SECO Energy Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2016

1. Introduction

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2. Number of meters served in calendar year 2016

196,461 active meters were served by SECO Energy in calendar year 2016, as of December 31, 2016.

3. Standards of Construction

National Electric Safety Code Compliance

SECO Energy's (SECO) design and construction standards, policies, and procedures comply with Rural Utilities Service (RUS) guidelines and the National Electrical Safety Code (ANSI C-2) (NESC). Electrical facilities constructed prior to August 1, 2016 are governed by the edition of the NESC that was in effect at the time of the facility's initial construction. However, for electrical facilities constructed on or after August 1, 2016, the 2017 NESC applies.

Extreme Wind Loading Standards

SECO's transmission facility design is guided by extreme-loading standards on a system-wide basis, and distribution facilities are designed to withstand 110 mph winds, in accordance with the NESC. The system is evaluated continuously for immediate storm hardening and system upgrade needs.

Flooding and Storm Surges

Although SECO serves a coastal county (Citrus), its closest facility to the coastline is 14 miles inland; therefore, storm surge is not a concern. SECO began a voluntary eight-year inspection of its underground facilities in 2007. For the 2016 cycle, SECO used Transformer Maintenance Services (TMS) to inspect its underground facilities. TMS inspected 11.8% of SECO's underground facilities, equating to 6,888 pieces of equipment. As a result of this inspection, 165 underground facilities

were replaced or retired, including 44 pad-mounted transformers, 7 switching cabinets, and 114 secondary enclosures. In addition, maintenance was performed at 261 locations, including items such as the replacement of lightning arresters, secondary covers, and leveling around equipment.

Safe and Efficient Access of New and Replacement Distribution Facilities

Electrical construction standards and SECO policies dictate the placement of distribution facilities to allow for the safest and most efficient access during installation and maintenance. SECO installs electrical facilities on the front of lots, except in cases where prohibited by land covenants. Wherever new facilities are placed (i.e. front, back or side of property), they are installed for accessibility by crews and vehicles to ensure proper maintenance/repair is performed as safely and expeditiously as possible. If it is determined that facilities need to be relocated, they will be placed in the safest, most accessible area available.

Attachments by Others

SECO has developed a standardized process to manage requests from companies who express interest in attaching to SECO poles. Following a formal application review and a thorough field investigation, SECO enters into a binding contractual agreement with the requestor. Submission of a permit application from an attachment company is required in order to attach to a SECO pole. This permit application is reviewed by SECO personnel and then verified in the field to ensure that code requirements are met prior to attachment. SECO expedites the transfer of attachments and the removal of old poles so that they are completed in a timely manner; all pole replacements and code violations are logged and tracked in a database, which is monitored each month.

