

# Sumter Electric Cooperative, Inc. (SECO) Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2014

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## ***1. Introduction***

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## ***2. Number of meters served in calendar year 2014***

188,491 active meters were served by SECO in calendar year 2014, as of December 31, 2014.

## ***3. Standards of Construction***

### *National Electric Safety Code Compliance*

SECO's 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 February 1, 2012 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 February 1, 2012, the 2012 NESC applies.

### *Extreme Wind Loading Standards*

SECO's transmission facility design is guided by extreme-loading standards on a system-wide basis, and its distribution facilities are designed to withstand 110 mph winds, in accordance with the 2012 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. In 2014, SECO used Transformer Maintenance Services ("TMS") to inspect its underground facilities. They inspected 11.6% of SECO's underground facilities, equating

to 6,449 pieces of equipment. As a result of this inspection, 512 underground facilities were replaced or retired, including 56 pad-mount transformers, 2 cabinets, and 454 secondary enclosures. In addition, maintenance was performed at 945 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. The ground-line inspection includes sounding and boring tests, as well as excavation of all poles for treatment, per RUS Bulletin 1730B-121.

In 2014, SECO used Midwest Pole Inspections, LLC to perform ground-line and visual inspections of 298 transmission poles. This represented 24.6% of the transmission poles on the SECO electrical system. There were 86 wooden transmission poles (approximately 28.9 %) that failed inspection. They were either replaced with spun-concrete poles, retired, or the pole top was cut in order to utilize as a distribution pole.

In 2010, SECO began a bi-annual visual and infrared inspection of transmission lines in lieu of an annual visual inspection by SECO's power provider, Seminole Electric Cooperative ("SECI"). In 2011, SECO implemented a program to visually and thermographically inspect Duke Energy Florida ("DEF") transmission lines that caused outages to SECO during the previous year.

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 infrared photos of a distribution pole (right) and a substation (below), 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 sound 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 16 years of age, as well as all non-CCA poles on an eight-year cycle. In 2008, SECO modified its inspection process to selectively bore and excavate CCA-preserved poles under the age of 16 years. This is similar to the CCA inspection process followed by DEF, Florida Power & Light, Inc. (“FPL”), and Tampa Electric Company, Inc. (“TECO”), as described in FPSC Docket No. 080219-EI dated August 7, 2008.

For the 2014 inspection cycle, SECO used Midwest Pole Inspections, LLC (“Midwest”) to perform a ground-line inspection of its distribution facilities. In accordance with the ground-line inspection criteria described above, Midwest inspected 12,123 distribution poles in 2014, representing 8.8% of the distribution poles on the SECO electrical system. SECO personnel performed visual inspections on 15,841 poles. There were 4,617 distribution poles identified during the inspection process that required remediation or replacement. This represented a failure rate of approximately 29.1%. In addition, maintenance was performed at 1,811 locations, including items such as the replacement of cross-arms and pole bonds.

b. Describe the number and percentage of transmission and distribution inspections planned and completed for 2014.

Year	System	# of Structures – Planned Inspections	% of Total Structures	# of Structures – Actual Inspected	% Complete vs. Planned
2014	Transmission	298	24.6%	298	100%
2014	Distribution Overhead	15,841	11.5%	15,841	100%
2014	Distribution Underground	6,449	11.6%	6,449	100%

c. Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2014 and the reason for the failure.

Year	System	# Failed	% Failed	Cause
2014	Transmission	0	0%	Ground Rot
2014	Transmission	86	28.9%	Top Deterioration
2014	Distribution	24	0.1%	Ground Rot
2014	Distribution	4,593	29.0%	Top Deterioration

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 2014, including a description of the remediation taken.

SECO completed 56% of its transmission pole remediation as of February 26, 2015. The transmission line section that contains the remaining 38 poles is also being reconducted in order to meet FRCC contingency Summer Loading criteria. This has extended the project completion date to May 1, 2015.

Transmission Poles			
Pole Type and Class	# Failed	# Replaced	% Remediation Complete (as of 2/26/15)
40-5	1	1	100%
45-1	1	1	100%
70-1	29	29	100%
75-1	49	15	31%
80-1	4	0	0%
85-1	1	1	100%
95-1	1	1	100%
<b>Total</b>	<b>86</b>	<b>48</b>	<b>56%</b>

SECO replaces all wooden transmission poles that failed inspection with spun-concrete poles. This allows for longer span length and requires fewer poles. While remediation occurred on (48) transmission poles, they were not necessarily replaced on a one-for-one basis.

