City of Vero Beach

T & D Department

P.O. Box 1389 3455 Airport West Dr.
Vero Beach, FL 32961-1389
Telephone: (772) 978-5400 Fax: (772) 770-2230

February 28, 2013

Robert L. Trapp, Director
Division of Engineering
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Dear Mr. Trapp,

Enclosed is the City of Vero Beach System Hardening Report pursuant to rule 25-6.0343, F.A.C. for 2012. I have also attached a spreadsheet listing the poles that were replaced. If you have any questions, please contact me.

Sincerely,

J. Randall McCamish, P.E.
Director Electric T & D
Email: rmccamish@covb.org

City of Vero Beach
System Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2012

1) Introduction

a) City of Vero Beach

b) 3455 Airport Dr. West
P.O. Box 1389
Vero Beach, FL 32961-1389

c) Contact information: Name, title, phone, fax, email
Randall McCamish
Director Electric T & D
Phone: 772-978-5431
Fax: 772-770-2230
Email: rmccamish@covb.org

2) Number of customers served in calendar year 2012

Accounts:
Residential – 28106
Commercial – 5,537
Industrial – 1

Total 33644

There are also 480 Outdoor unmetered lighting accounts.

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at the City of Vero Beach comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2008, the 2008 NESC applies. The edition of the NESC in effect at the time of the facility's initial construction governs electrical facilities constructed prior to February 1, 2008.

b) Extreme Wind Loading Standards

In 2005 the construction standards, policies, guidelines, practices, and procedures at the City of Vero Beach were revised and as a result are guided by the extreme wind loading standards specified by Figure 250-2(d) of the 2002 edition of the NESC 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. Plans are being made to make any changes necessary based on the 2008 NESC.

The City of Vero Beach is also participating in the Public Utility Research Center's (PURC) granular wind research study through the American Public Power Association.

c) Flooding and Storm Surges

Electrical construction standards, policies, guidelines, practices, and procedures at the City of Vero Beach address the effects of flooding and storm surges on underground distribution facilities and supporting overhead facilities. All facilities are installed a minimum of 8 inches above the roadway and grading is required to prevent erosion.

The City of Vero Beach 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 American Public Power Association.

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

Electrical construction standards, policies, guidelines, practices, and procedures at the City of Vero Beach provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. All new facilities are installed on the roadway for easy access. Right-of-ways are maintained to existing overhead back lot lines as much as possible. Overhead back lot lines are replaced by underground lines in high-risk areas. Remote control equipment is also available for hard to reach areas.

e) Attachments by Others

Electrical construction standards, policies, guidelines, practices, and procedures at the City of Vero Beach include written safety, pole reliability, and pole loading capacity, and engineering standards and procedures for attachments by others to the utility's electric transmission and distribution poles. They use, number, size, elevation of attachment and wind loading are all taken into consideration when determining the strength of the pole.

4. Facility Inspections

a) Policies, guidelines, practice, and procedures for inspecting transmission and distribution lines, poles, and structures.

- The City of Vero Beach has 41.5 miles of transmission lines that are mostly on road or canal right-of-way. The transmission lines are driven and visually inspected once every 2 to 3 months.

A complete inventory of the electric system was taken in 2009. The results of the inventory showed that the overhead distribution system is made up of approximately 10,600 electric utility poles. The count showed that approximately 2,900 of the poles are owned by AT&T/Bellsouth with the City of Vero Beach owning the rest. The poles are inspected once every 5 years. Plans are to inspect 2,000 to 2,500 poles per year. Last year all of the AT&T/Bellsouth poles were inspected by an outside firm contracted by

AT&T/Bellsouth. The City of Vero Beach contracts a four-person line crew to inspect and repair or replace anything that doesn't meet current NESC standards including poles and hardware. The crew is given a GIS map printout with instructions to inspect everything in the map area. The condition of the poles and equipment is marked on the map including the estimated life expectancy of the poles not failing inspection. The poles are inspected using the sound and bore method with some excavation. Normally the poles are sounded and bored at ground line unless the pole is over 20 years old or looks weathered, then some excavation around the pole is performed for further inspection. All poles and equipment failing inspection are replaced within two weeks. AT&T/Bellsouth is notified when one of their poles fails inspection and they usually replace them within 90 days.

b) Number and percentage of transmission and distribution inspections planned and completed for 2011.

- The transmission system was inspected 4 times in 2012 with no poles failing inspection. We currently have approximately 700 square concrete, 65 steel, 125-spun concrete, 65 wooden, and 5 round hybrid concrete/steel poles. Any additions or replacements will be either spun concrete or round hybrid poles.

The City of Vero Beach initiated an inspection program of the electric system in September 2006. Prior to this date complete records were not kept. In 2012 approximately 25% (2,640 poles) of the distribution system had been inspected and repairs made. The entire system will be inspected and repairs made within 5 years.

