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WITHLACOOCHEE RIVER ELECTRIC COOPERATIVE, INC.

Wednesday, February 24, 2021

PSC 25 – 6.0343
Municipal Electric Utility and Rural Electric Cooperative Reporting Requirements

Withlacoochee River Electric Cooperative, Inc.
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1) Number of meters served in calendar year 2020

237,950 (Services in place - December 2020)

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, 2017, will comply with the 2017 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 2020 WREC relocated approximately 6 miles of overhead primary lines from rear lot lines to the street, changing out 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 initiated, processed and the appropriate corrective action is taken. For several years WREC has utilized Infrared cameras during line inspections and in 2019 WREC added Drones to our line inspection program with inhouse operator certifications.

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	**399 Miles**
Drone/Infrared	**1,358 Miles**
Rear to Front Relocation	**6 Miles**
Right-of-Way	**1,723 Miles**
S.T.A.R. [1]	**499 Miles**
Total	**3, 985Miles (Approximate for year 2020)**

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 semi-annually by walking, riding or aerial patrol and any issues found are given top priority.

[1] 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 2020. (Detailed data is not available, but WREC is exploring options to capture requested data for 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.*

In the early part of 2017 WREC contracted with an arborist company (ACRT) who performed a total system vegetation analysis and assisted with the implementation and monitoring of a very aggressive Vegetation Management Program (VMP). ACRT is contracted for the duration of this four year program which is inclusive of problem tree removal, increased horizontal and vertical clearances and under-brushing to ground level.

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 will accomplish 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.

WREC maintains over 180 overhead feeder circuits (over 7,100 miles of line). The current trim cycle is 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 2020 WREC addressed 4,102 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 semi-annually and associated right of way issues are considered top priority and addressed immediately (2020 = 6.0 miles of transmission right of way trimmed).

WITHLACOOCHEE RIVER ELECTRIC COOPERATIVE, INC.

2020

Item Description	Additions	Retirements
POLES, FIBERGLS/COMPOSITE 40FT	2	0
POLES, FIBERGLS/COMPOSITE 50FT	3	-1
POLES, WOOD, 35'& UNDER	723	-990
POLES, WOOD, 40'& 45'	1304	-736
POLES, WOOD, 50'& OVER	406	-134
POLES, CEMENT, 35'& UNDER	7	-3
POLES, CEMENT, 40'& 45'	2	0
POLES, STEEL 45' LIGHT DUTY H2	20	0
POLES, DUCTILE IRON 50' C1	0	-2
POLES, DUCTILE IRON 55' H3	2	0
POLES, STEEL 60-65" LGHT DTY H2	10	0
POLES, STEEL 50' RD &LD H1 GALV	102	-3
POLES,CEMENT 50FT.	4	0
POLES, WOOD 60FT	0	-3
POLES, WOOD 65 FT	1	0
POLES, CONCRETE 55FT	23	0
POLES,CONCRETE 60FT	1	0
POLES, STEEL 55' LIGHT DUTY H2 & H4	29	0
POLES, STEEL 60'-65' H5	4	0
POLES, FIBERGLASS	39	-37
POLES, WOOD, 35'& UNDER	269	-179
POLES, CONCRETE,35'& UNDER	137	-24
POLES, CONCRETE,35' & UNDER (B)	8	-9
POLES, ALUMINUM, 14'	12	-1
POLES, ALUMINUM 12'	302	-17
POLES, ALUMINUM, 15'	1	-1
POLES, WOOD, 40'& 45'	3	0
GRAND TOTAL	3414	-2140

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

(Subject: 2020 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 (2020).

(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 2020. 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 2020. 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 2020. 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) MAIFI (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 2020.
   C = 225,403
   CAIDI = 104.6
   SAIDI = 87.0
   SAIFI = 0.8

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.

   CAIDI = 196.86
   SAIDI = 29.94
   SAIFI = 0.15

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 SUPPLY

   CAIDI = 40.19
   SAIDI = 7.68
   SAIFI = 0.19

   SCHEDULED MAINTENANCE & CONSTRUCTION – Planned outages are excluded.

   CAIDI = 93.92
   SAIDI = 1.587
   SAIFI = 0.02

4. Please provide MAIFIe for your company's distribution system in 2020.

   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 2020.

   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 2020.

   No outages were experienced on WREC owned radial transmission in 2020. WREC does not own Any "looped" or grid configured transmission.

   CAIDI = 0
   SAIDI = 0
   SAIFI = 0

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 2020. 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 2020. 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 2020 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 2020 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