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Wednesday, February 25, 2015

**PSC 25 – 6.0343**

**Municipal Electric Utility and Rural Electric Cooperative Reporting Requirements**

**Withlacoochee River Electric Cooperative, Inc.**

**P.O. Box 278**

**Dade City, FL 33526-0278**

**352-567-5133**

**Billy E. Brown, Executive V.P. & General Manager**

| 1) *Number of meters served in calendar year 2014* ~~10~~

| **219,780** (Services in place - December 2014) ~~8,057~~

2) *Standards of Construction*

a) *National Electric Safety Code Compliance*

**All electrical facilities constructed by Withlacoochee River Electric Cooperative, Inc. on or after January 1, 2012, will comply with the 2012 edition of the NESC; facilities constructed prior to this date comply with the edition in effect at the time of the initial construction.**

**Withlacoochee River Electric Cooperative's (WREC) Specifications and Drawings for 14.2/24.9 KV Overhead and Underground Distribution Line Construction are based on RUS bulletins, drawings and engineering specifications. All of those specifications meet or exceed the requirements of the National Electrical Safety Code (ANSI C-2) [NESC]. Due to the nature of capital funding from the Department of Agriculture (RUS), WREC is held accountable to a very comprehensive set of Federal guidelines (including the NESC). A Construction and Operations Manual was created and distributed to all line crews, supervisors, and**

other affected employees. Lines, cables and related equipment are installed and maintained according to these manuals, and both are used in the training program registered with the State of Florida. All field staking technicians have been trained in, and have access to, software that verifies NESC construction compliance. This Pole Foreman software is based on specific WREC design templates that include framing guides and corresponding material specifications. The program will calculate strength capabilities and clearances of specified spans, and compare results to the minimum NESC requirements (Grade C, B and Extreme Wind Loading).

*b) Extreme Wind Loading Standards*

WREC facilities are not designed to be guided by the “extreme wind loading standards” on a system wide basis. However, most new construction, major planned work assigned on or after December 10, 2006 and targeted critical infrastructure meets design criterion that comply with standards of construction for the wind loading projections in our service area. The NESC extreme wind loading standards are being considered for major distribution feeders. The difficulty in this consideration is the impact of joint use facilities. The concept of allowing joint use of overhead electrical distribution facilities is beneficial to all concerned, including the resulting pricing efficiencies for all affected Customers. Allowing multiple or large diameter cable attachments makes compliance with the extreme wind loading standards economically and aesthetically impractical due to the drastic reduction of span lengths.

*c) Flooding and Storm Surges*

Storm surge effects on WREC’s underground distribution facilities and supporting structures have been evaluated and for several years all pad mounted equipment, transformers, switchgear, etc., is specified with stainless steel construction. This requirement helps mitigate the need for premature replacement due to coastal erosion and high surge salt water intrusion.

We will continue to monitor all relative studies through the Florida Electric Cooperative Association and we will adjust our design standards accordingly. We strongly believe that it is essential to maintain current practices until we are able to thoroughly evaluate the results of current studies so that a cost/benefit can be established for conversion of overhead to underground.

All underground system designs include conduit installation for all primary and secondary cables, to both lengthen the life of the cable and shorten replacement times.

Additionally, WREC was the first Cooperative in the U.S. to receive RUS approval for

cost capitalization of the rehabilitative “cable-cure” process. This process prolongs the useful life of the cable and drastically reduces outages associated with cable failures. EPR (Ethylene-Propylene-Rubber) insulated cable is used exclusively for all underground primary distribution installations. Compared to standard cross-linked polyethylene insulation, EPR has a proven superior life span. All primary cables are also fully jacketed and strand-filled for additional long term reliability.

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

In 2014<sup>9</sup> WREC relocated approximately 27 miles of overhead primary lines from rear lot lines to the street, changing out hundreds of older poles and facilities. This practice will continue until all of the older areas have been upgraded.

e) *Attachments by Others*

All joint use attachment requests are evaluated on a case by case basis. Joint use companies send a written request to attach to WREC’s poles. Each request is evaluated as to loading and clearance requirements per the NESC and Pole Foreman software (referenced in 3(a) above). WREC has extensive written and signed joint use agreements on file with each joint use company that specify compliance with the NESC and Rural Utilities Services (RUS) requirements, specifications and drawings. Such items as placing, transferring, or rearranging attachments, erecting, replacing, or relocating poles are specifically addressed to meet all requirements as per the NESC and RUS.

