

**Tri-County Electric Cooperative, Inc.
Standards of Construction 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

Tri-County Electric Cooperative provided electric service to 17,932 for the reporting period ending December 31, 2016. The meters were located within Tri-County Electric Cooperative’s service territory, which consists of Madison, Jefferson and Taylor Counties and the northern portion of Dixie County in the State of Florida.

3. Standards of Construction

Tri-County Electric Cooperative has followed the standards, policies, guidelines, practices and procedures set forth by the Rural Utilities Service (RUS), previously known as the Rural Electrification Administration (REA) since the Cooperative was organized in the early 1940’s. Tri-County Electric Cooperative’s main construction standards are those set forth in the following bulletins: (1) RUS Bulletin 1728F-803 “Specifications and Drawings for 24.9/14.4 kV Line Construction”, (2) RUS Bulletin 1728F-804 “Specifications and Drawings for 12.47/7.2 kV Line Construction”, (3) RUS Bulletin 1728F-806 “Specifications and Drawings for Underground Electric Distribution”, (4) RUS Bulletin 1728F-810 “Electric Transmission Specifications and Drawings 34.5 kV through 69 kV”, (5) RUS Bulletin 1728F-811 “Electric Transmission Specifications and Drawings 115 kV through 230 kV.” Tri-County Electric utilizes the USDA Bulletin “Informational Publication 202-1: List of Materials Acceptable for Use on Systems of USDA Rural Development Electrification Borrowers” for any constructional material used in compliance with the above listed RUS construction bulletins.

a) National Electric Safety Code Compliance

The RUS construction bulletins are updated as required to stay in compliance with the National Electric Safety Code (IEEE/ANSI C-2) (NESC). However, Tri-County Electric Cooperative considers the standard in the NESC and the National Electric Code (NEC) to be the minimum safety standards and Tri-County Electric Cooperative has worked to exceed these minimum standards. Maintenance of proper clearance levels and the safety of the general public as well as the safety of our own workforce remains the main focal point for Tri-County Electric Cooperative’s compliance with National Electric Safety Codes.

1. Tri-County Electric Cooperative’s construction crew leaders inspect each newly built job as well as two (2) adjacent spans in each

direction before leaving the job site for any NESC or NEC code violations. If any code violations are found, they are corrected at that time. The Cooperative Foreman inspects all primary voltage construction completed by Tri-County Electric's construction personnel. Tri-County Electric's Contract Supervisor inspects all work completed by outside contracting personnel at the time of completion. All Cooperative distribution lines are inspected annually as well as during normal work assignments by Cooperative personnel.

2. After construction jobs are completed, Tri-County Electric Cooperative employs a third party engineering firm to inspect and verify that new construction jobs are built to RUS standards and free of code violations. Inspections are completed as per the RUS Bulletin with inspections completed quarterly. If NESC or NEC code violations are noted, Tri-County Electric Cooperative corrects these violations prior to a Professional Engineer certification of the work order report (RUS Form 219). Upon certification, the RUS Form 219 work order reports are then sent to Washington, D.C.
3. Tri-County Electric Cooperative sends a quarterly report of completed construction jobs (RUS Form 219) to the Florida Public Service Commission (FPSC). The FPSC selects jobs to be inspected by FPSC inspectors and provides Tri-County Electric Cooperative with a list of these jobs. If the FPSC inspector notes any code violations, Tri-County Electric Cooperative is notified via Certified Mail and these violations are then corrected by the Cooperative.
4. Of all RUS Form 219 jobs inspected, less than 5% required action by the Cooperative to correct minor code violations. These violations were minor infractions such as backfill and tamping of underground primary installations, guy marker installation or installation of insulated guy rods to maximize clearances. The Cooperative is committed to safety during distribution line extension and regular maintenance and remains vigilant of NESC, NEC or RUS code violations. The Cooperative attempts to address any potential code violations before leaving new construction sites and frequently revisits underground installation in an attempt to head off any potential erosion or code violation issues prior to inspection.

b) Extreme Wind Loading Standards

1. Tri-County Electric Cooperative utilizes Class B construction when crossing railroads, limited access highways and interstate highways. However, Tri-County Electric Cooperative has begun to institute Class B construction in certain highly congested areas to promote safety and maximize clearances. As specified in the NESC loading tables, Class B construction will withstand heavier wind and ice loading and will help to storm harden critical infrastructure facilities. These areas of high load demand and a desire to increase overall load capacity for Tri-County Electric Cooperative’s consumers will determine the future course and utilization of Class B construction standards for the Cooperative in normal construction. The Cooperative will continue to evaluate the feasibility of Class B construction on an ongoing basis as is justified by load, congestion and cost constraints.

