State of Florida

ORIGINAL

Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

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COMMISSION CLERK

-M-E-M-O-R-A-N-D-U-M-

DATE: March 15, 2007 070000

TO: Ann Cole, Commission Clerk

FROM: Timothy J. Devlin, Director, Division of Economic Regulation TJD

RE: Annual Storm Hardening Reports of the Municipal and Cooperative Electric Utilities Pursuant to Rule 25-6.0343, F.A.C

Please add the following Storm Hardening Reports of the municipal and cooperative electric utilities for calendar year 2006 to Case Management, Docket Number 070000. The attached reports are the first filings pursuant to Rule 25-6.0343, F.A.C. If you have any questions, please let me know. Thank you.

UTILITY	DATA YEAR	YEAR FILED	DOCUMENT NUMBER
Alachua, City of	2006	2007	None
Bartow, City of	2006	2007	None
Beaches Energy Services	2006	2007	None
Blountstown, City of	2006	2007	None
Bushnell, City of	2006	2007	None
Chattahoochee, City of	2006	2007	None
Clewiston Utilities, City of	2006	2007	None
Fort Meade, City of	2006	2007	None
Fort Pierce Utilities Authority	2006	2007	None
Gainesville Regional Utilities	2006	2007	None
Green Cove Springs, City of	2006	2007	None
Havana, Town of	2006	2007	None
Homestead, City of	2006	2007	None
JEA	2006	2007	None
Keys Energy Services	2006	2007	None
Kissimmee Utility Authority	2006	2007	None
Lake Worth Utilities Dept.	2006	2007	None
Lakeland Electric	2006	2007	None
Leesburg, City of	2006	2007	None
Moore Haven, City of	2006	2007	None
Mount Dora, City of	2006	2007	None
New Smyrna Beach	2006	2007	None
Newberry, City of	2006	2007	None
Ocala Electric Utility	2006	2007	None

DOCUMENT NUMBER-DATE
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Orlando Utilities Commission	2006	2007	None
Quincy, City of	2006	2007	None
Reedy Creek Improvement District	2006	2007	None
Starke, City of	2006	2007	None
Tallahassee, City of	2006	2007	None
Vero Beach, City of	2006	2007	None
Wauchula, City of	2006	2007	None
Williston, City of	2006	2007	None
Winter Park, City of	2006	2007	None
Central Florida Electric Coop., Inc.	2006	2007	None
Choctawhatchee Electric Coop., Inc.	2006	2007	None
Clay Electric Coop., Inc.	2006	2007	None
Escambia River Electric Coop., Inc.	2006	2007	None
Florida Keys Electric Coop. Ass., Inc.	2006	2007	None
Glades Electric Coop., Inc.	2006	2007	None
Gulf Coast Electric Coop., Inc.	2006	2007	None
Lee County Electric Coop., Inc.	2006	2007	None
Okefenoke Rural Electric Membership Corporation	2006	2007	None
Peace River Electric Coop., Inc.	2006	2007	None
Seminole Electric Coop., Inc.*	2006	2007	None
Sumter Electric Coop., Inc.	2006	2007	None
Suwannee Valley Electric Coop., Inc.	2006	2007	None
Talquin Electric Coop., Inc.	2006	2007	None
Tri-County Electric Coop., Inc.	2006	2007	None
West Florida Electric Coop. Ass., Inc.	2006	2007	None
Withlacoochee River Electric Coop., Inc.	2006	2007	None

FMEA
FLORIDA MUNICIPAL ELECTRIC ASSOCIATION

March 1, 2007

Tim Devlin
Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Rule 25-6.0343, F.A.C. and Order No. PSC-06-00351-PAA-EI

Dear Mr. Devlin,

Florida's municipal electric utilities are voluntarily participating with the state's investor-owned utilities in collaborative research on hurricane hardening. In their Storm Hardening reports to the PSC, due March 1, 2007, they each reference their membership in FMEA, and how through their membership, they are participating in this research.

FMEA regularly informs and involves all of Florida's municipal electric utilities providing information and progress of the research. We seek consultation on report drafts and input on research direction. As a result of FMEA's participation, Florida's municipal electric utilities have been involved and engaged in this research.

Attached is a report prepared by the Public Utility Research Center summarizing the research to date.

If you have any questions, please call me at (850) 224-3314, ext. 1, or send an email to bmoline@publicpower.com.

Sincerely,

Barry J. Moline
Executive Director

enclosure

Report on Collaborative Research for Hurricane Hardening

Provided by

The Public Utility Research Center
University of Florida

To the

Utility Sponsor Steering Committee

February 26, 2007

I. Introduction

The Florida Public Service Commission (FPSC) issued Order No. PSC-06-00351-PAA-EI on April 25, 2006 (Order 06-0351) directing each investor-owned electric utility (IOU) to establish a plan that increases collaborative research to further the development of storm resilient electric utility infrastructure and technologies that reduce storm restoration costs and outages to customers. This order directed IOUs to solicit participation from municipal electric utilities and rural electric cooperatives in addition to available educational and research organizations. As means of accomplishing this task, the IOUs joined with the municipal electric utilities and rural electric cooperatives in the state (collectively referred to as the Project Sponsors) to form a Steering Committee of representatives from each utility and entered into a Memorandum of Understanding (MOU) with the University of Florida's Public Utility Research Center (PURC).

The MOU has a term beginning March 1, 2006 and ending May 31, 2009, and may be renewed by mutual agreement of the Project Sponsors and PURC. In serving as the research coordinator for the Project outlined by the MOU, PURC manages the work flow and communications, develops work plans, facilitates the hiring of experts coordinates with research vendors, advises the Project Sponsors and provides reports for Project activities. PURC's budgets for work completed in 2006 are listed as Appendix A and Appendix B. Appendix D provides PURC's projected budget for the first part of 2007.

researchers who presented were selected by an industry steering committee. Presentations were made by:

- Dr. Kurt Gurley, University of Florida
- Dr. Steinar J. Dale, Florida State University
- Dr. Alex Domijan, Jr., University of South Florida
- Calvin Stewart, Davies Consulting, Maryland
- Dr. Francis M. Lavelle, Applied Research Associates, N. Carolina
- Dr. Seth Guikema, Texas A&M; and Dr. Rachel Davidson, Cornell University

The workshop provided a valuable educational opportunity for both industry and researchers, and provided an important exchange of ideas on how Florida utilities might improve its approach to hardening their infrastructure. In their presentations and discussion, the utilities emphasized the need for practical research, advanced analytical techniques, and increased data availability and testing. Utility representatives demonstrated interest in the following research topics:

- Wind research, such as might be provided by the hurricane wind simulation lab (i.e., the Wall of Wind) and wind measurement devices;
- Materials development and analysis that could provide, for example, poles that are cheaper and easier to install during storm recovery efforts;
- Cost-effectiveness of possible hardening solutions, including undergrounding and vegetation management; and
- How joint use loads affect storm damage and recovery

Subsequent to the workshop, the utility sponsors' Steering Committee refined the areas of interest into four topics for further research: the economics of undergrounding, granular analysis and modeling of hurricane winds, vegetation management, and improved materials. The Steering Committee decided that materials vendors should be encouraged to perform the materials research because they are the ones who would subsequently profit from selling the new equipment and facilities. The Steering Committee has launched efforts on each of the other three topics. Each is described below.

III. Undergrounding

An important consequence of hurricanes is that they often cause major power outages, which can last for days or even weeks. These outages almost always lead to a public outcry for electric utilities to move overhead power lines under ground. To some it seems intuitive that undergrounding facilities should protect them from damage. However, research shows that this is not necessarily the case: while underground systems have fewer outages than overhead systems, they can sometimes take longer to repair. Furthermore forensic analyses of recent hurricane damage in Florida found that underground systems may be particularly susceptible to storm surge.

IV. Wind Data Collection

Appropriate hardening of the electric utility infrastructure against hurricane winds requires: 1) an accurate characterization of severe dynamic wind loading, 2) an understanding of the likely failure modes for different wind conditions, and 3) a means of evaluating the effectiveness of hardening solutions prior to implementation.

The Project Sponsors are addressing the first requirement by contracting with the University of Florida's Department of Civil & Coastal Engineering (Department) to establish a granular wind observation network will be established to address the first requirement. This network of devices will capture the behavior of the dynamic wind field upon hurricane landfall. Once a hurricane occurs and wind data is captured, forensic investigations of utilities infrastructure failure, conducted by the utility companies, will be overlaid with wind observations to correlate failure modes to wind speed and turbulence characteristics.

The spatial resolution should be such that performance of varying power distribution infrastructure designs can be evaluated and compared to an accurate assessment of their respective wind loads. The influence of local terrain features as well as proximity to the coast will be incorporated within the resultant description of the wind field. Existing portable weather stations already deployed by the research team will continue to provide ground level wind observations. This portable network now consists of five portable stations; it may be extended to up to twelve portable stations.

The Steering Committee has approved funding for this project for a one-year period, with the option to expand the program in future years to bring more deployment stations on line. This one-year pilot-level program will fund development of the portable instrument package, the development of the fixed deployment station details, the production of several portable units and perhaps a dozen deployment stations. This pilot program will serve as a proof-of-concept, with possible additional follow-up investments expanding the pilot program to produce more portable units and more stations if chosen by the Steering Committee.

To monitor hurricane weather conditions, the researchers are developing a hardened compact package (wind reading instrument, data-logger, power supply) that is designed for deployment where needed as a storm approaches. Stations will be set up across Florida to receive the portable instrument package. As a storm approaches, the portable instrument packages will be deployed to selected stations within the path of the oncoming storm. This arrangement produces a close spatial resolution of observation points in the impacted area. The instrument packages would be stored and maintained by the researchers, assuring quality control. A mobile, centrally controlled stockpile of units to be

- Strategies to managing vegetation management resources to stay ahead of line crews' needs and restoration activities
- Distribution: Removals - targeting certain species

The initial outcome will be a greater pool of shared knowledge on the part of utilities, vendors and PURC regarding the utilities' needs for improved vegetation management practices. The Steering Committee will determine whether further work is needed in this area after the workshop. The budget for this workshop is attached as Appendix C.

VI. Conclusion

In response to the FPSC's Order 06-0351, IOUs, municipal electric utilities and rural electric cooperatives joined together and retained PURC to coordinate research on electric infrastructure hardening. The initial step in this project was a workshop held in June 2006 in Gainesville, Florida. The workshop provided a forum for utility managers and hazard research professionals to discuss means to prepare Florida's electric infrastructure to better withstand and recover from hurricanes. The presentations and a workshop report are on the PURC web site located at www.purc.ufl.edu.

The research and study areas under consideration were extracted from information provided by the utilities and other stakeholder groups, including the universities. The work of the group is guided by the utilities sponsoring the research. Implementation includes a coordination effort and organization of workshops to examine ongoing studies and research, and the development of a formal research agenda.

The second step in this coordination effort was the organization of meetings and conference calls to examine ongoing studies and research, and to discuss the potential need, for a formal research agenda. PURC worked with the Steering Committee, which decided to pursue work on undergrounding, wind data collection and analysis, and vegetation management as described above.

Costs have been incurred according to the funding schedule set by the Steering Committee. Thus far, costs have included the initial workshop, PURC's coordinating work, Phase I of the undergrounding research, and seed money for the granular wind research. These costs are detailed above. Funds have been designated for Phases II and III of the undergrounding research and for wind measurement also as described above. The Steering Committee has also approved plans for the vegetation management workshop in March. Registration fees for this workshop will cover the workshop costs.

The benefits of the scope of work realized at the time of this report include increased collaboration and discussion between members of the Steering

Appendix A

PURC's Budget for Research Coordination March – July, 2006

Items		Amounts
Personnel		
	Engineering Faculty (2 weeks)	$ 5,432.00
	PURC Faculty (2 weeks)	$ 6,858.00
	Admin. Assist. (2 weeks)	$ 2,467.00
		$ 14,757.00
Workshop (June 9, 2006)		
	Registration Fee	$ (5,125.00)
	Facility Rental, AV & Food	$ 2,900.00
	Speaker Travel	$ 1,000.00
	Materials & Supplies	$ 200.00
		$ (1,025.00)
Travel		
	Related Workshops & Conferences	$ 1,472.00
	Trips to Tallahassee	$ 270.00
		$ 1,742.00
Subtotal		$ 15,474.00
University Overhead (25%)		$ 5,158.00
Total		$ 20,632.00

Payment Amounts

Sponsor	Percent of Total	Amount due PURC
Florida Power & Light	47.61%	$ 9,822.90
Florida Public Utilities Company	0.34%	$ 70.15
Gulf Power Company	4.54%	$ 936.69
Progress Energy Florida	17.20%	$ 3,548.70
Tampa Electric Company	7.06%	$ 1,456.62
Florida Electric Cooperatives Association	8.55%	$ 1,764.04
Florida Municipal Electric Association	14.69%	$ 3,030.84
Total	100.00%	$ 20,629.94

PURC Faculty Activities

Organizing workshop
- Identifying speakers
- Preparing agenda
- Managing content

Developing workshop report
Developing plans with project sponsors
Participation in meetings and conference calls
Working on Memorandum of Understanding for research coordination
Preparing plans for research coordination

Appendix B

PURC's Budget for Research Coordination August – December, 2006

Items		Amounts
Personnel		
	PURC Faculty (4 weeks)	$ 11,200.00
	Grad Student (5 weeks)	$ 3,300.00
	Administrative (4 weeks)	$ 5,600.00
		$ 20,100.00
Travel		
	Steering Committee meetings (3)	$ 390.00
		$ 390.00
Subtotal		$ 20,490.00
University Overhead (25%)		$ 6,830.00
Total		$ 27,320.00

Payment Amounts

Sponsor	Percent of Total	Amount due PURC
FPL	46.71%	$ 12,761.17
FPUC	0.33%	$ 90.16
Gulf	4.46%	$ 1,218.47
Progress	16.88%	$ 4,611.62
TECO	6.93%	$ 1,893.28
FECA	8.39%	$ 2,292.15
FMEA	14.41%	$ 3,936.81
LCEC	1.89%	$ 516.35
	100.00%	$ 27,320.00

PURC Faculty Activities

Drafting work plans for undergrounding, vegetation management, and materials
Drafting RFP for undergrounding
Compiling consultant list for undergrounding
Organizing and managing weekly conference calls
Attending meeting with FPSC staff
Managing PURC staff working on project
Compiling literature to be reviewed by undergrounding consultant
Organizing undergrounding consultant selection

PURC Graduate Student Activities

Researching templates for RFPs
Editing RFP for undergrounding
Compiling consultant list for undergrounding
Participating in and taking minutes for weekly conference calls
Developing PURC work plan for overseeing projects
Compiling literature to be reviewed by undergrounding consultant
Organizing undergrounding consultant selection
    Distributing notices to consultants
    Providing content for web site

Appendix C

Budget for Vegetation Management Workshop

Items		Amounts
Food		
	Monday Lunch @$25	$ 1,175.00
	Afternoon/morning breaks	$ 1,410.00
	Breakfast Tuesday morning	$ 940.00
	Tuesday Lunch	$ 1,410.00
		$ 4,935.00
Facilities		
	Misc. room charges and fees	$ 400.00
	Audio visual set up and screen	$ 200.00
		$ 600.00
Total		$ 5535.00

Payment Amounts

Registration Fee: 35* @ $125	$ 5,875.00*

*Projected

PURC Administrative Activities
Developing budgets
Proofreading all materials
Taking minutes on conference calls
Organizing conference calls and meetings
Developing all administrative documents, such as contact lists and invoices

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DIVISION OF
ECONOMIC REGULATION

City of Alachua

Public Services Department

CITY OF ALACHUA

Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2006

1) **Introduction**

CITY OF ALACHUA
PO BOX 9
ALACHUA, FLORIDA 32616
Mr. Mike New, Director of Public Services (mnew@cityofalachua.com)
386-418-4079 Phone, 386-418-4084 Fax,

2) **Number of customers served in calendar year 2006**
3651

3) **Standards of Construction**

a) **National Electric Safety Code**
The City of Alachua constructs all new electrical projects in accordance with the National Electric Safety Code. All construction standards, approved materials, policies, guidelines, practices, and procedures comply with the National Electrical Safety Code (ANSI C-2) [NESC] and latest revisions.

b) **Extreme Wind Loading Standards**

The City of Alachua follows the guidelines for extreme wind loading in accordance the NESC standards 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.

c) **Flooding and Storm Surges**

The City of Alachua is not located in a coastal area subject to storm surges. However, City of Alachua has some areas throughout the corporate limits that are subject to possible flooding based on a 100 year flood, and these locations have been addressed during design of the underground distribution facilities and supporting overhead facilities.

Post Office Box 9
Alachua, Florida 32615

Phone: (386) 418-4079
Fax: (386) 418-4084

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

All new developments within the corporate limit are reviewed to ensure compliance to the City of Alachua's Electrical Construction Standards, approved materials, policies, guidelines, practices, and procedures for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. All existing facilities have complete access for maintenance, complete with PUE (Public Utilities Easements) to insure compliance.

e) Attachments by Others

The City of Alachua has Electrical Construction Standards with approved materials, policies, guidelines, practices, and procedures for attachments by other utilities to the electric distribution system. Each attached has a Pole Attachment Agreement with the City.

4. Facility Inspections

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

The City of Alachua performs inspection of the electric poles in service with an annual goal of 12.5% beginning in 2007.

(12.5% IS EQUAL TO AN 8-YEAR INSPECTION CYCLE, WHICH IS REQUIRED OF THE IOUs AND IS WHAT THE PSC IS LOOKING FOR AS A MINIMUM.)

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

Number of Poles: 3194   Inspected: 230 poles. (7.2%)

Note: The City of Alachua has only Distribution Poles, No Transmission.

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

Failed: 3 poles @ 1.3 %. The replaced poles were deteriorated because of some for; including ground rot and pole rot.

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.

The wood poles that failed inspection were 45' – Class 3. These poles were replaced with the same size and class.

Post Office Box 9
Alachua, Florida 32615

Phone: (386) 418-4079
Fax: (386) 418-4084

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.

The City of Alachua trims the overhead distribution system on a yearly cycle.

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

The City of Alachua trims 33% of its distribution system annually and will trim 100% of its distribution system in 2007.

6. Storm Hardening Research:

The City of Alachua 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.

Post Office Box 9
Alachua, Florida 32615

Phone: (386) 418-4079
Fax: (386) 418-4084

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CITY OF BARTOW

February 27, 2007

Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Dear Mr. Devlin:

Attached you will find the City of Bartow's submittal for the 2006 Annual Storm Hardening Report. Please review and call me with any questions or comments.

Sincerely,

Alan Hutto
Director of Electric Utilities

AH/mc

Attachment-

450 NORTH WILSON AVENUE • P.O. BOX 1069 • BARTOW, FLORIDA 33831-1069 • (863) 534-0100

City of Bartow
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) Name of city/utility

City of Bartow

b) Address, street, city, zip

450 North Wilson Ave
Bartow, FL 33830

c) Contact information: Name, title, phone, fax, email

Alan Hutto, Director of Electric Utilities
Ph: (863) 534-0142
Fax: (863) 534-7196
ahutto.electric@cityofbartow.com

2) Number of customers served in calendar year 2006

11,146

3) Standards of Construction

a) National Electric Safety Code Compliance

Our distribution standards, policies, guidelines, practices & procedures do not yet comply with the 2007 NESC. We are currently in the process of reviewing and updating our standards to meet the requirements of the 2007 NESC. We are working with our engineering firm who originally developed our current standards and expect the new standards to be adopted by September 2007.

b) Extreme Wind Loading Standards

Our distribution standards do not consider extreme wind loading conditions. The extreme wind loading criteria will be used in our updated standards as explained above.

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

Of the 250 inspections completed, 20 distribution poles failed for various reasons including rotten ground decay or rotten pole top decay.

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.

All of the 20 poles that failed inspection were replaced with new structures built to our standards. Records were not kept as to what class the failed poles were, but we are now keeping accurate records of this information for the future.

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.

We are currently on a 4 year tree trimming cycle. We try to trim out our distribution at a 6-10 foot clearance depending on the situation and type of vegetation. We have a licensed arborist on staff and currently use such practices as basal bark treatment, foliage treatment, cut-stump treatment, & herbicide application along with our regular trimming. We remove problem trees when deemed necessary by our crews or when the history of the tree reveals problems. Our reliability analysis indicates that our vegetation management practices are effective.

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

We feel that our 4 year trimming cycle and other vegetation management practices are effective in offering great reliability to our customers for now and years to come.

6. Storm Hardening Research

The City of Bartow 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.

BEACHES | ENERGY
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DIVISION OF
ECONOMIC REGULATION

February 28, 2007

Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Attn: Tim Devlin
Director of Economic Regulation

Re: Beaches Energy Services' Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C., for Calendar Year 2006

Dear Sir,

Enclosed with this letter is the Beaches Energy Services' (BES) Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C., for Calendar Year 2006.

If you have any additional comments or questions, contact me at your convenience at 247-6260 or via e-mail at JStonecipher@beachesenergy.com

Respectfully,

J. S. Stonecipher

J. S. Stonecipher, PE
Electrical Engineer
Beaches Energy Services

cc: Don Ouchley; Beaches Energy Services Director
John Bowerfind, PE; Electrical Engineering Supv.
Barry Moline; FMEA Executive Director

(City of Jacksonville Beach, Florida dba/Beaches Energy Services)
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2006

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: J. S. Stonecipher, PE
   Title: Electrical Engineer
   Phone number: (904) 247-6280
   Fax number: (904) 247-6120
   Email: jstonecipher@beachesenergy.com

2) **Number of customers served in calendar year 2006**

   In December, 2006, Beaches Energy Services had 33,270 customers.

3) **Standards of Construction**

   a) **National Electric Safety Code Compliance**

   Construction standards, policies, guidelines, practices, and procedures at the Beaches Energy Services (BES) comply with the National Electrical Safety Code (ANSI C-2). Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction.

   For electrical facilities constructed on or after February 1, 2007, the 2007 NESC will apply. BES is currently in the process of addressing various required changes to the distribution line standards, such as: The use of stronger concrete poles, rather than wood poles for critical feeders; and, the elimination of static lines, with shorter distribution structures, as necessary to reduce moment loads on the structures.

   b) **Extreme Wind Loading Standards**

   Construction standards, policies, guidelines, practices, and procedures at the Beaches Energy Services 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.

In order to accommodate these 120 mph wind loads, BES is currently in the process of addressing various required changes to the distribution line standards, such as: The use of stronger concrete poles, rather than wood poles for critical feeders; and, the elimination of static lines, with shorter distribution structures, as necessary to reduce moment loads on the structures.

Beaches 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 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) BES is eliminating "live-front" connected transformers. That is, the high voltage cables are connected to the equipment with sealed, "dead front" elbows instead of exposed, "live-front" terminations that could be "faulted" by flood waters;
2) Almost all exposed, "live-front" air-insulated padmounted switchgear has been replaced with sealed padmounted switchgear using SF6 gas or insulating oil as the insulation. Again, the exposed, "live-front" air-insulated padmounted switchgear could be "faulted" by flood waters;
3) BES has eliminated using fiberglass foundations for padmounted equipment and now only uses thick, heavy concrete foundations in order to act as a secure "anchor" to insure equipment isn't easily moved.

BES 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 the Beaches Energy Services provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance.

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. BES' 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 eliminates the tendency to have access to kWh meters blocked by fences;
3) Construction standards require all padmounted equipment located near buildings to have minimum access clearance around the equipment;
4) Construction standards for Beaches Energy Services are readily available at http://www.beachesenergy.com/ (Select "Publications and Forms" then select "Procedures Manual - Beaches Energy Services.")

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 attachers 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) Policies, guidelines, practices, and procedures for inspecting transmission and distribution lines, poles, and structures.

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

Distribution - BES has 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. BES plans to inspect 100% of our distribution wood poles in the next 12 months. Poles 15 years and older are also to be treated at ground level for rot and/or decay.

Poles that fail to meet requirements will be replaced.

In addition to the required documentation and treatment, Osmose will tag and provide GPS coordinates for all of our distribution structures.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

Transmission - 100% of 355 transmission structures planned and completed.

Distribution - Approx. 12% of 4,200 distribution structures planned and completed.

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

Transmission - Two structures, both for downguy problems:

Distribution - While inspections took place, inspection records were not kept in 2006 and prior. BES is initiating a rigorous pole inspection program in 2007 and will maintain detailed records and develop a database.

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.

Transmission - Two double deadend, static cast concrete structures, both for downguy problems:

1. The first one was when we noticed one of four downguy anchors in a salt marsh area had failed due to corrosion. The remaining anchors were also badly corroded, so all four were replaced.

This was the only location where downguy anchors are in a salt marsh area.

2. The second one was when we noticed two of four downguy fiberglass strain insulators had failed. All four downguy fiberglass strain insulators were replaced and the failed insulators have been sent to the manufacturer for a failure analysis.

Although we maintained a vigilant check on all the remaining transmission structure downguy fiberglass strain insulators, we're currently waiting on the manufacturer's failure analysis before proceeding with a remediation plan.

Distribution - A significant - but undocumented - number of rotten poles and crossarms were replaced. BES is initiating a rigorous pole inspection program in 2007 and will maintain detailed records and develop a database that includes remediation information.

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.

Transmission - BES maintains transmission line clearances and reporting in accordance with the NERC Reliability Standard FAC-003-1 requirements.

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

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

Distribution - BES has tree trimming crews from the Lewis Tree Services, Inc. working year-round in our Electric Service Area. The objective is to maintain a two to three year vegetation management cycle for transmission and distribution lines.

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

BES fully completed all FY2006 vegetation management activities described above. Vegetation management activities for FY2007 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 Barry Moline, Executive Director, FMEA, 850-224-3314, ext. 1, or bmoline@publicpower.com.

City of Blountstown
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) City of Blountstown

b) 20591 Central Avenue W.
Blountstown, 32424

c) Contact information:

Cathy Bess, Disbursement Officer
Phone 850-674-5488; Fax 850-674-8289
Email: cbess@blountstown.org

2) Number of customers served in calendar year 2006

The City of Blountstown has a total number of 1,343 customers for year 2006.

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at the City of Blountstown comply with the Nation Electric Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, 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 the City of Blountstown are currently not 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 exiting facilities and major thoroughfares. The City of Blountstown will examine this issue in 2007.

The City of Blountstown is also participating in the Public Utility Research Center's (PURC) granular wind research study through the Florida Municipal Electric Association.

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.

The City of Blountstown has a four year cycle for tree trimming with a ten (10) ft clearance of our lines and facilities.

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

The City of Blountstown will trim twenty-five (25) percent of our system with a ten (10) ft. clearance in 2007.

6. Storm Hardening Research

The City of Blountstown 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.

CITY OF BUSHNELL

219 N. Market Street
P.O. Box 115

Bushnell, Florida 33513
(352) 793-2591
Fax (352) 793-2711

February 19, 2007

07 FEB 23 AM 9:01
DIVISION OF ECONOMIC REGULATION

Mr. Tim Devlin
Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Dear Mr. Devin,

Please find attached, the City of Bushnell's Storm Hardening Report for calendar year 2006. Please contact me should you require additional information.

Sincerely,

Bruce J Hickle

Bruce J. Hickle
Director of Utilities
City of Bushnell

City of Bushnell
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) Name of city/utility: City of Bushnell

b) Address, street, city, zip: P.O. Box 115, Bushnell FL. 33513

c) Contact information: Name, title, phone, fax, email : Bruce J. Hickle , Director of Utilities, 352-793-8012, 352-793-8036, bruhickle@yahoo.com

2) Number of customers served in calendar year 2006

1,149

3) Standards of Construction

a) National Electric Safety Code Compliance

Response: Construction standards, policies, guidelines, practices, and procedures at the City of Bushnell comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction.

b) Extreme Wind Loading Standards

Response: Construction standards, policies, guidelines, practices, and procedures at the City of Bushnell will be 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 October 1, 2007.

c) Flooding and Storm Surges

Response: Electrical construction standards, policies, guidelines, practices, and procedures at the City of Bushnell do not address the effects of flooding and storm surges on underground distribution facilities and supporting overhead facilities because the Utility has no infrastructure in coastal communities and is not subject to major flooding/storm surge events.

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

Response: Electrical construction practices at the City of Bushnell provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. For example, these distribution feeders are not permitted to be placed on back lot lines or other areas having no service vehicle access.

e) Attachments by Others

Response: Electrical construction standards, policies, guidelines, practices, and procedures at the City of Bushnell currently do not 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. This issue will be addressed in 2007.

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.

Response: All poles in the utility distribution system were visually inspected and graded by condition in 2004 as part of a project that created a GIS map and data base of the distribution system. Since that time no other systematic inspections have been performed. A comprehensive periodic inspection program covering all distribution system wood poles is currently being developed which will include visual, sound and bore inspections, pole condition rating, as well as development and maintenance of an inspection data base. Pole inspections using the new program will commence in 2007.

The City of Bushnell has no transmission facilities.

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

Response: See response to section 4(a) above.

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

Response: See response to section 4(a) above.

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.

Response: See response to section 4(a) above.

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.

The City of Bushnell maintains a tree trimming contract covering tree removal, power line trimming, and right-of-way clearing. Tree trimming is performed by the contractor annually in the spring of the year preceding the Hurricane season. All right-of-ways are trimmed every year with a goal of maintaining foliage cut back to a three year level. Distribution lines not located on right-of-ways are trimmed by City personnel on an "as needed" basis. "Problem trees" that threaten primary distribution lines, not located within right-of-ways or easements, are also removed by the City on an as needed basis.

The City's land development regulations specify the species of trees that may be planted under or within specified distances of any overhead utility wire or underground utilities. Also specified are distances that trees may be planted from curbs and sidewalks.

The City's vegetation management practices are believed to be effective based upon outage history dating back to the 2004 hurricane season. During calendar years 2004, 2005, and 2006 combined, the City's distribution system experienced 118 outages, 11 of which were identified as due to vegetation management issues. The longest single outage was 1 hour and 15 minutes due to a vegetation management issue.

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

Response: Planned quantity, level and scope of vegetation management for the current year will be the same as completed in 2006. See above response.

6. Storm Hardening Research

Response: The City of Bushnell 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.

(City of Chattahoochee)
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2006

1) Introduction:

a. City of Chattahoochee

b. 115 Lincoln Drive
Chattahoochee, FL 32324

c. Jimmy Cain
Electric Distribution Foreman
Office (850) 663-4475
Cell (850) 567-5160
Fax (850) 663-4233
e-mail: jimmycain@gtcom.net

2) Number of customers served in calendar year 2006:

a. 1,280

3) Standards of Construction:

a. National Electric Safety Code Compliance:

Construction standards, policies, guidelines, practices and procedures at the City of Chattahoochee comply with the National Electrical Safety Code (ANSI-C2)

b. Extreme Wind Loading Standards:

As of January 1, 2007 the City of Chattahoochee will use the N.E.S.C. extreme wind loading standards specified by figure 250-2 (d) for any new construction, rebuilding or relocation of existing facilities. The City of Chattahoochee is also participating in the P.U.R.C. granular wind research study through the F.M.E.A.

c. Flooding and Storm Surges:

This section is not applicable, as the City of Chattahoochee is not a coastal community.

d. Safe and Efficient Access of New and Replacement Distribution Facilities:

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

e. Attachments by Others:

Currently we do not have such standards; we will be examining this issue in 2007.

4) Facility Inspections:

a. Policies, guidelines, practices, and procedures for inspecting transmission and distribution lines, poles, and structures:

A complete inspection is performed on the City of Chattahoochee's distribution system every three years. This being every primary and secondary pole with no selection preference. The inspection involves excavation around the base, sounding, and probing with steel rod. A visual examination is also performed, checking for damaged insulators and hardware. The City of Chattahoochee has only one substation and it is inspected thoroughly multiple times weekly. A wide buffer zone is maintained around the facility to prevent damage to structure during storms and hurricanes.

b. Number and percentage of transmission and distribution inspections planned and completed for 2006:

All 1,957 distribution poles were inspected 2006.

c. Number and percentage of transmission poles and structures and distribution poles failing inspection and the reason for the failure:

In the 2006 inspection 47 distribution poles or 2.4% inspected, were found to be defective. Ground line decay, pole top decay, insect damage, and animal damage were the major causes.

d. Number and percentage 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:

12 – (26% of poles failing inspection) class 4, 30' poles were replaced in 2006.
3 – (6% of poles failing inspection) class 4, 35' poles were replaced in 2006.
9 – (19% of poles failing inspection) class 4, 40' poles were replaced in 2006.
The remaining 23 poles will be replaced in 2007.

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:
The City of Chattahoochee trims the distribution system on an annual basis. Any trees that are suspected of damaging the system i.e. (leaning, dead or diseased) are removed.

b. Quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities:

For the remainder of the current year trimming will continue as scheduled in between other projects. In the near future The City of Chattahoochee will be cooperating with the P.U.R.C. through F.M.E.A. regarding the best practices of utility line clearance programs to maximize reliability.

6. Storm Hardening Research

The City of Chattahoochee is a member of the Florida Municipal Electric Association (FEMA), 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.

City of Clewiston
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) City of Clewiston

b) 141 Central Av, Clewiston, Fl 33440

c) Kevin McCarthy, Utilities Director
Phone 863-983-1454
Fax 863-983-3406
Email: kevin.mccarthy@clewiston-fl.gov

2) Number of customers served in calendar year 2006

4,000

3) Standards of Construction

a) National Electric Safety Code Compliance

The City of Clewiston uses the current National Electric Safety Code as its construction standard and has always used the applicable NESC as its standard.

b) Extreme Wind Loading Standards

All new construction and rebuilds of existing facilities will comply with the NESC extreme wind loading standard in effect at the time of design.

The City of Clewiston 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

The City of Clewiston is an inland community sixty miles from either coast and is not subject to storm surge or it's associated flooding. In addition only a small portion of our system is in a flood zone and pad mounted transformers are elevated above the required elevation.

The City of Clewiston is also participating in the PURC study on the conversion of overhead electric facilities to underground and the effectiveness of undergrounding facilities in preventing storm damage and outages throughout the Florida Municipal Electric Association.