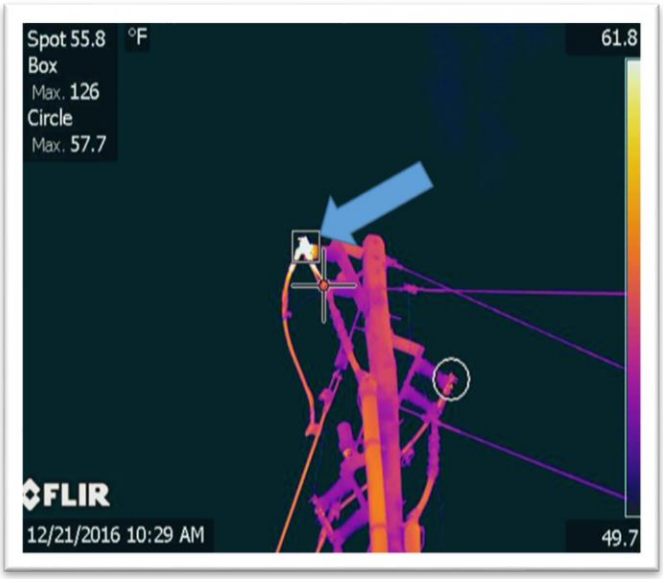
4. Facility Inspections

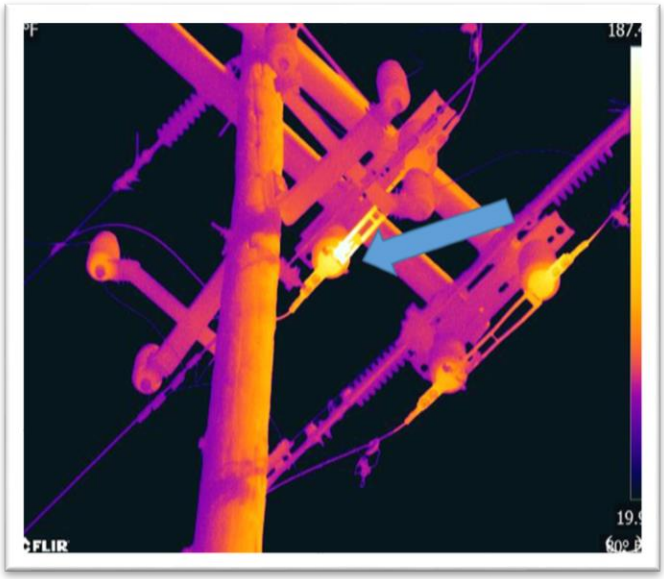
a. Describe the utility's policies, guidelines, practices, and procedures for inspecting transmission and distribution lines, poles, and structures including, but not limited to, pole inspection cycles and the pole selection process.

SECO inspects its transmission facilities, substation facilities, and distribution facilities on regular cycles in order to maintain a safe and reliable electrical system. The transmission facilities are of utmost importance because they serve the majority of members per line. In 2010, SECO implemented a policy to complete ground-line and visual inspections of all transmission facilities on a five-year cycle. In 2015, SECO completed the final year of the 5-year ground-line inspection cycle and plans to replace all wooden transmission poles with spun concrete by 2019. In 2016, there were 39 wooden transmission poles planned for remediation. These 39 wooden transmission poles were replaced with spun-concrete poles.

SECO performs annual visual and infrared inspections for SECO and Seminole Electric Cooperative (SECI) owned transmission lines. SECO conducts visual and thermographic inspections at every substation monthly. This method helps to quickly diagnose and resolve issues, thereby preventing potential substation outages to thousands of members.

As illustrated by the following infrared photos of a distribution pole, this proactive approach allows SECO to detect hotspots and identify devices before they fail in order to minimize service interruptions to its members.





In 2007, SECO began performing ground-line and visual inspections of all distribution poles on an 8-year cycle. This ground-line inspection includes sounding and boring tests, as well as the excavation of all poles for treatment per RUS Bulletin 1730B-121. SECO inspects all Chromated Copper Arsenate (CCA) poles in excess of 25 years of age, as well as all non-CCA poles on an eight-year cycle. SECO selectively bores and excavates CCA-preserved poles under the age of 26 years. This is in accordance with PSC Docket 140082-EI and is similar to the CCA inspection process followed by Duke Energy Florida, Inc. (DEF) and Florida Power & Light, Inc. (FPL).

For the 2016 inspection cycle, SECO used Osmose Utilities Services, Inc. (Osmose) to perform a ground-line inspection of its overhead distribution facilities. In accordance with the ground-line inspection criteria described above, Osmose inspected 5,712 distribution poles and treated 5,558. SECO personnel performed visual inspections on 19,923 distribution poles, representing 14.5% of the distribution poles on the SECO electrical system. During the inspection process, 2,562 distribution poles were identified for remediation or replacement. This represented a failure rate of approximately 12.9%. In addition, maintenance was performed at 3,511 locations, including items such as the replacement of cross-arms and pole bonds. All poles identified for replacement or maintenance were remediated by March 1, 2017.

b. Describe the number and percentage of transmission and distribution inspections planned and completed for 2016.