c) Flooding and Storm Surges

1. Tri-County Electric Cooperative has reviewed its standards, policies and procedures relating to the effects of flooding and storm surges on underground facilities and supporting overhead structures. Currently the Cooperative’s standard practice is to restrict electrification of flood prone areas, which includes areas immediately adjacent to river banks within Madison and Jefferson counties, in the immediate threat of a flood. In coastal areas of Taylor and Dixie Counties served by Tri-County Electric Cooperative storm surge threats are minimal due to the natural protection afforded by the cove like land structure of the panhandle of Florida and the shallow depth of the coastal seaboard area. In an effort to minimize the effects of salt spray and storm surge on the electrical service provided to these coastal areas, Tri-County Electric Cooperative has maintained a larger kV construction standard in the past. Tri-County Electric will continue to evaluate this practice in the future to determine its effectiveness in minimizing service interruptions in coastal areas. Due to the abundance of natural drainage pathways and the rural landscape within Tri-County Electric Cooperative’s service territory, flooding and storm surge issues are minimal and at this time it is the opinion of the Cooperative that current practices and procedures are

sufficient to minimize the effects of flooding and storm surge on the electrical distribution facilities of the Cooperative.

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

1. Tri-County Electric Cooperative's construction standards, policies and procedures provide for the installation of new facilities and the replacement and maintenance of existing distribution facilities. In addition, the same standards, policies and procedures provide for efficient access by Tri-County Electric Cooperative's personnel and vehicles for installation and maintenance as safely and quickly as possible. It is the standard practice of Tri-County Electric Cooperative's staking personnel to acquire easements for all new construction jobs in order to ensure safe and efficient access by Cooperative personnel during both initial construction and routine maintenance of all Cooperative distribution facilities. In the case of existing line relocation, Tri-County Electric Cooperative decides on a case-by-case basis if the relocation of such facilities is warranted based on both ease of access and cost feasibility. If Tri-County Electric Cooperative determines that existing facilities need to be relocated, then the new route for these facilities is chosen based on the most accessible and safest area available at the time of relocation.

e) Attachments by Others

1. Tri-County Electric Cooperative utilizes Joint Pole Use Attachment Agreements, which includes language specific to Tri-County Electric Cooperative's construction, policies, guidelines, practices and procedures. This language also addresses the issues of safety, pole reliability as well as engineering safety guidelines and maintenance procedures.
2. In 2011, Tri-County Electric Cooperative renewed its existing joint use pole agreements with all of the utilities attached to our facilities. The agreement has language and procedures which require each utility to contact the Cooperative before making additional attachments in an effort to insure any new or additional attachment would not overload the existing pole lines. The Agreement maximizes safety standards and ensures all necessary clearances

are met in accordance with NESC, NEC and RUS requirements.

4. Facility Inspections

a) **Description of policies, guidelines, practices and procedures for inspection transmission and distribution lines, poles and structures including pole inspection cycles and pole selection process.**

1. Tri-County Electric Cooperative's distribution poles are inspected on an eight-year inspection cycle by a third party contractor that performs both ground line and visual inspections. Poles for inspection are selected based on the distribution substation on which they reside. Substations are chosen based on the date of the last pole inspection cycle which most closely adheres to the eight-year inspection cycle of the Cooperative's pole inspection program. The pole inspection cycle is in addition to those performed by FPSC personnel on selected RUS Form 219 construction jobs as well as the quarterly job inspections performed by Tri-County Electric Cooperative's third-party engineering firm for new construction jobs.
2. Affected poles are treated with either a formulation of preservative paste for decay control or a fumigant which is applied to protect against strength loss due to internal decay and/or insect strikes. These chemical applications treat the existing conditions affecting the inspected poles and help prevent any further decay that may compromise the structural integrity of the distribution system. Tri-County Electric Cooperative's pole inspection program is managed by the Cooperative's Contract Supervisor. All rejected poles are reported to the Contract Supervisor who coordinates their replacement through the Staking Technicians within the Engineering Department of Tri-County Electric Cooperative.
3. Tri-County Electric Cooperative visually inspects two 69 kV transmission lines, owned by Seminole Electric Cooperative, Inc., located in Dixie and Taylor County, Florida, and a 115 kV transmission line owned by Tri-County Electric Cooperative located in Madison County, Florida, each year. We utilize an outside pole inspection contractor to perform both ground line and visual inspections on these transmission lines on a five (5) year cycle. Affected poles are treated with the same chemical applications as the distribution poles, which is either a fumigant which protects

against strength loss due to internal decay and/or insect strikes or a preservative paste which treats existing conditions and prevents further decay problems. Affected transmission poles are reported to the Cooperative's Contract Supervisor who coordinates their replacement through the Staking Technicians within the Engineering Department of the Cooperative.

b) Transmission and distribution inspections planned and completed.

