materials as an incentive.

In 2011 it was noted that many tree related outages were caused by overhanging limbs, which had clearance, but broke off onto the lines. In response, contract tree crews were instructed to reduce or remove all accessible overhanging limbs, and wording to that end was added to the Tree Trimming Contract that was put out to bid in February 2012, and again in 2015.

As overhang is reduced and problem and hazard trees mitigated, tree related outages will inevitably become less problematic during afternoon storms and high wind events; as new plantings are thoughtfully planned, and proper pruning practices applied the overall health of the tree canopy near the lines will gradually improve, so that damage during future major storms should be greatly reduced.

In 2013, Ocala Electric Utility launched a plan to reclaim the utility's easements in areas that had become problematic for a variety of reasons, from access issues, to canopy road designation. The new plan is being executed with the cooperation of local authorities in the interest of improving the reliability of electrical service system wide.

In 2017, Hurricane Irma tested the effectiveness of the City of Ocala Electric Utility's enhanced vegetation management efforts. The overwhelming percentage of damage and outages were directly related to vegetation issues. Specifically, trees falling on conductors from outside of the right-of-way or the utility's trimming easement, or from falling limbs located within "Shady Road" designations, or tree-friendly neighborhoods, where trimming is heavily restricted. Where comprehensive vegetation management was fully applied, the wind and tree-related outages were much less severe. For that reason City of Ocala Electric Utility will continue to encourage private property owners to allow increased levels of responsible vegetation management within proximity to the 69kV and distribution lines.

b) Describe the quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities in 2017.

The Utility consists of approximately 1000 miles of lines; 766 miles are overhead primary, The 84 miles of transmission lines include 69kV that is mostly contiguous with under-built primary, and 13 miles of designated 230kV easement.

In the past, the normal annual vegetation management plan included 1/3rd of the 230kV transmission system each year. However, in 2016, 100% (all 13 miles) of the 230kV transmission easement was cleared to the full extent of easement/right-of-way limits. This included removal of all floor level vegetation regardless of expected mature growth height, as well as ground-to-sky side trimming. In 2017, the Utility again fully inspected 100% of the transmission easement and performed vegetation management on 100% of the easement, up to full legal boundary of the Utility's easement area.

The annual work plan for 2017 included clearing 1/4th of distribution and 1/3rd of transmission system as described above. City of Ocala Electric Utility has continued to further implement use of chemical side trimming as an integral part of a program to reduce growth rates of vegetation into the transmission and sub-transmission lines.

The annual work plan for 2018 includes a combination of trimming, mowing and herbicide for both transmission and distribution lines. Additionally, the entire 230kV easement will be re-inspected (vegetation management) and planned for immediate maintenance work as needed.

6. Storm Hardening Research

City of Ocala Electric Utility is a member of the Florida Municipal Electric Association (FMEA), which is participating with all of Florida's electric utilities in storm hardening research through the Public Utility Research Center at the University of Florida. Under separate cover, FMEA is providing the FPSC with a report of research activities. For further information, contact Barry Moline, Executive Director, FMEA, 850-224-3314, ext.1, or bmoline@publicpower.com.