Year	System	# of Structures – Planned Inspections	% of Total Structures	# of Structures – Actual Inspected	% Complete vs. Planned
2016	Transmission	*39	3%	39	100%
2016	Distribution Overhead	19,923	14.5%	19,923	100%
2016	Distribution Underground	6,888	11.8%	6,888	100%

**transmission poles were structurally sound; replaced per plan to install concrete poles*

c. Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2016 and the reason for the failure.

Year	System	# Failed	% Failed	Cause
2016	Transmission	*0	0%	Ground Rot
2016	Transmission	*0	0%	Top Deterioration
2016	Distribution	26	0.13%	Ground Rot
2016	Distribution	2,536	12.72%	Top Deterioration

** (0) transmission poles failed inspections*

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 2016, including a description of the remediation taken.

SECO replaces all wooden transmission poles with spun-concrete poles. This allows for longer span length and requires fewer poles. While remediation occurred on 39 transmission poles, they were not necessarily replaced on a one-for-one basis. SECO completed 100% of the transmission pole remediation by December 6, 2016.

Transmission Poles			
Pole Type and Class	**# Failed**	**# Replaced**	**% Remediation Complete (as of 12/6/2016)**
70-1	0	24	100%
75-1	0	14	100%
80-1	0	1	100%
Total	**0**	**39**	**100%**

SECO completed 100% of the distribution pole replacement and remediation as of March 1, 2017.

Distribution Poles			
Pole Type and Class	**# Failed**	**# Replaced**	**% Remediation Complete (as of 3/1/2017)**
20-6	2	2	100%
30-1	1	1	100%
30-4	1	1	100%
30-5	3	3	100%
30-6	712	712	100%
35-1	1	1	100%
35-3	1	1	100%
35-5	85	85	100%
35-6	1,251	1,251	100%
40-3	2	2	100%
40-4	15	15	100%
40-5	429	429	100%
40-6	16	16	100%
45-1	1	1	100%
45-3	5	5	100%
45-4	22	22	100%
45-5	9	9	100%
50-3	2	2	100%
50-4	4	4	100%
Total	2,562	2,562	100%

5. Vegetation Management

In 2016, due to budgetary constraints, SECO reduced the miles scheduled for trimming from 1,500 to 1,354, which puts us on a 3.5-year cycle. To meet these goals, SECO follows industry-wide best management practices that include various combinations of unit-based tree pruning, tree removals and herbicide application.

In 2016, SECO trimmed 1,354 total circuit miles and removed 15,438 trees in support of its storm-hardening process. The following table is a summary:

Description	Measurement
Distribution line miles “Maintenance Trimmed”	1,354 miles
Distribution line miles cut “Ground-to-Sky” with 15-foot clearance on circuits for system improvement projects	14 miles
Transmission line miles cleared “Ground-to-Sky" with 30-foot clearance	5 miles
Total miles trimmed in 2016 (Distribution & Transmission)	1,373 miles
Total miles of herbicide application	1,547 miles
Total trees removed in maintenance trimming process	15,438 trees

Specifications and Procedures

SECO practices the following Vegetation Management program guidelines:

Trimming Clearances: SECO utilizes a 15-foot minimum clearance trimming standard in order to maintain a three-year trim cycle. Slow-growth species and ornamentals encountered in residential landscaped areas are trimmed to no less than 10 feet.

Pruning Practices: SECO requires all Vegetation Management contractors to follow the ANSI-A 300 industry standards, utilizing directional pruning methods as often as practical. Adherence to these standards allows trees to remain healthy after pruning, while reducing re-growth and crown failures that can cause storm-related reliability issues.

New Construction / System Upgrade Trimming: SECO maintains a "Ground-to-Sky" trimming policy for all circuits that are newly constructed or significantly upgraded. These circuits are trimmed to a 15-foot clearance with all underbrush being removed.