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

The City of Clewiston Utilities requires all new residential development to have front yard easements and road access. We also have on ordinance in place protecting our rear utility easements from fences, hedges, sheds and trees. Where practical rebuilds will relocate rear services to the front and underground the service. Commercial applications require truck access to the facility.

e) Attachments by Others

We do not have a standard guideline for pole attachments at the City of Clewiston, however all attachments are reviewed by our engineer and since all new construction is required to be underground we have had no new pole attachments in over five years. The only two entities that attach to our poles, Sprint and Adelphia, have been reducing the number of pole attachments and moving to underground installations in the last several years.

4. Facility Inspections

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

We have contracted with Osmose to perform our pole inspections and due to our small size we will complete our system in four years but operate on an eight year cycle. We conduct infrared inspections, by outside contractor, of our entire distribution system every other year and perform in-house spot checks for problem areas.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

No poles were inspected in 2006 but we will inspect 25% of our poles in 2007 and 25% per year for the next 3 years and then continue on an eight year cycle.

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

None inspected in 2006. We will inspect 25% of our system in 2007.

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.

None inspected in 2006. We will inspect 25% of our system in 2007.

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.

We have a City ordinance that prevents any hedges or trees from being planted in the easements, any tree that is in the easement that has grown to reach the power lines is completely removed. Our feeders are trimmed annually and our laterals are trimmed as needed or as requested by our customers. All customer generated trimming requests are tracked via work orders. We have no management plan outside of road right of ways or easements, this is a private property issue, and however we will work with willing homeowners to remove problem trees on private property.

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

All transmission and feeder distribution facilities were checked and trimmed in 2006 as they are every year. For the residential laterals there were 51 customer requests for tree trimming in 2006, 41 were completed and the remainder will be completed in the first quarter of 2007. Approximately 25 of those work orders involved complete tree removal.

6. Storm Hardening Research

City of Clewiston 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.

City of Fort Meade
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) City of Fort Meade

b) 8 West Broadway Avenue
Fort Meade, FL 33841

c) Frankie Curlee, Utility Director
(863) 285-1119 ext. 2
frankcurlee@cityoffortmeade.com

1) Number of customers served in calendar year 2006
2713

2) Standards of Construction

a) National Electric Safety Code Compliance

Response: Construction standards, policies, guidelines, practices, and procedures at the City of Fort Meade comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction.

b) Extreme Wind Loading Standards

Response: Construction standards, policies, guidelines, practices, and procedures at the City of Fort Meade 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.

The City of Fort Meade 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

Response: Electrical construction standards, policies, guidelines, practices, and procedures at the City of Fort Meade address the effects of flooding and storm surges on underground distribution facilities and supporting overhead facilities.

City of Fort Meade 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

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

e) Attachments by Others

Response: Electrical construction standards, policies, guidelines, practices, and procedures at the City of Fort Meade 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.

4. Facility Inspections

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

Response: The City of Fort Meade is currently in the process of developing and implementing an eight year inspection program for our electrical system.

b) Number and percentage of transmission and distribution lines, poles, and structures.

Response: The City of Fort Meade has distribution lines only. The data is unavailable for the percentage and number of poles replaced.

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

Response: The data is not available.

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.

Response: The data is not available.

5. **Vegetation Management**

   a) Utilities 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.

   Response: The City of Fort Meade is currently in the process of developing and implementing a three year inspection program for our electrical system.

   b) Quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities.
   Response: The data is not available.

6. **Storm Hardening Research**

   The City of Fort Meade 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.

Fort Pierce Utilities Authority
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

Craig Brewer
Superintendent of Electric T&D

Fort Pierce Utilities Authority
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) Fort Pierce Utilities Authority

b) P.O. Box 3191, Fort Pierce, F34948-3191

c) Thomas W. Richards, PE
Director of Electric & Gas Systems
772 466-1600
772 595-9841 (fax)
tom@fpua.com

2) Number of customers served in calendar year 2006

26,628 End of calendar year 2006

3) Standards of Construction

a) National Electric Safety Code Compliance
Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction. For these facilities construction standards, policies, guidelines, practices, and procedures at the FPUA comply with the National Electrical Safety Code (ANSI C-2) [NESC].

For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. FPUA is in the process of reviewing and updating the construction standards to insure that they comply with the 2007 National Electrical Safety Code (ANSI C-2) [NESC]. This review is expected to be completed by October 1, 2007.

b) Extreme Wind Loading Standards
Construction standards, policies, guidelines, practices, and procedures at the FPUA 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.

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

An integral part of the process of reviewing and updating the construction standards as described in section 3.a above is consideration of the Extreme Wind Loading Standard of 150 mph sustained winds as depicted in Figure 250-2(d) of the NESC.

c) Flooding and Storm Surges

FPUA is 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.

Electrical construction standards, policies, guidelines, practices, and procedures at the FPUA will be modified to address the effects of flooding and storm surges on underground distribution facilities and supporting overhead facilities at the conclusion of this study.

d) Safe and Efficient Access of New and Replacement Distribution Facilities
Electrical construction standards, policies, guidelines, practices, and procedures at the FPUA provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. New overhead distribution facilities are located in the front of customers' property and new pad-mounted equipment is carefully placed to facilitate safe and efficient access of vehicles for installation and maintenance.

e) Attachments by Others
Electrical construction standards, policies, guidelines, practices, and procedures at the FPUA 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. An integral part of the process of reviewing and updating the construction standards as described in section 3.a above is consideration of attachment to FPUA facilities by others (CATV, telephone, etc).

Attachment to FPUA poles by BellSouth Telephone and Comcast Cable is governed by individual contracts with each organization. The contract requires each of them to apply for attachment providing FPUA with sufficient information to determine the impact of these attachments to FPUA structures before installation of these facilities. There have been some instances in the past in which these procedures have not been carefully followed; FPUA is currently working with both organizations to insure compliance with contractual requirements.

4. Facility Inspections

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

Transmission: A new transmission pole inspection program was instituted at the beginning of fiscal year 2007. All wood poles are inspected annually. Concrete and steel poles are included in the inspection every third year to inspect the hardware, bolts and bonding on these poles and the wood poles. Wood poles are tested using the sound and bore method. All poles (wood, concrete and steel) are in the process of being inspected in fiscal year 2007. Completion is expected by the end of February 2007. This includes hardware, bolt and bonding inspection on all poles as well as sound and bore test on wood poles.

Distribution: Fort Pierce Utilities Authority is implementing a program to inspect all distribution poles in an eight (8) year cycle beginning this year (2007) using a third party contractor.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

Transmission: Prior to fiscal year 2007 transmission pole inspections were inspected every two (2) years, last done in 2005 by our transmission contractor, using visual, sound and bore inspections and pole rating.

Distribution: Prior to fiscal year 2007 there were no formal inspections on distribution poles. Poles were replaced on an as found/ reported basis from various field supervisors, engineers and other field employees.

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

Transmission: No transmission poles failed inspection.

Distribution: No formal distribution inspection in 2006.

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.

There was no inspection in 2006. No poles were replaced.

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.

The Fort Pierce Utilities Authority maintains a tree trimming contract covering tree removal, power line trimming, and right-of-way clearing. The contractor performs tree trimming year round with particular attention paid to critical infrastructure in the spring preceding Hurricane season. All transmission distribution lines are trimmed on a 3-year cycle with a goal of maintaining foliage cut back to a three-year level. "Problem trees" that threaten primary distribution lines, not located within right-of-ways or easements, are also removed by the Utility on an as needed basis.

The transmission lines are patrolled annually for vegetation management. Twelve trees are identified as trees that need to be monitored. These trees are visited quarterly to ensure there is no trimming needed.

The Fort Pierce Utilities Authority works with developers and suggests which species of trees may be planted under or within specified distances of any overhead utility wire or underground utilities.

The vegetation management practices are believed to be effective based upon outage history dating back to the 2004 hurricane season. During calendar years 2005 and 2006 the Utility's distribution system experienced 805 and 729 outages respectively. There were 30 outages in 2005 and 33 outages in 2006 of which were identified as due to vegetation management issues. This represents 4.1% of outages are vegetation management related. The Fort Pierce Utilities Authority staff believes this is an indication that our vegetation management practices are sound.

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

Fort Pierce Utilities Authority plans to continue to provide resources for the same quantity, level and scope of vegetation management as in the past.

6. Storm Hardening Research

Fort Pierce Utilities Authority 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.

Gainesville Regional Utilities
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) Gainesville Regional Utilities

b) 301 SE 4th Avenue
Gainesville, Florida 32601

c) David E. Beaulieu, PE
Assistant General Manager, Energy Delivery
Office: (352) 393-1513
Fax: (352) 334-2784
beaulieude@gru.com

2) Number of customers served in calendar year 2006

Gainesville Regional Utilities serves Gainesville proper as well as Gainesville's urban fringe but does not serve the University of Florida campus. The number of electric customers for 2006 totaled 88,663 or:

Residential Customers	79,125
Commercial (non-demand)	8,412
Commercial (demand)	1,107
Large Power	19
	88,663

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at Gainesville Regional Utilities comply with the National Electrical Safety Code ANSI C-2 NESC. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction. GRU maintains both Material and Construction Standards and is in the process of evaluating GRU's Construction Standards based on the 2007 NESC. This project should be completed by the end of 2007.

b) Extreme Wind Loading Standards

Construction standards, policies, guidelines, practices, and procedures at Gainesville Regional Utilities 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. GRU maintains both Material and Construction Standards and is in the process of evaluating GRU's Construction Standards based on the 2007 NESC for extreme wind conditions. This project should be completed by the end of 2007.

c) Flooding and Storm Surges

Electrical construction standards, policies, guidelines, practices, and procedures at Gainesville Regional Utilities address the effects of flooding but facilities are not generally subject to storm surges (saltwater intrusion) on underground distribution facilities and supporting overhead facilities.

Gainesville Regional Utilities is located in north central Florida, roughly equidistant to both coasts, and has limited exposure to flooding. Where there has been significant flooding GRU evaluates the opportunity to move the facilities, underground or overhead, to a more secure positions.

Gainesville Regional Utilities 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 Gainesville Regional Utilities provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance.

Gainesville Regional Utilities has developed a plan that prioritizes facilities that are to be replaced due to age and repeat outage occurrences. Wherever possible, difficult-to-access facilities are reviewed to determine if they can be relocated. GRU utilizes new poles and insulated aerial cable to harden the system. GRU also maintains back lot equipment that facilitates access and better response time to repair facilities.

e) Attachments by Others

Electrical construction standards, policies, guidelines, practices, and procedures at Gainesville Regional Utilities 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.

Gainesville Regional Utilities requires third party pole attachment agreements, and within the agreement, the third party must submit a permit to GRU for approval. The permit must include information that an engineer has evaluated the impact of the pole attachments on the existing poles and that the proposed pole(s) meet NESC requirements. GRU will be evaluating the impact of communication utilities during the evaluation of design requirements based on the 2007 NESC.

4. Facility Inspections

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

GRU has had a comprehensive and periodic pole inspection/treatment program since 1992.

Overview

- The inspection cycle has been established at eight (8) years.
- The inspection method is 'sound and bore method' for every pole and a complete visual inspection is also performed as well for cracks, splitting and obvious decay.
- The pole base is exposed (where possible) to 18 inches to inspect for indications of decay. Where not possible, pole is Mitc-fume. Mitc-fume is a pesticide that will migrate throughout the pole to prevent rot, decay and bug damage.
- Poles less than ten (10) years old are not inspected.
- Pole treatment is documented by Pole Inspection Program Maps.

Transmission

GRU visually inspects all transmission lines and poles twice each year and following major storm events. GRU has detailed inspection and ground line treatment performed on all wood transmission poles following an 8-year cycle. The inspection and treatment of these poles consists of a full visual inspection, and sound and boring to locate unseen decay pockets. Visual inspection includes below ground line inspection to a depth of 18" around the base of each pole. After inspection any decay is removed and a preservative paste is applied to prevent future decay. Transmission lines are also treated with MITC-fume to prevent internal decay as well. MITC-fume is a pesticide that migrates throughout a pole to prevent rot, decay and bug damage. Visual inspections also provide information about other items such as damaged hardware, woodpecker holes, cracks, splits and decayed pole tops. GRU replaces all rejected poles within one year of the inspection date. Rejected poles determined to be a "priority" are replaced immediately.

Distribution

GRU performs a detailed inspection and ground line treatment on wooden distribution poles over an 8-year cycle. All wood poles 10 years of age and older are inspected and treated over the cycle. The inspection and treatment of these poles consists of a full visual inspection, and sounding and boring to locate unseen decay pockets. Visual inspection includes below ground line inspection to a depth of 18" around the base of each pole. After inspection any decay is removed and a preservative paste is applied to prevent future decay. Distribution poles that can not be fully ground line inspected are treated with MITC-fume to prevent internal decay. Visual inspections also provide information on other problems such as damaged hardware, woodpecker holes, cracks, splits and decayed pole tops. GRU replaces all rejected poles within one year of the inspection date. Rejected poles determined to be a "priority" are replaced immediately.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

GRU planned to inspect 32 transmission poles in 2006 and completed inspection on all of them (Inspection 100% completed). There were 3,068 distribution poles that met annual inspection criteria (10 years of age or older) and, therefore required inspection (Inspection 100% completed).

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

Of the 32 transmission poles inspected in 2006, 6 were replaced (failure percentage 18.8%). Of the 3,068 distribution poles inspected in 2006, 90 poles were replaced (failure percentage 2.9%).

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.

Gainesville Regional Utilities Pole Replacement Summary 2005 & 2006

Note: All distribution poles were replaced due to decay.

Distribution	Total Inspected	Rejected	Replacement Percent
2005	3,636	130	3.6%
2006	3,068	90	2.9%

Replaced Poles

Height/Class	2005	2006
25/7	1	0
30/1	0	3
30/2	1	0
30/3	0	1
30/4	2	0
30/5	3	6
30/6	8	13
30/7	1	0
35/3	1	6
35/4	2	5
35/5	19	16
35/6	4	1
40/1	0	2
40/2	1	0
40/3	1	1
40/4	15	10
40/5	6	3
40/6	7	0
45/2	1	2
45/3	9	4

Replaced Poles (cont'd)

45/4	40	11
45/5	1	2
50/1	0	1
50/3	4	2
55/2	1	0
55/3	2	1

Transmission Pole Replacement Summary 2005 & 2006

Transmission	Total Inspected	Rejected	Replacement Percent
2005	138	3	2.2%
2006	32	6	18.8%

Note: All distribution poles were replaced due to woodpecker damage.

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.

GRU's Vegetation Management Department maintains approximately 600 miles of distribution lines on a three year rotating cycle. Scheduling of work is accomplished according to defined electrical distribution circuits. Maintenance trimming is also accomplished by circuit. GRU circuits range in size from approximately two to twenty five miles in length. Prioritizing of these circuits is based upon reliability, customer requests and visual inspections. We are completing our 5th maintenance cycle. The Vegetation Management Program includes maintenance of primary, secondary and service drops. We also have an aggressive herbicide program to reduce the density of undesirable vegetation as well as a tree growth regulator program to address specific problems. As much as it is possible to identify potentially hazardous trees from beyond the limits of the right-of-way/easement, we have had a program to negotiate with the property owner to remove these trees and provide the owner with a voucher redeemable for low growing species if need be.

The distribution vegetation maintenance program is based upon nationally recognized standards of tree care and vegetation management practices and adapted to Gainesville's environment and specific operating concerns.

These standards and practices include, but are not limited to the following:

- National Electric Safety Code

- ANSI A300 (Tree care - standard practices)
- ANSI Z133.1 (Tree care - safety practices)
- Shigo - Pruning trees near electrical utility lines
- Shigo - Tree Pruning
- Matheny and Clark - Evaluation of hazardous trees in urban areas

Components of the distribution maintenance program are:

- Routine utility tree pruning
- Selective tree removals based upon hazardous conditions
- Selective use of herbicides
- Selective use of tree growth regulators
- Wood chip recycling

Appropriate planting

GRU has produced a "Plant the Right Tree in the Right Place" brochure with a list of compatible tree species. By compatible we mean that these species may be planted within ten feet of an overhead power line. The mature height of these species is such that they should never reach GRU facilities.

GRU maintains a number of different types of ground level electric facilities. The two that we are concerned with are switch gear and pad-mount transformers. It is imperative that customer **do not** plant shrubs and small trees directly in front of these facilities. Each structure has a decal that reflects the above recommendations.

We have also developed a set of tree planting guidelines for use by developers and engineers as to appropriate species to be planted within prescribed distances from our facilities.

The City of Gainesville enjoys an especially dense tree canopy, one that is clearly favored by our community and its citizens. As a neighbor and responsive municipal electric utility, GRU has long acknowledged our obligation to serve our customers in this environment in the most effective yet least intrusive manner. Consequently, GRU is among those Florida utilities with the highest ratio of underground to overhead facilities.

Our Vegetation Management program was developed over time with a care and control agenda that has been recognized as a model program for electric utilities. GRU records and continually monitors vegetation related service interruptions. Preventable tree outages make up only 1% or less of the total outages experienced system wide. GRU observed a 30% drop in vegetation related circuit trips for 2005 which continued for 2006. Tree preventable outages for 2005 and 2006 were:

- Tree Preventable Outages 2005 = 0.06%
- Tree Preventable Outages 2006 = 1%

Transmission Program

Gainesville Regional Utilities was the subject of a North American Electric Reliability Council (NERC) performance and readiness audit in April 2006 where GRU's Vegetation Management Program received a Potential Example of Excellence (PEOE).

Their report stated *"GRU has a well documented and comprehensive vegetation management policy, program and knowledgeable staff. The GRU vegetation-management program and staff oversight is identified as a potential example of excellence for its comprehensive, detailed procedures and performance of the program itself."*

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

GRU's Transmission and distribution right-of way maintenance of vegetation is a routine and on-going, year round program accomplished through a utility approved contractor directed and supervised and by GRU Forestry professionals and Utility management staff. All current plans and trim time-lines are on schedule.

Transmission System Information

240.4 circuit miles @138 kV
2.5 circuit miles @ 230kV (falls into NERC Standard FAC-003-1)
GRU applies NERC Guideline FAC-003-1 over our entire transmission system.

GRU's transmission inspection program is based on a six-year cycle. The program calls for semi-annual inspections (spring and fall) to identify conditions which would pose a near-term threat to the operation of the system such as insect infestations or any other factor that would impact tree mortality or structural integrity. The program also calls for a complete inspection immediately following any significant events such as hurricanes, tornadoes or fires. Inspections cover 100% of the transmission system and are conducted by GRU foresters.

Inspection Summary Spring 2006 - March 13 – 17, 2006
Inspected 100% of Transmission system.
Results: Discovered 21 dead pines outside GRU right-of-way, informed owners of hazards and negotiated removal.
Follow-up activities: April 10 – 11, 2006: Removed dead pines

Inspection Summary Fall 2006 - September 12, 2006 and October 9 – 30
Inspected 100% of Transmission system.
Results: No problems observed.

Follow-up activities: None needed.

Transmission work 2006

In 2006, GRU performed routine maintenance activities on its transmission system including mechanical trimming, cutting and danger tree removals.

The entire floor of the transmission system was maintained by scheduled herbicide application (six-year cycle). GRU's herbicide application program is selective and targeted only those species which were capable of growing to a mature height that would interfere with the conductors. Low growing species, except for the access areas, were not discouraged from growing. GRU also purchased and cleared additional easement rights where right of way width was inadequate.

Distribution work 2006

GRU adhered to its three-year maintenance cycle and trimmed approximately 175 circuit miles that included 21 different circuits in 2006.

6. Storm Hardening Research

Gainesville Regional Utilities 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.

City of Green Cove Springs
Electric Utility

321 Walnut Street
Green Cove Springs, FL 32043

Phone: (904) 529-2229
Fax: (904) 529-2232

March 1, 2007

Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Storm Hardening Report for Rule 25-6.0343, F.A.C.

Dear Tim,

Please find enclosed a copy of our final report for fiscal 2006 on the subject of Storm Hardening and compliance with Rule 25-6.0343. The City of Green Cove Springs along with the Florida Municipal Electric Association is pleased to provide the enclosed information as required by the Public Service Commission. We are available to answer any questions you may have on our responses.

Sincerely,

Gregg Griffin
Director Electric Utility

Enclosure
Cc: Barry Moline, FMEA

GG/mq

City of Green Cove Springs
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) City of Green Cove Springs

b) 321 Walnut Street, Green Cove Springs, FL 32043

c) Contact information:

Gregg Griffin
Director Electric Utility
Phone: 904-529-2249
Fax: 904-529-2232
Email: ggriffin@greencovesprings.com

2) Number of customers served in calendar year 2006

3,709

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at the City of Green Cove Springs comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, 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 the City of Green Cove Springs 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.

The City of Green Cove Springs 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 the City of Green Cove Springs address the effects of flooding and storm surges on underground distribution facilities and supporting overhead facilities. The city lies adjacent to the St. Johns River and as such could come under the coastal category. All facilities are installed a minimum of 8 inches above the roadway with appropriate grading to prevent erosion.

The City of Green Cove Springs 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 under grounding 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 the City of Green Cove Springs provide for placement of new and replacement of distribution facilities so as to facilitate safe and efficient access for installation and maintenance. All new residential development is required to be of an underground feed design, even in existing overhead areas. Commercial applications require truck access to the facility. All feeder main lines have already been relocated to front lot lines.

e) Attachments by Others

Attachment policies, guidelines, practices, and procedures at the City of Green Cove Springs are covered by city ordinances and joint use agreements with CATV and telephone entities. Standards that include written safety, pole reliability, pole loading capacity, and engineering procedures for attachments by others to the utility's electric transmission and distribution poles are under review and being developed in 2007 .

4. Facility Inspections

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

The City of Green Cove Springs does not own or operate transmission facilities as defined by 69 KV and above. We are currently in the process of evaluating the benefits of an inspection program vs. accomplishing the same activity during a 4 KV conversion to 13 KV of a portion of our system. For the remainder of our overhead system we plan on contracting with Osmose using the sound and bore technique to perform pole inspections on an eight year cycle. We will be developing this plan in 2007.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

We visually inspect any distribution pole we interface with under normal maintenance work flow patterns. With the limited number of wooden poles in our system (2975 poles), and plans to upgrade two major sections of 4 KV in the next 4 years, approximately 15% of distribution system, we will have no problem completing these inspections in an 8 year cycle.

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

In 2006 we replaced four (4) wood poles and one (1) concrete pole on visual inspection. This represents 0.16 % of our installed infrastructure.

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.

One (1) 35 ft Class 3 Concrete pole replaced for damages due to vehicle impact. (1.35 % of class)

One (1) 40 ft Class 3 Wood pole replaced for damages due to vehicle impact. (0.14 % of class)

Three (3) 30 ft Class 3 Wood poles replaced due to rot. (0.6 % of class)

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.

The City of Green Cove Springs contracts annually to trim 100% of our entire system including all sub-transmission and distribution feeder facilities. Problem trees are trimmed and removed as identified.

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

Our entire system was trimmed in 2006, and has been completed for five (5) consecutive years now. Trimming of 100% of our system for fiscal 2007 will begin in the spring.

6. Storm Hardening Research

The City of Green Cove Springs 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.

City of Green Cove Springs
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) City of Green Cove Springs

b) 321 Walnut Street, Green Cove Springs, FL 32043

c) Contact information:

Gregg Griffin
Director Electric Utility
Phone: 904-529-2249
Fax: 904-529-2232
Email: ggriffin@greencovesprings.com

2) Number of customers served in calendar year 2006

3,709

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at the City of Green Cove Springs comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, 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 the City of Green Cove Springs 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.

The City of Green Cove Springs is also participating in the Public Utility Research Center's (PURC) granular wind research study through the Florida Municipal Electric Association.

plans to upgrade two major sections of 4 KV in the next 4 years, approximately 15% of distribution system, we will have no problem completing these inspections in an 8 year cycle.

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

In 2006 we replaced four (4) wood poles and one (1) concrete pole on visual inspection. This represents 0.16 % of our installed infrastructure.

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.

One (1) 35 ft Class 3 Concrete pole replaced for damages due to vehicle impact. (1.35 % of class)

One (1) 40 ft Class 3 Wood pole replaced for damages due to vehicle impact. (0.14 % of class)

Three (3) 30 ft Class 3 Wood poles replaced due to rot. (0.6 % of class)

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.

The City of Green Cove Springs contracts annually to trim 100% of our entire system including all sub-transmission and distribution feeder facilities. Problem trees are trimmed and removed as identified.

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

Our entire system was trimmed in 2006, and has been completed for five (5) consecutive years now. Trimming of 100% of our system for fiscal 2007 will begin in the spring.

6. Storm Hardening Research

The City of Green Cove Springs 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.

Town of Havana
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) Town of Havana, Florida

b) Address: P.O. Box 1068
Havana, Florida 32333

c) Contact information: Howard McKinnon, Town Manager
Tele: 850-539-2820
Fax: 850-539-2830
E-mail: hmgr@mchsi.com

2) Number of customers served in calendar year 2006

1,354 Customers

3) Standards of Construction

- National Electric Safety Code Compliance
  Construction standards, policies, guidelines, practices and procedures at the Town of Havana comply with the National electric Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007 the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction.

- Extreme Wind Loading Standards
  The Town of Havana hasn't considered extreme wind loading standards specified by Figure 250-2(d) of the 2002 edition of the NESC. We will consider them in 2007. Please note the Town of Havana is participating in the Public Utility Research Center's (PURC) granular wind research study through the Florida Municipal Electrical Association.

- Flooding and Storm Surges
  We are not a coastal community and we have no flooding or storm surge issues with our electrical utility. Also, we are participating in the PURC study on the conversion of overhead electric facilities to underground and the effectiveness of under grounding facilities in preventing storm damage and outages through the Florida Municipal electric Association.

- Safe and Efficient Access of New and Replacement Distribution Facilities

  The Town of Havana's policy is to locate new and replacement distribution facilities on public right of way. As a result, we have safe and efficient access to these areas.

- Attachments by Others

  We do not have standards addressing attachments by others to our distribution poles. We will examine this issue in 2007.

4. Facility Inspections

- Policies, guidelines, practices, and procedures for inspecting transmission and distribution lines, poles, and structures.

  We have a small system with only 1,169 poles. Our electrical superintendent inspects our distribution lines, poles and structures several times per year. Currently, we have no formal policy in place to document this process. We will develop one in 2007, as well as consider the sound and bore methodology for inspection.

- Number and percentage of transmission and distribution inspections planned and completed for 2006.

  As stated above, our superintendent inspects our system continuously. He completely inspects our entire system each year.

- Number and percentage of transmission poles and structures and distribution poles failing inspection and the reason for the failure.

  In 2006, we only had two small tap lines fail the inspection. They failed due to age.

- 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.

  Only failures were two tap lines and these were replaced with the same equipment.

5. Vegetation Management

- 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.

The Town of Havana's vegetation management policy is formalized. We hire a professional vegetation management company that specializes in electrical utilities to perform this very important function. We have written guidelines on vegetation management for them to follow as well as relying upon their expertise in knowing the best management practices in this field. We believe our vegetation practices are sufficient because we realize the importance of this and we strive to make sure it's done. The Town's budget is geared to get a third of our distribution system maintained each year, thus allowing our entire system to be serviced in a three year period. Since adopting this practice, our outages during windy conditions are minimal.

- Quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities.

  In 2007, we have contracted for our entire system to be trimmed. In future years we plan to manage a third of our system each year.

6. Storm Hardening Research

The Town of Havana 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.

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DIVISION OF ECONOMIC REGULATION

Homestead Energy Services
Homestead, Florida
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) **Introduction**

   a) *Homestead Energy Services, Homestead Florida*

   b) *675 N. Flagler Ave. Homestead, Florida 33030*

   c) *Kenneth J. Konkol, Assistant Director Ph. (305) 224-4707 Fax (305) 224-4769 kkonkol@homesteadenergy.org*

2) **Number of customers served in calendar year 2006**

   20,722

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 February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, 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 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.

   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.

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.

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.

4. Facility Inspections

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

Policies are being developed for pole inspections. It is the intent of HES to employ 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. Annually, a thermographic inspection is performed on all of the feeder circuits and any problems noted are repaired.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

The entire transmission system was inspected in 2005. All transmission structures are concrete. The schedule for the inspection of distribution poles has yet to be determined.

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

No transmission poles failed inspection in 2005. HES did not inspect the distribution system in 2006. HES intends to develop a rigorous pole inspection program beginning in 2007 (see 4a).

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.

None

5. Vegeta tion 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.

Homestead Energy Services employs a contractor for tree trimming services. Homestead's geographic area is small and we estimate 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.

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

See 5a.

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

21 West Church Street
Jacksonville, Florida 32202-3139

JEA

February 26, 2007

ELECTRIC

WATER

SEWER

Mr. Tim Devlin
Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Dear Mr. Devlin:

Enclosed is JEA's Storm Hardening Report to the Florida Public Service Commission. If you have any questions or I can be of further assistance please contact me at 904-665-7126 or e-mail hobste@jea.com.

Very truly yours,

Ted E Hobson

Ted Hobson, Vice President
Fuels Purchased Power and Compliance

TH/cr

Enc.

JEA
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) Jacksonville: JEA

b) 21 W Church St, Jacksonville, Fl 32202-3139

i) Ted Hobson, VP, Fuels, Purchased Power & Compliance, Office-904-665-7126
Fax 904-665-4238

2) Number of customers served in calendar year 2006:

JEA served approximately 409,000 electric customers in 2006.

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 C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, 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 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. These standards primarily affect electric transmission structures 60' and taller, and require those structures to withstand winds up to 120 mph for JEA's service territory.

JEA 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

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

Transmission-JEA utilizes a contractor to perform the Transmission inspection. JEA has 240KV, 138KV and 69KV circuits. Every transmission circuit is on a 4-year cycle with the exception of the "critical" N-1 240KV circuits which are inspected on a 2-year cycle. JEA inspects approximately 30 circuits each year.

Distribution- JEA utilizes an external contractor to perform a general pole by pole inspection (sound and bore with excavation) for 1/8 of the distribution system annually using the NESC standards for decay and reject status. The poles are treated at ground level for poles that are installed 15-years or older. JEA crews inspect the highest outage circuits, pole by pole, for insulators, arrestors, cross arms, grounding and pole integrity. JEA crews inspect laterals with more than 3-outages in 90-days for insulators, arrestors, cross arms, grounding and pole integrity.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

Transmission- JEA did a complete transmission inspection in 2004 - 2005 in response to the storms of 2004. JEA scheduled no routine transmission inspections in 2006. JEA began it's 4 year cycle again in FY07. As of Feb. 1, 2007, 10 of the 30 circuits are complete and the total inspection cycle is on schedule for the FY07 year which ends on Sept. 30, 2007.

Distribution- In 2006, JEA completed the assigned circuits in accordance with our schedule. As of Feb 1, 2007, the contractor has completed 6 of the 40 (8-year inspection cycle) schedule circuits for FY07. The contractor started in December 2006 and is adding additional crews as required to meet schedule. JEA crews are inspecting circuits on a reliability basis and are on schedule.

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

Based on FY2007 inspections to date: Transmission-7 wooden poles (0.5%) failing for reject on decay at ground level, 4 steel mono-poles (0.3%) failing for minor damage that could lead to loss of structural integrity several years in the future. JEA has analyzed these 4 poles and determined that their structural integrity is strong and that the minor damage is not sufficient to compromise pole strength. Nevertheless, we will replace these poles in FY2008."]

Based on FY2007 inspections to date: Distribution-6% of poles are failing inspection for FY2007. Approximately 60% of the failures are for ground decay and 40% of the failures are for pole top decay.

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.

Based on FY2007 inspections to date: Transmission- 100% of decayed poles have been replaced (7 poles). As stated above, the 4 transmission poles with minor damage are scheduled for replacement with other circuit outage work in FY2008.

Based on FY2007 inspections to date: Distribution-56% of rejected poles have been replaced (418 poles). The poles are put on a list and worked in the order reported—typically about a 90- day cycle. The poles that are not rejected per NESC but older than 15-years are ground treated.

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.**

Transmission-JEA maintains transmission line clearances and reporting in accordance with the NERC Reliability Standard FAC-003-1 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).

b) **Quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities.**

JEA fully completed all FY2006 vegetation management activities described above. Vegetation management activities for FY2007 are on schedule.

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.

Keys energy services

(305) 295-1000
1001 James Street
PO Box 6100
Key West, FL 33040-6100
www.KeysEnergy.com

UTILITY BOARD OF THE CITY OF KEY WEST

Fed Ex 8580 9579 6091

February 26, 2007

Mr. Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

RE: Florida Public Service Commission Storm Hardening Report - 2006

Dear Mr. Devlin:

In accordance with FPSC's rule #25-6.0343, please find attached two bound copies of the Utility Board of the City of Key West's (Keys Energy Services - KEYS) *"2006 Storm Hardening Report".*

We have also enclosed one copy of the final report in digital format (CD enclosed).

If any questions develop during your review, please do not hesitate to call me at 305/295-1042.