1. Tri-County Electric Cooperative maintains a 69 kV transmission line, which is 17.7 miles in length, located in Dixie County, Florida, and a 69 kV transmission line, which is 16.4 miles in length, located in Taylor County, Florida. These transmission lines are owned by Seminole Electric Cooperative, Inc., but are maintained by Tri-County Electric Cooperative. Tri-County Electric Cooperative also owns and maintains a 115 kV transmission line located in Madison County, Florida which is 13.77 miles in length. At the end of 2016, Tri-County Electric Cooperative began a project to rebuild twelve miles of the remaining wooden structures with steel on this 115 kV line. In 2010, nine (9) wooden poles on the 69 kV transmission line were replaced with metal structures.
2. In addition to our ground line pole inspection, we conduct an annual visual inspection of our transmission facilities. The visual inspection each year looks for pole, insulator, conductor damage, wood pecker damage on each wooden structure and possible right-of-way encroachment. We also inspect for any tree growth which could possibly cause an outage.
3. Tri-County Electric Cooperative completes an eight-year inspection cycle of our distribution poles. Of the 55,673 poles on our system, 45,778 poles have been inspected within this cycle.

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

1. During 2016, Tri-County Electric Cooperative inspected 6,153 poles. Of the poles inspected, 280 were rejected for a rejection rate of 4.6%. In addition to checking and treating poles, the inspection crew changed out and/or replaced missing down guy guards and

repaired broken ground wires. They repaired 49 broken ground wires.

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

1. The 280 rejected distribution poles found during the 2016 inspection which required replacement are in the process of being changed out.
2. After the annual visual inspections are performed, any items noted on the inspection are corrected, which usually consists of a large number of woodpecker hole repairs along with any other maintenance items.

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 practices are sufficient.

1. Tri-County Electric Cooperative maintains a listing of pre-construction guidelines which are provided to members prior to distribution line extensions. Members are also advised by Staking Technicians of the right-of-way procedures and practices performed by the Cooperative during line extension construction. This includes information about the maintenance of and access to right-of-way easement granted by the land owner to Tri-County Electric Cooperative for distribution line extensions. Members are advised to avoid planting any type of vegetation, other than grass, directly under the planned distribution lines or within the scope of the easement granted to Tri-County Electric Cooperative. The Cooperative will continue to evaluate this process on an ongoing basis and will continue to formulate new and more comprehensive right-of-way planning and maintenance materials which will be made available to current and prospective members.

2. Tri-County Electric Cooperative believes that the vegetation management and right-of-way practices of the Cooperative are sufficient at this time based upon our outage records per annual consumer hours off. Our reliability statistics meet and exceed RUS guidelines for SAIDI, SAIFI and CAIDI Indices. The Cooperative will continue to maintain an active right-of-way management program to minimize distribution line exposure and outage times for members. The Cooperative will continue to trim so called “hot spots” consisting of dangerous tree overhangs and vegetation overgrowth as these areas are reported to the Cooperative by members and Cooperative personnel during distribution line inspections and regular maintenance procedures.

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

Tri-County Electric Cooperative’s operation procedures and practices for right-of-way and vegetation management are as follows:

1. Tri-County Electric Cooperative attempts to acquire right-of-way easements 30-foot wide when constructing three-phase facilities. If only a 20-foot wide right-of-way easement can be obtained, then narrow profile construction is considered. The entire width of the obtained right-of-way easement is cleared from ground level to a maximum height of sixty (60) feet in order to minimize vegetation and right-of-way interference with the distribution facilities of the Cooperative.
2. On new single-phase construction, a 20-foot wide easement is desired with a 10-foot wide easement as the minimum standard. If a 10-foot easement cannot be obtained then an alternate route is required. The entire width of the obtained right-of-way easement is cleared from ground level to a maximum height of sixty (60) feet in order to minimize vegetation and right-of-way interference with the distribution facilities of the Cooperative.
3. Tri-County Electric Cooperative operates approximately 2,779 miles of overhead distribution line in Madison, Jefferson, Taylor and Dixie counties. During 2016, the Cooperative’s right-of-way contractors trimmed approximately 620 miles of right-of-way. The right-of-way removal procedure concentrated on areas with the heaviest tree

coverage with targeted goals of widening the tree overhang in order to minimize power interruptions due to tree coverage and vegetation growth. The right-of-way maintenance schedule includes a three year trim cycle for the least reliable circuits. There is also a four and five year cycle based on more reliable feeders.

4. Tri-County Electric Cooperative began an herbicide-spraying program in July 2009 to control vegetation growth and supplement current right-of-way trimming practices. Since the inception of the herbicide spraying program in 2009, the Cooperative has treated over 3,082 miles of right-of-way following our cutting and trimming program with a total of 425 miles being sprayed in 2016. The program has produced positive results in minimizing vegetation and tree growth within the Cooperative's right-of-way easements. The Cooperative will continue to monitor and evaluate the successfulness of all tree and vegetation management programs on a proactive rather than a reactive basis in order to maximize efficiency and minimize distribution line exposure.
5. Tri-County Electric Cooperative offers replacement trees to consumers as a way of negotiating with landowners in the right-of-way removal process. It is the practice of the Cooperative to attempt to build new distribution lines in the most accessible and safest available areas. This includes minimizing distribution line exposure to tree overhang and vegetation growth by planning and staking line extensions in areas with the least amount of right-of-way as is most feasible and cost effective at the time of construction.