#### 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.*

WREC utilizes well over 250 full time personnel to constantly monitor conditions and we are continuously developing realistic practices to evaluate the integrity and condition of our system as a whole. The group mentioned here consists of a combination of Operations and Engineering employees who are charged with the duty of line patrols while in the normal course of their daily work. Additionally, circuits and line segments having decreased performance are identified through data obtained with our Outage Management System and specific inspections are assigned accordingly. Annually, thousands of Service Orders are completed, processed, and the appropriate corrective action is taken.

With over 7,100 miles of overhead distribution lines, a considerable portion of WREC's system is physically checked annually according to the following methods:

Line Patrol	2,695 Miles
Voltage Conversion	99 Miles
Right-of-Way	1,636,233 Miles
S.T.A.R. <sup>1</sup>	378,195 Miles
Total	4,8083,145 Miles (Approximate numbers for year 2014)

- b) *Transmission and distribution inspections planned and completed*

WREC owns and maintains sixty-eight miles of transmission line with voltages of 69KV and 115KV.

All of the transmission feeders are patrolled annually by walking, riding or aerial patrol. An intense aerial patrol that included detailed infra-red inspections of every pole, switch, and connection on the system was conducted after it was exposed to tropical storm and hurricane force winds in 2004.

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<sup>1</sup> Strategic Targeted Action and Repair. Selected areas of our system are targeted for intense line maintenance and repair according to information obtained by various methods including customer service issues, service interruption data, etc.

**Distribution lines inclusive of lateral taps and services are annually inspected according to procedures described in the response to question (4. a) above.**

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

**Distribution poles are visually inspected at the time line inspections are performed. Additionally, poles are visually inspected, including sounding and checking below ground level, during voltage conversion and maintenance programs; subsequently changed out as necessary.**

**WREC utilized a contractor (OSMOSE) for pole inspection and treatment during 2003-2004. They found 6.2% pole rot and 1.0% pole rejection. A decision was made at that time to discontinue that type of inspection/treatment plan, due to the fact that the majority of our wooden poles are CCA, having a life expectancy well in excess of 20 years, with no known instances of ground line decay. The poles with older treatments are being systematically changed out.**

**Data is unavailable on exact failure rates. WREC is systematically changing out all of the wood poles treated with anything other than CCA through an aggressive voltage conversion program, relocation of rear lot line facilities and routine system maintenance. Many polymer and steel distribution poles have been installed throughout the system in an effort to test what appears to be emerging changes to the wood pole philosophy.**

*d) 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, including a description of the remediation taken.*

**Attached is a summary of size/class of distribution/transmission poles installed and removed in 2014. (Detailed data is not available, but WREC is exploring options to capture requested data for 2015 and future years)**

## **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.*

A very aggressive Vegetation Management Program (VMP) was adopted in 2004 which is inclusive of problem tree removal, increased horizontal and vertical clearances and under-brushing to ground level. Our goal has been obtained of having the entire system on a well documented trim cycle with problem circuits/areas clearly identified enabling a proactive right of way program.

WREC fully understands the objectives of the PSC with respect to a three year trim cycle, but WREC has in fact implemented measures to extend trim cycles; not shorten trim cycles. The ultimate objective is to control vegetation growth before it causes line related problems. WREC has accomplished this through the VMP and by well documenting vegetation growth/trim cycles for every transmission and distribution line segment. The thought process is by extending clearances, trim periods are extended. Certainly, desired clearances are not always obtainable, but these problem areas are being identified, monitored and addressed as needed. The VMP was implemented in early 2004 as a five-six year program with respect to addressing the entire system and our goal was achieved in summer of 2010.