Sincerely,

Dale Finigan
Director of Engineering/Control Center
Dale.Finigan@KeysEnergy.com

DF/ba

c:
L. Tejeda, General Manager & CEO
J. Wetzler, Asst. General Manager & CFO
D. Price, Director of T&D/Electrical
Barry Moline, FMEA
File:PSC

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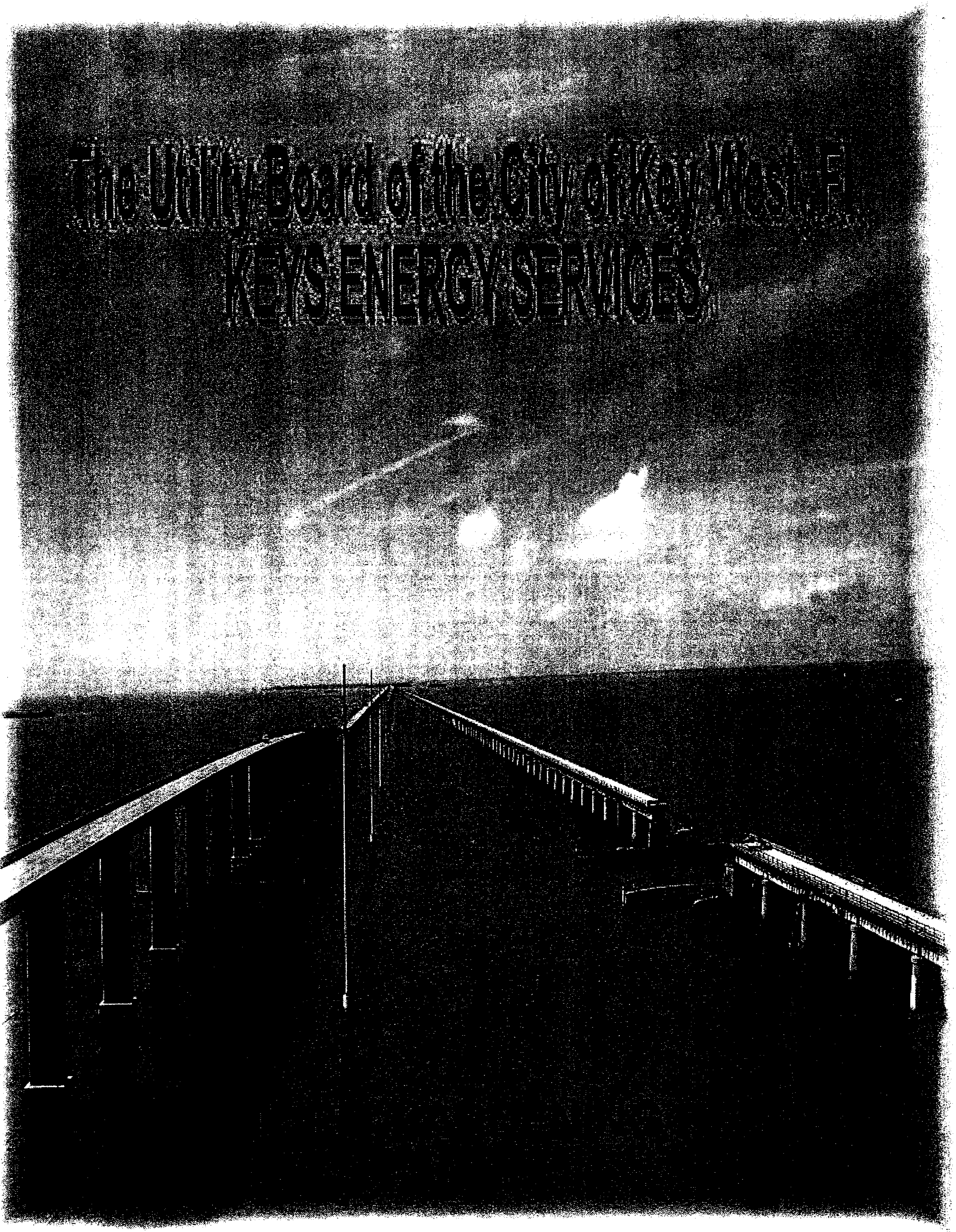
DIVISION OF ECONOMIC REGULATION


The Utility Board of the City of Key West, Fl
KEYS ENERGY SERVICES

SECTION 1
Introduction/Contact Information

Utility Name:	The Utility Board of the City of Key West, Florida dba, Keys Energy Services (KEYS)
Address:	1001 James Street P. O. Box 6100 Key West, Florida 33040
Contacts:	Lynne Tejeda, General Manager/CEO Ph. 305-295-1020 Fax 305-295-1034 Lynne.Tejeda@KeysEnergy.com
	Dale Z. Finigan, Director of Engineering/Control Center Ph. 305-295-1042 Fax 305-295-1044 Dale.Finigan@KeysEnergy.com

NOTE: This report developed by Dale Finigan. For questions and/or clarifications please call Dale Finigan at 305-295-1042

SECTION 2
Utility History and Description

History/Company Profile:

- •Municipal Electrical Company Since 1943
- •Five Members Elected Utility Board
- •160 Employees
- •KEYS Maintains and Operates Transmission, Distribution and Generation
- •Member of FMPA
- •FMPA Primary Power Provider

Service Territory:

- •Key West Florida and the Lower Florida Keys

Electrical Facility Description:

- •Transmission
  - -Voltage Level -138kV and 69kV
  - -Circuit Miles -68 Miles
  - -Age of Poles -1965 through 2004
  - -Pole Types Qty:
    - -Concrete -700
    - -Steel -150
    - -Wood - 0
- •Distribution:
  - -Voltage Level -13.8kV
  - -Circuit Miles -270
  - -Age of Poles -1950-2007
  - -90% Aerial
  - -Pole Types Qty:
    - -Concrete - 4,500
    - -Steel - 0
    - -Wood -10,200
- •Substation:
  - -Voltage Level -138kV, 69kV and 13.8kV
  - -Quantity of Substations: -8
- •Generation:
  - -Quantity of Units -8
  - -Type -High Speed Diesel, Low Speed Diesel, Combustion Turbine
  - -Capacity -125 MW
  - -Black Start Capabilities for Emergency

Customer Profile:

- •Total of Customers -29,507
- •Breakdown
  - -Residential -81%
  - -Commercial -13%
  - -Others -6%
    (Street Lights, churches)

Load Profile:

- •2006 Peak Demand -136 MW
- •2006 GWH sold -704 GWH

SECTION 3
Standards of Construction

3a) National Electric Safety Code (NESC) Compliance:

•KEYS' current construction standards, policy, guidelines, practices and procedures comply with the NESC 2007 (ANSIC-2) as of February 1, 2007.

•KEYS' electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facilities' initial construction.

•KEYS is very proactive in the education of its technical staff on new NESC requirements. Such educational measures taken in order to remain educated on topics, issues, and classification on the NESC issues are:

1) Professional Publications
2) NESC news letters from Clapp Associates
3) Technical training on NESC through APPA and FMPA

3b) Extreme Wind Loading Standards:

•KEYS' is in compliance with the new NESC "Extreme Wind Load" requirement for KEYS' Distribution System for:

1) New construction
2) Major planned work, and relocation of facilities
3) Targeted critical infrastructure

•KEYS has been very aggressive in analyzing the wind impacts on its electrical facilities, and has structurally studied modifications needed in order to accomplish/adhere to new Florida Public Service Commission (FPSC) Rule. The following has been performed by KEYS:

1) Structurally analyzed current system's capacity
2) Modified construction standards on distribution system to adhere to the "Extreme Wind Design"
3) Ordered new material in order to construct to the 150MPH
   - -poles designed to meet new wind load
   - -anchoring and down guy system

Attachments (in Tab-8):

1) Evaluation of Current System
2) Design criteria for Upgrade Study
3) Design Application Guide for KEYS' Design Staff

SECTION 3 continue

3c) Flooding and Storm Surge:

•KEYS' Construction Standards, for underground construction, has always incorporated the elevation of switches and padmount transformers to the" FEMA Flood Elevation" in order to prevent electrical damage due to storm surge and flooding. This long standing policy for over 30 years, proved to be very successful during Hurricane Wilma. Significantly flooding occurred over the entire Florida Keys and Key West from 4 to 12 feet. No damage occurred to KEYS' underground system as a result of flooding due to this longstanding construction standard.

Attachments (in Tab 9):

1) *Photos of Hurricane Wilma flooding at an underground location (during flood and normal conditions)*
2) *Typical pictures of KEYS' electrical underground padmount/switchgear showing elevated construction*
3) *Drawing of standard underground elevation boxes*

3d) Safe and Efficient Access of New and Replacement Distribution Facility:

•This issue is aggressively been reviewed and addressed. The utility and the City of Key West are investigating options on how to replace 650 wood poles that are located in easements and right-of-ways that are inaccessible (poles behind customers' property). Efforts to date:

1) BellSouth, Comcast KEYS and City formed a committee to study issues and solutions
2) KEYS performing impact study on options

Attachments (in Tab 8)

1) *KEYS' Utility Board Resolution #748 on Easement Inaccessibility policy to install new and upgraded facilities at a safe and accessible location*

3e) Attachments by Others:

•KEYS' "pole attachment contracts" with foreign communication firms has requirements for notification and the approval process. KEYS, Comcast and BellSouth are currently working together to improve on process.

SECTION 4
Facility Inspections

4a) KEYS' Policy, Guidelines, Process, and Procedures as They Relate to Pole Testing:

•Distribution Poles:

1) KEYS' contracted with Osmose, Inc. to perform a detail testing of **100%** of KEYS' utility poles at one time.
2) KEYS elected not to delay, and is currently testing all poles for NESC compliance. Osmose commenced testing in December of 2006. Testing of 100% of poles shall be completed by April of 2007.
3) In summary, Osmose is performing the task below:

Item #	Task Description
1	Site visit and Visual inspection of pole(concrete and wood)
2	Sound and Bore test for wood
3	Excavated base- soil around wood pole-- Reject pole
4	Excavated base- soil around wood pole-- External treat
5	Excavated base- soil around wood pole-- External treat, then reinforce using cost items below
6	Internal Treat of wood pole
7	Difficult accessible(poles located in rear lot lines)
8	Ground wire Repair near pole base
9	Load Calculation Assessment per pole as per PSC
10	Digital Images/photos for reject poles and code problems in items(18,19 and 20)
11	Computerized report of task performed per pole(includes 3 copies of software)
12	Install "Guy Guard" on Down Guy
13	Osmose C2 external steel reinforce installation at base (35' wood pole)(All labor and material)
14	Osmose C2 external steel reinforce installation at base (40' wood pole)(All labor and material)
15	Osmose C2 external steel reinforce installation at base (45' wood pole)(All labor and material)
16	Down guy wire and anchor rod inspection(6" below grade)
17	Identify/ document locations of missing KEYS pole # on the pole
18	Identify/document locations that the " pole ground rod" extends above grade/ground
19	Identify/document ADA non-compliance(b/w pole and any object) if clearance is lower then 33" (on sidewalks)
20	Identify/document locations that clearance between pole and Fire hydrant is -less then 4 feet (at ground level)
21	Identify/document locations where clearance b/w OH wire and Structures is less then 10 ft. (overhead)
22	Joint Use Survey of 2 other utility attachments(for each of the foreign attachments)

•Transmission Poles:

1) KEYS has no "wood" transmission poles.
2) Since KEYS has only one incoming transmission line into its service territory, KEYS has a policy to perform the following:
   - •Detailed inspection/survey of concrete foundations on transmission structures located in the water. This is performed every 4 years.
   - •Detailed helicopter inspections of all concrete poles. This aerial inspection is performed every 2 years.
   - •Infrared survey - KEYS performs a 100% infrared inspection every 2 years.

SECTION 4 continue

4b) Number and Percent of Transmission and Distribution Pole Inspections planned and completed:

- Transmission Facility Inspections
  - ➡Concrete Foundations inspected in 2005. Next concrete foundation inspection planned for 2008
  - ➡Aerial inspection - 100% inspected in 2006
- Distribution Facility Inspection
  - ➡See detail summary table below.

4c) Statistical data on T&D poles failing inspections

- Transmission
  - ➡Number of poles failed (rejected) -0.0
  - ➡Percentage of rejected failed rate -0.0%
- Distribution

POLE TESTING SUMMARY DISTRIBUTION	
Total poles to be tested by 4/07	14,300
concrete type	4,100
wood type	10,200
Total poles tested	4,883
% of Total poles tested to date	34.15%
Total wood poles tested to date	4,485
Total concrete poles tested to date	398
Reject/Failed pole Summary	
Total concrete rejects to date	2
% of total concrete	0.50%
Total wood pole reject to date	993
% of total wood	22.14%
Reject/Failure Reasons	
% Ground Rot	80%
% Structural Overload	5%
%Pole Top Rot	10%
% Other	5%

NOTE: This summary table is for the last 3 months. KEYS is testing 100% at one single time. The complete testing of all poles will be done by April of 2007. KEYS will report the entire results in the "2007 Storm Hardening Report".

Osmose

KEYS ENERGY SERVICES

SUMMARY REPORT

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Totals as of 02/10/2007

POLE CATEGORY	ITEM COUNT	% OF TOTAL	% OF GROUP
TOTAL POLES INSPECTED	4883	100.0	-
EXCAVATED	3876	79.4	79.4
External Treat No Decay Found (Includes Visual and Sound & Bore)	1449	29.7	37.4
External Treat Decay Found (Includes Visual and Sound & Bore)	1475	30.2	38.1
Reject with External Treat (Includes Visual and Sound & Bore)	173	3.5	4.5
Excavated Reject (Includes Visual and Sound & Bore)	779	16.0	20.1
NOT EXCAVATED	1007	20.6	20.6
Sound & Bore (Includes Visual)	182	3.7	18.1
Sound & Bore with Decay (Includes Visual)	284	5.8	28.2
Sound & Bore Reject (Includes Visual)	31	0.6	3.1
Visual Report	499	10.2	49.6
Visual Reject	11	0.2	1.1
TOTAL REJECTED POLES	995	20.4	-
Total Priority Rejected Poles	82	1.7	8.2
Priority Restorable with C-Truss	30	0.6	36.6
Priority Restorable with ET-Truss	0	-	-
Priority Restorable with Fiberwrap	0	-	-
Priority Not Restorable	52	1.1	63.4
Total Non-Priority Rejected Poles	913	18.7	91.8
Non-Priority Restorable with C-Truss	175	3.6	19.2
Non-Priority Restorable with ET-Truss	0	-	-
Non-Priority Restorable with FiberWrap	0	-	-
Non-Priority Not Restorable	738	15.1	80.8
OTHER CATEGORIES	26670	-	-
Poles With MITC-Fume	1377	-	-
MITC-Fume per Tube	4993	-	-
Private Property	270	-	-
Anchor Inspection	1915	-	-
Joint Use survey - CATV	3455	-	-
Joint Use Survey - TELCO	4074	-	-
Guy Marker Install - Customer	424	-	-
Digital Photo	994	-	-
Groundwire Repair	51	-	-
Internal Treat - Cop R Nap	6	-	-
LoadCalc	4228	-	-

... continued ...

SECTION 4 continue

4d) NUMBER AND PERCENTAGE OF T&D POLES REPLACED AND THE REMEDIATION PLAN TO CORRECT

•Transmission Facilities Plan

Since no transmission facilities have failed inspection. No plan is needed.

•Distribution Facilities Plan

KEYS anticipates a "reject rate" of 25%. The Utility Board has already approved a very aggressive schedule to correct and replace failed facilities (Tab 7 for detailed plan). Below are some of the highlights of the remediation plan:

- ➡KEYS has entered into a 5 year contract with Diversified Inc. (line construction company) to provide construction labor services to replace approximately 3,000 poles over 5 years. The $12 million dollar contract is for approximately 150,000 man-hours to replace poles.
- ➡KEYS approved a 5 year contract with USI (concrete pole manufacture) to manufacture 3,000 new concrete poles designed to the new Extreme Wind Load Design.
- ➡Pole Replacement Plan:

YEAR	Estimated Quantity to be Replaced
2007	200
2008	800
2009	800
2010	800
2011	400

KEYS ENERGY

T&D Storm Hardening Program

Table of Content

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Dale Finigan
Director-Engineering and Control

VER # 3

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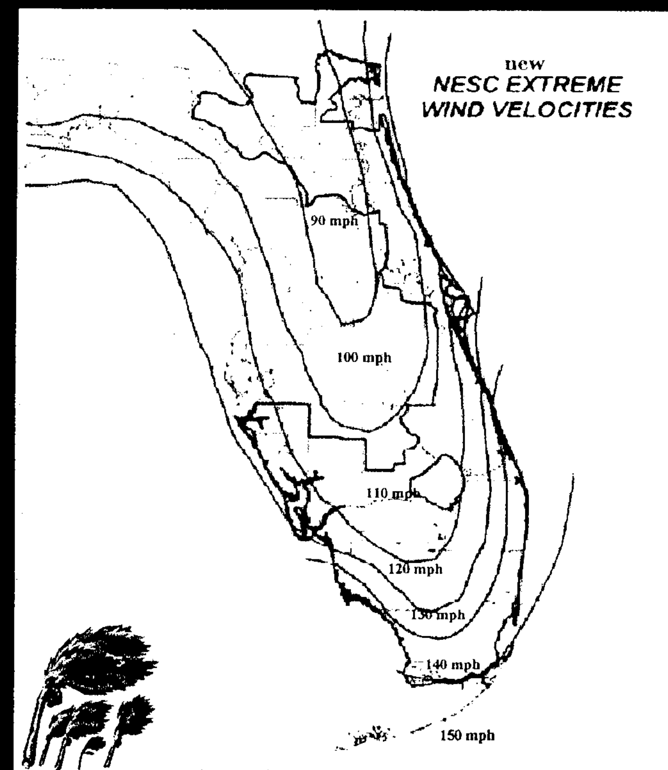
Florida PSC – New Rules

Rule # 25-6.0343

Florida Public Service New Requirements

- Utility Pole Inspection 8-yr Program Cycle
  - -Test by Drilling into each Pole
  - Treatment process of wood poles(life extension)
  - Excavation of all Wood Poles bases.
    18"decay test.
  - Load Calculation on each pole with attachments.
- Design/Construct all new and major rebuilt T&D facilities using the...."Extreme Wind Load Criteria".
  For KEYS area, this requires 150mph (3 second wind)
- Required New "Extreme wind load" for the Following
  - Hospital Circuit
  - EOC Circuit
  - New Construction
  - Rebuilt Construction
- For location not meeting the above, they will be required to withstand the 90 mph code until the poles are eventually changed out.
- Elevation of UG Facilities (padmounts, switches) to minimize or prevent flood damage
- Substantial Yearly Reporting of the Following:
  - 8 year pole testing program
  - Planned and actual % of upgrade program
  - Standards Submitted – OH and UG
  - Tree trimming and vegetation program and year status completion reports
  - Pole loading for 3rd party attachments
  - Number of poles failing criteria & plan to correct
- Provide placement of new & replacement facilities as to facilitate *safe and efficient access* for installation and maintenance (i.e.– in accessible easement relocate to front)



T&D Current FACTS

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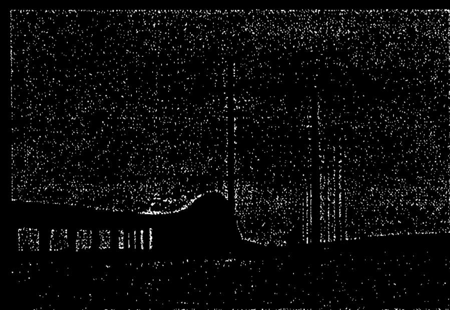
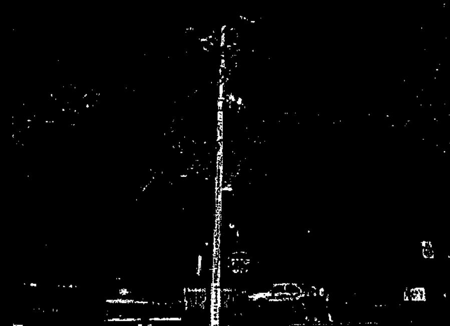


Transmission Facilities

-Purpose Electrical lines that transmit power in bulk over long distances.
-Voltage 69,000 volts and 138,000 volts
-KEYS 68 miles of Electrical line
-Pole QTY 850 Concrete and steel
-Age From 1965 -- 2004
-Design speed capabilities of POLES
Various depends on the specific section.
Sustained wind ..120-165mph
3sec gust ..155-172mph

NESC 2002 Code requirement ..150 mph 3sec basic wind



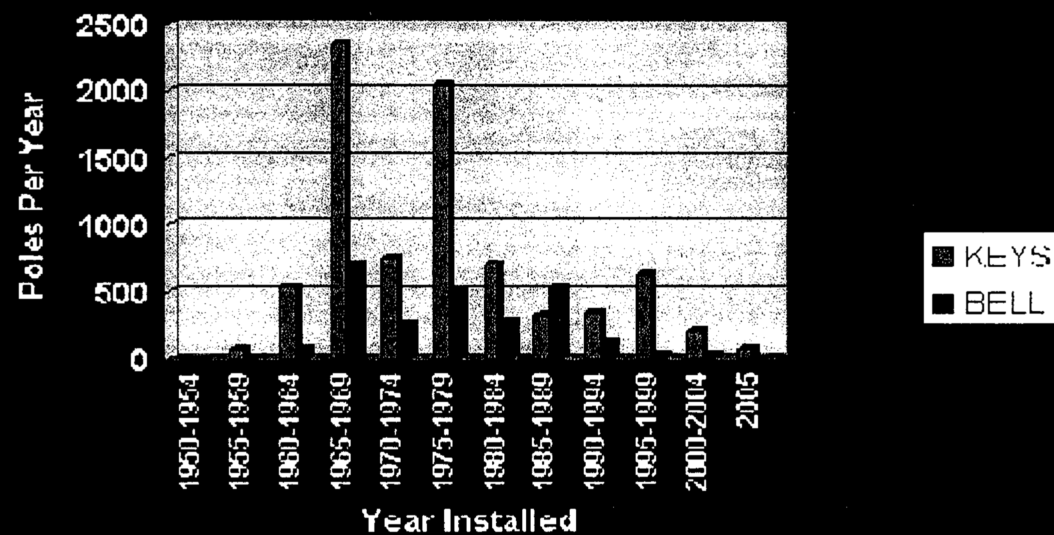
Distribution Facilities

Purpose Electrical lines that carries the power to the residential and commercial customers from various substations
-Voltage 13,800 Volts
-KEYS 270 miles of Electrical line (approx)
-Feeder Feeder Quantity- 34
-Poles 15,200
-Pole Age From 1950 -- 2006
-Design speed -current
Various depends on the pole configuration
85 to 142mph..
(110MPH is the average of our Distribution OH facilities)

NESC 2002 Code requirement ..90 mph 3sec basic wind

Power Facilities Under Logistics

T&D Current FACTS *(con't)*



Pole Data

- Pole Qty — 15,200 total (concrete and wood)
  - KEYS ownership — 83%
  - BELLSOUTH ownership — 17%
- Pole Type — 77% wood
  - 23% concrete

KEYS' Storm Hardening Program

Goals/Status/Schedule

Power
Facilities
Under
Logistics

Project Goals

- Investigate structural wind load capabilities of existing system (wood and concrete) poles.
- Change KEYS' construction standards for "Extreme Wind Condition" for new and rebuilt construction
- Replace approximately 3,300 poles over the next 5 years of system to 150mph wind capacity
- Construction Improvements as we upgrade facilities
  - Concrete Poles
  - Remove Open Wire Secondary
  - Remove crossarm construction in "keys" part of our service territory (outside of KW)
  - Remove "De-energized" conductors not in use
  - Perform aesthetic improvements as we perform upgrades
  - Reduce the number of poles and double circuits
  - Reclaim inaccessible easements or relocate to front
- Upgrade Poles that supply Hospital (Substation US1-5 Feeder)

Funding

- Over the 5 year period. The funds appropriated for the 3,300 poles is approximately $18 million

Current Status

- KEYS secured contract with Osmose to test our 14,000+ poles. Contract cost- $800k
- Developed and release bid documents for a "Line construction Firm". 4 Crews. Each crew consist of 4 men
- Performing structural analysis of existing structural and modification to our material and construction specifications/standards.
- Obtain 1(one) additional staff person for 4 yrs to assist in design and construction monitoring.

Schedule

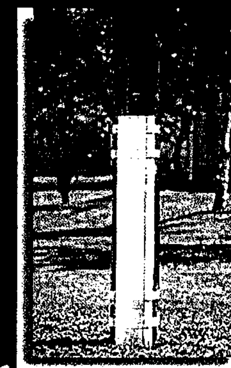
Design and Standard changes	Sep/06 -- Oct/06
Pole Testing	Dec/06 -- Mar/07
Material Procurement	Novt/06 -- Jun/07
Contractor Commencement on-site	Apr/07 multiple crews. (1 crew in Jan)

Power
Facilities
Under
Logistics

Distribution Improvement Program

Photos of Pole Testing

Testing of the 14,000+ wood pole, and perform load calculations



Structural improvement of a portion of the wood poles if cost effective (i.e. easements)

5 year
"System Hardening plan"
40% of system upgrade

Storm Hardening Program

Challenges & Opportunities

Power Facilities Under Logistics

Challenges and Issues

- 17% of pole are BellSouth. How do we handle KEYS Facilities on these poles? Who changes out Bell poles if PSC is not requiring them. PSC and Bell South are currently in Legal dispute.
- Easements/encroachment issues and dealing with City/customers on vacating or relocating to "front side".
- Material procurement and storage.
- Lineman availability in Florida – High Demand.
- Staff and managing the programs over 5 years.
- 2000+ pole are customer "tap pole" owned and maintained by customers with service drop on it. This is customers responsibility.

Opportunities for Improvements

- Sailboat impacts on Transmission line (Pine Channel) *FWC approved on 12.06.06.*
- Audit of " joint use attachments" for loading. Investigate Bell and Comcast standards.
- Traffic Signals- Work with DOT to convert to

  steel mast arm's on DOT rights-of ways.
- Possible New Local Ordnances (City & County)
  - ✓ New UG credits to encourage UG
  - ✓ New projects require to go Underground
  - ✓ Customer Back up generator credits
  - ✓ Tree Commission-greater flexibility for KEYS
  - ✓ UG conversion credits *(UB approved in March of 2006)*

P
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Facilities
Under
Logistics

Potential Customers and Employee

Misunderstandings & Misconception

- Customers may think Upgrades are done "quickly". Its a five year program.

- Just because it's a concrete pole does not mean it is at the 150mph load capacity (Existing concrete poles are "NESC Code compliant" and will remain).

- The new generation of Poles will be concrete at the 150mph (3sec basic wind speed) as per the NESC and PSC. Customers may think the 150mph of our poles is the sustained wind for a Cat-4 hurricane.

- After 5 years of the program
  - ✓ Not every pole will be concrete.
  - ✓ Only 40% of our distribution will be at 150mph "extreme code".
  - ✓ Remaining facilities will be upgraded to the 150mph extreme code at "end of life time." (when pole is 66% decayed per NESC code and FPSC).

SECTION 5

Vegetation Management Program

5a & b) KEYS ENERGY SERVICES VEGETATION MANAGEMENT PROGRAM AND QUANTITY, LEVEL, AND SCOPE OF PLANNED/COMPLETED ON KEYS T&D SYSTEM

•Mission:

Keys Energy Services (KEYS) is dedicated to maintaining safe clearances surrounding electrical facilities to reduce outages and increase the public's safety and awareness. This is achieved through various programs including, continuous zone trimming, tree safety press releases, Tree Give-A-Way, and by responding to Customer Service requests for vegetation management. The following information describes KEYS programs in greater detail.

•KEYS' Service Area:

KEYS service area consist of 226.71 miles of 3 phase Distribution lines & 66.3 miles of transmission lines.

•KEYS' Staff and Contractual Crews:

KEYS have a total of 5 tree trimming crews, 2 in-house crews and 3 contractor crews. KEYS in-house crews maintain all customer request orders, revisit tree trimming list as well as zone trimming and tree removals. Contractor crews specifically work in zone trimming and tree removals. All worked is compiled and documented, such as footage, tree removals, zone trimming and man-hours it takes to complete these zones. These crews have received special training in the line clearance tree trimming and follow arborist guidelines for utilities which specify how trees should be cut. Industry standards specify the minimum safety clearances that must be maintained for safety and for reliability.

•KEYS Trim Cycle Information:

KEYS' implemented a policy to maintain a 2 year cycle for system trimming, which KEYS has been able to complete in this time frame. This 2 year cycle has been in place since 2000 which includes trimming of all 3 phase feeders, laterals, secondary and communication conductors.
KEYS perform a biannual maintenance of tree clearances on all of the 66.3 miles of transmission lines and maintain these clearances.
KEYS averages about 7 customer requests a day, the low volume of requests are due to the cycle trimming that is in place. KEYS in house crews spend approximately 25% of their time on customer generated requests, which include service trims, communication and conductor trims. When not working on customer request the KEYS crews work on revisits and zone trimming.
While zone trimming contractor crews as well as KEYS tree crews remove all invasive trees in the right-of-way and easements. Trees are cut to ground level and sprayed with an herbicide to prevent re-growth.

SECTION 5 continue

- Problem Trees Outside of Right-of-Ways or Easements:

  For customer trees that are infringing into KEYS lines, KEYS will make contact with the customer and explain to the customer the safety issues that exist with a tree getting into high voltage lines. Most customers are receptive to the tree removal once contacted by KEYS.

  KEYS has initiated a quarterly revisit list for the locations throughout the system where customer's trees are infringing on KEYS lines and are not willing to have the tree removed. This revisit list was just put into place in late 2006 and is working well. The quarterly revisit list is necessary due to KEYS' tropical climate and the substantial growth rate throughout the year. KEYS is also looking into a tree replacement program as an incentive for reluctant customers to allow the removal of problem trees.

- Addressing Appropriate Planting, Landscaping:

  KEYS has a tree give-a-way program that has been in place since 1995 to help promote energy conservation and public awareness. KEYS help the customer determine the proper placement of the tree to maintain adequate clearance from facilities with one on one consultation. KEYS review a site layout of the customer's yard and advise on the best placement for shade benefit and proper clearance. During the consultation, KEYS gives the customer a brief summery of what type of problems may occur if a tree was to be placed under the high voltage lines/service drops. Generally, the customer agrees to plant the tree where KEYS indicates on the layout of the property resulting in fewer future tree trimming problems and increases safety.

- Benchmark Reports on Vegetation Management:

  KEYS implementation of the 2 year trim cycle, revisit list, tree removals, tree give-a-way program, and public service announcements, responding to customer request, and hiring contractor crews for zone trimming has allowed KEYS to reduce outages.

  KEYS maintain records and produce an annual report of all outages throughout the system. In 2006, KEYS had 1 reclosure, 2 feeder outages and 3 lateral outages due to trees from February to December 2006. These proactive measures have resulted in the low number of occurrences due to KEYS Vegetation Management Program. KEYS will strive to continue to improve this program and further reduce outages and increase safety for the public and KEYS employees.

- Line Clearances:

  KEYS strives to maintain the following line clearances where practical:

  - 15 feet clearance on all transmission lines.
  - 10 feet clearance on all open conductors greater than 600 volts (where possible)
  - 5 feet minimum clearance on all open conductors less than 600 volts. (where possible)
  - 3 feet minimum clearance on all communication conductors.

SECTION 6
Storm Hardening Research

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

BECKETT & LARUE, INC.
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September 25, 2006

Mr. Dale Finigan
Keys Energy Services
1001 James Street
Key West, FL 33041

Subject: ***NESC Extreme Wind Analysis***
Final Report

This letter will serve as our final report concerning our analysis of KEYS distribution facilities.

PURPOSE

It is our understanding that KEYS has received indication that the Florida Public Service Commission (PSC) will, in the near future, require that electric utilities in the state of Florida adopt standards that, to the extent reasonably practical and feasible, comply with the extreme wind loading standards specified in the NESC.

KEYS has requested that B&L provide engineering services to assist KEYS in assessing the effects of potentially complying with this requirement by the PSC. Since it is the opinion of KEYS that most, if not all, of its transmission facilities are designed in accordance with the NESC, these services will mainly concentrate on KEYS' distribution facilities.

ANALYSIS

The purpose of this analysis will be to determine the approximate wind rating of KEYS current standards and determine the changes that would need to be made to comply with the NESC Extreme Wind Criteria. A kick-off meeting was held at the KEYS offices where we gathered information on KEYS systems including its current standards and practices with respect to poles, materials, equipment and assemblies. We also viewed some of KEYS in-place distribution facilities in order to gain an understanding of current practices.

Based on discussions with KEYS, the requirements of the PSC, and the NESC, we developed a design criteria document that specifies KEYS current practices and the mechanical loading criteria which all future transmission and distribution design should potentially follow. The final design criteria is attached to this report a Exhibit A.

Based on the information gathered during the kick-off meeting and the design criteria, B&L evaluated KEYS current practices. The purpose of this analysis was to determine the approximate wind rating of KEYS current standards and determine the changes that would need to be made to comply with the NESC Extreme Wind Criteria.

As part of the scope, we analyzed structures, including wood and concrete, under different configurations and assemblies. A table is included as Exhibit B which lays out the different configurations that were chosen during the kick-off meeting.

FINDINGS

Based on the analysis, we identify the approximate wind rating of the items included in the analysis. We have also identified the changes that would need to be made to comply with the NESC Extreme Wind Criteria.

POLES

Included in the table in Exhibit B are the results of our analysis on the poles under the different scenarios chosen. The next to the last column of the table identify the current equivalent wind rating of the poles when compared with the requirements of the Extreme Wind Criteria in the NESC. The last column of the table identifies out estimate of the poles class that would be required to meet the 150 mph Extreme Wind Criteria specified by the NESC.

We have not included a required class for the concrete pole scenarios because we would not recommend that KEYS purchase future concrete poles in term of wood pole classes. We would recommend that KEYS develop a loading criteria for the concrete poles in conjunction with the development of a concrete pole specifications.

GUYS AND ANCHORS

We have analyzed several structure types using the standard guy wire that KEYS uses. The guy wire does show failure in most instances when modeled as typically installed by KEYS. The reason for the failure is the close proximately that KEYS is typically forced to install the anchor for the guys to the pole. The closer the anchor is to the pole, the more load is imposed on the guy wire. When deciding on future practices for guying structures, KEYS may want to consider a combination of better guy leads (which may not be possible), larger guy wires, and/or larger poles.

Under the current scenarios, it is very difficult to assess the capability of the current anchors that KEYS uses to carry the Extreme Wind loading due to the fact that the loads imposed on the current guying arrangement are so high.

