

ORLANDO UTILITIES COMMISSION



CALENDAR 2021

**FACILITY INSPECTION
AND
VEGETATION MANAGEMENT
REPORT**

**Orlando Utilities Commission
Florida Public Service Commission Pursuant to
Rule 25-6.0343, F.A.C.
Calendar Year 2021**

1) Introduction

Orlando Utilities Commission

100 West Anderson Street, Orlando, FL 32801

Contact information:

LeMoyne Adams, Vice President, Electric & Water Distribution
407-434-4137, LAdams@ouc.com

Troy Morris, Director, Distribution Construction & Maintenance
407-434-4199, TMorris@ouc.com

2) Number of meters served in calendar year 2021

Orlando Utilities Commission served 264,989 electric meters in the cities of Orlando and St. Cloud and surrounding Orange and Osceola counties as of December 31, 2021.

3) Standards of Construction

a) National Electric Safety Code Compliance

The Orlando Utilities Commission (OUC) complies with the construction standards, policies, guidelines, practices, and procedures directed within the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. The edition of the NESC in effect at the time of the facility's initial construction governs electrical facilities constructed prior to February 1, 2007.

b) Extreme Wind Loading Standards

Construction standards, policies, guidelines, practices, and procedures at the Orlando Utilities Commission are guided by the extreme wind loading standards specified by Figure 250-2(d) of the 2002 edition of the NESC for 1) new construction; 2) major planned work, including expansion, rebuild, or relocation of existing facilities, assigned on or after December 10, 2006; and 3) targeted critical infrastructure facilities and major thoroughfares.

OUC has verified that all future construction will meet the NESC requirements with particular focus on the extreme wind loading standards.

c) Flooding and Storm Surges

The Orlando Utilities Commission service territory is not within a coastal area, and therefore, not subject to storm surges or wide-spread significant flooding.

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

Electrical construction standards, policies, guidelines, practices, and procedures at OUC provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance.

Since the 1980's, the Orlando Utilities Commission has been installing underground and overhead distribution along property frontage corridors. This gives efficient and safer access to these facilities. OUC provides vegetation maintenance and replacement of aged equipment to ensure an efficient, safe, & robust system for all OUC facilities including existing rear lot installations.

e) Attachments by Others

Electrical construction standards, policies, guidelines, practices, and procedures at the Orlando Utilities Commission include contractual agreement to enable attachment by others. These contracts state that attachments must adhere to the guidelines of the NESC and all governmental authorities that have jurisdiction.

4) Facility Inspections

a) Policies, guidelines, practices, and procedures for inspecting transmission and distribution lines, poles, and structures.

Summary

Orlando Utilities Commission (OUC) has maintained an active pole inspection and replacement program with records dating back to 1990. We currently uphold an eight-year quadrant based inspection cycle along with annual inspections targeting essential distribution and transmission equipment. Shared transmission structures are inspected and maintained by OUC based on past inspection date.

Distribution and Transmission pole inspection replacements are tracked through an existing maintenance work order database to insure timely replacement.

Note: Due to COVID, OUC's contractor performing the inspections did not inspect any poles in 2020. OUC's contractor inspected 2020 and 2021 poles in the 2021 time period.

Inspection Procedures

Visual inspection shall be made of all poles from the ground line to the top before any other inspection. Visual inspection shall include: type of wood, original treatment, circumference, and age of pole, (if it can be determined), height, obvious splits, woodpecker holes, and any other physical damages to the pole. Also a visual check within the limitations of the inspector's expertise, is to be made at such time of the attachments to the pole being inspected for obvious conditions that appear improper, such as slack guy wires, slack overhead conductors, broken insulators, leaking transformers, missing guy guards, rotten cross arms, loose or faulty equipment, abandoned poles, etc.

Excavation

Earth shall be removed from the entire circumference of the pole to a minimum depth of 18 inches below ground line. Width of the hole shall be 4 inches clearance for the pole surface at the bottom and 10 inches at the ground line.

Poles with electric risers should not be excavated, but should be inspected by sounding, boring and fumigating.

Sounding and Boring

The pole must be sounded from the ground line to a minimum of six feet above the ground line. Sounding shall be done on all four sides of the pole to locate any shell rot or rot pockets on the side.

