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WITHLACOOCHEE RIVER ELECTRIC COOPERATIVE, INC.

Tuesday, February 22, 2022

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

Withlacoochee River Electric Cooperative, Inc.
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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 7,200 miles of overhead distribution lines, a considerable portion of WREC's system is physically inspected annually according to the following methods:

Line Patrol	**494 Miles**
Drone/Infrared	**2,568 Miles**
Right-of-Way	**1,670 Miles**
S.T.A.R. [1]	**249 Miles**
Total	**4,981 Miles (Approximate for year 2021)**

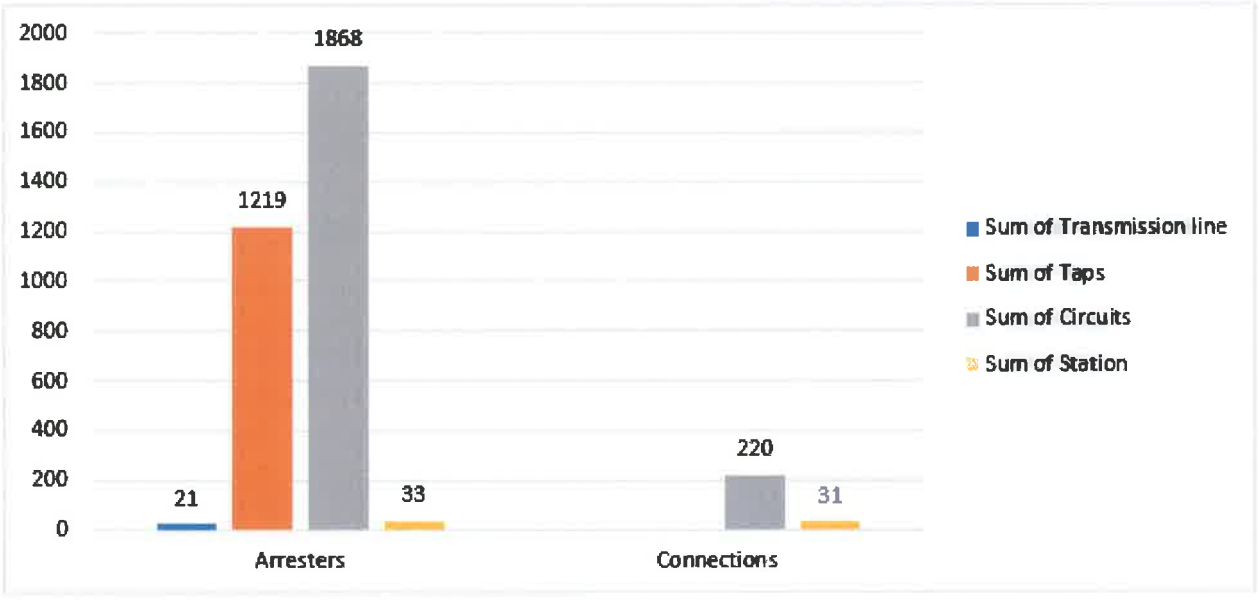
b) Transmission and distribution inspections planned and completed

WREC owns and maintains seventy-four miles of transmission line with voltages of 69KV and 115KV.

All of the transmission feeders are patrolled semi-annually by walking, riding or aerial/done patrol and any issues found are given top priority.

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

The following is a summary of 2021 Infrared/Drone inspections:



[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.

SUBSTATIONS
All substations were inspected four times with both the thermal camera and visual inspection. The inspections yielded 31 hot switches and 33 hot arresters. Several ampact connections and ABS switches were also found inside the stations

CIRCUITS
This year each circuit was inspected twice with the thermal camera. The inspections yielded 1,868 arresters and, 220 hot connections were either switches or compression connection. We also identified four poles that needed attention. The total mileage of line inspected is 2658 miles.

TRANSMISSION
The transmission line was both thermally and visually inspected twice this year. These inspections found 22 hot arresters on the transmission line itself. The total mileage of line inspected is 160 miles.

LATERAL TAPS
This year we were able to begin inspecting some of the high outage area taps. In doing so 1,219 hot arresters, several ROW issues, several coordination issues, and overloaded transformers were identified.

All identified issues were corrected.

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.

During the year 2021 transmission poles/structures inspections resulted in zero quantities of failures.

Data is currently unavailable on exact failure rates related to wood distribution poles. 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 and transmission poles installed and removed in 2021. (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.*

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). WREC has retained ACRT's services to oversee the VMP which is inclusive of problem tree removal, increased horizontal and vertical clearances, under-brushing to ground level and proper landscaping/planting.

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 7,200 miles of line) with a current trim cycle of 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 2021 WREC addressed 3,852 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. (2021 = 5.6 miles of transmission right of way trimmed)

WITHLACOOCHEE RIVER ELECTRIC COOPERATIVE, INC.

2021

Item Description	Additions	Retirements
POLES, FIBERGLS/COMPOSITE 40FT	4	2
POLES, FIBERGLS/COMPOSITE 50FT	8	13
POLES, WOOD, 35'& UNDER	872	1550
POLES, WOOD, 40'& 45'	2320	1189
POLES, WOOD, 50'& OVER	791	201
POLES, CEMENT, 35'& UNDER	9	1
POLES, CEMENT, 40'& 45'	10	6
POLES, STEEL 45' LIGHT DUTY H2	62	0
POLES, DUCTILE IRON 50' C1	2	0
POLES, STEEL 60-65' LGHT DTY H2	14	0
POLES, STEEL 50' RD &LD H1 GALV	212	0
POLES, WOOD 60'	9	2
POLES, CONCRETE 65'	2	0
POLES, WOOD, 60'	4	2
POLES, CONCRETE 60'	20	0
POLES, WOOD 65'	1	4
POLES, CONCRETE 55'	104	1
POLES, CONRETE 70'	2	0
POLES, STEEL 55' LIGHT DUTY H2 & H4	49	0
POLES, STEEL 60'-65' H5	2	0
POLES, FIBERGLASS	249	15
POLES, WOOD, 35'& UNDER	218	135
POLES, CONCRETE,35'& UNDER	305	29
POLES, CONCRETE,35' & UNDER (B)	16	1
POLES, ALUMINUM 30'	61	0
POLES, ALUMINUM, 14'	1	1
POLES, ALUMINUM 12'	696	9
POLES, ALUMINUM, 15'	37	0
POLES, WOOD, 40'& 45'	16	0
POLES, CEMENT, 40'& 45'	13	1
Grand Total	6109	3162

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

(Subject: 2021 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 (2021).

(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 2021. 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 2021. 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 2021. 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 2021.
   C = 233,177
   CAIDI = 72.35
   SAIDI = 86.98
   SAIFI = 1.20

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 = 0
   SAIDI = 0
   SAIFI = 0

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 = 86.15
   SAIDI = 19.42
   SAIFI = 0.23

   SCHEDULED MAINTENANCE & CONSTRUCTION – Planned outages are excluded.
   CAIDI = 44.6
   SAIDI = 0.63
   SAIFI = 0.01

4. Please provide MAIFIe for your company's distribution system in 2021.

   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 2021.

   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 2021.

   CAIDI = 62.08
   SAIDI = 5.41
   SAIFI = 0.09

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 2021. 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 2021. 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 2021 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 2021 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