FOUNDATIONS

Based on our analysis, it appears that the soils in the Keys will rquire an embedment on the average of 10% plus 4 feet. However, KEYS has expressed their confidence in their current practice of embedding their structures 10% plus 2. This confidence is based on local knowledge of the soils and operational history and maintenance of the current facilities.

HARDWARE

We have performed a cursory review of the major types of hardware used by KEYS and have not found any hardware that we feel will limit the loads to a level lower than that of the poles.

We appreciate the opportunity to provide these services to you and your staff.

BECKETT & LARUE, INC.

B. Dean Sevy, P.E.
Vice President

BDS/ca
Enclosures: Exhibit A and B

c: *Mathew Alfonso, KEYS*
Dan Sabino, KEYS
Sean Summers, B&L
File: KESNESC

KEYS ENERGY SERVICES

NESC Extreme Wind Analysis

DESIGN CRITERIA

Revision 2

September 25, 2006

PROJECT DESCRIPTION

It is our understanding that Keys Energy Services (KEYS) has received indication that the Florida Public Service Commission (PSC) will, in the near future, require that electric utilities in the state of Florida adopt standards that, to the extent reasonably practical and feasible, comply with the extreme wind loading standards specified in the NESC.

KEYS has requested that B&L provide engineering services to assist KEYS in assessing the effects of potentially complying with this requirement by the PSC. Since it is the opinion of KEYS that most, if not all, of its transmission facilities are designed in accordance with the NESC, these services will mainly concentrate on KEYS' distribution facilities.

APPLICABLE CODES AND STANDARDS

The designs will be governed by:

- 2002 NESC, Grade C
- KEYS distribution line design standards
- Applicable civil/structural design codes

DESIGN TOOLS

Much of the analysis for the project will be performed using PLSCadd and PLSPole design tools. These tools allow us to model the distribution facilities and run different loading scenarios in order to check strength and other factors.

WIND LOADS

Extreme wind loads will be calculated using NESC 2002 standard methods as follows:

$$W(psf) = 0.00256\,(V)^2\,(k_z)\,(Grf)\,(I)\,(Cd)$$

I = 1.0 Importance Factor for Utilities
Cd = 1.0 Shape Factor for Cylindrical Surface
= 1.6 Shape Factor for Square Surface (Concrete Poles)

- Base Pole Height: 40 feet – 45 feet (34 to 38.5 feet Above Ground);
- Max Wind Span: 100 feet (Key West); 150 feet (Upper Keys)
- Basic Wind Speed (V): 150 mph;

STRUCTURE EXTREME WIND:

Above Ground Height, Ht (ft)	Str	
	k_z	Grf
<= 33	0.92	1.02
> 35 to 50	1.00	0.97
> 50 to 80	1.10	0.93
> 80 to 115	1.20	0.89
> 115 to 165	1.30	0.86
> 165 to 250	1.40	0.83

W (psf) = 0.00256 $(150)^2$(1.00) (0.97) (1.0) (1.0)
W (psf) = 55.9 psf on Structure (Cylindrical)

W (psf) = 0.00256 $(150)^2$(1.00) (0.97) (1.0) (1.6)
W (psf) = 89.4 psf on Structure (Square)

WIRE EXTREME WIND:

Above Ground Height, Ht (ft)	Wire
	k_z
<= 33	1.00
> 35 to 50	1.10
> 50 to 80	1.20
> 80 to 115	1.30
> 115 to 165	1.40
> 165 to 250	1.50

W (psf) = 0.00256 $(150)^2$ (1.10) (0.88) (1.0) (1.0)
W (psf) = 55.8 psf on Wires

Wire Grf per Span Length, L (ft)					
<= 250	**250< L <= 500**	**500< L <= 750**	**750< L <=1000**	**1000< L <=1500**	**1500< L <=2000**
0.93	0.86	0.79	0.75	0.73	0.69
0.88	0.82	0.76	0.72	0.70	0.67
0.86	0.80	0.75	0.71	0.69	0.66
0.83	0.78	0.73	0.70	0.68	0.65
0.82	0.77	0.72	0.69	0.67	0.64
0.80	0.75	0.71	0.68	0.66	0.63

LOADING CONDITIONS:

The following loading conditions will be used for the project:

- NESC Light: 0.00-inch ice, 9 psf wind, 30 degrees F., K=0.05, Initial
- NESC Extreme Wind: 0-inch ice, 55.8 psf wind, 60 degrees F, Initial.

LINE VOLTAGES

	13.8 kV Line
Nominal Line (phase-to-phase) Voltage	13.8 kV
Maximum Operating Voltage (+5%)	14.5 kV
Maximum Line-to-ground (+5%)	8.37 kV

POLE TYPE

KEYS typically uses concrete and wood structures on its system. The current standard for pole type and class is the following: 40 ft.-Class 4 and 45 ft.-Class 2 Wood Poles and Static Cast, Square, Prestressed, Type III Pre-Cast Concrete poles. For analysis of the Type III an ultimate moment capacity of 90 kip-ft will be used based on information provided by Pre-Cast Specialties.

The average age of the KEYS system is 35 years.

POLE TOP ASSEMBLIES

The structure pole-top assemblies that will be used on this project are included in Exhibit I of this document. The table below identifies these structure types that will be used.

Structure Type	***Line Angle (Degrees)****	***Phasing Configuration No.***	***Insulator Assembly***
Tangent, Single Phase	0	0	Porcelain Line Post
Tangent, Single Circuit, Horizontal	0	1	Porcelain Line Post
Tangent, Double Circuit, Horizontal	0	1	Porcelain Line Post
Medium Angle, Single Circuit, Vertical	20	2	Polymer Suspension
Deadend, Single Circuit, Vertical	60	2	Polymer Suspension

* Line angle ranges will be confirmed through calculations.

POLE MOUNTED EQUIPMENT

The following are the typical type of pole mounted equipment that KEYS utilizes on its system that will be considered as part of this analysis:

Transformer Size (kVA)	Maximum Weight (lbs.)	Maximum Tank Height (in.)	Maximum Tank Diameter (in.)
25	490	32.0	18.5
50	750	34.5	23.0
75	1,010	36.5	25.5

CONDUCTOR DATA

The primary conductor typically used by KEYS in single phase circuits is 1/0 with the following mechanical characteristics:

Area: 0.0968 sq. in.
Diameter: 0.398 in.
Weight: 0.1157 lbs./ft.
RBS: 4,460 lbs.

Maximum operating temperature is usually 75 degrees C.

The primary conductor typically used by KEYS in two-phase circuits is #2 with the following mechanical characteristics:

Area: 0.0608 sq. in.
Diameter: 0.316 in.
Weight: 0.0727 lbs./ft.
RBS: 2,800 lbs.

Maximum operating temperature is usually 75 degrees C.

The primary conductor typically used by KEYS in three-phase circuits is AAAC 394.5 "Canton" with the following mechanical characteristics:

Area: 0.3098 sq. in.
Diameter: 0.721 in.
Weight: 0.3703 lbs./ft.
RBS: 13,300 lbs.

Maximum operating temperature is usually 75 degrees C.

NEUTRAL

The neutral typically used by KEYS for single phase circuits is 1/0 with the following mechanical characteristics:

Area: 0.0968 sq. in.
Diameter: 0.398 in.

Weight:	0.1157 lbs./ft.
RBS:	4,460 lbs.

The neutral typically used by KEYS for two-phase circuits is #2 with the following mechanical characteristics:

Area:	0.0608 sq. in.
Diameter:	0.316 in.
Weight:	0.0727 lbs./ft.
RBS:	2,800 lbs.

The neutral typically used by KEYS for three-phase circuits is AAAC 394.5 "Canton" with the following mechanical characteristics:

Area:	0.3098 sq. in.
Diameter:	0.721 in.
Weight:	0.3703 lbs./ft.
RBS:	13,300 lbs.

COMMUNICATIONS UNDERBUILD

In many locations, KEYS distribution is underbuilt by communications utilities. For the purposes of this analysis, we will assume that, when considered, the communications underbuild is as follows:

Telephone			
	Type:	600 Pair	100 Pair
	Diameter:	2.50 in	1.25 in.
	Weight:	2.00 #/ft.	0.60 #/ft
Cable			
	Type:	-	-
	Diameter:	1.25 in.	0.5 in.
	Weight:	0.60 #/ft.	0.25 #/ft.

- The horizontal and vertical spans used in the analysis for the communications underbuild will be equal to that of the distribution.

TENSION LIMITS

The tension limits below will be utilized on the distribution for the conductors:

Weather Case	***Tension***
NESC Light (Initial)	60% RBS
Extreme Wind (Initial) – Square	60% RBS
Extreme Wind (Initial) – Cylindrical	60% RBS
Normal (60 deg F, 0 ice, 0 wind) (Initial)	35% RBS
Normal (60 deg F, 0 ice, 0 wind) (Final)	25% RBS

The tension limits below will be utilized on the distribution neutral:

Weather Case	***Tension***
NESC Light (Initial)	60% RBS
Extreme Wind (Initial) – Square	60% RBS
Extreme Wind (Initial) – Cylindrical	60% RBS
Normal (60 deg F, 0 ice, 0 wind)	25% RBS

The communications tension limits are listed below:

Conductor	***Weather Case***	***Tension***
Telephone	60 Degrees F	500-1,000 lbs.
Cable	60 Degrees F	150-500 lbs.

SERVICE DROPS

When considering service drops in the analysis, we will use an additional transverse load applied in the communications space to account for the pull-off load. When 4 drops per services are assumed, we will use 200 pounds. When 8 drops per service are assumed, we will use 400 pounds.

STRUCTURE LOADING

The following loading criteria will be utilized on the structures:

Wood Structures

Load Case Description	***Temp. (° F)***	***Radial Ice (In.)***	***Wind (psf)***	***Vertical OCF***	***Wind OCF***	***Tension OCF***
CASE 1: (NESC Light)	30.00	0.00	9.00	1.90	2.20	1.30
CASE 2: (Extreme Wind)	60.00	0.00	Varies	1.00	1.00	1.00

Concrete Structures

Load Case Description	***Temp. (° F)***	***Radial Ice (In.)***	***Wind (psf)***	***Vertical OCF***	***Wind OCF***	***Tension OCF***
CASE 1: (NESC Light)	30.00	0.00	9.00	1.90	2.20	1.30
CASE 2: (Extreme Wind)	60.00	0.00	Varies	1.00	1.00	1.00

Wind load will vary between analysis in order to determine the current rating of the structures.

STRENGTH FACTORS

Wood and Concrete Structures

Load Case Description	***Strength Factor***
CASE 1: (NESC Light)	0.85
CASE 2: (Extreme Wind)	0.75

GUYS AND ANCHORS

Typically, KEYS uses 3/8-inch E.H.S. guy wire to guy its angle and deadend structures. Guys will be analyzed without exceeding 90 percent of the guys RBS. The guy leads typically used by KEYS are 12 – 15 feet.

The typical new anchor used by KEYS for its distribution structures are Manta Ray MR-2. A majority of the existing KEYS anchors are J 8115 8 Way Expanding Anchor.

FOUNDATIONS

Typically, KEYS structure embedment is 10 percent of pole height plus 2 feet for tangent, and guyed angle and deadend structures.

Since a geotechnical boring program will not be practical for this analysis, we will assume the following parameters when checking the typical embedment:

Soil Layer	***Soil Type***	***Properties***
1	Loose Sand - Top 2 ft.	Density = 100 psf, φ = 0.0, C = 0.0
2	Dense Sand – 2 ft. layer	Density = 120 psf, φ = 32.0, C = 0.0
3	Coral Rock – To Depth	Density = 140 psf, φ = 0.0, C = 5.0

We will assume that the water table is typically at 1 foot below groundline in the upper keys and at the groundline in Key West.

CONFIGURATIONS TO BE ANALAYZED

Exhibit II includes a table that lists the configurations that will be considered as part of this analysis. These configurations were chosen in order to provide a representative sample of the wide variety of configurations that exist on KEYS' system. These configurations are not intended to cover all cases and scenarios.

PREPARED BY:
BECKETT & LARUE, INC.

B. Dean Sevy, P.E.
BDS/bds

c: File copy: KESNESC

KEYS ENERGY SERVICES
NESC EXTREME WIND ANALYSIS

DESIGN CRITERIA

Exhibit I
Pole Top Assemblies

DISTRIBUTION CONFIGURATIONS ANALYSIS

Item	Configuration	Assembly	Number of Circuits	Pole Height	Span Length	Pole Mount Equipment	Communication Underbuild	Service Drop (D,T,C) (2)	Guys (Dist,Comm)	NESC Equivalent Wind Load	Pole Class Required for NESC 150 mph	KES Percentage of Structures
1	0	1-phase		40 ft. Wood	150	Transformer	1 small Bell and Cable	4, 4, 4		130 mph	Class 2	
2	0	1-phase	1 + Open Wire Sec.	40 ft. Wood	150	Transformer	1 small Bell and Cable	4, 4, 4		110 mph	Class 1	
3	0	1-phase Med. Angle	1 + Open Wire Sec.	40 ft. Wood	150	Transformer	1 small Bell and Cable	4, 4, 4	1 , 1	150 mph	Class 4	
4	0	1-phase Deadend	1 + Open Wire Sec.	40 ft. Wood	150	Transformer	1 small Bell and Cable	4, 4, 4	2 , 2	110 mph (1)	(3)	
5	0	1-phase		40 ft. Wood	250	None	1 small Bell and Cable	None		110 mph	Class 1	
6	6, 7, 8, 9, 12	2-phase		40 ft. Wood	150	Transformer	1 small Bell and Cable	4, 4, 4		120 mph	Class 2	
7	6, 7, 8, 9, 12	2-phase	1 + Open Wire Sec.	40 ft. Wood	150	Transformer	1 small Bell and Cable	4, 4, 4		110 mph	Class 1	
8	6, 7, 8, 9, 12	2-phase Med Angle	1 + Open Wire Sec.	40 ft. Wood	150	Transformer	1 small Bell and Cable	4, 4, 4	1 , 1	150 mph	Class 4	
9	6, 7, 8, 9, 12	2-phase Deadend	1 + Open Wire Sec.	40 ft. Wood	150	Transformer	1 small Bell and Cable	4, 4, 4	2 , 2	100 mph (1)	(3)	
10	1, 2, 3, 4, 5, 10, 11	3-phase Tangent	1	40 ft. Wood, CL4 45 ft. Wood, CL2 40 ft. Concrete, CL2 45 ft. Concrete, CL3	100	None	2 Bell Trunk and 1 large Cable	8, 8, 8		90 mph 110 mph 110 mph 100 mph (1)	Class H3 Class H3	
11	1, 2, 3, 4, 5, 10, 11	3-phase Tangent	1	40 ft. Wood, CL4 45 ft. Wood, CL2 40 ft. Concrete, CL2 45 ft. Concrete, CL3	100	3 - 75 kVA Transformers	2 Bell Trunk and 1 large Cable	8, 8, 8		< 90 mph (1) 90 mph 90 mph (1) < 90 mph (1)	Class H4 Class H5	
12	1, 2, 3, 4, 5, 10, 11	3-phase Tangent	1	40 ft. Wood, CL4 45 ft. Wood, CL2 40 ft. Concrete, CL2 45 ft. Concrete, CL3	100	3 - 75 kVA Transformers	2 Bell Trunk and 1 large Cable - 90 deg. Pulloff	8, 8, 8		<90 mph <90 mph <90 mph <90 mph	Class H5 Class H6	
13	2	3-phase Med. Angle	1	40 ft. Wood, CL4 45 ft. Wood, CL2 40 ft. Concrete, CL2 45 ft. Concrete, CL3	100	None	2 Bell Trunk and 1 large Cable - Follow Angle	8, 8, 8	2 , 1 2 , 1 2 , 1 2 , 1	150 mph 150 mph 150 mph 150 mph	Class 4 Class 2	
14	2	3-phase Deadend	1	40 ft. Wood, CL4 45 ft. Wood, CL2 40 ft. Concrete, CL2 45 ft. Concrete, CL3	100	None	2 Bell Trunk and 1 large Cable - Follow Angle	8, 8, 8	4 , 1 4 , 1 4 , 1 4 , 1	<90 mph <90 mph <90 mph <90 mph	(3) (3)	
15	1, 2, 3, 4, 5, 10, 11	3-phase Tangent	2	45 ft. Concrete, CL3	100	3 - 75 kVA Transformers	2 Bell Trunk and 1 large Cable	8, 8, 8		<90 mph		
16	1, 2, 3, 4, 5, 10, 11	3-phase Tangent	2	45 ft. Concrete, CL3	100	None	2 Bell Trunk and 1 large Cable	8, 8, 8		<90 mph		
17	1, 2, 3, 4, 5, 10, 11	3-phase Tangent	1	45 ft. Wood, CL2	250	None	2 Bell Trunk and 1 large cable	None		<90 mph	> Class H6	
18	2 (Hospital)	Tangent	1	40 ft. Concrete, CL2	200	None	1 Large Bell and Cable	None		90 mph		
19	2 (Hospital)	Tangent	1	40 ft. Concrete, CL2	200	Transformer	1 Large Bell and Cable	None		90 mph		
20	2 (Hospital)	Angle	1	40 ft. Concrete, CL2	200	None	1 Large Bell and Cable	None	2 , 1	150 mph		
21	2 (Hospital)	Deadend	1	40 ft. Concrete, CL2	200	None	1 Large Bell and Cable	None	4 , 1	<90 mph		

(1) Fails under NESC Light Loading
(2) D = Distribution, C = Cable, T = Telephone. Numbers represent the number of drops assumed.
(3) Does not converge. Guys overstressed in short-guy configuration.

DISTRIBUTION POLE APPLICATION GUIDE
(Extreme Wind Load Design)

PURPOSE: The purpose of this document is to provide guidance on the field application of the different pole types stocked by KEYS. In accordance with the new PSC's rules, all new construction (both line extensions and pole replacements) shall conform to this.

POLE TYPES: The following table lists the types of pole stocked by KEYS along with the design strength values:

Pole ID	Pole Description	Rated Strength (kips)	Ultimate Strength (kips)
A-40	40 Foot - Type A Flat Structure	1.6	6.1
A-45	45 Foot - Type A Flat Structure	1.5	6.0
B-45	45 Foot - Type B Flat Structure	2.1	9.6
C-50	50 Foot - Type C Flat Structure	2.8	10.2
D-40	40 Foot - Type D Flat Structure	6.0	11.8
E-45	45 Foot - Type E Flat Structure	11.5	23.7

APPLICATION: IN ORDER TO APPLY THE PROPER STRUCTURE, THE TECHNICIAN SHOULD IDENTIFY THE ASSEMBLY AS ONE OF THE FOLLOWING:

Single Phase/Two Phase with or without Open Wire Secondary	Typically Type 'A' Structures
Single Circuit Three Phase	Typically Type 'B' Structures
Double Circuit Three Phase	Typically Type 'C' Structures
Single Phase Self-Supporting Termination Structure	Typically Type 'D' Structures
Three Phase Self-Supporting Termination Structure	Typically Type 'E' Structures

Attachment 1 to this guide is a chart which describes the criteria by which each of the pole types was designed. The field rep should refer to this chart in order to establish the maximum installation conditions that may be used for a given situation in the field. The technician should take care to ensure that the criteria in Attachment A is not exceeded for a given pole type.
The technician should note that Type 'D' and Type 'E' structures are terminal structures, (only deadend for "inline". Not 90° turns). The circuit and all other facilities must terminate on the structure.

FOUNDATION:
All structures should be embedded at least 10% of their height plus 2 feet. The backfill shall be tamped thoroughly to full depth. If the technician experiences loose soils, the technician should consult with Director/Supervisor of Engineering on the embedment procedure

GUYING:
All structures over 5 degrees in line angle should be guyed. Guy leads on all guys should be at least 15 feet from the pole. If guy leads of this length are not possible, the technician should consult with Supervisor of Engineering. Communication company guys shall have their own anchor and not attach to KEYS.

TENSION LIMITS:
The following maximum stringing tensions should be utilized on the distribution conductor and neutral:

Weather Case	1/0	#2	AAAC 394.5 "Canton"
90 Degrees	400 lbs	300 lbs	700 lbs

COMMUNICATIONS UNDERBUILT:
In many locations, KEYS distribution is underbuilt by communications utilities. The following table lists the maximum sizes of these communications conductors to be supported on the poles along with the tensions:

Telephone

Type:	Bell Trunk Line	Small Bell
Diameter:	2.50 in.	1.25in.
Weight:	2.00 #/ft.	0.60 #/ft
Max Tension:	1,000 pounds	500 pounds

Cable

Type:	Large	Small
Diameter:	1.25 in.	0.5 in.
Weight:	0.60 #/ft.	0.25 #/ft.
Max Tension:	500 pounds	150 Pounds

The communications underbuild should be guyed in a manner consistent with KEYS' guying and a minimum of one guy per conductor.

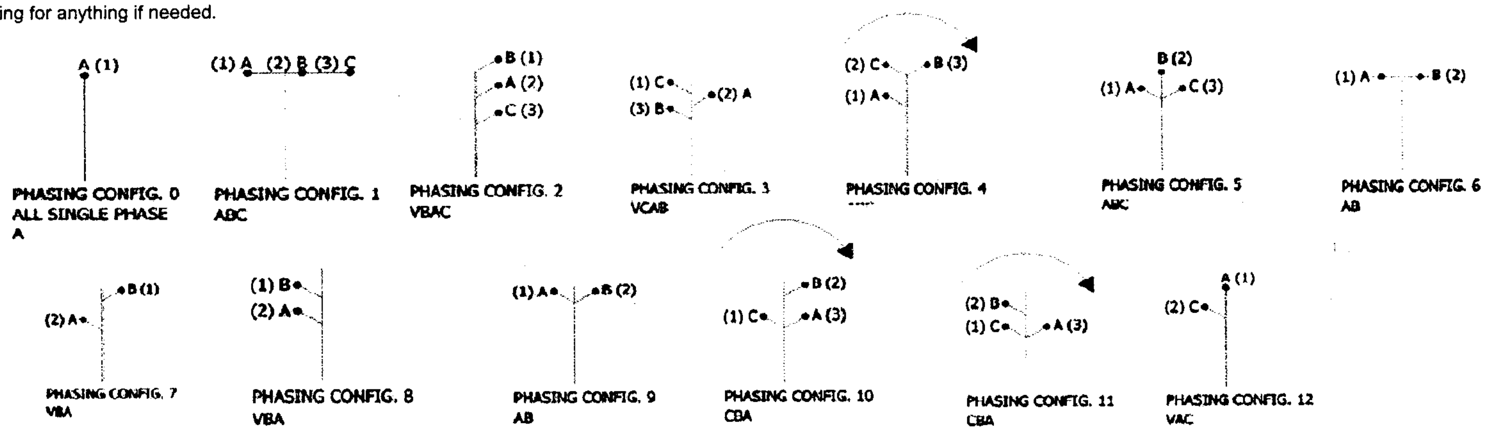
Revised #3
2/14/07

KEYS ENERGY SERVICES
DISTRIBUTION POLE APPLICATION GUIDE
EXTREME WIND DESIGN

POLE	Possible KEYS Configuration	Phases	Number of Circuits	Pole Height (feet)	Max. Span Length	Maximum Line Angle (Degrees) without Guying	Pole Mount Equipment	Maximum Communication Underbuild	Maximum Number of Service Drops (D,T,C) (1)
A	0,6,7,8,9,12	1-Phase/2-Phase	1+Open Wire Sec.	40	200	5	One Transformer	1 Small Bell and Cable	4,4,4
	0,6,7,8,9,12	1-Phase/2-Phase	1+Open Wire Sec.	45	200	5	One Transformer	1 Small Bell and Cable	4,4,4
	0,6,7,8,9,12	1-Phase/2-Phase	1	40	250	5	No Transformer	1 Small Bell and Cable	None
	0,6,7,8,9,12	1-Phase/2-Phase	1	45	250	5	No Transformer	1 Small Bell and Cable	None
B	1, 2, 3, 4, 5, 10, 11	3-phase	1	45	100	5	Three 75 KVA Transformers	2 Bell Trunk and 1 large cable	8,8,8
	1, 2, 3, 4, 5, 10, 11	3-phase	1	45	200	5	No Transformer	2 Bell Trunk and 1 large cable	None
C	1, 2, 3, 4, 5, 10, 11	3-phase	2	50	100	5	Three 75 KVA Transformers	2 Bell Trunk and 1 large cable	8,8,8
D	0,6,7,8,9,12	Single phase Self-Supporting Deadend	1 + Open Wire Sec	40	200	Termination	One Transformer	1 Small Bell and Cable	4,4,4
E	1, 2, 3, 4, 5, 10, 11	Three Phase Self-Supporting Deadend	1	45	100	Termination	Three 75 KVA Transformers	2 Bell Trunk and 1 large cable	8,8,8

(1) D = Distribution, T = Telephone, C = Cable

Note: type of potential options are not listed above. This table accounts for 95% of KEYS needs. Based on the above "Interpretation" for other types are reasonable. Consult Director of Engineering for anything if needed.



DESIGN GROUPINGS

GROUP	Configuration	Assembly	Number of Circuits	Pole Height	Round or Flat	Max. Span Length	Line Angle (Degrees)	Pole Mount Equipment	Communication Underbuild	Service Drop (D,T,C) (2)	Guys (Dist,Comm)	Rated Tip Load (kips)	Ultimate Tip Load (Kips)
A	0,6,7,8,9,12	1-Phase/2-Phase	1+Open Wire Sec.	40	Round	200	5	Transformer	1 Bell and 1 Cable	4,4,4		1.4	5.28
	0,6,7,8,9,13	1-Phase/2-Phase	1+Open Wire Sec.	40	Flat	200	5	Transformer	1 Bell and 1 Cable	4,4,4		1.53	6.07
	0,6,7,8,9,12	1-Phase/2-Phase	1+Open Wire Sec.	45	Round	200	5	Transformer	1 Bell and 1 Cable	4,4,4		1.35	5.10
	0,6,7,8,9,13	1-Phase/2-Phase	1+Open Wire Sec.	45	Flat	200	5	Transformer	1 Bell and 1 Cable	4,4,4		1.48	5.96
	0,6,7,8,9,13	1-Phase/2-Phase	1	40	Round	250	5		1 Bell and 1 Cable			1.02	4.61
	0,6,7,8,9,14	1-Phase/2-Phase	1	40	Flat	250	5		1 Bell and 1 Cable			1.12	5.24
	0,6,7,8,9,13	1-Phase/2-Phase	1	45	Round	250	5		1 Bell and 1 Cable			0.99	4.52
	0,6,7,8,9,14	1-Phase/2-Phase	1	45	Flat	250	5		1 Bell and 1 Cable			1.10	5.24
B	1, 2, 3, 4, 5, 10, 11	3-phase Tangent	1	45	Round	100	5	3 75 KVA Transformers	2 Bell Trunk and 1 large cable	8,8,8		2.27	7.71
	1, 2, 3, 4, 5, 10, 11	3-phase Tangent	1	45	Flat	100	5	3 75 KVA Transformers	2 Bell Trunk and 1 large cable	8,8,8		2.45	8.85
	1, 2, 3, 4, 5, 10, 11	3-phase Tangent	1	45	Round	200	5		1 Large Bell and Cable			1.96	8.87
	1, 2, 3, 4, 5, 10, 11	3-phase Tangent	1	45	Flat	200	5		1 Large Bell and Cable			2.08	9.59
C	1, 2, 3, 4, 5, 10, 11	3-phase Tangent	2	50	Round	100	5	3 75 KVA Transformers	2 Bell Trunk and 1 large cable	8,8,8		2.57	8.97
	1, 2, 3, 4, 5, 10, 11	3-phase Tangent	2	50	Flat	100	5	3 75 KVA Transformers	2 Bell Trunk and 1 large cable	8,8,8		2.76	10.16
D	0,6,7,8,9,13	Single phase SS DE	1 + Open Wire Sec	40	Round	200	Termination	Transformer	1 Bell and 1 Cable	4,4,4		5.79	10.97
	0,6,7,8,9,13	Single phase SS DE	1 + Open Wire Sec	40	Flat	200	Termination	Transformer	1 Bell and 1 Cable	4,4,4		5.92	11.76
[redacted]	1, 2, 3, 4, 5, 10, 11	Three Phase Self-Supporting	1	45	Round	100	Termination	3 75 KVA Transformers	2 Bell Trunk and 1 large cable	8,8,8		11.29	[redacted]
	1, 2, 3, 4, 5, 10, 11	Three Phase Self-Supporting	1	45	Flat	100	Termination	3 75 KVA Transformers	2 Bell Trunk and 1 large cable	8,8,8		11.47	

RESOLUTION NO. 748

A RESOLUTION BY THE UTILITY BOARD OF THE CITY OF KEY WEST, FLORIDA, COMMENDING THE CITY OF KEY WEST'S STAFF AND COMMISSION ON THEIR SUPPORT OF KEYS ENERGY SERVICES' RELIABILITY IMPROVEMENT EFFORTS, AND REQUESTING THE CITY OF KEY WEST TO PROVIDE DIRECTION ON THE PLACEMENT OF UPGRADED ELECTRICAL FACILITIES THAT ARE CURRENTLY LOCATED IN INACCESSIBLE LOCATIONS

WHEREAS, the Utility Board of the City of Key West, d/b/a Keys Energy Services is the utility that provides electrical service in Key West and the Lower Florida Keys, and

WHEREAS, Keys Energy Services has a distribution reliability record that is superior to municipal and investor-owned utilities in Florida with customers experiencing on average 10 percent fewer distribution outage minutes than other municipal utilities in the state, and is committed to further improving electrical reliability to all its customers, and

WHEREAS, Keys Energy Services and its customers have experienced an increase in storm related damage to their electrical facilities and outages as a result of the 2004 and 2005 hurricane seasons, and

WHEREAS, and the National Oceanic & Atmospheric Administration (NOAA) and other weather experts predict the trend of hurricane impact to Florida will remain high over the next decade, and

WHEREAS, Keys Energy Services is working on measures relating to the "Storm Hardening" of its electrical system for new and rebuilt facilities to withstand 150 MPH winds, and

WHEREAS, the Florida Public Service Commission (FPSC) passed Order #25-06.0342 which specifically, "require the cost-effective strengthening of critical electric infrastructure to increase the ability of transmission and distribution facilities to withstand extreme weather conditions; and reduce restoration costs and outage times to end-use customers associated with extreme weather conditions," and

WHEREAS, Keys Energy Services and BellSouth have approximately 10,200 wood poles between Key West and the Seven Mile Bridge and plan on replacing approximately 3,000 of these poles with new, stronger and larger concrete poles, and

WHEREAS, Keys Energy Services has construction contracts in place for replacement of these 3,000 wood poles over the next four (4) years, and

WHEREAS, the Florida Public Service Commission also passed Order #25-6.0341 specifically stating, "in order to facilitate safe and efficient access for installation and maintenance, to extent feasible and cost-effective, electric distribution facilities shall be placed adjacent to a public road, normally in front of the customer's premises," and

WHEREAS, Keys Energy Services and BellSouth have identified 615 wood poles in Key West that are in the rear of customers' properties with 425 of those poles inaccessible due to being occupied with customers' structures, pools, fences, and vegetation, and

WHEREAS these obstructions in easements and rights-of-ways have created accessibility issues making it difficult for Keys Energy Services, BellSouth and Comcast to perform safe maintenance and replacement of such poles, and

WHEREAS, the City of Key West has formed a committee comprised of staff from the City, BellSouth, Comcast and Keys Energy Services to research the impacts of such obstructions to each agency and the customers, and

WHEREAS, Keys Energy Services appreciates the City of Key West's staff and Commission for addressing this issue, in order for Keys Energy Services to continue its commitment to improving electrical services to customers of Key West and the Lower Florida Keys.

NOW THEREFORE, BE IT RESOLVED BY THE UTILITY BOARD OF THE CITY OF KEY WEST, FLORIDA, that:

The Utility Board of the City of Key West, Florida commends the City of Key West's staff and Commission for their support of Keys Energy Services' reliability improvement efforts; and requests the City of Key West City Commission to provide direction on the placement of upgraded electrical facilities that are currently located in inaccessible locations.

The Utility Board respectfully seeks solutions from the City of Key West and is open to any ideas from the City of Key West including but not limited to:

1) the City of Key West restoring accessibility to city owned right-of-ways and easements that are inaccessible, in order for Keys Energy Services and BellSouth to safely replace and reliably maintain its electrical facilities recognizing that such clean up may create considerable disruption to existing customer facilities and expense to the customer, as well as, the City of Key West
2) The City of Key West assisting Key Energy Services in the relocation of new facilities to accessible locations recognizing that such a move will create an expense to Keys Energy Services and, in many instances, to the customer who may have to move their electrical facilities.

This Resolution shall take effect immediately upon adoption.

APPROVED AND ADOPTED by the Utility Board of the City of Key West, Florida at its regular meeting on this 28th day of February, 2007.