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

- There were no transmission pole or structure failures in 2011. Three square concrete poles were found to have a vertical hairline crack at the base in a 2008. An outside contractor inspected the poles and determined that the cracks were not due to wind or load stress but possibly from lightning. All three poles were repaired in 2009.

- 2,650 distribution poles were inspected with 15 failures or 0.5%. There were 2 poles replaced by AT&T/Bellsouth due to ground rot. Fourteen poles were replaced by the City of Vero Beach, of which 8 were from ground rot, and 5 were hit by a vehicle.

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.

- There were no transmission poles or structure failures in 2012.

- The distribution system had two 40 Class-3 wood poles hit by a car. They were replaced with a 40 Class-3 wood poles. Three 30' class 5 wood poles was hit by cars and replaced with a 30' class 5 wood poles. Seven 40-4 wood poles failed from ground line rot. All were replaced with 40' class 4 poles. Three 30' class 5 wood poles failed from ground line rot. All were replaced by 30' class 5 wood poles and.. AT&T/Bellsouth replaced 2 of the above listed poles. In every case the same size and type of pole was used to replace the old pole. The remaining poles were owned and

replaced by the City of Vero Beach and the following criteria were used. Once a pole fails inspection it is replaced with a steel or concrete pole if it can easily be reached by a bucket truck from the road or a parking lot. If it is in a back lot line and cannot be reached easily by a bucket truck a wood pole is used.

5. Vegetation Management

a) The City of Vero Beach has always attempted to maintain a three-year vegetation management cycle. In December 2004 the City adopted the Tree Line USA approach to trimming trees. Now when tree limbs get within 3 feet of the neutral or 5 feet of the primary it is cut back to the trunk or main limb. This usually leaves about a 10 feet clearance after initial trimming. The City has also started topping trees that are in the right-of-way at the customer's request in an effort to help them remove the trees. With this trimming policy the City has been able to maintain proper clearance with two 3-man crews. In 2011 the dispatch center received approximately 12 calls per week from customers requesting tree trimming.

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

- The City of Vero Beach has approximately 40 square miles of service territory. This territory is broken down into a grid system of 60 blocks of equal size. The tree crews are given one block to trim at a time and this block is mark off as it is completed. The goal is to complete all 60 blocks every three years. We also have our transmission lines mowed every six months.

6. Storm Hardening Research

The City of Vero Beach is a member of the American Public Power Association (APPA), 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, APPA is providing the FPSC with a report of research activities. For further information, contact

Public Utility Research Center

University of Florida
Warrington College of Business Administration
205 MAT
PO Box 117142
Gainesville, FL 32611-7142

2/28/2013

JOBYEAR	JOBCOU	ADDRESS	NEW POLE	OLD POLE	REASON	COMPLETED
12	2877	43RD AVE AND AIPORT WEST DR	40' WOOD POLE	40' WOOD POLE	ROTTON POLE	02-Apr-12
12	3280	2226 50TH AVE	30' WOOD POLE	30' WOOD POLE	ATT POLE TRANSFER	09-May-12
12	3279	3600 BLK OF US HWY 1/CASE#2012-1240	NOT REPORTED	NOT REPORTED	BAD POLE	08-May-12
12	3422	15TH & 16TH AVE FROM 23RD TO 25TH S	40' WOOD POLE	40' WOOD POLE	SET POLE	21-May-12
12	4048	1425 18TH ST	2-30' WOOD POLES	2-30' WOOD POLES	ROTTON POLES	11-Jul-12
12	4067	1880 37TH ST	40' WOOD POLE	40' WOOD POLE	ROTTON POLE	12-Jul-12
12	4141	1858 COMMERCE AVE	40' WOOD POLE	40' WOOD POLE	ROTTON POLE	18-Jul-12
12	4142	4507 SUNSET DR	30' WOOD POLE	30' WOOD POLE	ROTTON POLE	18-Jul-12
12	4141	1858 COMMERCE AVE	30' WOOD POLE	30' WOOD POLE	CAR HIT POLE	18-Jul-12
12	4163	27TH AVE & ATLANTIC BLVD	40' WOOD POLE	40' WOOD POLE	ATT POLE TRANSFERS	20-Jul-12
12	4351	2715 52ND AVE	30' WOOD POLE	30' WOOD POLE	VEHICLE HIT POLE AND BROKE IT IN HALF	06-Aug-12
12	4384	19TH ST & 18TH AVE	40' WOOD POLE	40' WOOD POLE	VEHICLE HIT POLE AND BROKE IT IN HALF	09-Aug-12
12	4506	6885 20th ST APT #318	40 FT POLE	40 FT POLE	VEHICLE HIT POLE AND BROKE IT IN HALF	27-Aug-12
12						
12	1562	1164 18TH PL	30' WOOD POLE	30' WOOD POLE	VEHICLE HIT SL POLE	13-Nov-12
12	1760		30' WOOD POLE	30' WOOD POLE	MOVED UTILITY POLE PER CUSTOMER REQUEST	04-Dec-12