SECO completed all distribution pole replacements as of January 31, 2015.

<b>Distribution Poles</b>			
<b>Pole Type and Class</b>	<b># Failed</b>	<b># Replaced</b>	<b>% Remediation Complete (as of 01/31/15)</b>
20-6	4	4	100%
30-6	1654	1654	100%
35-2	1	1	100%
35-4	5	5	100%
35-5	69	69	100%
35-6	1394	1394	100%
40-3	1	1	100%
40-4	10	10	100%
40-5	1243	1243	100%
45-2	1	1	100%
45-3	16	16	100%
45-4	104	104	100%
45-5	34	34	100%
50-1	1	1	100%
50-2	6	6	100%
50-3	12	12	100%
50-4	39	39	100%
50-5	1	1	100%
55-1	1	1	100%
55-3	5	5	100%
55-4	2	2	100%
60-3	13	13	100%
65-1	1	1	100%
<b>Total</b>	<b>4,617</b>	<b>4,617</b>	<b>100%</b>

## **5. Vegetation Management**

SECO achieved its Vegetation Management program objectives by completing a three-year trimming cycle on all transmission, feeder, and lateral circuits. To meet these goals, SECO followed industry-wide best practices that included various combinations of unit-based tree pruning, tree removals, and herbicide application.

In 2014, SECO trimmed 1,738 total circuit miles and removed 20,440 trees in support of its storm-hardening process. The following table is a summary:

Description	Measurement
Distribution line miles "Maintenance Trimmed"	1,738 miles
Distribution line miles cut "Ground-to-Sky" with 15-foot clearance on circuits for system improvement projects	1 mile
Transmission line miles cleared "Ground-to-Sky" with 30-foot clearance	22 miles
Total miles trimmed in 2014 (Distribution & Transmission)	1,761 miles
Total miles of herbicide application	1,451 miles
Total trees removed in maintenance trimming process	20,440 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, customer notification, and post-work inspection. 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:** SECO targets the removal of trees that fall within the 4"-10" diameter at breast height (DBH) range. In 2014, NTS trimming crews removed 20,440 trees from distribution circuit easements, representing 19.4% of the total 105,339 trees that were addressed for line-clearance issues. SECO also removes all 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 2014 by utilizing three weighted factors:

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

**Herbicide Program:** SECO utilized EDKO, LLC as its herbicide applicator to treat brush units in areas that were trimmed by NTS in 2013 and part of 2014 (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 the removal of vegetation growing in close proximity to its conductors. During 2014, SECO purchased 481 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 2014:

**Tree Planting Guidelines:** SECO has consistently exceeded strict requirements to maintain quality tree care practices and develop programs that educate both employees and members of the public. Proper tree selection and planting guidelines were communicated to its customers through SECO's website, direct mailings, and public events. In 2014, SECO was awarded the National Arbor Day Foundation's prestigious "Tree Line USA" designation for the eighth consecutive year.

**Danger Tree Removal / Hazard Mitigation:** In 2014, SECO removed 402 danger trees located outside of 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 2015, 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 2015, any hurricane and tropical storm activity within the continental United States could negatively impact production levels for crews performing cycle trimming on SECO distribution circuits.

### 2015 Vegetation Plan

SECO will continue to utilize its unit-based trimming practices to meet its cycle trimming goals for 2015. Circuits are prioritized based on date of trimming, customers impacted, and the number of tree-related outages. This method will enable SECO to maintain a three-year clearance trimming cycle.

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 2015 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 2014 and a portion of the miles to be trimmed in 2015. An estimated 1,442 miles of underbrush is scheduled for herbicide application by EDKO, LLC through October 2015, 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 all tree-trimming activities. They are responsible for initiating all member contact as well as inspecting the quality of tree-trimming work completed. SECO provides the latest technology so that ACRT is able to plan and audit work efficiently and accurately.



### Trimming Activities

All SECO tree-trimming work is performed by NTS, based on computerized work plans developed 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, EDKO, LLC utilizes low-volume backpack sprayers and larger scale vehicle-mounted equipment to apply select herbicide within easements and right-of-way.