(Seal)

UTILITY BOARD – CITY OF KEY WEST, FLORIDA

____

Robert R. Padron, Chairman

ATTEST

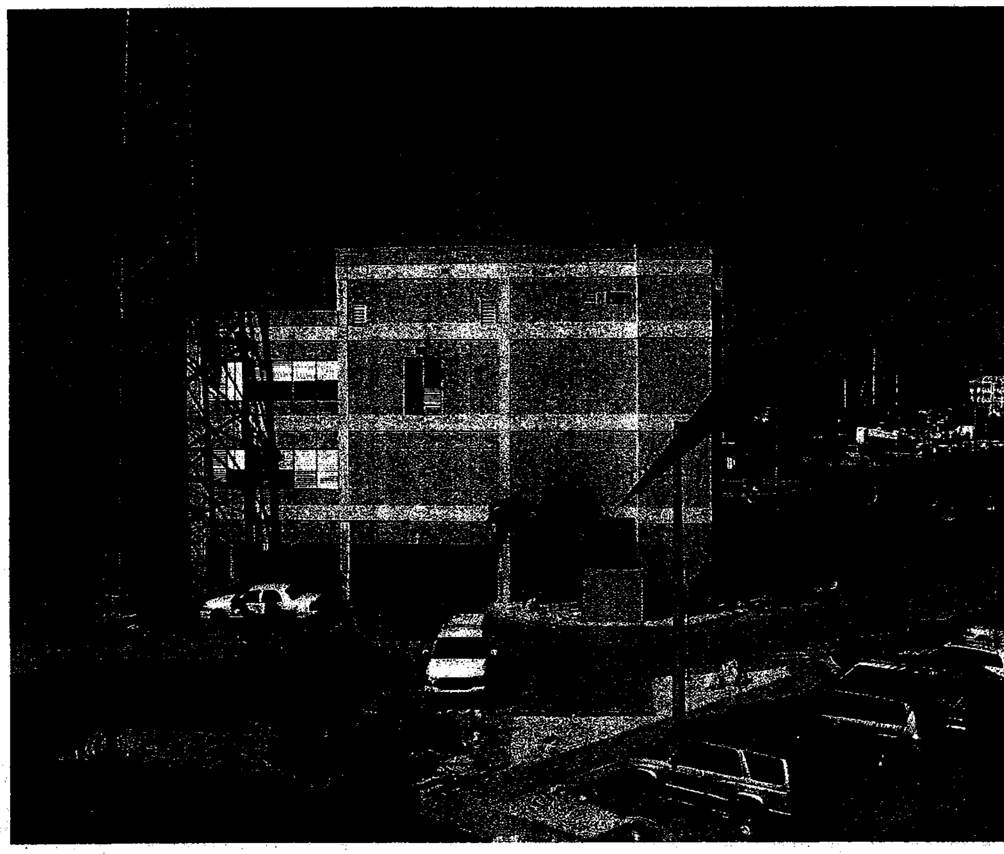
____

Lynne E. Tejeda, General Manager & CEO/Secretary

Approved as to form and correctness:

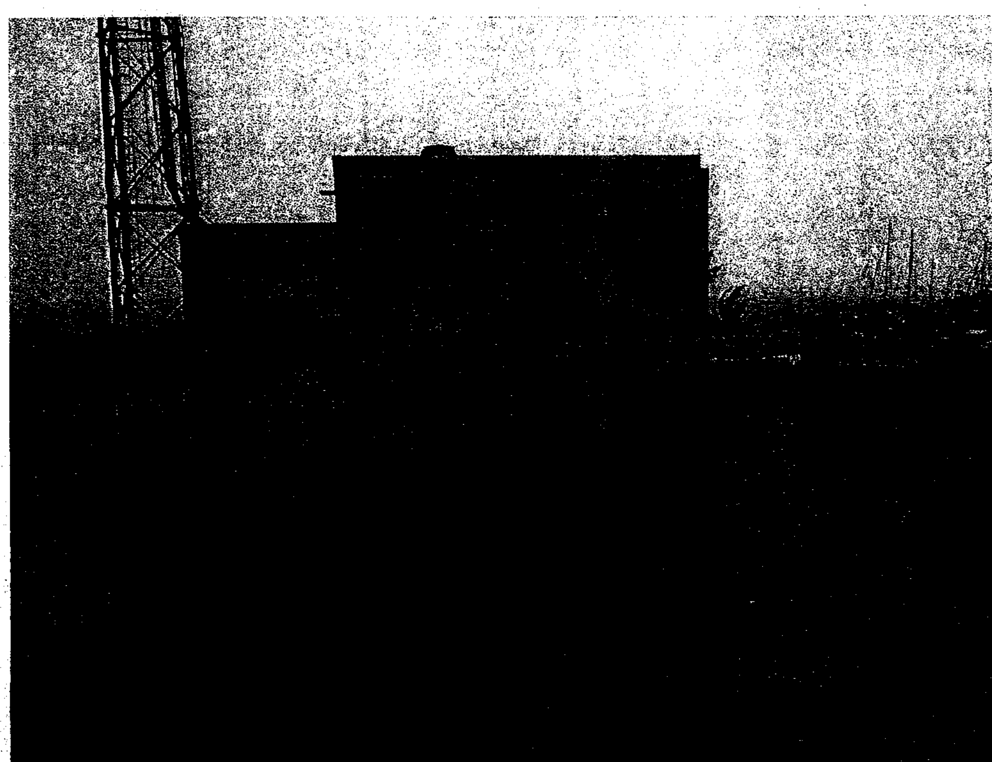
____

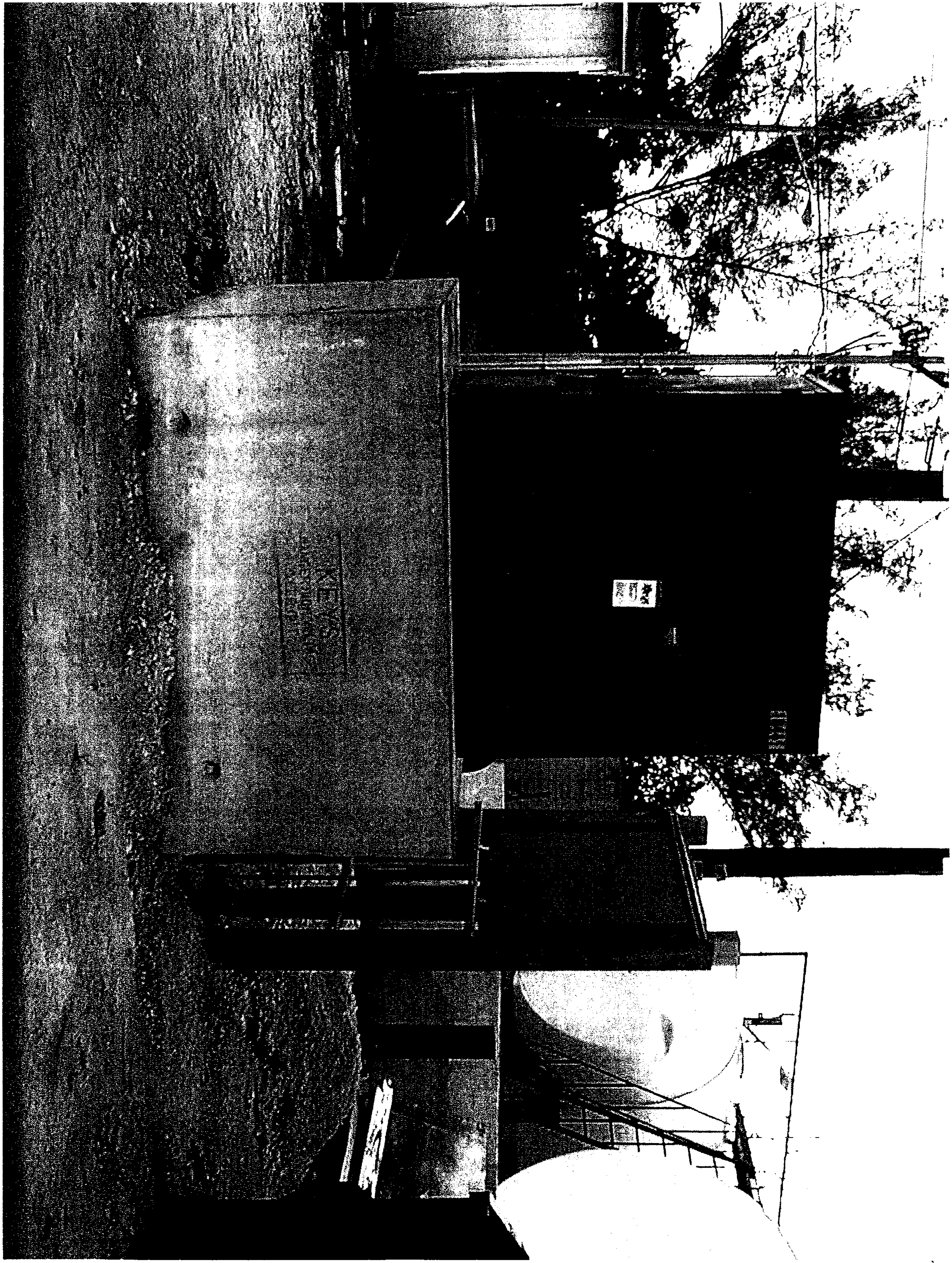
Nathan Eden, Board Attorney

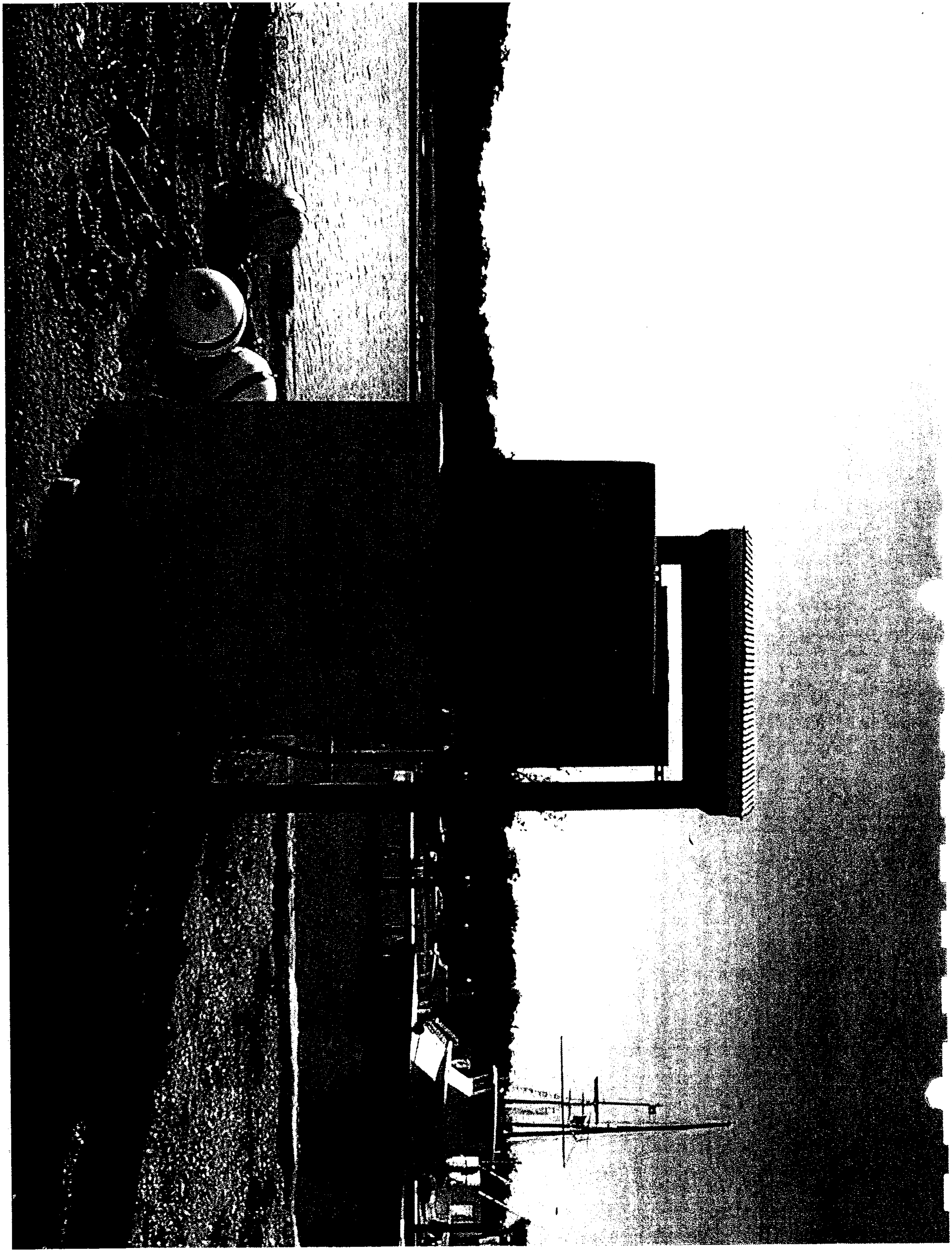


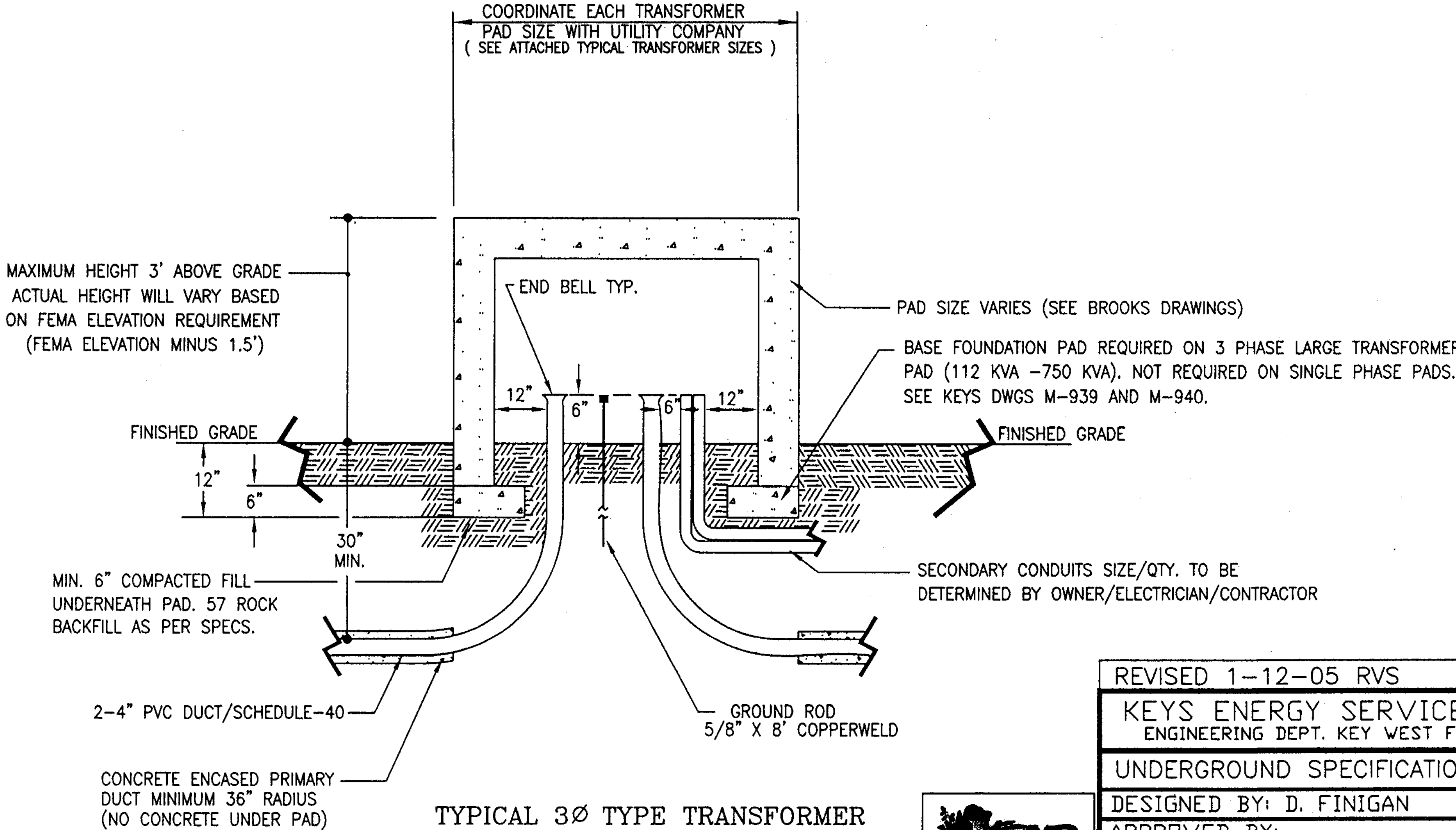
Before and During PHOTOS

HURRICANE WILMA 2005









TYPICAL 3Ø TYPE TRANSFORMER
FOUNDATION AND CONDUIT LOCATION

SCALE: NONE

REVISED 1-12-05 RVS

KEYS ENERGY SERVICES
ENGINEERING DEPT. KEY WEST FL.

UNDERGROUND SPECIFICATIONS

DESIGNED BY: D. FINIGAN

APPROVED BY:

DATE: 1-01

DRAWN BY: VIN SMITH

SCALE: NONE | SHEET 2 OF 2

M-729

KEYS ENERGY CREWS

Date	Address	Pole Number	Zone	Footage KEYS	Bell/Cab	Work Tickets	Crew	Crew Hours	Mulch Drops	Tree Removals
1/2/2007	City TT request					3	MG	8		
1/3/2007	City TT request		two	52	52		MG	16		
1/5/2007	City TT requests					27	MG	16		
1/8/2007	City TT request & Zone		two	15	15	5	MG	16		
1/9/2007	City TT request & Zone		five	60	60		DG	16		1
1/9/2007	City TT request					36	MG	16		
1/10/2007	City Zone		four	150	150		DG	16		1
1/10/2007	Keys Zone		PK28-35	60	60		MG	16		
1/11/2007	City TT request					110	DG	16	1	
1/11/2007	City Zone		four	45	45		MG	16		
1/16/2007	City TT request					30	DG	16		
1/17/2007	City TT request					80	DG	16		1
1/17/2007	Keys Zone		PK28-35	54	54		MG	16		
1/18/2007	City TT request					140	DG	16		
1/18/2007	Keys TT request & Zone		PK28-35	35	35	16	MG	16		
1/19/2007	City Re-visits					70	DG	16		
1/19/2007	Keys TT request					30	MG	16		
1/22/2007	City TT request					75	DG	16		
1/22/2007	City Zone		five	106	106		MG	16	1	
1/23/2007	City TT request & Zone		five	175	175	70	DG	16		
1/23/2007	City Re-visits					62	MG	16		
1/24/2007	City TT request					55	DG	16		
1/24/2007	Keys Zone		Shark Key	91	91		MG	16		
1/25/2007	City TT request					90	DG	24		
1/26/2007	City TT request					100	DG	16	1	
1/26/2007	City Zone		four	43	43		MG	16		
1/29/2007	City Re-visit					80	MG	24		1
1/30/2007	City Re-visit					125	DG	16		
1/30/2007	City Zone		three	88	88		MG	16		
1/31/2007	City Re-visit					100	DG	16		
1/31/2007	Keys Zone		PK28-35	50	50		MG	16	1	
				1024	1024	1304			4	4
2/1/2007	City TT request					105	DG	24		
2/2/2007	Keys TT request					130	DG	16		

REVISITED TROUBLE TICKETS

(SAMPLE-TRACKING AND REPORT)

Zone	Address	Tree Type	Trim Date	Revisit Date	Revisit Date	Notes
TWO						
	621 United	Various trees				
DG	636 to 641 United	Poinciana	12/8/2006			
DG	1007-A United	Palm	12/8/2006			
DG	1013 South	Washingtonian	12/8/2006			Candidate for removal
DG	1015 South	Palm	12/8/2006			
DG	700 Balk of Catherine (prk lot)	Royal Palm	12/7/2006			
DG	717 Catherine	Palm	12/8/2006			Candidate for removal
DG	729 Catherine	Palm	12/8/2006			Candidate for removal
DG	Catherine & Royal	Palms	12/8/2006			Candidate for removal
DG	814 Catherine	Palm	12/8/2006			
DG	Catherine & Margaret	Palm	12/8/2006			Candidate for removal
DG	909 Flagler	Palm	12/8/2006			
DG	1101Flagler	Almond	12/8/2006			
DG	1020 Von Phister	Palm	12/8/2006			
	719 Washington	Palm				
	1021 Washington	Palm				
	Whalton & Washington	Palm				
	1129 Washington	Washingtonian				
	1400 to1408 White	Palms				
	811 Truman	Palm				
	901 Truman	Pine/Palm				
	907 Truman	Palm				
	611 to 613 Olivia	Palms				
	828 Olivia	Palm				
	902 Olivia	Palm				
	1006 Olivia	Rubber				
	Frances & Southard	Palms				
	1020 Southard	Various trees				
	906 Southard	Royal Palm				

Tree Removals 2006

Sample Report

Name	Address	Requested By	Tree	Quantity	Removed	Crew	Comments
Donald Digman	CU44-10-75	customer	Coconut Palm	2	2/27/2006	DG	
			Total	**2**			
County Ride Away	S38-7-14	Keys	Coconut Palm	1	3/2/2006	Ash-1	Zone trim
S. Gatti	TK8-36-11-26-6	Keys	Washingtonian	1	3/13/2006	JN	
County Ride of way	TK8-36-11-14	Keys	Washingtonian	1	3/22/2006	DG	
Ann G. Hutchings	38 Bluewater Dr.	customer	Coconut Palm	1	3/22/2006	DG	
Keys Mini Storage	1010 5thn Street S.I.	Keys	Washingtonian	2	3/27/2006	DG	
			Total	**6**			
City Ride of way	Hilton Haven Rd.	Keys	Almond	1	4/20/2006	DG	
City Ride of way	525 United St.	Keys	Coconut Palm	1	4/28/2006	JN	
County Ride of way	Calle Dos	Keys	Pines	3		JN	Zone trim
			TOTAL	***5***			
	S82-27-17		Dead tree	1	5/8/2006	DG	wo# 164900
Housing Authority	Porter Pl. White St.	Keys	Coconut Palm	3	5/9/2006	DG	
Steve Ridlop	C-20 9th Ave S.I.	Keys	Coconut Palm	1	5/10/2006	DG	
Robert Henske	910 Grinnell St.	customer	Coconut Palm	1	5/10/2006	DG	
Sandy Henning	1424 Newton St.	Keys	Coconut Palm	1	5/23/2006	DG	
	1438 Tropical St.	customer	Mango	1	5/30/2006	DG	
			TOTAL	***8***			
City Ride of way	1119 Southard St.	Keys	Coconut Palm	1	6/7/2006	DG/MG	
City Ride of way	625 Simonton St.	Keys	Coconut Palm	4	6/7/2006	DG/MG	
City Ride of way	106-8 Geraldine St.	Keys	Coconut Palm	2	6/13/2006	MG	
City Ride of way	100 Blk of Amelia St.	Keys	Washingtonian	1	6/13/2006	MG	
County Ride of way	Front St. Stock Island	Keys	Washingtonian	1	6/13/2006	MG	
	PK32-1-10-13-1	Keys	Washingtonian	1	6/22/2006	DG	
	1912 Patterson Ave.	Keys	Washingtonian	2	6/29/2006	DG/MG	
				12			
City Ride away	3303 Pearl St.	City	Washingtonian	1	7/7/2006	DG	
Kathy P. Hamilton	3075 Flagler Ave.	customer	Was,Fic,Pal,Um	5	7/17/2007	DG	
Steven Kessler	1401 Atlantic Blvd.	customer	Washingtonian	2	7/21/2006	MG	
			Total	**8**			
Charles Schakrk	151 Cutthroat Dr.		Holly berry	2	8/1//06	Ash-1	
Jason Stephens	22624 Jolly Rodgers Dr.	customer	Pine / Palms	2	8/6/2006	Ash-1	
Tina Sizing	28160 County Road	customer	Coconut Palm	2	8/7/2006	Ash-1	
County Ride away	TK8-46 621 Pirate Rd	Keys	Pines	6	8/17/2006	Ash-1	
Dennis Cumming	28515 Jolly Rodgers Rd.	customer	Coconut Palm	4	8/17/2006	Ash-1	
County Ride away	TK8-27A	Keys	Pines	4	8/24/2006	Ash-1	

KUA
KISSIMMEE UTILITY AUTHORITY

Engineering & Operations Department

P.O. Box 423219 • Kissimmee, Florida 34742-3219
407/933-7777 • Fax 407/933-4178

07 FEB 28 AM 9: 13

February 26, 2007

Mr. Tim Devlin
Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Kissimmee Utility Authority Storm Hardening Report
PSC Rule 25-6.0343, FAC
Calendar Year 2006

Dear Mr. Devlin,

Please find enclosed the Storm Hardening Report for calendar year 2006 for Kissimmee Utility Authority (KUA). This report is filed in accordance with the subject Florida Public Service Commission Rule.

Please contact me if you require additional information.

Sincerely,

Kenneth L. Davis

Kenneth L. Davis
Vice President
Engineering & Operations

enclosure

Kissimmee Utility Authority
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

This report is filed in response to the above referenced rule for:

a) Kissimmee Utility Authority (KUA)

b) 1701 W. Carroll Street
Kissimmee, Florida 34741

Mailing Address:
P.O. Box 423219
Kissimmee, Florida 34742-3219

c) Contact information:

Kenneth L. Davis
Vice President – Engineering & Operations
Phone: (407) 933-7777 Ext 1210
Fax: (407) 933-4178
Email: kdavis@kua.com

2) Number of customers served during calendar year 2006

During calendar year 2006 KUA served an average number of 63,008 customers. As of December 2006, KUA served a total of 64,077 customers.

3) Standards of Construction

a) National Electric Safety Code Compliance

All construction standards, policies, guidelines, practices and procedures at KUA comply with the National Electrical Safety Code, ANSI C-2, (NESC). All electrical facilities constructed prior to February 1, 2007, were governed by the NESC edition in effect at the time of construction. All facilities constructed on or after February 1, 2007, are constructed in compliance with the 2007 edition of the NESC.

b) Extreme Wind Loading Standards

KUA standards for distribution construction have been adopted that are guided by the extreme wind loading standards specified by Figure 250-2 (d) of the 2002 edition of the

NESC for all 1) new construction; 2) major expansions, rebuilds or relocation projects 3) individual pole replacements for certain targeted "critical" structures such as main three-phase underground riser poles, poles containing three-phase transformer banks with 75 KVA or larger transformers, and poles within main three-phase feeders. Although this guideline was implemented earlier, the policy was officially issued for all construction on or after December 20, 2006.

KUA standards for transmission construction have met or exceeded NESC extreme wind loading standards since approximately 1984.

KUA 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

The KUA service territory does not contain areas subject to storm surges. The KUA service territory has not experienced any significant flooding even as a result of major storms and therefore has not adopted any specific standards or policies addressing the protection of the distribution system. Any low areas that may be more susceptible to flooding are monitored when the flooding potential is higher.

Through the Florida Municipal Electric Association, KUA 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.

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

Construction standards, policies and practices at KUA provide for the placement of all facilities so as to provide for safe, unobstructed access. All new distribution facilities are constructed on front-lot lines. KUA has not constructed on rear-lot lines in over 25 years and therefore has a very minimal amount of rear-lot construction. When feasible, any infrastructure currently constructed on rear-lot lines is modified to front-lot during any major replacement or upgrade project.

e) Attachments by Others

KUA standards, policies and practices include consideration of pole loading capacity for both electrical infrastructure and for attachments to KUA poles by others. KUA's current pole attachment agreement also addresses this issue in detail and requires the appropriate data to provide for loading analysis on all poles for which attachments are being requested.

4. Facility Inspections

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

KUA policies, guidelines, practices and procedures include visual inspection of all distribution lines on a five-year cycle. In addition, 100% of distribution feeders are inspected via infrared scanning on an annual basis. KUA guidelines also call for inspection of all wood distribution poles on an eight-year cycle. We currently conduct pole inspections with KUA personnel utilizing the sound and bore technique with excavation when deemed appropriate by the inspector. Inspections performed in calendar year 2007 will include excavation of all wood poles over ten years in age. We are currently in the process of evaluating the feasibility of outsourcing this function. Detailed (component by component) inspections are performed on circuits with high outage rates.

Visual inspections of all transmission lines are also conducted on an annual basis. We previously conducted inspections of all wood transmission poles on a five-year cycle. Contracts are currently being developed to include thorough inspection of all wood transmission poles on an annual basis.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

Transmission – Following the hurricane season of 2004, KUA inspected all wood transmission poles (a total of 354) in 2004-2005. For 2006, a total of 76 (21%) poles were inspected.

Distribution – KUA inspects the distribution system on a five-year cycle. Following the 2004 hurricane season, the vast majority of the distribution system was inspected during 2005. Routine distribution line inspections were continued during 2006. Approximately 35 miles of the total 350 pole miles of distribution circuits were inspected. In addition, approximately 25 miles of underground circuits were inspected. This inspection included pad mounted equipment and underground primary cable terminations. Approximately 2,000 linear feet of underground primary cable was replaced as a result of the underground circuit inspections.

In addition, 100% of the distribution feeder circuits were inspected via infrared scanning during 2006.

Based on an eight-year inspection cycle, 1,956 distribution poles were scheduled for inspection during 2006. A total of 2,434 poles were inspected.

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

Transmission – No transmission poles failed inspections during the 2004-2005 or 2006 inspections. However, due to age of the poles and projected loading requirements, a total of 87 wood transmission poles are scheduled for removal and/or replacement during 2007.

Distribution – A total of 56 (2.3%) of the total 2,434 poles failed inspection and were scheduled for replacement. Poles failing inspection were due to woodpecker holes and/or decay.

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.

Transmission – See item 4. c) above.

Distribution – Of the 56 poles failing inspection, 45 were deemed as needing immediate replacement and were replaced during 2006. The remaining 11 poles were less critical and are scheduled for replacement as part of rebuild/relocation projects. In addition, 30 wood poles were replaced with concrete poles in order to meet NESC extreme wind loading standards.

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.

Transmission – KUA policies, guidelines, practices and procedures for transmission system vegetation management is in accordance with NERC Reliability Standard FAC-003-1 requirements. KUA currently schedules a target plan of visual inspection of all transmission lines for potential vegetation problems on an annual basis.

Distribution - KUA practices currently targets a complete vegetation inspection of the entire distribution system on a three-year cycle. Based on past experience we believe this three-year trim cycle is sufficient.

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

Transmission – During calendar year 2006, a vegetation inspection of all transmission lines was conducted and any required corrective action was completed.

Distribution - Following the 2004 hurricane season, the entire distribution system was inspected in 2005. Approximately 115 pole miles (32% of the total 350 pole miles) of distribution circuits were visually inspected during 2006.

6. Storm Hardening Research

KUA 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.

Utilities Administration
1900 2nd Avenue North · Lake Worth, Florida 33460 · Phone: 561-586-1665· Fax: 561-586-1702

February 28, 2007

Tim Devlin
Director, Division of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Subject: Annual Report – Rule 25-6.0343

We have prepared the 2006 report on "Construction Standards, Facility Inspections, and Vegetation Management in accordance with Rule 25-6.0343 and have enclosed eight (8) copies.

Sincerely,

Mark Dubois/m.a.p

Mark Dubois
Superintendent of Energy and Delivery

Enclosures

MD/map

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FLORIDA PUBLIC SERVICE COMMISSION
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DIVISION OF ECONOMIC REGULATION

Construction Standards, Facility Inspections, and Vegetation Management 2006 Annual Report

City of Lake Worth
Lake Worth, Florida

March 1, 2007

Construction Standards, Facility Inspections, and Vegetation Management 2006 Annual Report

1. Introduction

This report has been prepared in accordance with Rule 25-6.0343 of the Florida Administrative Code for:

City of Lake Worth
Utilities Administration
1900 2nd Avenue North
Lake Worth, FL 33461

Contact Person: Mr. Mark Dubois
Superintendent of Energy and Delivery
561-586-1705
Fax: 561-586-1672
Email: mdubois@lakeworth.org

Number of customers served in current year: 25,407

Submit to: Director of the Division of Economic Regulation
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Filing Due: March 1, 2007

Reporting Period: 2006 Calendar Year

2. National Electrical Safety Code Compliance

Construction standards, policies, practices, and procedures for construction of electric transmission and distribution facilities by the City of Lake Worth (CLW) generally comply with basic requirements of the National Electrical Safety Code (NESC). Electrical facilities constructed in 2006 were constructed in accordance with the 2002 edition of the NESC.

Facilities designed and constructed after February 1, 2007 will be constructed in accordance with the 2007 NESC.

3. Extreme Wind Loading Standards

All new transmission construction or reconstruction of transmission lines at CLW meets all requirements for Grade B construction with extreme wind loads applied. Extreme wind loads are based on wind speeds shown on Figure 250-2(d) of the 2002 edition of the NESC.

Design and construction of electrical distribution lines at CLW is based on the following guidelines:

a.. ***When required by Rule 250C of the NESC*** - Poles, guy-anchors, and other supported facilities will be designed to withstand extreme wind loads based on wind speeds shown on Figure 250-2(d) of the 2002 edition of the NESC. Generally, this includes distribution facilities when portions of poles or conductors exceed a height of 60 ft above ground. Minimum grade of construction will be Grade C+ (Grade C at crossing). Where applicable, Grade B construction requirements will be met in accordance with Table 242-1 of the 2007 edition of the NESC.

b. ***Where poles or conductors do not exceed 60 ft above ground*** - CLW has performed an analysis to determine the impact extreme wind load design will have on distribution pole class selection. CLW is currently evaluating results of this analysis and is considering adoption of the following recommendations:

- Where practical, poles will be designed to withstand extreme wind loads based on Grade C+ construction and wind speeds shown on Figure 250-2(d) of the 2002 edition of the NESC. These guidelines apply to new construction and major planned work, including expansion, rebuild, or relocation of existing facilities.

- Grade B construction for targeted critical infrastructure facilities and major thoroughfares will be considered on a case-by-case basis

4. Flooding and Storm Surges

Underground distribution construction practices at CLW require installation of dead front pad-mounted equipment in areas susceptible to flooding and storm surges. No special design or construction practices for overhead facilities have been deemed necessary.

5. Safe and Efficient Access of New and Replacement Distribution Facilities

Electrical construction standards, policies, guidelines, practices, and procedures at CLW provide for placement of new distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Policies for new construction require placement in front easements. Underground installations require placement in conduit. CLW practice is to maintain existing overhead laterals in rear lot easements.

6. Attachments by Others

Electrical construction standards, policies, and guidelines at CLW provide space for attachment of communication facilities by others. The communication utility is responsible for the design of communication facilities including meeting NESC clearance requirements and providing structure guying. CLW construction practice is to provide sufficient pole strength capacity such that NESC strength requirements are normally met after attachments by others.

Attachment standards and procedures are being investigated as part of storm hardening research being conducted at the Public Utility Research Center at the University of Florida. CLW is a member of the Florida Municipal Electric Association (FMEA), which is participating with all of Florida's electric utilities in this storm hardening research. 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.

