

JEA
Storm Hardening Report to the Florida Public Service
Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2015

1) Introduction

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2) Number of meters served in calendar year 2015:

JEA served approximately 450,000 electric meters in 2015.

3) Standards of Construction

a) National Electric Safety Code Compliance

JEA's construction standards, policies, guidelines, practices, and procedures comply with the National Electrical Safety Code (ANSI C2) [NESC]. For electrical facilities constructed on or after February 1, 2012, the 2012 NESC applies. Electrical facilities constructed prior to February 1, 2012, are governed by the edition of the NESC in effect at the time of the facility's initial construction.

b) Extreme Wind Loading Standards

JEA's construction standards, policies, guidelines, practices, and procedures are guided by the extreme wind loading standards specified by Figure 250-2(d) of the 2012 edition of the NESC for 1) new construction; 2) major planned work, including expansion, rebuild, or relocation of existing facilities, constructed on or after February 1, 2012; and 3) targeted critical infrastructure facilities and major thoroughfares. These standards primarily affect electric transmission structures 60 feet and taller, and require those structures to withstand winds up to 120 mph for JEA's service territory.

JEA has participated in the Public Utility Research Center's (PURC) granular wind research study through the Florida Municipal Electric Association (FMEA).

c) Flooding and Storm Surges

JEA historically has experienced very little flooding of our distribution or substation facilities, even during storms and consequently has not developed specific policies or guidelines addressing the effects of flooding and storm surges on our underground

distribution or supporting overhead facilities. JEA does have a written Storm Policy and associated procedures that address shutting down specific generating plants when a Category 3 storm or greater causes flooding or storm surges that threaten the safe operation of the plants.

JEA has participated 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 FMEA.

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

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

During the design process, traffic patterns, trees, lot lines, environmental hazards and future customer needs in undeveloped areas are taken into consideration when determining the best location for poles and equipment. Consideration is also taken when designing circuits to ensure that line crews and troubleshooters will have a suitable means of approach in order to reach the facilities and equipment for the purpose of operation and maintenance. JEA's 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. JEA has very few facilities requiring rear property line entrance and has not constructed any rear-entrance facilities in over 30 years.

e) Attachments by Others

JEA requires permits for all attachments by others to our poles. This permit requires the entity requesting to attach to a JEA pole to provide the design calculations to insure the addition of their attachment does not violate the requirements of the NESC in effect at the time of the request. In addition, attachments are generally limited to 7% of the total wind load capacity of the structure.

4. Facility Inspections

a) Describe the 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 - JEA owns and maintains 240KV, 138KV and 69KV transmission circuits. Every transmission circuit is inspected on a 5-year cycle with the exception of "critical" N-1, 240KV circuits which are inspected on a 2-year cycle. JEA inspects on average approximately 20 transmission circuits per year. JEA's transmission circuit inspections are performed in accordance with the JEA "Transmission Circuit Inspection Practices and Procedures" manual. JEA utilized a contractor to perform transmission circuit inspections prior to February 2013. In February 2013 JEA created, equipped, and staffed a five (5) man,

one (1) foreman, "Transmission Crew". JEA now self performs transmission circuit inspections.

Distribution - JEA utilized internal line maintainer staff in calendar year 2015 to perform a general pole by pole inspection for approximately 1/8 of the distribution system annually using the NESC standards for decay and reject status. The wood poles are drilled at ground level with a Resistograph for all poles that are installed 15-years or older. JEA crews perform a visual inspection on all poles for insulators, arrestors, cross arms, grounding and pole integrity.

b) Describe the number and percentage of transmission and distribution inspections planned and completed for 2015.

Transmission - JEA is currently using a 5 year transmission circuit inspection cycle except for three (3) critical circuits. JEA completed 36 circuit inspections in calendar year 2015.

Distribution - In 2015, JEA completed approximately 20 circuits for pole inspection.

c) Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2015 and the reason for the failure.

Based on 2015 inspections: Transmission – 0% failed inspection. Zero (0) wood transmission poles were identified for replacement by our circuit inspection program in 2015.

Based on 2015 inspections: Distribution – 4.3% of poles failed inspection. Approximately 30% of the failures are for ground decay and 70% of the failures are for pole top 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 in 2015, including a description of the remediation taken.

Based on 2015 inspections: Transmission – JEA replaced less than .01% or ten (10) wood transmission class 1 poles in 2015.

Based on 2015 inspections: Distribution – The poles listed as emergency poles (under 1%) are replaced immediately. The priority 2 poles are put on a list and scheduled for repair. In 2015, 189 poles were replaced. Since 2006, 15156 poles have been 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 - JEA maintains transmission line clearances and reporting in accordance with the NERC Reliability Standard FAC-003 requirements.

Distribution - JEA has maintained a 3-year trim cycle for more than 8 years on feeder and lateral circuits. The cycle was verified by benchmarking and an engineering study performed in 2000. In an effort to improve reliability even further – as requested by our customers – JEA started a 2.5 year trim cycle for the feeder and laterals in FY2007 (October 2006) and completed the first 2.5 year trim cycle in April 2009. FY2016, the 2.5 year trim cycle remains in effect.

b) Describe the quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities in 2015.

JEA fully completed all 2015 vegetation management activities described above. In 2014, the FRCC audited JEA for the NERC standard for vegetation management, FAC-003-1, for the past 3-year period. JEA was found fully compliant. In January 2015, JEA self-certified compliance for the FAC-003-3. Vegetation management activities for FY16 are on schedule.

The Public Utility Research Center has held two vegetation management workshops in 2007 and 2009. Through FMEA, JEA has a copy their reports and will use the information to continually improve vegetation management practices. We will participate in future best-practice workshops if there is interest.

6. Storm Hardening Research

JEA 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 Barry Moline, Executive Director, FMEA, 850-224-3314, ext. 1, or bmoline@publicpower.com.