WREC maintains over 150 overhead feeder circuits (over 7,100 miles of line). The current trim cycle is between three and four years. A few feeders, due to the type of soil conditions, have been cut more often because of a faster growth rate in those particular areas. Specific areas, according to customer service issues, outage reports and other statistics are trimmed in spots (Hot Spotted) which addresses “cycle busters”.

Data relevant to right of way issues is extracted from our outage management system (OMS) for prioritizing circuit trimming. When circuit trimming is performed all lateral taps and services are trimmed. Additional right of way issues are identified by line patrols, employees, contractors and consumers. Whenever the company is notified of any right of way issue a “service order” is initiated. During 2014 WREC addressed 2,020,639 right of way service orders ranging from trimming a single account to trimming an entire subdivision/area.

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

All transmission lines are inspected annually and associated right of way issues are considered top priority and addressed immediately. **Five (5) miles**

~~of right of way issues were addressed during our 2010 transmission line patrols.~~

# PSC Data Request to Florida Municipal Electric Utilities and Rural Electric Cooperative Utilities

(Subject: 2014 Electric Distribution and Transmission Service Reliability)

## Withlacoochee River Electric Cooperative, Inc.

For the data requests appearing below, please use the following definitions for the measure of reliability performance at the distribution system or the transmission system level. If your company uses a different definition, please specify.

(a) Service Interruptions (CI) - the loss of service to retail customers that lasts one minute or greater due to unplanned events within the distribution system or the transmission system.

(b) Customers (C) – The total number of retail customers (meters) served by the utility at the end of the reporting period (2014).

(c) Customer Minutes of Interruption (CMI) - The total number of minutes of interruption of retail customers within the total system.

(d) CAIDI (Customer Average Interruption Duration Index) - The average time to restore the service interruptions to interrupted retail customers within a system for 2014. CAIDI is calculated by dividing the customer minutes of interruption by the number of interrupted customers.

(e) SAIFI (System Average Interruption Frequency Index) - The average number of service interruptions per retail customer within a system for 2014. It is calculated by dividing the Service Interruptions (CI) by Customers (C).

(f) SAIDI (System Average Interruption Duration Index) - The average minutes of service interruption duration per retail customer served within a system for 2014. Mathematically, SAIDI is CMI divided by C.

(g) CEMI (Customers Experiencing Multiple Interruptions) - The percentage of customers (C) that have experienced more than a specified number of interruptions. For example, CEMI5 reports the percentage of customers experiencing more than 5 interruptions.

(h) MAIFIE (Momentary Average Interruption Event Frequency Index) - The average number of Momentary Interruption events (loss of continuity of less than one minute) recorded at substation breakers. A momentary interruption event is one or more momentary interruptions recorded within a five-minute period.

I. Data Requests Regarding Distribution Reliability (1 through 6) – For utilities which do not own distribution infrastructure, please respond “Not Applicable” or “N/A”.

1. Please provide C, CAIDI, SAIDI, and SAIFI for your company’s distribution system in 2014.

C = 205,458

CAIDI = 78.03

SAIDI = 102.44

SAIFI = 1.31



2. Please provide CAIDI, SAIDI, and SAIFI for each named storm that was excluded from the calculation of the system reliability indices provided in response to Question 1.  
No named storms but there were events that exceeded the T-Med threshold (SAIDI=8.2338) and were considered Major Event days.  
CAIDI = 768.64  
SAIDI = 8.31  
SAIFI = .01
3. Please provide CAIDI, SAIDI, and SAIFI for those events other than named storms that were excluded from the calculation of the system reliability indices provided in response to Question 1. Please describe the types of events and reasons for exclusion.  
POWER SUPPLIER – Outages caused by Progress Energy/ Substations excluded.  
CAIDI = 61.25  
SAIDI = 14.63  
SAIFI = 0.24  
SCHEDULED MAINTENANCE & CONSTRUCTION – Planned outages are excluded.  
CAIDI = 57.17  
SAIDI = 0.90  
SAIFI = 0.02
4. Please provide MAIFIE for your company’s distribution system in 2014.  
Not Available, WREC does not track MAIFIE.
5. Please provide MAIFIE for all events that were excluded from the calculation of the MAIFIE provided in response to Question 4. Please describe the types of events and reasons for exclusion.  
Not Available, WREC does not track MAIFIE.
6. Please provide any other measures that your company uses in tracking outage trends and system reliability goals, including any type of CEMI (such as CEMI5) for 2014.  
Not Available, WREC does not track other outage trends beyond those described above.