Work Planning: SECO uses Utility Arborist Resource Group, Inc. (ACRT) to perform all work planning and customer notification. Once ACRT provides the completed work plans, SECO then issues them to a single-source contractor, Nelson Tree Service (NTS), to complete the trimming.

Unit Price Contracting: NTS is compensated on a per-unit basis to perform all overhead line clearance work on the SECO system. This allows SECO to accurately track the type of work being performed.

Vegetation Removal: In 2016, NTS trimming crews removed 15,438 trees from distribution circuit easements, representing 17% of the total 91,161 trees that were addressed for line-clearance issues. SECO also removes all tall growing brush underneath its conductors, preventing future tree growth and providing better access for restoration crews during major storm events.

Circuit Prioritization: SECO's Vegetation Management staff determined the order of cut for 2016 by utilizing four weighted factors:

- Pole Inspection Cycle
- Last date trimmed
- Number of members served by each circuit
- Total tree-related outages on each circuit

SECO has begun to coordinate its vegetation management program with the pole inspection program. Using this methodology, the overall reliability of the circuits are improved and the impact to the customer is minimized since both the pole inspections and replacements are performed within the same 12-month period as the tree trimming.

Herbicide Program: SECO utilized EDKO, LLC as its herbicide applicator for all substations and NaturChem, Inc. to treat brush units in areas trimmed by NTS in 2015 and part of 2016 (in accordance with all local, state, and federal regulations).

Tree Replacement Program: SECO's tree replacement program provides "utility-friendly" trees to customers who allow for the removal of vegetation growing in close proximity to its conductors. During 2016, SECO purchased 195 trees for members in exchange for these strategic removals.

Program Enhancements

In addition to meeting its trimming cycle mileage goals, SECO focused on addressing the following issues for continued success in 2016:

Tree Planting Guidelines: Proper tree selection and planting guidelines are provided to members of the public through SECO's website, newsletters, and public events. In 2016, SECO was awarded the National Arbor Day Foundation's prestigious "Tree Line USA" designation for the tenth consecutive year.

Danger Tree Removal / Hazard Mitigation: In 2016, SECO trimmed or removed 2,721 trees located adjacent to road right-of-ways and easements that posed an imminent threat to system reliability. ACRT arborists and SECO line inspection personnel identified dead, leaning, or diseased trees with the potential to fall on distribution facilities throughout SECO's service territories. Once located, these defective trees were removed by NTS trimming crews within 30 days.

Obstacles/Opportunities Ahead

In 2017, SECO will face challenges outlined below:

Green Initiatives: Local ordinances and legislation can limit access and in some cases, virtually prohibit trimming from occurring. This increases costs for tree-caused outages and lengthens restoration times.

Natural Disasters / Hurricanes: With an active storm season predicted for 2017, any hurricane and tropical storm activity within the continental United States could negatively affect production levels for crews performing cycle trimming on SECO distribution circuits.

2017 Vegetation Plan

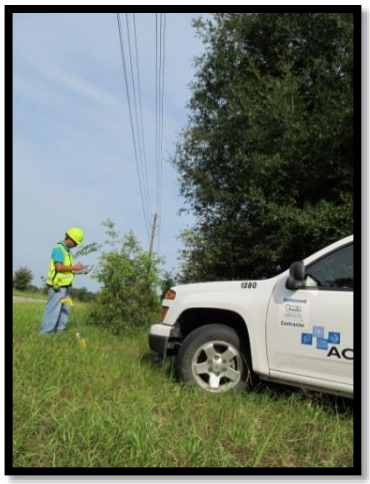
SECO will continue to utilize its unit-based trimming practices to meet its cycle trimming goals for 2017. Circuits are prioritized based on pole inspection cycle, date last trimmed, customers impacted, and the number of tree-related outages.

The successful identification and removal of dead, diseased, and unstable trees located within falling distance of energized circuits will remain a priority for SECO's 2017 Vegetation Management program. While it is uncertain how many of these trees exist, it is clear that the removal of these hazards will mitigate damages during moderate to extreme weather events.