7. Facility Inspections

CLW performs a visual inspection of all transmission facilities on an annual basis. All transmission poles are concrete or steel and no pole testing is performed.

CLW performs a visual inspection of all distribution facilities on a 2-3 year cycle. The pole inspection practice at CLW in 2006 and prior years was to perform pole tests on poles with visual problems. Pole tests consist of hammer sounding and screwdriver penetration 6 inches below ground line. Poles are replaced when screwdriver penetration exceeds 2 inches. Detailed records documenting pole inspection testing and failure rates are not currently being tabulated by CLW. In 2006, approximately 230 out of 400 poles (58 percent) were replaced during a voltage conversion project of three circuits. These poles were replaced due to a combination of reasons including condition, pole height, and location.

CLW will be modifying the pole inspection plan as follows:

- Test poles on eight-year cycle. Pole testing schedule will be coordinated with major reconstruction and/or voltage conversion projects.
- Test by sounding wood poles with a hammer.
- Excavate and test by screwdriver penetration below ground line if sounding indicates a problem. In 2007, CLW will sound and bore on a trial basis to compare effectiveness with sound and screwdriver penetration method.
- Maintain records of pole inspection plan documenting inspection schedule; type, class, and location of reject poles; and description of remediation taken.

8. Vegetation Management

CLW has an on-going vegetation management contract in place with Asplundh. Tree trimming and clearing is performed on a 1-2 year cycle. Trees are trimmed to obtain maximum clearance considering rate of tree growth, symmetry, tree health, and the rights and interests of property owners and the public. A minimum clearance of 10 ft in any direction from CLW conductors is obtained. The contractor attempts to obtain permission from property owners to remove trees described in the following categories:

- Small trees which the property owner does not value, but which will require trimming in future years.
- Dead or defective trees which are a hazard to CLW conductors.
- Trees that are unsightly as a result of the necessary trimming and that have no chance for future development.
- Fast growing soft-wooded or weed trees located under or dangerously close to CLW conductors.
- Trees that are non-native and invasive and subject to removal as declared by the Palm Beach County Environmental Resources Department.

LAKEELAND ELECTRIC

Your Essential Link to a Quality Life

February 26, 2007

Tim Devlin
Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Dear Mr. Devlin:

Enclosed is Lakeland Electric's revised Storm Hardening Report for 2006. Please destroy the previously submitted copy and let me know if you need additional information or clarification regarding any of our responses.

Sincerely,

Alan W. Shaffer
Assistant General Manager – Delivery
Lakeland Electric
(863) 834-6505

501 E. Lemon St. ✦ Lakeland, Florida 33801
Phone: 863.834.6300 ✦ Fax: 863.834.6344

Lakeland Electric
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

(Revised 2/26/2007)

1) **Introduction**

   a) **Name of city/utility**
      City of Lakeland Department of Electric Utilities / Lakeland Electric

   b) **Address, street, city, zip**
      501 East Lemon Street
      Lakeland, FL 33801

   c) **Contact information: Name, title, phone, fax, email**
      Alan Shaffer
      Assistant General Manager – Delivery
      Phone: (863) 834-6505
      Fax: (863) 834-6373
      Alan.Shaffer@lakelandelectric.com

2) **Number of customers served in calendar year 2006**
   119,500

3) **Standards of Construction**

   a) **National Electric Safety Code Compliance**

   Construction standards, policies, guidelines, practices, and procedures at the Lakeland Electric (LE) comply with the National Electrical Safety Code (ANSI C-2) [NESC]. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction. LE engineering personnel are attending training on the 2007 Edition of the NESC and will comply with any applicable changes to construction standards.

   b) **Extreme Wind Loading Standards**

   Construction standards, policies, guidelines, practices, and procedures at Lakeland Electric have considered 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. LE designs and builds to meet or exceed the extreme wind loading strength requirements for all pole heights 60 feet and above and meet or exceed Grade B Construction below this height.

   Lakeland Electric 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**

   Because we are not a coastal community, the Lakeland Electric service territory is not subject to storm surges or other wide-spread significant flooding.

Lakeland Electric is 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 Lakeland Electric provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. In all locations possible and with rare exception facilities are immediately adjacent to public roadways. Rear lot line construction away from roads and alleyways was discontinued over 25 years ago. Where significant reconstruction of inaccessible line sections may occur, they are considered for relocation to the roadway.

e) Attachments by Others

Lakeland Electric's engineering and construction standards account for the influence of potential telecommunications attachments for pole strength and height in maintaining compliance to the applicable NESC standards. Additionally, pole attachment agreements with external entities have maintained requirements that those making the licensed attachments comply with NESC requirements in their design, construction, operation, and maintenance activities.

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.

Lakeland Electric budgeted for, and is in the process of reestablishing, a pole inspection, evaluation and treatment/replacement program to commence in mid-2007. The length of the inspection cycle is being evaluated to determine what is appropriate for the Lakeland community but it is presently planned not to exceed eight years or 12.5% per year.

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

No routine inspections as part of an inspection program occurred in 2006. Inspections that took place in 2006 were only done in conjunction with other maintenance, upgrades, or obvious visual indicators of problems.

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

No routine inspections as part of an inspection program occurred in 2006. LE is beginning to keep accurate inspection records in 2007.

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.

While Lakeland Electric did not replace polls in 2006 as a result of a formal inspection process, 4 transmission poles (0.3 % of the wood transmission poles, 0.15% of total transmission poles) and 74 distribution poles (0.14 % of distribution poles) were replaced as a result of other process findings of deterioration not including additional poles that were replaced with line upgrades and relocations.

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.

Lakeland Electric's Vegetation Management contract, policies, guidelines, practices, and procedures address vegetation planting recommendations and the handling of threatening trees and limbs within and outside of the road right-of-ways and easements. Transmission circuits have been maintained on a 3 year trim cycle and efforts are underway to reduce the distribution cycle, presently at 4.5 years, to 3 years.

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

Transmission circuits have been maintained on a 3 year trim cycle and efforts are underway to reduce the distribution cycle, presently at 4.5 years, to 3 years. The distribution trimming includes secondaries and service drops.
2006 Distribution Miles Completed: 284 (22% of total)
2006 Transmission Miles Completed: 51 (35% of total)

6. Storm Hardening Research

Lakeland Electric 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.

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DIVISION OF ECONOMIC REGULATION

February 27, 2007

Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Subject: PSC Storm Hardening Report for Rule 25-6.0343 for Calendar Year 2006

Dear Mr. Devlin:

Enclosed is subject report submitted by the City of Leesburg.

Sincerely,

Paul D. Kalv

Paul D. Kalv
Director

Enclosure

LEESBURG
The Lakefront City
Post Office Box 490630 • Leesburg, Florida 34749-0630
352/728-9700 • Fax 352/728-9734 • TDD 352/728-4138
– AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER –

City of Leesburg
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) Name of city/utility: City of Leesburg

b) Address, street, city, zip: 2010 Griffin Road, Leesburg, FL 34748

c) Contact information: Paul D. Kalv, Director
Voice: 352.728.9809
Fax: 352.728.9809
E-mail: Paul.Kalv@leesburgflorida.gov

2) Number of customers served in calendar year 2006

The City of Leesburg electric utility served approximately 22,000 customer meters.

3) Standards of Construction

a) National Electric Safety Code Compliance

City of Leesburg construction standards, policies, guidelines, practices, and procedures comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction.

b) Extreme Wind Loading Standards

City of Leesburg construction standards, policies, guidelines, practices, and procedures 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. These standards require structures to withstand winds up to 100 mph within the City of Leesburg electric service territory.

The City of Leesburg is also participating in the Public Utility Research Center's (PURC) granular wind research study through the Florida Municipal Electric Association.

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

No information available for 2006. Distribution pole inspections will commence during the spring of 2007.

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.**

No information available for 2006. Distribution pole inspections will commence during the spring of 2007.

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.**

The City of Leesburg maintains a 3-year trim cycle feeder and lateral circuits. Problem trees are trimmed or removed as identified. Vegetation outage causes represented 1,781 customer minutes interrupted during calendar year 2006 which was 6% percent of all outage causes.

b) **Quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities.**

Vegetation management activities were completed as scheduled during calendar year 2006. Vegetation management activities for calendar year 2007 are on schedule.

6. Storm Hardening Research

The City of Leesburg 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.

City of Moore Haven
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

City of Moore Haven
P.O. Box 399 Moore Haven, Fl. 33471
Michael E. Jones, Director of Public Works
Phone (863) 946-0909
Fax (863) 946-2185
e-mail mjones@moorehaven.net

2) Number of customers served in calendar year 2006

For calendar year 2006 the City of Moore Haven served 752 residential customers and 115 commercial customers for a total of 867 customers.

3) Standards of Construction

The City of Moore Haven does not officially list standards for our distribution system. We use consulting engineers that follow all applicable standards in construction and maintenance of our electric distribution system including following the NESC and the extreme wind loading standards. Any new large construction project is designed by a Florida registered electrical engineer on a consultant basis. Small projects are designed with assistance from Glades Electric Cooperative engineers. The City of Moore Haven is an inland community with 99% of our distribution system overhead. One small park with a high elevation is underground and therefore not impacted by flooding or storm surge.

Electrical construction guidelines, practices, and procedures at the City of Moore Haven provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance.

Electrical construction standards, policies, guidelines, practices, and procedures at the City of Moore Haven do not include pole reliability, pole loading capacity, and engineering standards and procedures for attachments by others to the utility's distribution poles. We have contracted with FMPA and MEAG to provide safety training to all electric employees. We will be examining these issues in 2007.

4. Facility Inspections

a) The City of Moore Haven is continuously inspecting distribution lines, poles and structures. As discrepancies are located the electric crew, consisting of a lineman and an apprentice, plan and perform repairs and is recorded on daily work tickets recording labor and materials.

We perform a visual inspection of all poles within a 1 year rotation and for 2007 will assess the feasibility of sound and bore inspections.

b) The City of Moore Haven has no transmission lines and inspects all distribution lines on a 1 year rotation.

c) We had 0 failures on our distribution poles during the 2006 calendar year.

d) The City of Moore Haven had 0 poles replaced because of failure and replaced 12 questionable poles during relocation of electrical distribution wires from easements to rights of way to obtain easier access.

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.

The City of Moore Haven continuously is trimming trees located in easements and on right-of-ways. 100% of power distribution is covered in a year cycle. The city is monitoring all new construction on private property and communicating with owners the importance of locating vegetation away from all utilities. The City of Moore Haven is a small town of one square mile. Because of the experience with Hurricane Wilma, most residents are willing to comply with requests of the city concerning vegetation near utilities. The City will examine the need to formalize this policy in 2007.

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

The City of Moore Haven has a plan to trim all vegetation on a 1 year cycle. We actually completed approximately 98% during the 2006 calendar year and completed the other 2% during the month of January 2007.

6. Storm Hardening Research

The City of Moore Haven 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.

CITY OF MOUNT DORA

Public Works & Utilities
1250 North Highland Street
Mount Dora, FL 32757
(352) 735-7151
Fax: (352) 735-1539
Email: publicworks@cityofmountdora.com

VIA US MAIL

February 26, 2007

Tom Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

RE: City of Mount Dora Storm Hardening Report for Rule 25-6.0343 F.A.C

Dear Mr. Devlin:

Enclosed is the City of Mount Dora Storm Hardening Report pursuant to Rule 25-6.0343 F.A.C. for Calendar Year 2006.

Please contact me if you have any questions.

Very truly yours,

Charles F. Revell

Charles F. Revell
Electric Utility Manager

Phone: (352) 735-7155, x1802
Email: revellc@cityofmountdora.com

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DIVISION OF ECONOMIC REGULATION

City of Mount Dora
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) **Introduction**

   a) Name of city/utility

      City of Mount Dora

   b) Address, street, city, zip

      1250 North Highland Street
      Mount Dora, FL 32757

   c) Contact information: Name, title, phone, fax, email

      Mr. Charles F. Revell
      Electric Utility Manager
      Phone: (352) 735-7155, ex 1802
      Fax: (352) 735-1539
      Email: revellc@cityofmountdora.com

2) **Number of customers served in calendar year 2006**

   Approximately 6,250 Customers

3) **Standards of Construction**

   a) National Electric Safety Code Compliance

      The City of Mount Dora (City) does not have written documentation that its construction standards, policies, guidelines, practices, and procedures comply with the various editions of the National Electrical Safety Code (NESC) that were in effect during the construction of the City's distribution system. However, the City has replaced many older overhead distribution facilities during the last ten years using new wood and concrete poles, new insulators, and other new equipment. For new construction, the City generally uses concrete poles for its main distribution feeders. While no formal analysis of construction standards has yet been made, the City's distribution system held up well during the hurricanes of 2004. Hurricanes Charlie, Jeanne, and Francis caused relatively minor damage to the City's electric distribution system.

As a first step in evaluating compliance with the NESC, in 2007 the City will begin field inventorying and inspecting all overhead and underground distribution facilities. The City also plans to conduct an engineering review of its construction standards to insure that future construction will comply with the 2007 NESC.

b) Extreme Wind Loading Standards

The City does not have written documentation that its construction standards, policies, guidelines, practices, and procedures meet 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. However, the City has replaced many older overhead distribution facilities during the last ten years using new wood and concrete poles, new insulators, and other new equipment. For new construction, the City generally uses concrete poles for its main distribution feeders. As mentioned earlier, the City's distribution system held up well during the hurricanes of 2004.

As a first step in evaluating compliance with the wind loading standards of the 2002 NESC, in 2007 the City will begin field inventorying and inspecting all overhead and underground distribution facilities. The City also plans to conduct an engineering review of its construction standards to insure that future construction will comply with the wind loading standards of the 2002 NESC.

The City 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 the City address the effects of flooding on underground distribution facilities and supporting overhead facilities. Because of the hilly terrain around Mount Dora, flooding of low-lying areas is not generally a problem.

The City is not subject to storm surges because of its inland location.

The City 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 the City provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Most distribution facilities are on public streets which are easily accessible. The City no longer allows back-lot line utility services for new developments. All new distribution facilities are required to be near a street or within a utility easement.

e) Attachments by Others

The City does not currently have written safety, pole reliability, pole loading capacity, or engineering standards for attachments by others to the City's distribution poles. However, knowledgeable field personnel examine City electric facilities to identify obviously overloaded poles. In addition, the City has not experienced any failures of poles due to overloading by pole attachments of other entities. The City will further examine this issue in 2007.

4) Facility Inspections

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

The City electric system consists of distribution lines, poles, and structures – it owns no transmission facilities. Since its service territory is relatively small, the Electric Division is able to make visual inspections of its six distribution feeders on a routine basis. Wood poles are visually inspected for cracks and a sounding technique is used to determine potential wood rot. Poles that appear to have wood rot are replaced when they are found, rather than being further inspected below ground level. The City has found this inspection process to result in the ability of its utility system to withstand storm events.

The inspection also includes a visual survey of equipment attached to each pole, including insulators, conductors, lightning arrestors, fused cut-outs, capacitor banks, guy wires and guards, streetlights, and attachments by others (cable, fiber, and telephone). Damaged poles or equipment are immediately replaced. If a third-party attachment appears damaged or does not meet NESC clearance requirements, the City notifies the respective party in writing.

In 2007, the City will examine conducting strength testing of distribution poles.

Some of the City's distribution lines are attached to 69 kV wood transmission poles owned by Progress Energy. Any observed problems with the transmission poles are reported directly to Progress Energy.

The City is currently utilizing hard-copy maps to manage the facilities of its electric distribution system, including inspections. The City is currently completing a needs assessment and implementation plan for a city-wide GIS system. Once available, the Electric Division will utilize the GIS system to map and manage all of its distribution facilities including wood and concrete poles, attached hardware, pole attachments by other entities, and underground electrical facilities.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

The City has not historically maintained formal inspection records, so these statistics are not currently available. The City will be developing a more formal inspection program during 2007 with associated forms to track this information.

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

The City has not historically maintained formal inspection records, so these statistics are not currently available. The City will be developing a more formal inspection program during 2007 with associated forms to track this information.

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.

The City has not historically maintained formal inspection records, so these statistics are not currently available. The City will be developing a more formal inspection program during 2007 with associated forms to track this information.

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.

The City Electric Division trims trees on a 12 month cycle using an outside contractor with a two-man crew working 40 hours per week. This contractor focuses exclusively on clearing vegetation that could adversely impact the reliability of the City's electric distribution system. In addition to the contractor crew, the City employs one two-man crew that is continuously trimming trees and reducing vegetative growth throughout other parts of the City. In some situations, the City crew assists the contractor crew in trimming or removing large trees.

The City routinely removes limbs from trees located outside road right-of-ways or easements that could create clearance problems for its overhead distribution circuits. The City has also removed entire trees in such locations if those trees threaten overhead distribution circuits (usually dead trees in danger of falling).

The City believes that its vegetation management practices result in high reliability because it trims trees on a 12 month cycle, which is much more frequent than the practices of most of Florida's electric utilities.

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

The City Electric Division will continue to trim trees on a 12 month cycle using an outside contractor with a two-man crew working 40 hours per week. The City will also continue to remove limbs from trees located outside road right-of-ways or easements that could create clearance problems for its overhead distribution circuits.

6. Storm Hardening Research

The City 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, at 850-224-3314, ext. 1, or through email at bmoline@publicpower.com.

UTILITIES COMMISSION,
CITY OF NEW SMYRNA BEACH, FLORIDA

200 Canal Street
New Smyrna Beach, Florida 32168
386-427-1361

Mailing Address:
Post Office Box 100
New Smyrna Beach, Florida 32170

February 26, 2007

Mr. Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Dear Mr. Devlin:

In compliance with requirements, enclosed please find our Storm Hardening Report for Rule 25-6.0343, F. A. C.

Should you have any questions, please feel free to contact us at the contact information enclosed in the report.

Thank you,

Miguel Rodriguez, Electrical Engineer
Utilities Commission, City of New Smyrna Beach
200 Canal Street
New Smyrna Beach, Florida 32168

cc: Barry Moline, FMEA
Robert Rodi, UCNSB
Ray Mitchum, UCNSB
Jim White, UCNSB

Utilities Commission, City of New Smyrna Beach
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) Name of city/utility
Utilities Commission, City of New Smyrna Beach

b) Address, street, city, zip
200 Canal Street,
New Smyrna Beach, Florida 32168

c) Contact information:

Ray Mitchum, Director Electric Operations
Office: (386) 424-3162
Fax: (386) 423-7133
mailto:rmitchum@ucnsb.org

Miguel Rodriguez, Elect.Engineer
Office: (386) 424-3029
Fax: (386) 409-4720
mailto:mrodriguez@ucnsb.org

2) Number of customers served in calendar year 2006

The Utilities Commission City of New Smyrna Beach served an average of 24,111 customers during 2006 calendar year.

3) Standards of Construction

a) National Electric Safety Code Compliance

The Utilities Commission City of New Smyrna Beach construction standards, policies, guidelines, practices, and procedures comply with the National Electrical Safety Code (ANSI C-2) (NESC)) applicable at the time of facilities installation. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction. Electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies.

b) Extreme Wind Loading Standards

The Utilities Commission City of New Smyrna Beach construction standards, policies, guidelines, practices, and procedures are guided by the extreme wind loading standards specified by Figure 250-2(d) 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.

The Utilities Commission City of New Smyrna Beach 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

The Utilities Commission City of New Smyrna Beach construction standards, policies, guidelines, practices, and procedures are being studied to determine the effects of hardening for flooding and storm surges will have to the ratepayers and facilities installation practices.

We only install stainless steel dead front pad mounted transformers in our system. Additionally, all major planned work, including expansion, rebuild, relocation or replacement of existing pad mounted transformer installations are being upgraded to our standard of dead front stainless steel transformers. We are also investigating the use of stainless steel dead front sealed pad mounted switchgear.

The Utilities Commission City of New Smyrna 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 underground facilities in preventing storm damages and outages through the Florida Municipal Electric Association.

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

The Utilities Commission City of New Smyrna Beach construction standards, policies, guidelines, practices, and procedures provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance.

Whenever possible, easements are secured from private property owners for the installation of required new and/or relocated facilities. If easements are not secured, facilities are installed in the public right of ways.

e) Attachments by Others

The Utilities Commission City of New Smyrna Beach has existing pole attachment agreements with joint users. We have enforced the 2007 NESC guidelines to proposed new attachments requests recently received. We have performed stress pole calculations and if attachments are found to potentially overload the existing facilities, facilities are upgraded or the project reengineered.

We are in the process of reviewing our existing attachment agreements to include written safety, pole reliability, pole loading capacity, and engineering standards and procedures for attachments by others to the utility's electric distribution poles. Normally, joint use attachments are not permitted on our transmission poles.

4. Facility Inspections

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

Transmission facilities are inspected on an ongoing basis. Staff inspects every pole from top to bottom, including all hardware and wires, performing repairs as needed. An inspection of our entire transmission system is usually completed every 4-5 years.

Distribution facilities are not under a "formal" inspection cycle. They are inspected as part of our normal maintenance when patrolling distribution feeders. An inspection of our distribution poles is generally completed every 7-9 years using the sound and spike method. Distribution facilities that are found defective are scheduled for remediation or replacement. To further our "Storm Hardening" efforts, we are in the process of establishing a formal 8 year pole inspection program.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

The Utilities Commission, City of New Smyrna Beach has approximately 420 transmission poles. By the end of FY 2006 we had inspected approximately 85 transmission poles, approximately 20 % of our transmission system. Two (2) poles were found to have woodpecker damage. These poles are being repaired with I-Pole Corporation epoxy resin woodpecker repair. They will be further evaluated to determine if replacement with spun concrete poles is warranted.

The Utilities Commission, City of New Smyrna Beach has approximately 10,162 distribution poles. We have researched our records and during FY 2006 we inspected approximately 500 distribution poles, approximately 5 % of our distribution system. Our records indicate 8 poles had reached end of life and needed to be replaced. These poles are scheduled for replacement prior to 2007 hurricane season.

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

Transmission: 2.3 % (see Item 4b) Distribution: 1.6 % (see Item4b)

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.

The Utilities Commission, City of New Smyrna Beach does not keep type and class failure records. This type data sometimes is not available as pole birthmarks may have deteriorated over time. In the future, if type and class of structure is available it will be provided.

The Utilities Commission, City of New Smyrna Beach transmission system currently has wood, spun concrete and steel structures. Wood structures that require replacement will likely be replaced with spun concrete poles.

The Utilities Commission, City of New Smyrna Beach distribution system has wood and concrete poles. Our standard distribution design is to utilize wood poles for distribution facilities. We are also investigating other pole types that may be cost effective alternatives to wood pole installations.

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.

The Utilities Commission, City of New Smyrna Beach at this time does not keep cycle trimming records. The Utilities Commission, City of New Smyrna Beach trims trees on an ongoing basis. We currently have two crews continuously trimming trees and reducing vegetative growth throughout the system. Each crew works 40 hours a week, and a third full-time crew is proposed to be added in the near future. We maintain one crew trimming main feeders and the other crew performing "hot spot" trimming as required. The proposed tree trimming crew will be utilized to enhance our main feeder trimming efforts.

Our tree trimming records indicate that during FY 2006 we trimmed approximately 15 % of our distribution system. We have also performed clear cutting on approximately 20 % of our transmission lines. Additionally we mow all our transmission lines on a yearly basis. We are planning to establish a formal cycle for tree trimming.

The Utilities Commission, City of New Smyrna Beach is planning to partner with the City of New Smyrna Beach to increase tree trimming along city right of ways. We will be meeting prior to the 2007 hurricane season to coordinate these efforts.

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

See response to Item 5a.

6. Storm Hardening Research

The Utilities Commission, City of New Smyrna Beach 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.

City of Newberry

Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2006

1) Introduction

a) City of Newberry

b) P. O. Box 369, Newberry, Fl. 32669

c) Contact information: Blaine Suggs, Utilities Director

Phone: (352) 472-1537 Fax: (352) 472-1799
Email: blaine.suggs@ci.newberry.fl.us

2) Number of customers served in calendar year 2006

1,396

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at the City of Newberry comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, 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 the City of Newberry, meet 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 January 1, 2007; and 3) targeted critical infrastructure facilities and major thoroughfares.

The City of Newberry 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

NOT Applicable, The City of Newberry is an inland Community located 45 miles from a coastal area.

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

All New Electrical Construction and Replacement Distribution Facilities within the City of Newberry are constructed along Road Right of Ways or on accessible easements. No construction is allowed on rear lot lines within Residential Subdivisions.

e) Attachments by Others

We are examining this issue in 2007 to establish pole loading rates by others.

4. Facility Inspections

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

All distribution poles are inspected on a Three (3) year cycle by City of Newberry Personnel.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

All 1,007 Distribution Poles were inspected in 2006

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

In 2006 Inspections, a total of 73 distribution poles, or 7% of poles inspected, were found to be defective.

27 distribution poles were found to have wood decay at or below ground level, 46 poles were found to have decay on the tops, animal destruction or structural cracks in the main body.

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.

23 - (32% of poles failing inspection) – Class 5, 45' wood poles were replaced in 2006

4 - (5% of poles failing inspection) – Class 5, 30' wood poles were replaced in 2006

Remaining poles (46) will be replaced in 2007.

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.

The City of Newberry trims all distribution lines on a three (3) year cycle and attention is given to problem trees during the same cycle. Any problem tree not located within the right-of-way is addressed with the property owner and a solution is agreed upon before corrective actions are taken.

c) Quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities.

One third (1/3) of the Distribution facilities are trimmed every year to obtain a three year cycle.

6. Storm Hardening Research

The City of Newberry 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

Ocala FL/Ocala Electric Utility
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2006

1) **Introduction**

   a) **Name of city/utility** Ocala FL/ Ocala Electric Utility

   b) **Address, street, city, zip**
   201 SE 3rd Street
   Ocala, FL 34471

   c) **Contact information: Name, title, phone, fax, email**
   David Anderson
   Regulatory Specialist
   Phone (352)629-8509
   Fax (352)629-8502
   danderson@ocalafl.org

2) **Number of customers served in calendar year 2006**

Ocala Electric Utility has a total electric service territory of 160.2 sq. miles and serves a total of 50,860 Electric Customers

Customer Break down:

Residential Customers	43,339
General Service Customers	5,315
General Service Demand Customers	2,206

3) **Standards of Construction**

   a) **National Electric Safety Code Compliance**

   Ocala Electric Utility has standards for construction and materials for its overhead and underground lines. Our practice is to design new lines to conform to the latest edition of the NESC. Ocala Electric Utility is in the process of evaluating its standard designs in light of the 2007 NESC rules and initial results indicate our standard designs well exceed the NESC requirements. Ocala Electric Utility will completely evaluate its standards in 2007.

b) **Extreme Wind Loading Standards**

Ocala Electric Utility's practice is to design new lines to conform to the latest edition of the NESC, however there are no written standards specifically addressing wind loading on distribution poles. Ocala Electric Utility is in the process of evaluating its standard designs in light of the 2007 NESC rules and initial results indicate our standard designs well exceed the NESC requirements. Ocala Electric Utility will completely evaluate its standards and develop written wind loading standards in 2007.

c) **Flooding and Storm Surges**

Ocala is located 80 miles from the west coast of Florida and is not subject to storm surge and has limited exposure to flooding. Both the City of Ocala and Marion County require new developments to provide water retainage for 100 year, 24 hour events. The previous standard was a 10 year, 24 hour event. Ocala Electric Utility practices do not allow poles and underground equipment within retention areas, swales or other flood prone areas. Where flooding occurs, Ocala evaluates the facilities for relocation to less flood prone areas.

Ocala Electric Utility 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**

Electric construction standards, policies, guidelines, practices, and procedures at the Ocala Electric Utility provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Our policy is to install all new overhead and underground facilities adjacent to right-or-way or paved areas to allow for access.

e) **Attachments by Others**

Ocala Electric Utility requires attachment agreements with all third party attachees on its poles and requires permits for all new attachments. The permits include information for Ocala Electric Utility to evaluate the impact of the attachment on pole loading. Ocala Electric Utility is in the process of reviewing its standards and procedures for allowing attachments on it poles and developing written standards and procedures for pole attachments. The process will be complete in 2007. Initial calculations indicate our standards construction practices exceed the requirements of the NESC. We have contracted to have our poles inspected and evaluated for pole loading, including third party attachments, and this information will be used to further evaluate our standard designs.

4. Facility Inspections

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

In 2002, Ocala Electric Utility contracted with Osmose Utilities Services, Inc. to complete a field audit. This audit, finished in 2003, gave us a complete pole dataset which we could then use to create a pole inspection initiative. Ocala Electric Utility contracted with Osmose Utilities Services, Inc., in February 2007 to undertake an aggressive pole inspection project. This contract with Osmose Utilities Services, Inc., meets the PSC's rules (PSC-06-1444-PAA-EI) governing pole inspections.
Prior to the contracted services, Ocala Electric Utility had a pole replacement program from 1989 to 1993 and replaced 1,371 poles during this time. Records were not kept on the poles inspected. After 1993, poles were inspected in the course of day-to-day work and Ocala Electric Utility changed an additional 640 poles to date.

b) **Number and percentage of transmission and distribution inspections planned and completed for 2006.**

As of this report, there are no completed statistics to detail. Ocala Electric Utility has contracted with a firm to inspect all poles on an eight year cycle (12.5% per year). This will total approximately 4,000 poles to be inspected each year.

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

As of this report, there are no completed statistics to detail. Ocala Electric Utility has contracted with a firm to inspect all poles on an eight year cycle (12.5% per year). This will total approximately 4,000 poles to be inspected each year.

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.**

As of this report, there are no completed statistics to detail. Ocala Electric Utility has contracted with a firm to inspect all poles on an eight year cycle (12.5% per year). This will total approximately 4,000 poles to be inspected each year.

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.**

Ocala Electric Utility's Vegetation Management program is based on a three (3) year trim cycle, which is augmented as needed to maintain clearance between cycles. Dead and hazard trees located outside of right-of-way on private property, which present an imminent threat to power lines or equipment, are removed or reduced in height to remove the threat. Vegetation Management plan language specifies that all routine trimming shall adhere to the National Arbor Day Foundation standards for Line Clearance and comply with ANSI A300 standards for tree trimming.

The City of Ocala Tree Ordinance includes language that specifies planting distances from power lines depending on species, and Ocala Electric Utility budgets annually for a Remove and Replace tree program. These are used in conjunction with the National Arbor Day Foundations' Plant the Right Tree in the Right Place educational materials, which are mailed to all customers annually, to encourage long term solutions for problem trees on private property. This program of thoughtful planting, cyclic trimming, hazard tree removals, and intermittent (as needed) trimming combined with good pruning practices that direct future growth away from lines allows Ocala Electric Utility to provide safe and reliable electrical service to customers on a day to day basis and reduces the potential for damage during storms.

b) **Quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities.**

Annually the line clearance goal is one third (1/3) of the total system overhead line miles, which is currently just over 800 miles or approximately 250 miles per year. To ensure that the this goal is met the Tree Trimming Contract was revised in 2006 to a firm price per mile format that specifies 250 miles of trimming in 2007 with a provision for additional T&M crews year round to perform on demand tree work. In response to the approval in 2006 of new FERC regulations for Transmission Ocala Electric Utility revised our system of documentation for bi-annual inspection patrols performed by in house crews along thirteen (13) miles of 230kV right-of-way and easements. Ocala Electric Utility files a monthly report to FRCC and NERC on Vegetation Management.

Activity during 2006 included mowing and removing trees and underbrush in all accessible areas by in-house tree crews. The remaining easement areas where access is restricted are being addressed and mitigation should be complete in 2007. Scheduled activity in 2007 includes complete side trimming along the corridor and removal of potentially hazardous trees adjacent to the right-of-way. Currently research is underway for beginning an herbicide program to eliminate the need for mowing and create a sustainable wildlife friendly corridor that is easily accessible for maintenance.

6. Storm Hardening Research

Ocala Electric Utility 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.

Orlando Utilities Commission
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1. Introduction

City of Orlando, Orlando Utilities Commission

500 S. Orange Avenue, Orlando FL 32801

Contact information:

Bryon Knibbs, Vice-President, Electric Delivery Business Unit
407-423-9100 ext. 4938, bknibbs@ouc.com

Steve Langley, Director, Distribution Construction & Maintenance
407-423-9100 ext. 4193, 407-384-4124 fax, slangley@ouc.com

2. Number of customers served in calendar year 2006

Orlando Utilities Commission serves approximately 200,000 electric customers in the counties of Orange and Osceola, and the Cities of Orlando and St. Cloud.

3. Standards of Construction

A. National Electric Safety Code Compliance

The Orlando Utilities Commission (OUC) complies with the construction standards, policies, guidelines, practices, and procedures directed within the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 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, 2007.

B. Extreme Wind Loading Standards

Construction standards, policies, guidelines, practices, and procedures at the Orlando Utilities Commission 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.

Presently, OUC is in the process of verifying that all future construction does meet the NESC requirements with particular focus on the extreme wind loading standards.

Orlando Utilities 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

The Orlando Utilities Commission service area is in the middle of Florida. Therefore, flooding and storm surges do not apply.

However, OUC 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 under grounding 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 OUC provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance.

Orlando Utilities has been installing underground and overhead distribution along property frontage corridors since the 80's. This gives efficient and safer access to these facilities. For existing rear lot installations, OUC provides vegetation maintenance and replacement of aged equipment to ensure an efficient, safe, & robust system.

E. Attachments by Others

Electrical construction standards, policies, guidelines, practices, and procedures at the Orlando Utilities Commission include contractual agreement to enable attachment by others. These contracts state that attachments must adhere to the guidelines of the NESC and all governmental authorities that have jurisdiction.

4. Facility Inspections

A. Policies and Guideline for inspecting Transmission and Distribution lines, poles, and structures.

Orlando Utilities Commission (OUC) has maintained an active pole inspection and replacement program with records dating back to 1990. We currently uphold an eight-year quadrant based inspection cycle along with annual inspections targeting essential distribution and transmission equipment. Shared transmission structures are inspected and maintained by OUC with corresponding inspection based by past inspection date.