II. Data Requests Regarding Transmission Reliability (7 through 9) – For utilities which do not own transmission infrastructure, please respond “Not Applicable” or “N/A”.

7. Please provide SAIDI, SAIFI, and CAIDI for your company’s transmission system in 2014.  
NO outages were experienced on WREC owned radial transmission in 2014. WREC does not own Any “looped” or grid configured transmission.
8. Please provide SAIDI, SAIFI, and CAIDI for each named storm that was excluded from the calculation of the system reliability indices provided in response to question 7.  
N/A
9. Please provide SAIDI, SAIFI, and CAIDI for those events other than named storms that were excluded from the calculation of the system reliability indices provided in response to question 7. Please describe the types of events and reasons for exclusion.  
NO planned outages were experienced on WREC’s transmission in 2014. Power supplier (Progress Energy) outages are spread across the distribution circuits affected.

III. Overhead (OH) vs. Underground (UG) Questions (10 through 12)

10. Please provide the number of Overhead (OH) and Underground (UG) retail customers for your company at year-end 2014. How does your company determine whether a retail customer is served by OH or UG system?

**Not Available, WREC does not categorize retail customers by OH or UG.**

11. Please provide an estimate of the number of customer interruptions for OH and UG systems in 2014 and, if available, show the breakout of such data for named storms event periods (combined) and non-named storm periods.

**Not Available.**

12. Please provide an estimate of the minutes of customer interruptions for OH and UG systems in 2014 and, if available, show the breakout of such data for named storms event periods (in sum for all such periods) and non-named storm periods.

**Not Available.**

END

Record	Unit Description	Added	Retired
F085	POLES,CONCRETE 60'	0	0
F130	POLES,WOOD 80'	0	17
F135	POLES,CONCRETE,80 FT.	1	1
F145	POLES,CONCRETE, 85 FT.	0	1
F218	POLES, STEEL 95' TANG 0-5D	2	0
F221	POLES, STEEL 85' TANG 0-5D	4	0
F225	POLE, STEEL 90' TANG 0-5D	9	0
F234	POLE, STEEL 105-109 ANG 15-30D	1	0
F310	POLES, CONCRETE 95' TANG 0-5D	1	0
F320	POLE CONCRETE 100-103 TNG 0-5D	2	0
F330	POLE CONCRETE 105-108 TNG 0-5D	1	0
1065	POLES, FIBERGLS/COMPOSITE 40FT	9	0
1066	POLES, FIBERGLS/COMPOSITE 50FT	36	0
1067	POLES, FIBERGLS/COMPOSITE 55FT	1	0
1070	POLES,WOOD,35'& UNDER	521	916
1080	POLES,WOOD,40'& 45'	1128	894
1090	POLES,WOOD,50'& OVER	609	145
1100	POLES,CEMENT,35'& UNDER	3	4
1110	POLES,CEMENT,40'& 45'	3	2
1114	POLES, DUCTILE IRON 50' C1	15	0
1117	POLES, STEEL 60' LIGHT DUTY H2	1	0
1118	POLES,STEEL 50' RD &LD H1 GALV	32	0
1122	POLES,WOOD 60FT	13	1
1123	POLES,CONCRETE 60FT	2	0
8085	POLES,FIBERGLASS	79	40
8090	POLES,WOOD,35'& UNDER	247	159
8100	POLES,CONCRETE,35'& UNDER	249	27
8105	POLES,CONCRETE,35' & UNDER (B)	6	2
8118	POLES, ALUMINUM 12'	273	19
8119	POLES,ALUMINUM, 15'	12	1
8130	POLES,WOOD,40'& 45'	3	0
8135	POLES,CEMENT,40'& 45'	27	0