Sounding shall be done with an approved hammer that leaves a distinctive hammer pattern. If there is evidence of possible interior voids or rot, at least one boring shall be made where a void is indicated. If rot or voids are detected, several borings shall be made per rot or void location and a shell gauge shall be used to determine the extent of all voids or rot. In any event at least two borings shall be made at the ground line to check for rot.

Poles set in concrete or pavement shall be bored at least twice at opposite sides at the ground line down at a 45-degree angle into the pole and the boring sample checked for rot or voids.

Removal of Exterior Decay

All exterior decay must be removed where possible, from 18 inches below the ground line to 3 inches above ground line. The rotted wood is to be removed from the premises and deposited of in a proper manner.

Evaluation of Pole Condition

After the sounding and boring has been performed and all exterior decay has been removed, the effective circumference of the pole, from 18 inches below the ground line to 15 inches above the ground line, is to be determined.

Internal Treatment

All sound poles are internally treated if any specific voids of specific internal decay pockets are found. This should involve a sufficient number of bored 3/8 inch holes and the preservative is applied under at least 50 psi of pressure. Internal pole treatment also utilizes MITC-Fume or and OUC approved fumigant.

Ground Line Treatment

All poles not previously rejected are covered from 18 inches below the ground line to 3 inches above the ground line by an OUC approved preservative and moisture barrier film. Preservative treatment penetrates a minimum of two inches into the pole. Long-term treatment retention studies are kept to assure future review and results.

b) Note: Number and percentage of transmission and distribution inspections planned and completed for 2020-2021.

Distribution and Transmission Planned Inspections					
Year	Total System Poles	Planned Inspection	Planned Percentage of System	Inspection Completed	Completed Percentage of System
2020-2021	51900	16579	32%	16532	32%
2019	51200	2998	6%	2990	6%
2018	51200	6512	13%	6411	13%
2017	49643	6200	12%	6389	13%
2016	50049	6400	12%	6419	13%
2015	50915	6400	12%	6758	13%
2014	50582	6400	12%	6410	13%
2013	50721	6400	12%	6415	13%
2012	50804	6400	12%	6400	12%
2011	50938	6400	12%	6730	13%
2010	51142	6400	12%	6534	13%
2009	51435	6400	12%	6411	12%

c) Number and percentage of transmission and distribution poles / structures failing inspection and the reason for the failure.

Poles Failing Inspection		
	Percentage of Inspection Failure	Total Inspected Poles Failing Inspection
2020-2021	2.3%	377
2019	12.4%	372
2018	2.6%	167
2017	0.4%	27
2016	0.9%	58
2015	1.3%	97
2014	2.3%	145
2013	5.5%	352
2012	6.2%	396
2011	8.9 %	600
2010	9.8 %	642
2009	4.4%	280

d) Number of transmission poles, structures and distribution poles, replaced or for which remediation was taken after inspection, including a description of the remediation taken.

Poles needing Remediation					
Year	Total Inspection Poles Failing Inspection	Priority Replacement (Complete)	Restoration (Complete) C-Truss	Work Orders Generated for Replacement	Work Orders Completed
2020-2021	377	4	16	361	316
2019	372	17	29	343	32
2018	167	4	29	138	72
2017	27	2	0	27	35
2016	58	3	7	51	72
2015	97	15	9	88	195
2014	145	2	3	142	479
2013	352	5	56	296	282
2012	396	8	10	386	456
2011	600	2	66	532	267
2010	642	7	121	514	435
2009	280	4	66	210	208

OUC changed out 316 wood poles that were identified on previous years' inspections during 2020-2021 time period.

5) Vegetation Management

- a) *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.*

Maintenance Guidelines and Procedures

The Orlando Utilities Commission (OUC) provides essential electrical service closely tied to our communities' safety, economy and welfare. In delivering reliable electrical service OUC manages the vegetation for approximately 1323 miles of overhead distribution lines and 222 miles of transmission lines within Orange and Osceola Counties. Vegetation line clearance of distribution facilities are trimmed on a three year maintenance cycle. Transmission right of ways' are maintained in two sub-divided regions, urban right of way on an annual cycle, and rural on a three year cycle. Measures to ensure our vegetation program is sufficient and remains on schedule, comprise of annual inspections of the distribution and transmission system.

