City of Jacksonville Beach, Florida
dba/Beaches Energy Services
Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2019

1) Introduction

a) Name of city/utility:
City of Jacksonville Beach, Florida/dba Beaches Energy Services

b) Address, street, city, zip:
1460 Shetter Ave.
Jacksonville Beach, FL 32250

c) Contact information: Name, title, phone, fax, email
Contact person: Allen Putnam
Title: Director, Beaches Energy Services
Phone number: (904) 247-6259
Fax number: (904) 247-6120
Email: aputnam@beachesenergy.com

Contact person: Don R. Cuevas, PE
Title: Electrical Engineering Supervisor
Phone number: (904) 270-1686
Fax number: (904) 247-6120
Email: dcuevas@beachesenergy.com

2) Number of meters served in calendar year 2019

As of December, 31st, 2019 the number of electric meters served by Beaches Energy Services was 35,411 or:

Residential Meters	30,171
General Service Non-Demand Meters	4,412
General Service Demand Meters	350
Net Meter (Solar/PV, etc.)	120
City Accounts (GS Non-Demand Meters)	107
City Accounts (GS Demand Meters)	18
Inactive or "Out-of-Service" Meters*	233
	35,411

(*Note: All electric utilities have a number of inactive accounts at any given time. In addition, a number of customers own vacation homes in the Beaches Energy Services' Service Area and they have the electric service turned "on" or "off" as they come and go.)

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at the Beaches Energy Services comply with the National Electrical Safety Code (ANSI C-2). For electrical facilities constructed after 2017, the 2017 NESC applies. Electrical facilities constructed prior to NESC 2017 effective date are governed by the edition of the NESC in effect at the time of the facility's initial construction.

b) Extreme Wind Loading Standards

Construction standards, policies, guidelines, practices, and procedures at Beaches Energy Services are guided by the extreme wind loading standards specified by Figure 250-2(d) of the 2017 edition of the NESC for:

1) New construction;
2) Major planned work, including expansion, rebuild, or relocation of existing facilities, assigned on or after August 1, 2017; and
3) Targeted critical infrastructure facilities and major thoroughfares.

In order to accommodate these 120 mph wind loads, Beaches Energy Services implemented various required changes to our distribution line standards, such as:

a) The use of stronger concrete poles, rather than wood poles for critical feeders; and,
b) The elimination of static lines, with shorter distribution structures, as necessary to reduce moment loads on the structures.

Beaches Energy Services currently has a Capital Funding Program in place where, over the fifteen (15) year period between 2008 and 2022 all wood poles on main distribution feeder circuits are scheduled to be replaced with stronger concrete poles (Wood poles may still be used for single phase laterals).

- During calendar year 2008, Beaches Energy Services replaced 140 wood poles with 92 new concrete poles and 55 new wood poles (This was in addition to 164 distribution wood pole structures that were replaced due to failed inspections).

- During calendar year 2009, Beaches Energy Services replaced 142 wood poles with 88 new concrete poles and 23 new wood poles.

- During calendar year 2010, Beaches Energy Services replaced 74 wood poles with 68 new concrete poles and 9 new wood poles.

- During calendar year 2011, Beaches Energy Services replaced 93 wood poles with 89 new concrete poles and 3 new wood poles.

- During calendar year 2012, Beaches Energy Services replaced 101 wood poles with 71 new concrete poles and underground laterals.

- During calendar year 2013, Beaches Energy Services replaced 168 wood poles with 138 new concrete poles and underground laterals.

- During calendar year 2014, Beaches Energy Services replaced 53 wood poles with 34 new concrete poles and underground laterals.

- During calendar year 2015, Beaches Energy Services replaced 11 wood poles with 7 new concrete poles and underground laterals.

- During calendar year 2016, Beaches Energy Services replaced 56 wood poles with 39 new concrete poles and underground feeders and laterals.

- During calendar year 2017, Beaches Energy Services replaced 77 wood poles with 38 new concrete poles and underground feeders and laterals.

- During calendar year 2018, Beaches Energy Services replaced 63 wood poles with 33 new concrete poles and underground laterals.

- During calendar year 2019, Beaches Energy Services replaced 100 wood poles with 62 new concrete poles and underground laterals.

Also, Beaches Energy Services implemented a Capital Funding Program where in the ten (10) year period between 2008 and 2017, all overhead distribution lines, within approximately three city blocks of the Atlantic Ocean, were scheduled to be replaced with underground conductors, pad mounted transformers, switches and junction cabinets.

- During calendar year 2008, Beaches Energy Services replaced all of the remaining City of Neptune Beach overhead lines, within approximately three city blocks of the Atlantic Ocean, with underground conductors, pad mounted transformers, switches and junction cabinets.

- At this time, Beaches Energy Services has replaced all overhead lines, within approximately three city blocks of the Atlantic Ocean, with underground conductors, pad mounted transformers, switches and junction cabinets

beginning at the north end of our Service Territory, from the City of Neptune Beach, south through the City of Jacksonville Beach.