Distribution and Transmission pole inspection replacements are tracked through an existing maintenance work order database to insure timely replacement. Implementation has already begun to incorporate inspection records into active maintenance based software for pole inspections.

B. Inspection Procedures

Visual inspection shall be made of all poles form the ground line to the top before any other inspection. Visual inspection shall include: type of wood, original treatment, circumference, age of pole (if it can be determined)_, height, obvious splits, woodpecker holes, and any other physical damages to the pole. Also a visual check within the limitations of the inspector's expertise, is to be made at such time of the attachments to the pole being inspected for obvious conditions that appear improper, such as slack guy wires, slack overhead conductors, broken insulators, leaking transformers, missing guy guards, rotten cross arms, loose or faulty equipment, abandoned poles, etc.

C. Excavation

Earth shall be removed from the entire circumference of the pole to a minimum depth of 18 inches below ground line. Width of the hole shall be 4 inches clearance for the pole surface at the bottom and 10 inches at the ground line.

Poles with electric risers should not be excavated, but should be inspected by sounding, bored and fumigated.

D. Sounding and Boring

The pole must be sounded from the ground line to a minimum of six feet above the ground line. Sounding shall be done on all four sides of the pole to locate any shell rot or rot pockets on the side.

Sounding shall be done with an approved hammer that leaves a distinctive hammer pattern. If there is evidence of possible interior voids or rot, at least one boring shall be made where a void is indicated. If rot or voids are detected, several borings shall be made per rot or void location and a shell gauge shall be used to determine the extent of all voids or rot. In any event at least two borings shall be made at the ground lien to check for rot.

Poles set in concrete or pavement shall be bored at least twice at opposite sides at the ground line down at a 45-degree angle into the pole and the boring sample checked for rot or voids.

E. Removal of Exterior Decay

All exterior decay must be removed where possible, from 18 inches below the ground lien to 3 inches above ground line. The rotted wood is to be removed from the premised and deposed of in a proper manner.

F. Evaluation of Pole Condition

After the sounding and boring has been performed and all exterior decay has been removed, the effective circumference of the pole, from 18 inches below the ground line to 15 inches above the ground line, is to be determined.

G. Internal Treatment

All sound poles are to be internally treated if any specific voids of specific internal decay pockets are found. This should involve a sufficient number of bored 3/8 inch holes and the preservative should be applied under at least 50 psi of pressure. Fumigant Treatment – The approved fumigant shall be Mitc-Fume.

H. Ground Line Treatment

All poles not previously rejected shall be covered from 18 inches below the ground line to 3 inches above the ground line by an Owner approved preservative and moisture barrier film.

Preservative treatment should penetrate a minimum of two inches into the pole. Long-term retention studies should be made available to assure results.

targeting removal of fast growing invasive tree species compliments the established four-year maintenance cycle.

Annual inspections of the distribution system monitor vegetation clearances and verify an effective schedule. A final measure to insure distribution system reliability involves quarterly reviews of circuit feeder momentary and sustained outages records in correlation to vegetation.

B. Maintenance Guidelines and Procedures

A four-year maintenance cycle of distribution facilities anticipates an average annual growth of 2.5 feet. Trees in close proximity of distribution facilities are trimmed to a minimum distance of 10 feet clearance from energized un-insulated conductors. Fast growing invasive species are targeted for removal during distribution pruning. This proactive measure relieves future trimming requirements and insures clearances within the cycle will be maintained.

OUC currently procures vegetation maintenance labor and equipment through a contract with Davey Tree Experts. The contract comprises 10 production line trimming crews used in distribution pruning and removals. An additional 3 crews supplement production trimming activities, completing work orders generated from inspections and field crews.

Vegetation pruning requests are tracked using an internal CIS system available in the distribution operations, customer service and construction and maintenance area. Requests generated from a system outage are either trimmed immediately or given a work order priority for 24-hour completion. The general foreman provides additional feedback if additional area trimming is needed.

OUC has dedicated staff within the construction and maintenance area to inspect distribution vegetation clearances. A ground visual inspection of overhead distribution facilities is conducted from October 1, through May 30th. Individual work orders are generated from vegetation clearances, which do not conform, to specified clearances and schedule. This inspection is specifically timed to prepare for expected severe weather conditions during summer months. Quarterly reviews of distribution reliability records may require additional inspections to insure a negative impact due to vegetation.

The DVMP allows for additional crews to be temporarily utilized when conditions warrant. This was conducted in early 2006 to recover scheduled time lost during previous hurricane recovery relief.

C. Appropriate Planting

Our goals are to educate and inform the public through information provided by the Central Florida Urban Forestry Council. The concept "Right Tree in the Right Place" is conveyed in an effective manner, which promotes the urban forest, yet recognizes the compatibility with near power lines.

Strong connections to the City of Orlando Urban Forestry Council and educational community enable OUC to provide information about the benefits of an urban forest, which involves proper tree selection and proper placement planting. OUC is striving to further communications with both City and County ROW planning committees relating to the Urban Forest and proper planting.

D. DVMP Work Specifications

1. Prune or remove trees in close proximity to a minimum conductor clearance of 10 Feet.

2. Alternative Vegetation Management Strategy; Where restrictions due to easement limitations, legal prohibitions or other impediments do not allow tree removal, we prune trees under the wires to a minimum of 8 feet of clearance and inject ground with tree growth retardant.

3. Customers advised of OUC "Right Tree / Right Place" Program

E. Annual Plan for Transmission and Distribution Facilities

The 2006 annual budget for Transmission and Distribution Vegetation management was 2.3 million dollars. 2007 budget is expected to remain the same due to contractual price re-structuring.

The Transmission Vegetation Management Plan goals of 2007 are for treatment of 47 miles of urban and 67 miles of rural corridors as part of the transmission vegetation management plan. Treatment of rural corridors is conducted on a three-year maintenance cycle, where as urban corridors are conducted annually. Rural corridors are maintained using a combination of integrated vegetation management (IVM). Urban corridors utilize more traditional pruning and removal maintenance methods.

The Distribution Vegetation Management Plan objectives are for treatment of 330 miles of overhead distribution facilities.

F. 2006 Distribution Schedule

Orlando Utilities Commission — Fiscal 2006-2009 Distribution Feeder Circuit Tree Trimming Schedule								
GIS Circuit Number 11/01/05	Feeder Circuit Rear Lot + Street Tree Trim Miles	Rear Lot Miles	Street Miles	Non Billable Miles	Quarterly # of Circuits	Trim Cycle Order	Initiated Date	Completion Date
Fiscal Year 2006								
October - December							2006 Fiscal First Quarter	
3-14	9.71	2.38	7.33		1	1	Nov-05	Mar-06
10-15	3.24	0.96	2.28	1.16	2	134	Jun-05	Oct-05
28-213	57.19	21.26	35.93		3	168	Jun-05	Mar-06
12-12	5.74	1.73	4.01	0.82	4	148	May-05	Oct-05
18-43	2.89	0.33	2.56		5	132	May-05	Jun-06
1-22	5.60	0.20	5.40		6	15	May-05	Jan-06
10-11	7.91	0.69	7.22	0.04	7	190	Oct-05	Apr-06
1-33	0.64	0.05	0.59	0.58	8	10	Jan-06	Jan-06
Quarterly Total Mileage	92.92	27.60	65.32	2.60				
January - March							2006 Fiscal Second Quarter	
4-12	5.67	0.19	5.48	0.28	1	13	Mar-06	Mar-06
28-221	19.58	7.62	11.96		2	131	Feb-06	Mar-06
1-32	0.40	0.20	0.20		3	8	Mar-06	Mar-06
4-31	2.20	1.39	0.81		4	16	Mar-06	Mar-06
2-33	5.40	2.06	3.34		5	17	Mar-06	Mar-06
3-23	2.67	1.34	1.33	1.88	6	18	Mar-06	Apr-06
9-21	5.01	2.38	2.63	1.27	7	19	Mar-06	Jun-06
27-224	3.72	1.01	2.71	0.03	8	20	Feb-06	Feb-06
3-21	4.85	1.52	3.33		9	21	Mar-06	Mar-06
2-11	14.13	4.22	9.91	0.25	10	22	Jan-06	Feb-06
1-13	0.07	0.06	0.01		11	23	Feb-06	Mar-06
2-31	11.82	2.80	9.02		12	24	Mar-06	Apr-06
Quarterly Total Mileage	75.52	24.79	50.73	3.71				
April - June							2006 Fiscal Third Quarter	
14-24	0.31	0.00	0.31	1.23	1	25	May-06	May-06
9-11	9.53	2.40	7.13	1.11	2	26	Mar-06	Aug-06
21-13	0.38	.30	0.38	0.30	3	27	May-06	May-06
2-13	8.84	4.66	4.18	1.06	4	28	May-06	Sep-06
29-223	20.42	3.51	16.91	0.12	5	129	Mar-06	Mar-06
2-41	8.76	2.69	6.07	0.02	6	30	Jun-06	Sep-06
21-12	1.39	0.01	1.38		7	31	May-06	May-06
1-34	8.54	1.19	7.35	0.22	8	32	Jul-06	Sep-06
17-13	1.84	1.01	0.83	0.46	9	33	May-06	May-06
1-14	7.28	3.72	3.56	0.01	10	34	Jul-06	Nov-06
11-32	1.93	0.40	1.53		11	35	May-06	May-06
9-32	7.23	0.98	6.25		12	36	May-06	Jun-06
Quarterly Total Mileage	76.45	20.57	55.88	4.53				
July - September							2006 Fiscal Fourth Quarter	
10-42	2.29	0.12	2.17		1	37	Oct-06	85% complete
17-12	6.83	4.48	2.35		2	38	Jul-06	Jul-06
12-22	3.24	0.68	2.56		3	39	Aug-06	Nov-06
2-12	6.52	4.06	2.46	0.66	4	40	Aug-06	Nov-06
9-33	4.35	0.89	3.46		5	41	Dec-06	
9-23	5.55	0.34	5.21	0.51	6	42	Aug-06	90% Complete
5-22	5.28	3.96	1.32	1.24	7	120	Nov-06	Dec-06
21-14	0.04		0.04		8	44	Sep-06	Sep-06
12-21	12.52	2.37	10.15		9	45	Nov-06	75% complete
17-24	13.35	6.65	6.70	2.58	10	63	Jun-06	Jul-06
11-21	12.16	3.18	8.98		11	47	Oct-06	90% Complete
27-214	13.90	1.96	11.94	0.16	12	164	Jun-06	Sep-06
Quarterly Total Mileage	86.03	28.69	57.34	5.15				
Annual Total Miles	330.92	101.65	229.27	15.99				

G. 2007 Distribution Schedule

Fiscal Year 2007								
October - December							2007 Fiscal First Quarter	
2-24	11.73	4.30	7.43		1	89	Dec-06	
8-11	0.92	.43	0.92		2	50	Sep-06	Oct-06
16-22	9.88	5.95	3.93	0.59	3	51		
14-16	0.97	0.23	0.74	0.14	4	52	Oct-06	Oct/06
19-22	9.81	5.55	4.26		5	53	Sep-06	Sep-06
27-223	17.30	3.41	13.89		8	166	Sep-06	Oct-06
11-41	8.97	1.59	7.38		7	55		
5-24	1.32	0.54	0.78		8	56	Oct-06	Nov-06
14-22	8.83	2.23	6.60		9	57	Oct-06	Oct-06
21-24	1.35	0.05	1.30		10	58		
3-24	8.15	3.50	4.65		11	59		
14-34	1.44	0.31	1.13	0.84	12	60	Nov-06	
Quarterly Total Mileage	80.67	27.66	53.01	1.57				
January - March							2007 Fiscal Second Quarter	
11-43	7.11	0.92	6.19		1	61		
28-214	44.11	12.42	31.69	5.09	2	123	Oct-06	
8-15	0.49	0.49			3	46		
21-11	1.53	1.45	0.08		4	64		
2-331	6.41	2.94	3.47	4.72	5	65		
21-25	1.58	0.18	1.40		6	66		
6-311	4.94	3.78	1.16		7	67		
5-16	1.60	1.60			8	68		
19-24	4.64	3.67	0.97	0.33	9	69		
14-31	1.74	0.70	1.04	1.05	10	70		
14-33	4.47	2.23	2.24		11	71		
5-43	1.93	0.81	1.12	1.27	12	72		
Quarterly Total Mileage	80.55	31.19	49.36	12.46				
April - June							2007 Fiscal Third Quarter	
1-42	4.26	.10	4.26	0.02	1	73		
14-12	1.93	1.10	0.83	0.10	2	74		
17-25	3.83	3.49	0.34		3	75		
2-332	11.77	5.31	6.46	1.44	4	49		
3-13	8.76	5.40	3.36	0.19	5	3		
1-21	0.30	0.00	0.30		6	4		
3-32	8.12	1.83	6.29	0.01	7	5		
21-22	0.39	0.26	0.13	1.37	8	6		
29-224	7.53	2.02	5.51		9	7		
32-221	25.40	14.17	11.23		10	127		
6-12	1.99	0.41	1.58		11	78		
5-11	2.75	2.26	0.49		12	79		
8-14	0.03	0.03			13	176		
30-14	0.31	0.05	0.26	0.58	14	182		
14-11	2.40	1.92	0.48		15	82		
8-21	2.54	1.65	0.89	1.26	16	83		
11-42	2.41	0.51	1.90		17	84		
Quarterly Total Mileage	84.72	40.41	44.31	4.97				
July - September							2007 Fiscal Fourth Quarter	
27-216	38.33	13.26	25.07		1	85		
21-35	0.03	0.03	0.00		2	86		
14-32	12.54	4.20	8.34	0.06	3	87		
14-35	0.58	0.58	0.00		4	88		
17-15	0.62	0.18	0.44	1.34	5	90		
14-16	0.97	0.23	0.74	0.14	6	52		
19-13	10.87	1.50	9.37		7	91		
11-11	0.83	0.01	0.82		8	92		
4-14	10.75	5.35	5.40		9	93		
19-21	0.83	0.44	0.39	0.30	10	94		
14-43	1.44	0.41	1.03	1.18	11	62		
6-321	1.86	0.45	1.41	2.86	12	96		
Quarterly Total Mileage	79.65	26.64	53.01	5.88				
Annual Total Miles	325.59	125.90	199.69	24.88				

H. 2006 Transmission Schedule

Orlando Utilities Commission

2006 Transmission Vegetation Management Program Maintenance Schedule

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ROW Corridor Segment Number		Description	Miles Sharing Same ROW	Miles	Loop	Est. Crew Hours	Struture Numbers Begin	Struture Numbers End	Completion Date
Fiscal Year 2005									
1	4-2829	North to East		7.55	Outer		1	112	3/26/05 JC
2	5-0214	Pine Hills to Turkey Lake		3.03	Inner				1/05 JM
3	5-0508 A	Southwood to Martin		2.41	Outer		201	256	11/9/05 JC
	5-0508 B	Southwood to Martin	2.41		Outer		201	256	11/9/05 JC
4	5-052421	Southwood to Metrowest		0.68	Outer				11/09/05 JC
5	5-0607 A	Pershing to Indian River A		31.90	Outer		0	130	1/11/05 JC
	5-0607 B	Pershing to Indian River B	31.90		Outer		0	130	1/11/05 JC
	7-0717 A	Indian River to Stanton A&B	24.59		Outer		135	156	1/11/05 JC
	7-0617 B	Pershing to Stanton		9.32	Outer	8.00	1	34	1/11/05 JC
	7-0617A	Pershing to Stanton	9.32		Outer		1	34	1/11/05 JC
	7-0717 B	Indian River to Stanton A&B	24.59		Outer		135	156	1/11/05 JC
6	5-0916	Michigan to Grant		2.30	Inner		1	136	11/9/05 JC
7	7-620	Pershing to Airport		3.31	Inner				11/07/05 JC
Total Annual Miles Treated		60.50							
Fiscal Year 2006									
8	7-Osceola - Agnes	1/4 of the LakeLand Line Shared W/ TECO		11.00	Outer				3/22/06 JM
	7-Lake Agnes-McIntosh	1/4 of the LakeLand Line Shared W/ TECO		11.00	Outer		0	76	
9	4-1728	Stanton to North		19.00	Outer		2	48	
10	4-2728	Central to North		7.75	Outer	95.00	1	120	07/10/2006 JM
11	4-27KISS	Shared W/ KUA				8.00	2	64	07/10/2006 JM
12	4-28 FPC	Shared W/ FPC				57.00	1	175	
13	7-29FPC	North to Holopaw		8.13	Outer				
14	7-02FPC	Pine Hills to Woodsmere		1.14	Outer	8.00			07/10/2006 JM
15	7-05FPC	Southwood to Windemere		0.17	Outer	None	4	27	07/10/2006 JM
16	7-0515	Southwood to Taft		10.96	Outer	45.00			
17	7-07FPL"A"	Indian River to FPL Canaveral "A"		0.41	Outer				07/10/2006 JM
	7-07FPL"B"	Indian River to FPL Canaveral "B"	0.41		Outer				07/10/2006 JM
18	7-1517	Taft to Stanton		19.11	Outer	253.00			
Total Proposed Annual Miles Treated		88.67							
Fiscal Year 2007									
19	7-1920	Airport Industrial Park		7.99	Outer				
20	7-17 FPC A	Stanton to Curry Ford		6.46	Outer	58.00			
	7-17 FPC B	Stanton to Rio Pinar		9.16	Outer				
	7-SEC-1	Stanton Unit 1 Generator		0.75	Outer				
	7-SEC-2	Stanton unit 2 Generator	0.75		Outer				
	7-SEC1			0.75	Outer				
	7-SEC2		0.75		Outer				
	7-17RAT2	SEC Reserve Aux Trans 2		0.75	Outer				
	7-17RAT1	SEC Reserve Aux Trans 1	0.75		Outer				
	7-1731	Sub 17 to SEC Unit3		1.50	Outer				
21	5-0212	Pine Hills to Country Club		3.22	Inner				
22	5-0306 A	Azalea to Pershing A		4.18	Inner				
23	5-0306 B	Azalea to Pershing B	4.18		Inner				
24	5-0405	Holden to Southwood		3.45	Inner		506	586	
25	5-0409	Holden to Michigan		5.07	Inner		2	78	
26	5-0609	Pershing to Michigan		5.68	Inner		2	93	
27	5-0616	Pershing to Grant		2.09	Inner		1	46	
28	5-1013	America to Kaley		1.44	Inner		1	26	
29	5-142421	Turkey Lake to Metrowest		1.60	Inner				
30	5-1618	Grant to Robinson		5.87	Inner		343	363	
31	7-0622 Verify not in SOM sheet								
32	7-0530-15 Verify not in SOM sheet								

I. 2007 Transmission Schedule

Orlando Utilities Commission
Transmission Vegetation Management Program
2007 Annual Work Plan - Maintenance Schedule
FRCC 2006 Compliance Audit Requirement R 2 - Rotational Cycle Segments Revised 12/28/06

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ROW Corridor Segment Number	OUC Line	Mapping Reference Click for Map Segment	Description	Miles Rural	Miles Urban	Current Crew Assignment	Structure Number Begin	Structure Number End
Current 2007 Maintenance Cycle								
			Urban ROW Corridor - Annual Cycle					
1	5-0212	Page 9 Sub 12 to Sub 2	Pine Hills to Country Club		3.22		1	48
2	7-02FPC	Page 29 Sub 2 to FPC	Pine Hills to FPC at Dolores W/O Emeralda		1.08		1	27
3	5-0214	Page 10 Sub 2 to Sub 14	Pine Hills to Turkey Lake		3.03		428	365
4	5-1424	Page 27 - 5-1424	Turkey Lake to Southwood		1.82		362	343
5	5-2405	Page 16 Sub 14 to Sub 24	South Term Sub 24 to Southwood Sub 5		1.74		341	303
6	5-0508 A	Page 15 Sub 5 to Sub 8	Southwood to Martin (KingsPointe) East Line		2.70		260	201
7	5-0508 B	Page 15 Sub 5 to Sub 8	Southwood to Martin		1.80		1	14
8	5-08-30	Page 31 Sub 8 to Sub 30	Martin to Counvention Center		0.41		14	16
9	5-0405	Page 13 Sub 5 to Sub 4	Holden to Southwood		3.55		506	586
10	5-0409	Pag 14 Sub 4 to Sub 9	Holden to Michigan		3.20		2	78
11	5-0910	Page 24B Sub 9 to Sub 10	Michi gan to America (On Division)		3.73		56	132
12	5-1013	Page 25 Sub 10 to Sub 13	America to Kaley		1.44		1	26
13	5-1618	Asset 113046 to 095843	Michigan and Gowen to Bumby and Jersey		0.21		1	5
14	5-0916	Page 24A Sub 9 to Sub 16	Michigan to Grant		2.30		1	52
15	5-0609	Page 21 Sub 9 to Sub 6	Michigan to Pershing (Follows Raeford Rd)		5.48		2	93
16	5-0616	Page 22 Sub 16 to Sub 6	Grant to Pershing		2.09		1	27
17	7-622	Page 33 Sub 6 to Sub 22 Term	Pershing to Sub 22 Term Site		3.42		135	157
18	5-0306 A & B	Page 11 Sub 6 to Sub 3	Azalea to Pershing A & B		4.14		143	182
19	4-27KISS	Page 4 Sub 27 to KISS Tie	Shared W/ KUA		2.64		2	64
			Rural ROW Corridor - Three Year Cycle					
20	5-0607 A	Page 17 Sub 6 to Sub 7 Sheet 1 of 4	Pershing to Indian River A	31.90		Davey 11/1/06	7	71
		Page 18 Sub 6 to Sub 7 Sheet 2 of 4					72	139
		Page 19 Sub 6 to Sub 7 Sheet 3 of 4					140	209
		Page 20 Sub 6 to Sub 7 Sheet 4 of 4					210	256
	5-0607 B	Shares ROW with 5-0607A	Pershing to Indian River B				0	130
21	7-0717 A	Page 34 - Sub 17 to 0607 Line	Indian River to Stanton A&B	0.50			54E	54B
	7-0717 B	Shares ROW with 5-0717A	Indian River to Stanton A&B				135	156
	7-0617A	Shares ROW with 5-0717A & 5-0607	Pershing to Stanton (Shares 5-0607) ROW				1	34
	7-0617 B	Shares ROW with 5-0717A & 5-0607	Pershing to Stanton (Shares 5-0607) ROW				1	34
	7-17 FPC A	Shares ROW with 5-0607 & 5-0717	Stanton to Curry Ford				23	53
	7-17 FPC B	Shares ROW with 5-0607 & 5-0717	Stanton to Rio Pinar				23	53
22	7-SEC-1	No Map South of Sub 17	Stanton Unit 1 Generator	0.75				
	7-SEC-2	No Map South of Sub 17	Stanton Unit 2 Generator					
	7-17RAT2	No Map South of Sub 17	SEC Reserve Aux Trans 2	0.75				
	7-17RAT1	No Map South of Sub 17	SEC Reserve Aux Trans 1					
23	7-1731	No Map South of Sub 17	Sub 17 to SEC Unit3	1.50				
24	7-07FPL"A"	Page 47 Sub 7 to FPL TIE LINE	Indian River to FPL Canaveral "A"	0.41				
	7-07FPL"B"	Page 47 Sub 7 to FPL TIE LINE	Indian River to FPL Canaveral "B"					
	Total Proposed Annual Miles Treated 83.80			35.81	47.99			

6. Storm Hardening Research

Orlando Utilities Commission 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

City of Quincy
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) City of Quincy

b) 423 W Washington St, Quincy, FL 32351

c) Rohan Berry
Director of Utilities
(850)627-7681 -- (office)
(850)875-7357 -- (fax)
rberry@myquincy.net

2) Number of customers served in calendar year 2006

4917

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at the City of Quincy comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, 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 the City of Quincy 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.

The City of Quincy 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

The City of Quincy is not located near a coastal area and is not exposed to severe flooding or storm surges.

However, we are 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 the City of Quincy provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance.

The City of Quincy practices clearing of right-of -ways to maintain access and this is also considered for new installations and determines the location of installations based on accessibility

e) Attachments by Others

We are reviewing our pole attachment agreements to consider incorporating strength assessment calculations by the attacher at the time the attachment is made, as well as amending existing pole attachment agreements to determine the feasibility of such calculations for 2007.

4. Facility Inspections

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

The City of Quincy did drive – by patrols of all poles once per month for every month in 2006.This allowed the city to identify structures that were of immediate threat.

Policies and procedures are being developed in 2007 to implement the 'sound and bore technique' over an 8 year period for the entire system..

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

Drive-by inspection was carried out on all 2842 distribution poles for 2006.

Detailed inspection was carried out on all 31 transmission poles for 2006.These poles are made of concrete.

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

The City of Quincy had 2 poles or 0.07% that failed distribution inspection. One pole was severely bent due to a previous hit by an unidentified object and the other had signs of rotting midway up the length of the pole.

No transmission pole failed inspection

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.

The City of Quincy replaced 2 distribution poles for reasons mentioned in (c) above.

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.

The City of Quincy trims 25% of its system each year for the past 4 years using in-house crews.

The City of Quincy did not experience a direct hit from storms over the past 4 yrs and did not change any poles as a result .However, the city plans to intensify the program by acquiring additional staff and employ contractors in the months prior to the hurricane season..

Trees that are outside the city's right-of way that are deemed a threat, are removed only after discussion with the owner. At times the City replace trees for the customers with a slower growth option..

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

   Approximately 25 miles or 24% of medium vegetation trimming was planned and completed on the distribution system.
   100% of our transmission lines were trimmed.

6. Storm Hardening Research

The City of Quincy 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.

REEDY CREEK
IMPROVEMENT DISTRICT

P.O. BOX 10170 LAKE BUENA VISTA, FLORIDA 32830-0170 TELEPHONE (407) 828-2241

February 15, 2007

Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Fl. 32399-0850

Mr. Devlin,

Please find attached a copy of the Storm Hardening report for Reedy Creek Improvement District as per the PSC Storm Hardening Rule 25-6.0343.

If you have any questions, please do not hesitate to contact me at (407) 934-7853.

Sincerely,

C. Ray Maxwell
District Administrator

Enclosure

cc: Steve Tucker
Lee Schmudde
Jim Vendur

Reedy Creek Improvement District
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) Reedy Creek Improvement District

b) 1900 Hotel Plaza Blvd, Lake Buena Vista, FL 32830

c) C. Ray Maxwell, District Administrator, 407-934-7853, Fax: 407-934-6200, ray_maxwell@rcid.dst.fl.us

2) Number of customers served in calendar year 2006

Reedy Creek Improvement District had 1,228 electric customers in 2006.

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at the Reedy Creek Improvement District (the "District") comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, 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 the District 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. The District is primarily an underground utility by standard design with less than 15 miles of overhead lines and more than 275 miles of underground.

c) Flooding and Storm Surges

Electrical construction standards, policies, guidelines, practices, and procedures at the Reedy Creek Improvement District address the effects of flooding on underground distribution facilities and supporting overhead facilities. Storm surges do not apply to the District as it is located in Central Florida 60 miles away from the nearest coastal areas. The District has no underground vault switchgear.

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

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

e) The District does not have any foreign attachments on its facilities.

4. Facility Inspections

The District's transmission system has 5 wooden poles with the remainder being concrete or steel. The system includes approximately 15 miles of overhead transmission right-of-way. The District's distribution system is essentially an underground system with a very limited amount of overhead. The overhead distribution includes only 13 wood poles with the remainder of the distribution overhead on concrete or steel.

a) The District's overhead transmission system is ridden monthly by Utility Division personnel for the purpose of performing a basic visual inspection of the condition of the poles, lines and right of way. Transmission and distribution wood poles are inspected and treated by an outside pole inspection contractor every 2 years.

b) All transmission and distribution wood poles were inspected and treated by an outside contractor in 2006.

c) All transmission and distribution poles passed inspection.

d) No pole replacement or remediation on District poles was required based on the 2006 inspection results.

5. Vegetation Management

a) The District's 15 miles of transmission right-of-ways are ridden monthly for the purpose of visual inspection including vegetation issues. The District contracts tree trimming each spring and early summer to clear any issues existing on District right-of-ways. In 2006, the trimming plan was enhanced to cut back all vegetation on the transmission right-of-ways that could potentially "fall" into the lines. Trimming planned for spring 2007 will complete this more aggressive approach on all transmission lines. Limited vegetation areas exist with the District distribution system and these limited areas on the distribution system are maintained along with the transmission system program.

b) In 2006, approximately half of the transmission right-of-ways were addressed per the above plan with the remainder to be completed in 2007.

6. Storm Hardening Research

RCID 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.

Ongoing Storm Preparedness
City of Starke Implementation Plan
May 23, 2006

A. Introduction

This is the Storm Preparedness report from the City of Starke, located in Bradford County, Florida. For information concerning this report or utility issues contact:

Mr. Ricky Thompson
Project Director/ Acting City Manager
P.O. Box Drawer C
Starke, Florida 32091
(904) 964-2011
Rthompson@cityofstarke.org

The City of Starke is an inland city with a population of 5,600 and is not normally directly affected by hurricane strikes. During 2004 Hurricanes Jeanne and Francis caused minor damage to our electric distribution system that serves our 3000 customers.

B. Three-Year Vegetation Management Cycle

The City of Starke has an annual Tree Trimming and Vegetation contract with Gainesville Regional Utilities for 12 weeks of tree trimming. The City of Starke has electric department employees that trim trees yearly as needed.

C. Transmission and Distribution Geographic Information System

The City of Starke currently does not have GIS capability, however we have hard copy maps of our entire electric distribution system to rely on as needed.

D. Wooden Transmission vs. Concrete Transmission Structures

The City of Starke has no Transmission system. The City of Starke receives transmission service through Florida Power and Light.

E. Post-Storm Data Gathering, Data Retention and Forensic Analysis

Our utility office personnel prepare outage reports for every electric outage during normal business hours. After hour outage reports are completed and dispatched by the City of Starke Police dispatcher. These outage forms contain name of caller, address, phone number, cause of outage, time reported. These outage forms are city records and are retained accordingly. During major outages city utility staff meets to analyze the cause and to recommend equipment and or operational changes to avoid similar outages in the future.

F. Audit of Joint Use Pole Attachments Agreements

The City of Starke audits pole attachments on city owned poles annually. The City of Starke electric department staff visually inspect poles and have not experienced any failures with poles due to being overloaded.

G. Six-Year Transmission Inspection Program

The City of Starke does not have any transmission lines or facilities. The City of Starke receives transmission through Florida Power and Light.

H. Collection of Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems

The City of Starke utilizes a work order system in which we can differentiate between overhead and underground outages and repairs.

I. Coordination with Local Governments

The City of Starke Contracts tree trimming on an annual basis with Gainesville Regional Utilities. The City of Starke electric department trims our trees annually to help prevent outages. The City of Starke Police Department, Water and Waste Water plant all have emergency generators to supply power during outages. The City of Starke has staff that help out in our local Bradford County Emergency Management Office during storms and as needed.

J. Collaborative Research Through the Public Utility Research Center (PURC) at the University of Florida

The City of Starke, through its membership in the Florida Municipal Electric Association and its involvement with Public Utility Research Center (PURC) at the University of Florida, participates in PURC activities related to Storm Hardening Research.

City of Starke
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) City of Starke

b) P.O. Box Drawer C, Starke, Florida 32091

c) Contact: Ricky Thompson, Operations Manager
Phone # (904) 964-5027
Fax # (904) 966-0584
Email: Rthompson@cityofstarke.org

2) Number of customers served in calendar year 2006

2,736

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction guidelines, policies, standards, practices, and procedures at the City of Starke comply with the National Electrical Safety Code (ANSI C-2) (NESC). For electric facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electric facilities constructed prior to February 1, 2007, 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 the City of Starke meet 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, relocation of existing facilities or rebuild, assigned by work order on or after January 1, 2007; and 3) targeted critical infrastructure facilities and major highways.

The City of Starke participates in the Public Utility Research Centers (PURC) granular wind research study through the Florida Municipal Electric Association.

c) Flooding and Storm Surges

Flooding and Storm Surges are not applicable, The City of Starke is an inland community with the nearest coastline being 60 plus miles away.

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

Every new electrical construction and replacement distribution facilities located in the City of Starke are constructed along Highway/Road Right of Ways or on easy accessible easements. All Residential Sub-Divisions electrical construction is constructed on the front Right of Way. We do not allow rear lot line construction.

e) Attachments by Others

We are studying this issue in 2007 to determine pole loading ratings by others.

4. Facility Inspections

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

City of Starke Distribution poles are visually inspected on an annual basis by City of Starke Electric Department staff. The City of Starke is currently upgrading our distribution voltage (50% of our load) and our contractor will be inspecting and changing out poles as needed.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

All 3,389 poles were inspected in 2006.

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

In the 2006 pole inspection a total of 62 poles or 1.8 % of poles inspected were found to be bad.

21 poles had wood decay below or at ground level, 41 poles were decayed at the top of the pole due to splitting, and animal contact.

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.

19- (.56 % poles failing inspection) Class 2, 30 ft. wood poles were replaced in 2006

14- (.41 % poles failing inspection) Class 2, 35 ft. wood poles were replaced in 2006

12- (.35 % poles failing inspection) Class 2, 40 ft. wood poles were replaced in 2006

10- (.29 % poles failing inspection) Class 2, 45 ft. wood poles were replaced in 2006

7- (.21 % poles failing inspection) Class 7, 25 ft wood poles were replaced in 2006

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.

The City of Starke has an annual Tree Trimming and Vegetation contract with Gainesville Regional Utilities to provide 12 weeks of annual tree trimming. The City of Starke has electric department employees that trim trees yearly as needed. We trim 33 % of our distribution system annually.

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

The City of Starke trims distribution lines throughout the year as needed and when applicable removes dead or decayed trees. Trees that are not on our right of way and present a concern or safety issue are addressed with the property owner. The City of Starke will trim 33% of our electric distribution system in the year 2007.