OUC follows pruning and safety methods outlined in American National Standards Institute A300 and Z133.1. A three-year maintenance cycle of distribution facilities anticipates an average annual growth of 2.5 feet. Trees in close proximity of distribution facilities are trimmed to a minimum distance of 10 feet clearance from energized un-insulated conductors. Fast growing invasive species are trimmed to a greater distance of 15 feet or targeted for removal during distribution pruning. This proactive measure relieves future trimming requirements and ensures clearances within the cycle will be maintained.

The distribution three year cycle is divided into over 197 distribution segments reviewed on a quarterly basis. The review is used to make adjustments to crew resources to remain on cycle. OUC currently procures vegetation maintenance labor and equipment through a contract with Davey Tree Experts and Asplundh Tree Experts. The contract comprises ten to twenty production line trimming crews used in distribution and transmission line clearance.

Vegetation pruning requests are tracked using an internal CIS (customer information system) available in the distribution operations, customer service, construction and maintenance area. Requests generated from a system outage are either trimmed immediately or given a work order priority for completion. The general foreman provides additional feedback if additional area trimming is needed.

Appropriate Planting

OUC outlines appropriate planting through educational information presented by the Florida Urban Forestry Council. The council presents a theme “Right Tree in the Right Place” to ensure proper distance between trees and power lines. By practicing proper planting our goals to ensure safety, reliability and lowered maintenance costs become factors which all of our customers benefit.

Vegetation located outside of the right of way is pruned to a distance 10’ from energized conductors. The “Right Tree Right Place” concept is reviewed in cases where removals may become prudent. OUC annually sponsors tree planting events during Arbor Day to promote proper planting.

Measures to Ensure Sufficient Vegetation Management

OUC has applied a Reliability Centered Maintenance (RCM) approach from NFPA 70B to assure our vegetation management practices area sufficient. An annual inspection of all main feeder distribution lines is conducted to survey acceptable clearances in distribution system throughout the three-year treatment plan. The RCM inspections document vegetation to conductor distances with less than one year’s anticipated growth (2.5’). Vegetation work orders are generated and completed during seasonal non-peak time frame to ensure electrical system is fully prepared for the Florida summer storm season.

Two measures are used to verify sufficient vegetation management in our maintenance cycle.

1. The documented number of RCM clearances are compared against the trim cycle order. (A circuit about to be trimmed is expected to have more areas of clearance.)
2. Outage Management System (OMS) indices relating to sustained and momentary outages are also compared to the trim cycle order.

b) Quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities.

Vegetation Management Annual Plan

The 2021 annual plan was amended to 193 miles due to COVID and Supplier labor shortages on Distribution and was 100% completed.

OUC plans to continue with treatment of 418 miles of distribution line clearance and 107 miles of transmission ROW to remain on established cycles in 2022. Treatment of distribution line clearance will consist of bucket and rear lot climbing crews. Treatment of the transmission rural corridors, conducted on a three-year cycle, are maintained using a combination of integrated vegetation management (IVM). Transmission urban corridors are maintained annually with a more traditional pruning and removal maintenance methods.

* OUC's Transmission Vegetation Management Plan (TVMP) allows until May 30th 2022 for completion.

Vegetation Treatment				
Year	Distribution Total System Miles 1323		Transmission Total System Miles 213 (Urban-Annual, Rural 3 Year Cycle)	
	Planned	Completed	Planned	Completed
2021	193	100%	112	100%
2020	446	78%	99	100%
2019	426	94%	107	100%
2018	421	100%	112	100%
2017	450	100%	99	100%
2016	333	100%	107	100%
2015	335	100%	88	100%
2014	328	100%	99	100%
2013	287	100%	107	100%
2012	332	100%	127	100%
2011	312	100%	107	100%
2010	329	100%	99	100%
2009	328	100%	105	100%
2008	330	100%	99	100%
2007	330	100%	114	100%