- At this time, Beaches Energy Services has replaced all overhead lines, between state road A1A and the Atlantic Ocean, with underground cables, pad mounted transformers, switches and junction cabinets from the City of Jacksonville Beach, south through the Ponte Vedra Beach and St. Johns County, to the southern end of our Service Territory.

Beaches Energy Services is also participating in the Public Utility Research Center's (PURC) granular wind research study through the Florida Municipal Electric Association (FMEA).

c) Flooding and Storm Surges

Electrical construction standards, policies, guidelines, practices, and procedures at the Beaches Energy Services address the effects of flooding and storm surges on underground distribution facilities and supporting overhead facilities.

For instance, for underground distribution facilities:

1) Beaches Energy Services eliminated "live-front" connected transformers. All exposed, "live-front" connected transformers have been replaced. In addition, the high voltage cables are connected to the transformers with sealed, "dead front" elbows instead of exposed, "live-front" terminations that could be "faulted" by flood waters;

2) All exposed, "live-front" air-insulated pad mounted switchgear has been replaced with sealed pad mounted switchgear utilizing SF6 gas or insulating oil as the insulation. In addition, high voltage cables are connected to the switchgear with sealed, "dead front" elbows instead of exposed, "live-front" terminations that could be "faulted" by flood waters; and,

3) Beaches Energy Services has discontinued the use of fiberglass foundations for pad mounted equipment and now only utilizes thick, heavy concrete foundations in order to act as a more secure "anchor" to insure equipment is less easily moved by flood waters.

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

Electrical construction standards, policies, guidelines, practices, and procedures at the Beaches Energy Services provide for placement of new and existing distribution facilities so as to facilitate safe and efficient access for installation and maintenance.

Consideration is also taken when designing circuits to ensure that our line crews and vehicles will have a suitable means of approach in order to reach the facilities and equipment safely and efficiently for the purpose of operation and maintenance. Beaches Energy Services' standard construction of vertical framing at the right-of-way line reinforces this by

preventing overhang into private property and allowing bucket truck access to equipment on the back of the pole due to phase separation requirements.

In addition:

1) "Back lot line" electric utility construction has been eliminated;

2) Construction standards require all electric kWh meters be located outside and near the front corner of buildings. This ensures easier access to kWh meters that were previously blocked by fences, possible dangerous dogs, etc.

3) All replacement or new URD underground conductors are installed in conduits rather than being direct buried. This allows easier installation; and, in the event of a cable failure, faster and easier cable replacement is possible;

4) All replacement or new URD underground cables have a plastic, jacketed sheath over the outer concentric neutral conductors. This eliminates corrosion and deterioration of the concentric neutral conductors on our URD underground cables;

5) Construction standards require all pad mounted equipment located near buildings to have minimum access clearance around the equipment; and,

7) Construction standards and requirements for Beaches Energy Services are readily available at http://www.beachesenergy.com/ (Select "Resources" then select "Publications and Forms" and finally "Procedures Manual".) This allows architects, engineers and contractors easy access to our Construction Standards and assists in eliminating misunderstandings and issues during the design phase of a construction project.

e) Attachments by Others

Electrical construction standards, policies, guidelines, practices, and procedures at the Beaches Energy Services include written safety, pole reliability, pole loading capacity, and engineering standards and procedures for attachments by others to electric transmission and distribution poles.

Currently, any party requesting new attachments to transmission and distribution poles must provide loading calculations sealed by a licensed Professional Engineer, to determine if the pole strength complies with the current edition of the NESC.

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 pole selection process.

Transmission - Beaches Energy Services has 138kV transmission circuits. All of Beaches Energy Services' transmission structures are spun or cast concrete poles, except for eleven (11) monotube steel poles and two (2) H-frame steel structures. As a result, there is little structural deterioration. Beaches Energy Services line crews perform the transmission line inspections, which are performed on an annual basis. They typically inspect the transmission structure's insulators, down guys, grounding and pole integrity.

Distribution - During 2007, Beaches Energy Services contracted with Osmose Utilities Services, Inc., to perform a general pole by pole inspection (sound and bore with excavation) for all distribution wood poles using the NESC standards for decay and reject status. Osmose Utilities Services, Inc., inspected 100% of our distribution wood poles. Poles 10 years and older were also treated at ground level for rot and/or decay. In addition to the required documentation and treatment, Osmose tagged and provided GPS coordinates for all of our wood and concrete distribution structures.

