

**Homestead Energy Services  
City of Homestead, Florida  
Storm Hardening Report to the Florida Public Service  
Commission Pursuant to Rule 25-6.0343, F.A.C.  
Calendar Year 2020**

**1) Introduction**

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**2) Number of customers served in calendar year 2020**

25,853

**3) Standards of Construction**

a) National Electric Safety Code Compliance

*Construction standards, policies, guidelines, practices, and procedures at Homestead Energy Services comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after November 1, 2017, the 2017 NESC applies. Electrical facilities constructed prior to November 1, 2017, 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 Homestead Energy Services are guided by the extreme wind loading standards as specified by <http://windspeed.atcouncil.org/> for structures greater than 60' tall, and as recommended by the 2017 NESC Figure 250-2(b) for structures less than 60' tall for: 1) new construction; 2) major planned work, including expansion, rebuild, or relocation of existing facilities, assigned on or after December 10, 2006; and 3) targeted critical infrastructure facilities and major thoroughfares.*

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

c) Flooding and Storm Surges

*Electrical construction standards, policies, guidelines, practices, and procedures at Homestead Energy Services address the effects of flooding and storm surges on underground distribution facilities and supporting overhead facilities. New underground facilities are placed on ground high enough to minimize the impact of flooding.*

*Homestead Energy Services is also participating in the Public Utility Research Center's (PURC) study on the conversion of overhead electric facilities to underground and the effectiveness of undergrounding facilities in preventing storm damage and outages through the Florida Municipal Electric Association*

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

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

*All new residential services are in the front lot and are underground. All new facilities are installed so that Homestead Energy Services' facilities are accessible by its crews and vehicles to ensure proper maintenance/repair work is performed as expeditiously and safely as possible. Homestead Energy Services decides on a case-by-case basis whether existing facilities need to be relocated. If it is determined that facilities need to be relocated, they will be placed in the safest, most accessible area available.*

e) Attachments by Others

*Electrical construction standards, policies, guidelines, practices, and procedures at Homestead Energy Services include written safety, pole reliability, pole loading capacity, and engineering standards and procedures for attachments by others to the utility's electric transmission and distribution poles. All of these items are part of the Pole Attachment Agreements that Homestead Energy Services enters into with each attaching party. The agreements include language which specifies that the attacher, not Homestead Energy Services, has the burden of assessing pole strength and safety before they attach to the pole. Homestead Energy Services performs follow-up audits of attachments to ensure the attachment is properly installed and maintained.*

**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.**

*All transmission poles are concrete. A drone thermographic inspection of all transmission lines was completed in late 2017. A drone inspection was completed on Line 1 in March*

2019. With the advent of drone technology, Homestead Energy Services will be performing transmission line inspections on a three year cycle.

Wooden distribution poles are inspected in accordance with standard industry guidelines including sound and bore and loading evaluations. HES employs a contractor to perform pole inspections on an eight-year cycle. All new wooden poles are CCA as are the majority of the poles currently installed in the system. Class II, Class I or concrete poles are used for new construction or for any Class IV or Class V poles that are found to be in need of replacement. Homestead Energy Services makes the determination regarding which class of pole to be used on a case-by-case basis.

Annually, a thermographic inspection is performed on all of the feeder circuits and any problems noted are repaired. This inspection was completed in March 2020.

Distribution pole inspections are on an 8 year cycle, with 12.5% of the population scheduled to be inspected each year. Actual inspections typically yield about a 15% inspection rate.

Drone inspection on 2383 distribution poles was completed in April, 2019.

Pole selection has been done through a multi-city agreement coordinated by the Florida Municipal Power Association.

**b) Describe the number and percentage of transmission and distribution inspections planned and completed for 2020.**

50 % of the transmission system was scheduled to be inspected in the 2018/2019 fiscal year via drone. All transmission structures are concrete. 25% of the transmission system was inspected. Additional drone inspections are planned for Fiscal Year 2020/2021.

During the 2016/2017 Fiscal Year approximately 50% of the system was inspected. During the 2019/2020 Fiscal Year Homestead did not complete any distribution pole inspections. Pole inspections are scheduled to resume in 2021. During the 2018/2019 Fiscal Year a drone inspection of 7.6% of the distribution system was completed (2,382 poles).

**c) Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2017 and 2019 and the reason for the failure.**

*Transmission Poles:* 4 poles out of 135 failed inspection, or 1.5%. Two poles had cracks in the concrete at the top of the pole and have been remediated. Two poles have insulator damage and are scheduled for remediation in 2021.