2021 OUC Distribution Maintenance Schedule – 3 Year Trimming Cycle Work Completed

Three Year Treatment Cycle

Line Segment	Circuit Number GIS 10-09-20	Supplier	Location	Worked Dates		Circuit Total Billable Miles	Truck Access (S)	Limited Access (LA)	Rear Lot (R)	Non Billable Miles
				Initiated Date	Completion Date					
Yr. 2 First Quarter - October / December 2020										
145	3-31	DAV	Orlando	10/19/2020	5/8/2021	5.97	3.99	0.10	1.88	1.89
150	2-14, 2-33	DAV	Orlando	11/6/2020	6/12/2021	5.26	3.49		1.77	
18	12-31	DAV	Orlando	11/28/2020	12/12/2021	6.54	4.17		2.37	
110	12-32	DAV	Orlando	12/5/2020	1/30/2021	9.40	4.56		4.84	
160	12-33	DAV	Orlando	12/12/2020	12/19/2020	6.21	5.76	0.10	0.35	0.16
67	12-13, 12-33, 12-34	DAV	Orlando	12/19/2020	1/23/2021	7.30	5.31		1.99	0.23
Quarterly Mileage						40.68	27.28	0.20	13.20	2.28
Yr. 2 Second Quarter - January / March 2021										
189	12-35	DAV	Orlando	1/2/2021	4/10/2021	2.52	1.57		0.95	
127	12-26, 12-34	DAV	Orlando	1/9/2021	1/30/2021	5.33	3.44		1.89	0.27
123	12-24	DAV	Orlando	1/16/2021	2/6/2021	6.56	4.32		2.24	
47	12-21	DAV	Orlando	1/23/2021	2/20/2021	12.20	9.90		2.30	
7	12-12, 12-21	DAV	Orlando	2/13/2021	2/27/2021	5.56	3.55		2.01	0.82
157	2-14, 12-26	DAV	Orlando	2/20/2021	3/13/2021	5.62	2.72		2.90	1.45
41	12-22	DAV	Orlando	2/22/2021	4/03/2021	3.20	2.52		0.68	
161	6-13, 6-24	DAV	Orlando	2/27/2021	5/1/2021	6.29	3.06	0.33	2.90	
167	5-13	DAV	Orlando	3/6/2021	5/22/2021	5.70	2.53		3.17	0.97
169	9-34	DAV	Orlando	3/13/2021	6/05/2021	7.27	4.27		3.00	0.14
Quarterly Total Mileage						60.25	37.88	0.33	22.04	3.65
Yr. 2 Third Quarter - April / June 2021										
27	9-11	DAV	Orlando	4/3/2021	6/19/2021	9.23	7.12		2.11	1.11
32	1-14, 1-33, 1-34	DAV	Orlando	4/17/2021	6/26/2021	8.04	6.65		1.39	0.22
Quarterly Total Mileage						17.27	13.77	0.00	3.50	1.33
Yr. 2 Forth Quarter - July / September 2021										
1	3-14	ASPL	Orlando	9/04/2021	11/06/2021	9.41	7.46		1.95	
19	2-332	ASPL	Orlando	8/28/2021	10/23/2021	4.23	2.91		1.32	4.32
21	9-21	ASPL	Orlando	9/18/2021	10/9/2021	4.12	1.25		2.87	2.06
35	1-14	ASPL	Orlando	7/6/2021	9/18/2021	6.74	3.03	0.01	3.70	
37	9-32	ASPL	Orlando	7/17/2021	11/13/2021	7.14	6.10		1.04	
44	9-23	ASPL	Orlando	9/18/2021	12/11/2021	6.55	6.06		0.49	0.51
Quarterly Total Mileage						38.19	26.81	0.01	11.37	6.89
63	28-214, 28-221, 28-222	DAV	St. Cloud	7/3/2021	10/2/2021	37.35	30.31		7.04	0.00
Quarterly Total Mileage						37.35	30.31	0.00	7.04	0.00
Annual Total Miles						193.74	136.05	0.54	57.15	14.15