Herbicide application will also continue on all remaining untreated circuit miles trimmed in 2016 and a portion of the miles to be trimmed in 2017. An estimated 1,500 miles of underbrush is scheduled for herbicide application by NaturChem, Inc. prior to this year's dormant season.

SECO has clearly demonstrated the highest level of commitment to storm-harden its system through a comprehensive easement-reclamation effort. As new obstacles to this innovative approach emerge, SECO will continue to analyze its policies and procedures and identify future improvement opportunities.

6. Vegetation Program Segments



Planning and Auditing Activities

SECO utilizes the services of ACRT to plan and audit 100% of routine scheduled maintenance. They are responsible for making contact with the customer and explaining the need to trim and/or remove trees within close proximity to the power lines. SECO provides the latest technology so that ACRT is able to plan work efficiently and accurately. SECO also utilizes its own internal workforce of ISA certified arborists to audit random samples of completed maintenance work to ensure quality tree trimming and work plans meet industry standards as well as SECO's specifications.

Trimming Activities

All SECO tree-trimming work is performed by NTS, based on computerized work plans created by ACRT. NTS utilizes state-of-the-art equipment to achieve optimal efficiencies while ensuring that trimming activities pose minimal impact to SECO members.

Tree Replacement Program

Customers who choose to remove landscape trees located within SECO easements may qualify for "utility-friendly" replacement trees.

Herbicide Activities

SECO's herbicide application contractor, NaturChem, Inc. utilizes low-volume backpack sprayers and larger scale vehicle-mounted equipment to apply select herbicide within easements and right-of-way.

Report on Collaborative Research for Hurricane Hardening

Provided by

The Public Utility Research Center

University of Florida

To the

Utility Sponsor Steering Committee

February 2017

I. Introduction

The Florida Public Service Commission (FPSC) issued Order No. PSC-06-00351-PAA-EI on April 25, 2006 (Order 06-0351) directing each investor-owned electric utility (IOU) to establish a plan that increases collaborative research to further the development of storm resilient electric utility infrastructure and technologies that reduce storm restoration costs and outages to customers. This order directed IOUs to solicit participation from municipal electric utilities and rural electric cooperatives in addition to available educational and research organizations. As a means of accomplishing this task, the IOUs joined with the municipal electric utilities and rural electric cooperatives in the state (collectively referred to as the Project Sponsors) to form a Steering Committee of representatives from each utility and entered into a Memorandum of Understanding (MOU) with the University of Florida's Public Utility Research Center (PURC). The third extension of this MOU was approved last year by the Research Collaboration Partners and now extends through December 31, 2018.

PURC manages the work flow and communications, develops work plans, serves as a subject matter expert, conducts research, facilitates the hiring of experts, coordinates with research vendors, advises the Project Sponsors, and provides reports for Project activities. The collaborative research has focused on undergrounding, vegetation management, hurricane-wind speeds at granular levels, and improved materials for distribution facilities.

This report provides an update on the activities of the Steering Committee since the previous report dated February 2016.

II. Steering Committee Workshop

On September 29, the Steering Committee organized a workshop for 26 participants from the Project Sponsors at TECO Plaza in Tampa. The workshop was held to orient new members on the work that the cooperative has accomplished, and to serve as a forum for new ideas in the field of storm preparedness and outage response.

The opening speaker was Matt Corey from Weatherflow, Inc. who discussed their wind monitoring network "HurrNet." The network consists of approximately 90 wind monitoring stations, 44 in Florida, and 21 on utility property. This data is available at no charge to the Project Sponsors. He also outlined

Weatherflow's new capabilities, specifically their StormTrack/StormPrint model (on which he displayed, ironically, Hurricane Matthew) and their new line of Smart Weather weather stations for domestic to commercial users.

Next was Ted Kury from PURC with an update on the undergrounding model developed by the Project Sponsors. The current capabilities, which include both probabilistic and deterministic modeling, were reviewed.