*Distribution Poles:* 101 poles out of 4713 failed inspection in 2017, or 2.1%. With Butt Rot being the most prevalent cause, followed by upper roof rot and split tops. The breakdown is shown in the table below.

Reject with Cause	Count
BROKEN POLE	1

BUTT ROT	52
BUTT ROT, HOLLOW HEART	2
BUTT ROT, HOLLOW HEART, SPLIT TOP, UPPER ROOF ROT, POLE MOVING IN GROUND	1
BUTT ROT, POLE MOVING IN GROUND	1
BUTT ROT, SPLIT TOP	5
BUTT ROT, SPLIT TOP, TERMITES	1
BUTT ROT, SPLIT TOP, WOOD PECKER DAMAGE	1
BUTT ROT, TERMITES	1
BUTT ROT, TERMITES, WOOD PECKER DAMAGE	1
BUTT ROT, TOP DECAY	1
BUTT ROT, UPPER ROOF ROT	2
BUTT ROT,POLE ROT AT TOP	1
EXPOSED POCKET	1
EXPOSED POCKET, UPPER ROOF ROT, ENCLOSED POCKET, BUTT ROT	1
HOLLOW HEART	2
HOLLOW HEART, BUTT ROT	1
HOLLOW HEART, BUTT ROT, EXPOSED POCKET	1
INTERNAL VOID 5 FT ABOVE GROUND	1
MECHANICAL DAMAGE	1
SPLIT TOP	6
SPLIT TOP, TERMITES, BUTT ROT	1
SPLIT TOP, UPPER ROOF ROT	2
SPLIT TOP,TOP DECAY	1
UPPER ROOF ROT	10
UPPER ROOF ROT, SPLIT TOP	1
UPPER ROOF ROT, WOOD PECKER DAMAGE	1
WOOD PECKER DAMAGE	1
Not Rejected	4612
<b>Grand Total</b>	<b>4713</b>

- 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 in 2017, including a description of the remediation taken.**

*Transmission Poles: Two transmission poles (1.5%) were found to need remediation following the 2017 inspection. As the inspection was completed at the end of the year in 2017, remediation was completed first quarter 2020 by securing the tops with an extremely strong bonding material. During the 2019 inspection two (1.5%) additional transmission poles were identified for remediation and are scheduled for remediation in 2021.*

*Distribution Poles:*

*During the past year, the following pole repairs and replacements were completed based on the results of the 2016 and 2017 inspections and also on an as needed basis for storm hardening.*

- *New installation of Two (2) 45' 111 "H" concrete poles*
- *Replaced one (1) 40' wood class 4 pole with a 45' class 2 wood pole*
- *Replaced twenty-one (21) 40' class 4 poles with 40' class II poles*
- *Replaced eight (8) 45' class 2 poles with 45 foot class II poles*
- *Removed fifteen (15) 45' Class 4 poles and placed underground. Approximately ½ mile*

*In addition, following Hurricane Irma, 162 wood poles were replaced with either Class II, Class I or concrete poles. The 162 poles failed as a result of 1) trees falling on spans of wire and pulling the poles down, 2) high wind gusts or microbursts, and 3) poles identified through inspection as needing replacement, but not yet addressed when the hurricane arrived.*

## **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.**

*Homestead Energy Services employs a contractor for tree trimming services, and added an additional tree trimming crew at the end of 2016. Customers are provided literature regarding trees recommended for planting near power lines as requested. Homestead's geographic area is small and it is estimated that the entire system is trimmed on a two-year cycle. The City of Homestead recently enacted Code changes that require property owners to keep vegetation on private property trimmed to maintain six feet of clearance from HES facilities. There are no issues with vegetation management for transmission facilities. As a City department, Homestead Energy Services works with Public Works and Building and Zoning to ensure that appropriate landscaping is planned in the vicinity of electrical facilities.*

- b) **Describe the quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities in 2020.**

*The City of Homestead currently trims and maintains vegetation on a two year cycle. The utility's tree trimming contractor, Asplundh, is tasked with Homestead Energy's vegetation management process. Asplundh has a certified arborist and a state certified Commercial Applicator with experience in right of ways and vegetation management around transmission and distribution facilities on staff.*

## **6. Storm Hardening Research**

*Homestead 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](mailto:azubaly@publicpower.com).*