2021 OUC Transmission Schedule - Urban (Annual Cycle) & Rural (3-Year Cycle)
Completed Work

Annual Maintenance Schedule June 1, 2021 - May 30, 2022									
Treatment Cycle Year Three									
Urban ROW Corridors 1 - 19 TREATMENT ON AN ANNUAL CYCLE									
ROW Segment	OUC Line	Description	Structure Number Begin	Structure Number End	Miles Urban	Past Treatment	Date Assigned	Date Completed	
1	5-0212	Pine Hills to Country Club	1	48	3.2	6/18/20	06/01/21	10/8/21	
2	7-02FPC	Pine Hills to FPC at Dolores W/O Emeraldalda	1	11	1.0	6/17/20	06/01/21	10/13/21	
3	5-0214	Pine Hills to Turkey Lake	428	365	3.0	6/18/20	06/01/21	10/19/21	
4	5-1424	Turkey Lake to Southwood	362	343	1.8	6/18/20	06/01/21	10/29/21	
5	5-2405	Southwood Sub 5	341	303	1.7	6/18/20	06/01/21	11/2/21	
6	5-0508 A	Southwood to Martin (KingsPointe) East Line	260	201	2.8	REMOVED	REMOVED	REMOVED	
	7-05FPC	Southwood to Windemere				6/23/20	06/01/21	11/15/21	
7	5-0508 B	Southwood to Martin	1	14	1.8	6/23/20	06/01/21	11/15/21	
8	5-08-30	Martin to Couvention Center	14	16	0.4	6/23/20	06/01/21	11/15/21	
9	5-0405	Holden to Southwood	506	586	3.6	6/24/20	06/01/21	11/20/21	
10	5-0409	Holden to Michigan	2	78	3.2	6/24/20	06/01/21	1/17/22	
11	5-0910	Michigan to America (On Division)	56	132	3.7	6/29/20	06/01/21	1/15/22	
12	5-1013	America to Kaley	1	26	1.4	6/25/20	06/01/21	1/12/22	
13	5-1618	Michigan and Gowen to Bumby and Jersey	1	5	0.2	6/29/20	06/01/21	1/15/22	
14	5-0916	Michigan to Grant	1	52	2.3	7/3/20	06/01/21	2/11/22	
15	5-0609	Michigan to Pershing (Follows Raeford Rd)	2	93	5.5	7/4/20	06/01/21	2/3/22	
16	5-0616	Grant to Pershing	1	27	2.1	7/10/20	06/01/21	2/5/22	
17	7-622	Pershing to Sub 22 Term Site	135	157	3.4	7/10/20	06/01/21	1/8/22	
18	5-0306 A & B	Azalea to Pershing A & B	143	182	4.1	7/28/20	06/01/21	1/20/22	
	4-27KISS	Shared W/ KUA	2	64	2.6	08/04/20	06/01/21		
Total Urban Annual Treatment Miles					48.0				
1/3 of Rural ROW Corridors (28 thru 33) - THREE YEAR CYCLE									
	OUC Line	Description	Structure Number Begin	Structure Number End	Miles Rural	Past Treatment	Date Assigned	Date Completed	
28	7-1517	Sub 15 to Sub 17	67	180	23.9	09/13/18	06/01/21		
	7-SEC-1	Stanton Unit 1 Generator				09/13/18	06/01/21		
	7-SEC-2	Stanton unit 2 Generator				09/13/18	06/01/21		
	7-17RAT2	SEC Reserve Aux Trans 2				09/13/18	06/01/21		
	7-17RAT1	SEC Reserve Aux Trans 1				09/13/18	06/01/21		
	7-1731	Sub 17 to SEC A				09/13/18	06/01/21		
	7-1736	Sub 17 to SEC B	TBD	TBD		09/13/18	06/01/21		
	7-15 19	Taft to Airport Industrial Park	1A	14		09/13/18	06/01/21		
	7-2332	Sub 32 to Sub 23 South Term Site	102A	109		09/13/18	06/01/21		
29	4-2728	Central to North	1	120	8.6	09/10/18	06/01/21		
30	4-2829				7.6	01/15/19	06/01/21		
31	7-29FPC	North to Holopaw	1	69	8.1	04/19/19	06/01/21		
32	5-2933	Sub 29 to Sub 33			10.8	03/19/19	06/01/21		
33	5-3327	Sub 33 to Sub 27 00 Termination			4.7	03/16/19	06/01/21		
Total Proposed Annual Treatment Miles					63.6				
Total Urban + Rural ROW Miles					111.7				

6) Storm Hardening Research

Orlando Utilities Commission 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 Amy Zubaly, Executive Director, FMEA, 850-224-3314, ext.1001, or azubaly@publicpower.com.