The next item on the agenda was a roundtable on vegetation management. Participants discussed current procedures and best practices. All noted that utilities continue to face challenges regarding access to facilities that need to be managed, particularly within municipal boundaries due primarily to municipal codes. Some noted that municipalities may not be aware of the impact that their codes may have on system reliability, and that education is critical in these areas. Each utility then outlined their current trim cycle and approach. Finally, the participants discussed the evolution of customer expectations regarding communications with their utilities.

Next on the agenda was a discussion on the collection and usage of forensic storm damage data. Participants reviewed the existing platform and data framework.

Finally, the participants engaged in a roundtable discussion of topics that might be explored further in future workshops, and discussed the importance and the form of follow-up efforts.

Overall, the participants left the workshop with a greater appreciation and understanding of the work conducted at the various transmission and distribution segments of the Florida utilities.

III. Undergrounding

The collaborative research on undergrounding has been focused on understanding the existing research on the economics and effects of hardening strategies, including undergrounding, so that informed decisions can be made about undergrounding policies and specific undergrounding projects.

The collaborative has refined the computer model developed by Quanta Technologies and there has been a collective effort to learn more about the function and functionality of the computer code. PURC and the Project Sponsors have worked to fill information gaps for model inputs and significant efforts have been invested in the area of forensics data collection. Since the state has not been affected by any hurricanes since the database software was completed, there is currently no data. Therefore, future efforts to refine the undergrounding model will occur when such data becomes available.

In addition, PURC has worked with doctoral and master's candidates in the University of Florida Department of Civil and Coastal Engineering to assess some of the inter-relationships between wind speed and other environmental factors on utility equipment damage. PURC has also been contacted by engineering researchers at the University of Wisconsin and North Carolina State University with an interest in the model, though no additional relationships have been established. In addition to universities, PURC was again contacted by researchers at the Argonne National Laboratory who expressed interest in modeling the effects of storm damage. The researchers developed a deterministic model, rather than a probabilistic one, but did use many of the factors that the Collaborative have attempted to quantify. They are currently working to incorporate stochastic elements into their model and have

consulted PURC for guidance. Every researcher that contacts PURC cites the model as the only non-proprietary model of its kind.

The research discussed in previous years' reports on the relationship between wind speed and rainfall is still under review by the engineering press. Further results of this and related research can likely be used to further refine the model.

IV. Wind Data Collection

The Project Sponsors entered into a wind monitoring agreement with WeatherFlow, Inc., in 2007. Under the agreement, Florida Sponsors agreed to provide WeatherFlow with access to their properties and to allow WeatherFlow to install, maintain and operate portions of their wind monitoring network facilities on utility-owned properties under certain conditions in exchange for access to wind monitoring data generated by WeatherFlow's wind monitoring network in Florida. WeatherFlow's Florida wind monitoring network includes 50 permanent wind monitoring stations around the coast of Florida, including one or more stations located on utility-owned property. The wind monitoring agreement expired in early 2012; however, the wind, temperature, and barometric pressure data being collected at these stations is being made available to the Project Sponsors on a complimentary basis.

V. Public Outreach

In last year's report we discussed the impact of increasingly severe storms on greater interest in storm preparedness. PURC researchers continue to discuss the collaborative effort in Florida with the engineering departments of the state regulators in Connecticut, New York, and New Jersey, Pennsylvania, and regulators in Jamaica, Grenada, Curacao, Samoa, and the Philippines. While all of the regulators and policymakers showed great interest in the genesis of the collaborative effort, and the results of that effort, they have not, at this point, shown further interest in participating in the research effort.

VI. Conclusion

In response to the FPSC's Order 06-0351, IOUs, municipal electric utilities, and rural electric cooperatives joined together and retained PURC to coordinate research on electric infrastructure hardening. The steering committee has taken steps to extend the research collaboration MOU so that the industry will be in a position to focus its research efforts on undergrounding research, granular wind research and vegetation management when significant storm activity affects the state.