- It has been initially determined that this inspection process by Osmose Utilities Services, Inc., will continue to be performed on a cycle of once every eight (8) years.
- The inspection method is "sound and bore" method for every wood pole over 10 years old and a complete visual inspection is also performed for all poles for cracks, splitting, woodpecker holes and obvious decay.
- For every wood pole over 10 years old, the pole base is exposed (where possible) to 18 inches to inspect for indications of decay. On all wood poles where the base could be exposed, the pole was then treated with an externally applied wood preservative.
- Wood poles where the pole base could not be exposed were MITC-Fume treated. MITC-Fume is a fumigant preservative that's applied through holes bored in the pole and will migrate through the pole to prevent rot, decay and bug damage.
- In 2015 Beaches Energy Services started using the IML PD600 Resistograph for wood pole testing and inspected 800 poles.
- In 2016 Beaches Energy Services inspected 300 poles using an IML PD600 Resistograph.
- In 2017 Beaches Energy Services inspected 75 poles using an IML PD600 Resistograph.
- In 2018 Beaches Energy Services inspected 150 poles using an IML PD600 Resistograph.
- In 2019 Beaches Energy Services inspected 165 poles using an IML PD600 Resistograph.

All poles that failed to meet requirements were replaced.

b) Describe the number and percentage of transmission and distribution inspections planned and completed for 2019.

Transmission - 100% of Beaches Energy Services 424 transmission structure inspections were scheduled and completed.

Distribution - 100% of Beaches Energy Services 4,657 distribution wood and concrete pole inspections were scheduled and completed in 2007 (4,021 distribution wood pole inspections and 636 distribution concrete pole inspections).

In 2010, 68 new concrete poles and 9 new wood poles were installed and inspected during construction.

In 2011, 89 new concrete poles and 3 new wood poles were installed and inspected during construction.

In 2012, 71 new concrete poles were installed and inspected during construction.

In 2013, 138 new concrete poles were installed and inspected during construction.

In 2014, 34 new concrete poles were installed and inspected during construction.

In 2015, 7 new concrete poles were installed and inspected during construction.

In 2016, 39 new concrete poles were installed and inspected during construction.

In 2017, 38 new concrete poles were installed and inspected during construction.

In 2018, 33 new concrete poles were installed and inspected during construction.

In 2019, 62 new concrete poles were installed and inspected during construction.

In 2015, Beaches Energy Services inspected 800 poles using an IML PD600 Resistograph. This represents 15.5% of Beaches Energy Services' total of 5,145 wood and concrete poles.

In 2016, Beaches Energy Services inspected 300 poles using an IML PD600 Resistograph. This represents 5.6% of Beaches Energy Services' total of 5,354 wood and concrete poles.

In 2017, Beaches Energy Services inspected 75 poles using an IML PD600 Resistograph. This represents 1.4% of Beaches Energy Services' total of 5,307 wood and concrete poles.

In 2018, Beaches Energy Services inspected 150 poles using an IML PD600 Resistograph. This represents 2.8% of Beaches Energy Services' total of 5304 wood and concrete poles.

In 2019, Beaches Energy Services inspected 165 poles using an IML PD600 Resistograph. This represents 3.1% of Beaches Energy Services' total of 5,266 wood and concrete poles.

c) Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2019 and the reason for the failure.

Transmission – None of Beaches Energy Services' transmission structures failed routine inspection.

Distribution – Three (3) distribution structures failed inspection due to decay.

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, including a description of the remediation taken.

Transmission - No transmission structures failed routine inspection.

Distribution - 100% of all of our 4,657 distribution wood and concrete pole inspections were scheduled and completed in 2007 (4,021 distribution wood pole inspections and 636 distribution concrete pole inspections). Rather than repair them, all 164 of the distribution wood pole structures that failed inspection in 2007 were replaced. The 164 wood poles that were replaced represent approximately 3.5% of our total distribution poles.

In 2015, three (3) poles were replaced.

In 2016, no pole failed inspection and no pole was replaced.

In 2017, no pole failed inspection and no pole was replaced.

In 2018, no pole failed inspection and no pole was replaced.

In 2019, three (3) poles were replaced.

5. Vegetation Management

a) **Describe the 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.**

Transmission - Beaches Energy Services maintains transmission line clearances in accordance with the NERC Reliability Standard FAC-003 requirements.

All transmission lines are inspected and trimmed as needed prior to the start of each hurricane season.

Transmission line Rights-of-Way are mowed and maintained on an annual basis.

Beaches Energy Services believes our vegetation management practices are sufficient since we maintain the NERC standard.

Distribution - Beaches Energy Services has tree trimming crews/contractors, working year-round in our Electric Service Territory. The objective is to maintain a two to three year vegetation management cycle for transmission and distribution lines.

b) **Describe the quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities in 2019.**

Beaches Energy Services fully completed all FY2019 vegetation management activities described above. Vegetation management activities for FY2020 are on schedule.

6. Storm Hardening Research

Beaches Energy Services is a member of the Florida Municipal Electric Association (FMEA), which is participating with all of Florida's electric utilities in storm hardening research through the Public Utility Research Center at the University of Florida. Under separate cover, FMEA is providing the FPSC with a report of research activities. For further information, contact Amy Zubaly, Executive Director, FMEA, 850-224-3314, ext. 1, or AZubaly@PublicPower.com.