6. Storm Hardening Research

The City of Starke 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

City of Tallahassee
Your Own Utilities℠

602 Jackson Bluff Road, Tallahassee, Florida 32304, (850) 891-4YOU (4968), talgov.com

February 27, 2007

Tim Devlin
Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

RECEIVED FLORIDA PUBLIC SERVICE COMMISSION
07 MAR -1 AM 10: 05
DIVISION OF ECONOMIC REGULATION

Dear Mr. Devlin,

Please find enclosed the Storm Hardening Report for the City of Tallahassee – Electric Utility. If you have any questions please let us know at 850-891-5633.

Sincerely,

Kevin G. Wailes
General Manager – Electric Utility

Cc: Gary Oberschlake
Betty Armstrong

System Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2006

From the City of Tallahassee Electric Utility February 23, 2007

1) **Introduction**

   a) City of Tallahassee Electric Utility

   b) 2602 Jackson Bluff Road, Tallahassee, Florida 32304-4408

   c) Contact:

Kevin G. Wailes, General Manager Electric Utility
Office Phone # (850) 891-5532
Fax # (850) 891-5162
WailesK@talgov.com
or
Gary A. Oberschlake
Manager Electric T&D
Phone Number (850) 891-5003
Fax# (850) 891-5033
oberschg@talgov.com
or
Brian D. Fisher
Manager Power Engineering
Phone Number (850) 891-5034
Fax# (850) 891- 5162
FisherB@talgov.com

2) **Number of customers served in calendar year 2006** – 110,537 customers

3) **Standards of Construction**

a) National Electric Safety Code Compliance

The City of Tallahassee Electric Utility (City) has adopted the National Electric Safety Code as the standard for electric transmission and distribution system design and therefore designs electric transmission and distribution facilities to the latest edition of the National Electric Safety Code. During the calendar year 2006 the City designed new facilities according to the 2002 Edition of the NESC. All distribution engineering standards, guidelines, policies, practices and procedures are in accordance with this Code. The City has examples of pole loading in our construction standards detailing an easily manipulated process by which our design staff determines the loads for the City's poles. (See Exhibits 1, 2, and 3) The edition of the NESC in effect at the time of the facility's initial construction will govern electric distribution facilities constructed on or after February 1, 2007.

Exhibit 1

TABLE I

FORCE ON CONDUCTORS
DUE TO 9 LB. PER SQ. FT. WIND
(with Grade C Overload Factor)

CONDUCTOR	FORCE IN POUNDS PER FOOT
#4 AAAC BARE	.413
#1/0 AAAC BARE	.607
#1/0 AAAC COV.	1.173
#4/0 AAAC BARE	.989
#4/0 AAAC COV.	1.396
#556 AAAC BARE	1.418
#556 AAAC COV.	1.868
#4TPX	.971
#1/0 TPX	1.591
#4/0 TPX	2.066
#1/0 QPX	1.601
#4/0 QPX	2.066

TABLE II

FORCE ON TRANSFORMERS
DUE TO 9LB. PER SQ. FT. WIND
(with Grade C Overload Factor)

SIZE, KVA	FORCE IN POUNDS
5–10	44
25–37.5	75
50	81
75	124
100	134
167	143
250	154
Capacitor Bank, 600 kvAR	152
Regulator Platform	605 (At attachment point)

PROCEDURE:

1. CONDUCTOR LOAD: MULTIPLY THE VALUE IN TABLE I BY THE SUM OF 1/2 THE SPAN LENGTH ON EACH SIDE OF THE POLE.
2. MULTIPLY THE VALUE OBTAINED IN (1) BY THE HEIGHT ABOVE THE GROUND. STEPS (1) AND (2) SHOULD BE DONE FOR EACH CONDUCTOR AT A DIFFERENT HEIGHT. FOR THREE CONDUCTORS ON A CROSSARM, MULTIPLY BY THREE.
3. IF EQUIPMENT IS ON THE POLE, MULTIPLY THE VALUE IN TABLE II BY THE ATTACHMENT HEIGHT.
4. SUM ALL VALUES OBTAINED IN STEPS (2) AND (3). RESULTS WILL BE IN FOOT– POUNDS.
5. COMPARE WITH VALUES ON NEXT PAGE TO DETERMINE APPROXIMATE POLE SIZE.

TITLE: WIND LOAD CALCULATIONS DUE TO POLE SIZE (REVISED 7/20/06)	CONSTRUCTION STANDARDS MANUAL City Electric Tallahassee	
PAGE 21 – 101		

Exhibit 8

WOOD POLE LOADING CAPABILITY

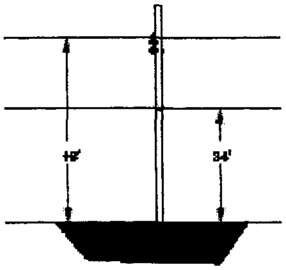
POLE SIZE		ALLOWABLE LOADING IN FOOT-POUNDS AT GROUND LEVEL GRADE C	ALLOWABLE LOADING IN FOOT-POUNDS AT GROUND LEVEL GRADE B
HEIGHT	CLASS		
30	5	31858	22816
35	5	38388	25919
35	4	46140	32940
40	4	53350	38020
40	3	68729	49529
45	3	76578	54678
50	3	83808	59808
55	3	89821	62021
60	3	95202	65203
65	3	99933	67288
70	3	104806	68806
50	2	105616	75277
55	2	114194	80524
60	2	123425	86425
65	2	130740	90410
70	2	137321	93881
70	1	174058	120968

NOTES:

1. THE LOADING VALUES IN THE TABLE ARE NET VALUES, AS THE WIND FORCE ON THE POLE SURFACE HAS BEEN DEDUCTED.
2. SEE NEXT PAGE FOR METHOD OF CALCULATION.
3. LOADING IS BASED ON EXTREME WIND FACTORED AGAINST THE POLE ITSELF WITH NO OVERLOAD FACTOR.

	CONSTRUCTION STANDARDS MANUAL	TITLE:
	City Electric Tallahassee	ALLOWABLE POLE LOADING (REVISED 7/25/06)
		PAGE 21 - 102

Exhibit 3



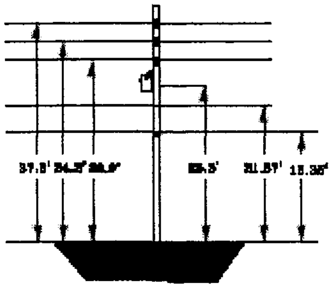
EXAMPLE 1: INS311-1B FRAMING, 3 #4/0 AAAC PRIMARY, #4/0 AAAC NEUTRAL, SPAN LENGTH OF 210 FT. ON EACH SIDE 50' POLE REQUIRED, GRADE C. CONSTRUCTION

STEP 1: FROM TABLE 1
#4/0 AAAC PRIMARY – 3x0.929 X 210' = 585.27
#4/0 AAAC NEUTRAL – 0.929 X 210' = 195.09
STEP 2:
585.27 X 42' = 24581 FT.- LBS.
195.09 X 34' = 6633 FT.- LBS.

STEP 3: NO EQUIPMENT – 0
STEP 4: 31214 FT.- LBS.
STEP 5: 50'/3 POLE IS ADEQUATE

NOTE: FOR GRADE B CONSTRUCTION, MULTIPLY BY 1.136.

EXAMPLE 2: INS301-3D FRAMING, #1/0 TPX SECONDARY, SPAN LENGTH OF 250' RIGHT AND 210' LEFT. 50KVA TRANSFORMER. 45' POLE REQUIRED.



STEP 1: FROM TABLE 1
#556 AAAC – 1.416 X 230' = 326 LBS.
#1/0 TPX – 1.591 X 230' = 365.93 LBS.

STEP 2:
326 X 37.5 = 12225 FT.- LBS.
326 X 34.2 = 11138 FT.- LBS.
326 X 30.87 = 10063 FT.- LBS.
326 X 21.87 = 7130 FT.- LBS.
366 X 18.35 = 6711 FT.- LBS.

STEP 3: FROM TABLE D
81 X 26.3 = 2131 FT.- LBS.

STEP 4: 49,398 FT-LBS.
STEP 5: 45'/3 POLE IS ADEQUATE

TITLE: WIND LOADING CALCULATION EXAMPLES (REVISED 7/25/06)	CONSTRUCTION STANDARDS MANUAL	
PAGE 81 – 108	City Electric Tallahassee	

b) Extreme Wind Loading Standards

The City's construction standards, policies, guidelines, practices, and procedures are guided by the extreme wind loading standards specified by Figure 250-2(d) of the 2002 edition of the National Electric Safety Code 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. There has not been any catastrophic event to date to indicate that stronger design considerations are necessary on the City's electric system.

The City 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

As the City is not a coastal community subject to flooding and storm surges, these types of standards, practices, guidelines, and procedures do not apply to the City's system.

The City is also participating in the Public Utility Research Center (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

All new distribution facilities are placed within either distribution easements or are within the right of way limits on a road. The City discontinued the practice of rear lot construction many years ago. No distribution easements are allowed away from easily accessed areas for new construction. To the extent that alternatives exist for replacing other distribution facilities in a safe and efficiently accessed area, the City would consider all possibilities before leaving existing situations in less than desirable locations.

e) Attachments by Others

While the City has always maintained adequate vertical clearance for all pole locations, the City has not traditionally calculated joint use loading or required a joint user to provide the loads for their attachments. In July 2006, the City issued a letter requiring this information from all joint users (See exhibits 4 and 5) for all new requests. Subsequent to July 2006, the City has not issued a permit for attaching without reviewing the loading details supplied by the joint user and the existing conditions of the poles in question. All loading is reviewed in compliance with the National Electric Safety Code.

Exhibit 4

City of Tallahassee
Your Own Utilities

May 12, 2006

To: All Joint Users

RE: Required Loading Calculation for New Attachments On COT Poles

Pursuant to the recent Florida Public Service Commission inquiries and subsequent review of structure loadings and utility storm hardening practices, the City of Tallahassee has reviewed our joint use attachment program, with the following result.

Effective June 1, 2006 an enhancement is being made to the Joint Use Attachment Permitting process. All new attachments submitted for permitting will need to include loading calculations for Grade C construction, which must be reported to the City in the form of a ground line bending moment, based upon the National Electric Safety Code conditions, with the exception of railway crossings, which will require Grade B construction.

This requirement will also be required for relocation projects. These projects require a new permit and will need to have load calculations included with the new permitting form.

Please notify anyone in your company who might be affected by this enhancement. If you have concerns, please feel free to contact me at 850-891-5084.

Sincerely,

Laura Osborne DeRouen

Laura Osborne DeRouen
City of Tallahassee Electric
Utility & Right of Way Coordinator

Exhibit 5

City of Tallahassee
Your Own Utilities

June 14, 2006

To: All Joint Users

RE: Clarification for Loading Calculation and Overlashing to existing cables

Effective June 1, 2006 an enhancement was made to the Joint Use Attachment Permitting process for City of Tallahassee. This enhancement was based on the ANSI C2-2002 National Electric Safety Code, Sections 25 and 26, Light Loading District. The calculations to be performed are required for all pole attachments electric or otherwise. Within this Code, the City builds to Grade C construction with the exception of railway crossings, which in every case, is required to be Grade B Construction. In order to insure that the City meets these conditions, all joint users are now required to provide the City with the impact of their attachments to the City's poles on new installations. This impact is to be reported to the City in the form of a ground line bending moment, based upon the calculations mentioned above. Based on the location of your submittal, additional information may be required of existing conditions from other joint users on these same poles before a permit may be authorized. In order to streamline your process (and ours), in most cases, a submittal of load calculations based **on the worst-case condition being permitted should be provided. Careful attention should also be given to the extreme wind-loading requirement, which applies to any attachment that is attached to poles over 60ft. in height.**

The issue of overlashing has also surfaced. As this installation is an additional load on the pole, this will require a permit submittal, which includes the ground line moment of the existing installation and the change in the ground line moment of the proposed installation. **Overlashing will not be viewed as a new attachment requiring payment so your permit form should indicate that there is no change to the number of attachments when performing this type of operation.**

Should an attachment permit be rejected based on the load calculations, the joint user requesting permission to attach may be required to pay to upgrade the pole(s) to a sufficient size or Class in order to accommodate the new installation.
Please notify anyone in your company who might be affected by this enhancement.
Please feel free to contact me at 850-891-5084 with your concerns..

Sincerely,

Laura Osborne DeRouen

Laura Osborne DeRouen
City of Tallahassee Electric

4. Facility Inspections

a) The City's policies, guidelines, practices, and procedures for inspecting transmission and distribution lines, poles, and structures are as follows:

<u>Pole Inspection Treatment Program</u> – Eight Year cycle

- The City's pole/structure inspection and treatment program was initiated several years ago and has been refined through each inspection cycle. The City's program is defined so that every **eight years** a new pole inspection and treatment cycle is initiated to inspect all the distribution and transmission wood poles and structures on the city's system over a three-year period. Also during these inspections, visual inspections are made of the City's concrete and/or steel structures with any deficiencies needing attention reported. The inspection/treatment program includes all of the following; (i) visual inspection for wood poles less than 10 years old, (ii) sound and bore inspection for poles greater than 10 years old, (iii) internal treatment and fumigant treatment as required, (iv) reinforcement/replacement as required, (v) assessment and evaluation of poles to determine whether they meet the applicable N.E.S.C. strength standard and (vi) record keeping of joint use attachments and data for the GIS database. The City has found that this inspection process, used typically throughout the industry, has resulted in high reliability and appropriate maintenance levels at reasonable cost.

- **Transmission Inspection Program – Five Year cycle.** The City performs a climbing and physical inspection of every transmission structure on its system at least every five years. A plan is developed from these inspections to make all of the necessary repairs and/or refurbishments during periods of the year when load conditions permit the scheduling of line outages (typically fall and spring periods unless it is an emergency repair).

Infrared Inspections/Flying Inspections – Transmission and Distribution Facilities

- Infrared Inspections/Flying Inspections of Facilities - the Electric Utility and Tallahassee Police Department have jointly funded a Forward Looking Infrared Radar (FLIR) system that is utilized from the Leon County Sheriff's Office (LCSO) helicopters. In return for our funding the LCSO provides flight time for transmission and distribution inspections. The transmission system is routinely inspected twice per year. Other aerial inspections of different segments of the distribution and transmission system are performed as needed.

Technical Assessments

- Technical Assessments - after a significant electrical service interruption event has impacted the City of Tallahassee service territory and restoration of the City's customer has been completed, staff then initiates its technical and service related reviews:
  - Crews are assigned specific circuits and areas to patrol and inspect to make sure that the system facilities are in normal operating condition.
  - Assessment team personnel, engineering staff and restoration supervisory staff meet to assess, review and evaluate system performance, strength, problem-areas and prioritize issues/items that need to be addressed and/or improved upon.

Documentation/Record Keeping

- The City's Outage Management System (OMS) tracks all transmission and distribution facilities outages and identifies the causes of these facility interruptions. The interfacing of the OMS and Geographic Information System (GIS) allows OMS to track outages allowing the determination of the cause as being overhead or underground..
- GIS contains information concerning the system construction and has the capability for connectivity that will trace from the source point to the end point of service to a specific customer. This aids in assessment of outage causes.

Post Mortem Interruption Reviews

- After every major outage on the COT system, Engineering & Operations Staff conduct a "post mortem" meeting to analyze the cause of the outage, the response to the outage and evaluate any changes or improvements that can be made to the system or the response process. Forensic analysis is utilized on an as-needed basis. COT has been consistently proactive in maintaining and improving the reliability and integrity of its distribution and transmission systems. In addition to our eight-year cycle pole inspection, treatment and replacement program, Infrared Inspection Program, five-year transmission inspection program, we have other ongoing programs such as the following that we perform for reliability purposes:

- Line Clearance and Vegetation Management Program
- Distribution, Transmission, and Substation Engineering Designs
- Distribution System Inspection/ Monitoring/Maintaining
- Geographic Information System (GIS)/Outage Management System (OMS)
- Training/Preparation
- Emergency Operations & Disaster Recovery Planning

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

- **Transmission Poles:**
  - Wood Poles/Structures in-service – 2,823
  - Number treated and inspected during FY2005 and FY2006 - 1,694 (60%)
  - Number to be treated and inspected FY2007 – 1,129

- **Distribution Poles**:
  - Wood Poles/Structures in-service – 46,537
  - Number treated and inspected during FY2005 and FY2006 - 43,280 (93%)
  - Number to be treated and inspected FY2007 – 3257

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

- **Transmission Poles**:
  - Rejected poles to be replaced – 6 (0.4% of transmission poles inspected)
    - A rejected pole is one found to be deteriorated below the required minimum circumference as defined in the standard industry table for inspection and treated poles specified by the City. Rejected poles typically have weakened due to wood decay, insect, or mechanical/structural damage and age.
    - These poles will be replaced with spun concrete poles.

- **Distribution Poles**:
  - Rejected poles to be replaced – 254 (0.6% of distribution poles inspected)
    - Eighty percent – 203 of the 254 rejected poles were replaced in FY2005 and FY2006 and the remainder will be replaced in FY2007.
    - A rejected pole is one found to be deteriorated below the required minimum circumference as defined in the standard industry table for inspection and treated poles specified by the City. Rejected poles typically have weakened due to wood decay, insect, or mechanical/structural damage and age.
    - The replaced poles are evaluated and assessed to ensure the appropriate class pole used to meet the City's applicable Construction Standards.

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.

Replaced poles -260 poles (0.6% of all poles inspected)

- All 158 rejected poles sizes from 25' 7 through 35' 5 replaced with 35' poles – 158 poles (62% of all the rejected poles). All the poles being replaced are evaluated and assessed to ensure the appropriate class pole used to meet the City's applicable Construction Standards

- Remaining 102 poles (39% of all the rejected poles):

Pole	Number	Percent of all pole inspected
40'-3	35	0.08 %
40'-4	27	0.06 %
40 –5	3	0.01 %
45'- 0	1	0.00 %
45'-2	1	0.00 %
45'-3	12	0.04 %
45'-4	3	0.01 %
50'-2	1	0.01 %
50'-3	8	0.02 %
55'-3	2	0.01 %
60'-1	1	0.00 %
60'-2	1	0.01 %
60'-3	1	0.00 %
70'-2	2	0.01 %
75'-2	2	0.01 %
80'-2	2	0.01 %

  - All poles determined to be in need or replacement are evaluated and assessed to ensure the appropriate class pole is used to meet the City's applicable Construction Standards

Re-enforcement of Poles – 129 poles (0.3% of all poles inspected)

- 129 various size poles 40'3 and larger were re-enforced with a C-truss to extend their useful serviceability. At this time we do not have a breakdown of the re-enforced poles by size and class.

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.

- COT's design standards exceed the National Electric Safety Code requirements for horizontal clearances to all transmission lines. This typically dictates easement widths that provide for larger clear zones from trees and other structures. COT Line Clearance and Vegetation Management Program maintains an eighteen-month trimming cycle of all overhead distribution lines targeting at least four to six feet of line clearance and the removal of hazard trees pursuant to the City Commission's established guidelines. The same eighteen-month cycle is utilized for the transmission lines but the target clearance distance is fifteen to twenty feet. COT's vegetation management program also utilizes directional trimming, tree growth regulators and the removal/replacement of invasive trees with "power line friendly" trees.

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

- **Transmission** – All transmission Rights of Way and/or easements will be mowed this fiscal year and will be mowed annually for the foreseeable future. Those lines that pass through residential areas will be mowed 3-4 times during the growing season in order to reduce customer complaints regarding "overgrown ROWs". The lines running through rural areas were managed with the use of a Jaraff mechanical trimmer in 2006. Our plan is to prune in FY2009 again utilizing some type Jaraff mechanical trimmer or equivalent. The Jaraff crew skips over locations where the lines pass near or through residential areas because of the appearance of the trees after being mechanically pruned. Those locations are pruned with the use of aerial lifts so that proper pruning cuts can be made leaving a more aesthetically pleasing appearance. However, whether mechanical or by hand, target clearance is twenty feet from the conductors. A broad-spectrum herbicide is applied to the base of all poles, steel structures, guy wires, and cross fences to eliminate the growth of underbrush and vines around the facilities.

- **Distribution** – Vegetation around approximately 650 miles of overhead distribution lines will be managed this fiscal year. This represents 2/3 of the total 1,000 overhead line miles on the system that has vegetation exposure. This is based on an eighteen-month trim cycle of which we have maintained since 1997 pursuant to City Policy. A target clearance of 4-6 feet based on ANSI A-300 standards is obtained each cycle. All line clearance maintenance work is performed by our contractor under a Firm Price contract, which requires that the entire overhead distribution system shall be completed within the 18 month trim cycle. In addition to pruning, all appropriate trees that have the potential to grow into the established clear zone of the lines will be treated with a Tree Growth Regulator. The entire overhead distribution system has been treated twice since 1997 and the treatment continues.

6. Storm Hardening Research

COT Electric Utility 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.

City of Vero Beach
System Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

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 2006

33,067

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, 2007, the 2007 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, 2007.

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; and 3) targeted critical infrastructure facilities and major thoroughfares. Plans are being made to make any changes necessary based on the 2007 NESC.

The City of Vero Beach 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 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 Florida Municipal Electric 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, pole loading capacity, and engineering standards and procedures for attachments by others to the utility's electric transmission and distribution poles. The 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, practices, and procedures for inspecting transmission and distribution lines, poles, and structures.

- The City of Vero Beach has 55 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.

The overhead distribution system is made up of approximately 6,000 poles that are inspected once every 5 years. Plans are to inspect 1,000 to 1,250 poles per year. Just over half (3,100) of the poles are owned by BellSouth with the City of Vero Beach owning the rest. 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. 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 2006.

- The transmission system was inspected 5 times in 2006 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 accurate records were not kept. As of December 31, 2006, a little over 8% (500 poles) of the distribution system had been inspected and repairs made. The entire system will be inspected and repairs made in 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 2006.
- Approximately 500 distribution poles were inspected with 12 failures or 2.4 %. Ten of the failures were from ground rot and 2 from woodpecker holes.

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 2006.
- The distribution system had one 60-2 wood pole fail because of woodpecker holes. It was replaced with another 60-2 wood pole. One 50-3 wood pole was replaced because of woodpecker holes and was replaced with a 50-IV steel pole. Four 50-3 wood poles failed from ground line rot and were replaced with 50-3 wood poles. Five 40-4 wood poles failed from ground line rot. One was replaced with a 40-IIIA concrete pole and the other four were replaced with 40-4 wood poles. One 30-5 wood service pole failed from ground line rot and was replaced with a 30-5 wood pole. 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, after hurricanes Frances and Jeanne, 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. Prior to Hurricane Frances the City used two 3-man crews year round with a third crew for 6 to 8 months during storm season. With the new trimming policy the City is able to maintain proper clearance with two 3-man crews. Prior to the new policy the dispatch center received 6 to 10 calls a day to trim trees, now the calls are down to about 3 to 5 per week.

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 50 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 50 blocks every three years. If this goal is not met a temporary tree crew is added to catch up.

6. Storm Hardening Research

The City of Vero Beach 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.

City of Wauchula
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) City of Wauchula

b) 126 S. 7th Avenue, Wauchula, FL 33873

c) Contact information: Ray McClellan, Superintendent of Public Works, 863-773-3535, ray@cityofwauchula.com

2) Number of customers served in calendar year 2006
The count is 2,750 customers.

3) Standards of Construction

a) National Electric Safety Code Compliance

The City of Wauchula does not have standards, policies, guidelines, practices, and procedures. The City will be reviewing such standards policies, guidelines, practices and procedures for development in 2007.

b) Extreme Wind Loading Standards

The City of Wauchula will be reviewing the NESC standards for extreme wind loading in 2007.

c) Flooding and Storm Surges

The City of Wauchula is approximately 60 miles from the Atlantic and Gulf coasts, and therefore is not affected by flooding or storm surges.

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

The City of Wauchula has the ability for crews to be able to access distribution facilities on or behind customer's property if work needs to be done.

e) Attachments by Others

The City of Wauchula does not have any standards in place at this time but will examine this issue in 2007.

4. Facility Inspections

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

The City of Wauchula will be developing these policies in 2007.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

One –third was completed in 2006 (594) and we will continue to do one-third every year.

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

The City of Wauchula has less than 1% failure (1800 poles). Failure is due poles rotting at the ground line.

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.

None have been completed and the scheduled has yet to be determined. However, all will be replaced in 2007.

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.

The City of Wauchula's policy on vegetation management consists of tree trimming and herbicide for vines on a schedule of one-third per year.

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

The City of Wauchula's policy on vegetation management consists of tree trimming and herbicide for vines on a schedule of one-third per year.

6. Storm Hardening Research

The City of Wauchula 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

City of Williston
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2006

1) **Introduction**

   a) City of Williston

   b) P. O. Drawer 160, Williston. FL 32696

   c) Contact information: James Arrington, Utilities Director

      Phone: (352) 528-3060 Fax: (352) 528-0390
      Email: butlerjr@ci.williston.fl.us

2) **Number of customers served in calendar year 2006**
   1491

3) **Standards of Construction**

   a) National Electric Safety Code Compliance

      Construction standards, policies, guidelines, practices, and procedures at the City of Williston comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, 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 the City of Williston, meet 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 January 1, 2007; and 3) targeted critical infrastructure facilities and major thoroughfares.

The City of Williston 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

NOT Applicable, The City of Williston is an inland Community located 45 miles from a coastal area.

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

All New Electrical Construction and Replacement Distribution Facilities within the City of Williston are constructed along Road Right of Ways or on accessible easements. No construction is allowed on rear lot lines within Residential Subdivisions.

e) Attachments by Others

We are examining this issue in 2007 to establish pole loading rates by others.

4. Facility Inspections

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

All distribution poles are inspected by a visual and sound inspection on a Three (3) year cycle by City of Williston Personnel. In 2007 the City of Williston will consider the bore method along with the visual and sound method for future inspections.

b) Number and percentage of distribution inspections planned and completed for 2006.

33% of the City of Williston's 1100 poles were inspected in 2006.

c) Number and percentage of distribution poles failing inspection and the reason for the failure.

In 2006 33% of the 1100 poles were inspected and it was found that 3.5% or 10 poles were defective.

10 poles were found to have wood decay at or below ground level.

d) Number and percentage of 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.

2.5% or 7 poles that failed inspection – Class 5 - 45' wood poles replaced in 2007

1% or 3 poles that failed inspection – Class 5 – 30' wood poles replaced in 2007.

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.

The City of Williston trims all distribution lines on a three (3) year cycle and attention is given to problem trees during the same cycle. Any problem tree not located within the right-of-way is addressed with the property owner and a solution is agreed upon before corrective actions are taken.

c) Quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities.

One third (1/3) of the Distribution facilities are trimmed every year to obtain a three year cycle.

6. Storm Hardening Research

The City of Williston 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 e-mail to bmoline@publicpower.com.

City of Winter Park Electric Utility
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

a) Name of city/utility
City of Winter Park Electric Utility

b) Address, street, city, zip
401 Park Avenue South
Winter Park, FL 32789-4386

c) Contact information: Name, title, phone, fax, email
Donald E. McBride, Director
Phone - 407-599-3491
Fax – 407-599-3417
dmcbride@cityofwinterpark.org

2) Number of customers served in calendar year 2006

14,030

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at the City of Winter Park Electric Utility comply with the National Electrical Safety Code (ANSI C-2) [NESC]. The utility is in the process of adopting the 2007 NESC. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction.

b) Extreme Wind Loading Standards
The City of Winter Park Electric Utility is considering adopting 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.

The City of Winter Park Electric Utility 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
The City of Winter Park Electric Utility is not a coastal community and storm surges are not a concern. Neither was flooding a significant problem during the hurricanes of 2004.

The City of Winter Park Electric Utility 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 the City of Winter Park Electric Utility provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance.

e) Attachments by Others

The City of Winter Park Electric Utility was established on June 1, 2005, when the City purchased the electric distribution system from Progress Energy. The Utility is currently negotiating joint use agreements with a number of attachers to our poles and facilities.

4. Facility Inspections

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

The City of Winter Park Electric Utility was established on June 1, 2005, when the City purchased the electric distribution system from Progress Energy. The Utility is working to establish a pole inspection program based on the results of an initial inspection described in paragraph 4 (b)... The policy, when adopted, will meet or exceed the Florida Public Services Commission rules or guidelines for pole inspections and strength testing.

b) Number and percentage of transmission and distribution inspections planned and completed for 2006.

In 2006, the City of Winter Park Electric Utility completed a visual inspection, GIS mapping and pole inventory for 100% of the approximately 6,500 distribution poles. The Utility has no transmission poles.

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

As a result of the inspection described above, 9 poles (less than 1%) were identified as requiring immediate replacement due to wood rot.

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.

# of Poles	Size of Pole Removed	Size of Pole Installed	Class
2	35'	35'	5
2	45'	45'	3
1	40'	50'	2
2	35'	45'	3
1	40'	45'	3
1	45'	35'	5
TOTAL NUMBER OF POLES 9			

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.

After the City of Winter Park Electric Utility was established on June 1, 2005, the Utility began a program to establish an overall 3 year trim cycle with shorter cycles in sensitive areas.

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

In 2007, the City of Winter Park will trim one-third of our distribution system as well as trim sensitive areas as needed.]

6. Storm Hardening Research

The City of Winter Park Electric Utility 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.

FECA

Florida Electric Cooperatives Association, Inc.

®

2916 Apalachee Parkway
Tallahassee, Florida 32301
(850) 877-6166
FAX: (850) 656-5485

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DIVISION OF ECONOMIC REGULATION

March 1, 2007

Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Dear Tim:

Please find enclosed Florida Keys Electric Cooperative Association, Inc.'s (FKEC) report submitted pursuant to Rule 25-6.0343, F.A.C. FKEC has included a CD of the report and attachments with the hard copies.

Please call Scott Newberry, CEO of FKEC, if you have any questions regarding the report.

Thank you for your assistance in this matter.

Sincerely,

Michelle Hershel
Director of Regulatory Affairs

Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2006

1) Introduction

a) Florida Keys Electric Cooperative Association, Inc.

b) 91605 Overseas Highway
Tavernier, Florida 22070

c) Scott Newberry
Chief Executive Officer
Phone – (305) 852-2431
Fax – (305) 852-4794
Email – scott.newberry@fkec.com

2) Number of meters served in calendar year 2006

30,985

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at Florida Keys Electric Cooperative Association, Inc., comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility=s initial construction.

b) Extreme Wind Loading Standards

At this time, Florida Keys Electric Association, Inc., facilities are not designed to be guided by the extreme loading standards on a system wide basis. However, Florida Keys Electric Cooperative Association, Inc., is guided by extreme wind loading standard for:

a) New construction

b) Major planned work, including expansion, reconstruction or relocation of existing facilities assigned on or after April 24, 2006.

c) Flooding or Storm Surges

Florida Keys Electric Cooperative Association, Inc., is in the process of evaluating our standards, policies, guidelines, practices and procedures that address the effects of flooding and storm surges on underground facilities and supporting overhead facilities. FKEC is 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 Electric Cooperative Association.

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

Electrical construction standards, policies, practices and procedures at Florida Keys Electric Cooperative Association, Inc., provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Wherever new facilities are placed, all facilities are installed so that FKEC facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. FKEC 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 Florida Keys Electric Cooperative Association, Inc., 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. FKEC will be inspecting these attachments on a five year cycle beginning January 1, 2007.

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.

Florida Keys Electric Cooperative Association Inc. inspects all transmission structures annually by helicopter visual ground partrol. Distribution poles are inspected on a five-year cycle. FKEC will begin a formal distribution pole inspection and treatment program in 2007. Request for proposals have been forwarded to qualified contractors and the bid will be awarded in March, 2007, with inspections to begin in April of 2007. Approximately twenty percent of poles will be inspected annually to maintain a five-year inspection cycle. Attachment A describes FKEC's distribution pole inspection and treatment specifications that will be in effect from 2007 forward.

b) Describe the number and percentage of transmission and distribution inspections planned and completed for 2006.

One hundred percent of FKEC's transmission poles were inspected by helicopter and visually in 2006. Seven hundred eighty two (782) distribution poles were inspected in 2006, which represents approximately 7% of FKEC's distribution poles. This is fewer than FKEC's normal 20% annual inspection goal. Fewer poles than normal were inspected because FKEC was upgrading and formalizing its pole inspection standards and program, as now documented in Attachment A.

c) Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2006 and the reason for the failure.
No transmission poles or structures failed inspection in 2006. All transmission poles or structures are either steel or concrete. Seventy-one (71) distribution poles failed inspection in 2006 and were replaced. This represents approximately 0.667% of the total number of distribution poles FKEC has in service. The primary reason for failure was age.

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 2006, including a description of the remediation taken.

No transmission poles or structures were replaced in 2006. Seventy-one (71) wood distribution poles were replaced in 2006.

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.

Florida Keys Electric Cooperative Association, Inc., inspects and trims, where necessary, the entire transmission system on an annual basis. Substations are inspected annually and trimmed when vegetation encroaches. The remainder of FKEC's distribution system is trimmed on a three-year cycle. Further details of FKEC's vegetation management program are contained in Attachment B.

b) Describe the quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities in 2006.

Annual transmission line right-of-way clearing from mile marker 106 on County Road 905 to the Dade/Monroe County line was conducted in the first quarter of 2006. The remainder of the transmission system was spot-trimmed as necessary. Vegetation surrounding all substations was trimmed prior to June 1, 2006. Approximately 200 circuit miles of distribution lines were trimmed in 2006. Additional distribution spot-trimming was conducted as necessary. A tree growth regulator pilot program was completed in 2006 with positive results. A formal tree growth regulator program has been implemented for 2007.

Attachment A

Florida Keys Electric Cooperative

Distribution Pole Inspection and Treatment Specifications

Table of Contents

1.0 Pole Inspection & Treatment General Requirements

1.1 Scope

This specification is intended as a basis for the inspection of wood and concrete distribution poles, and supplemental treatment of wood poles. All poles will be visually inspected and reported if visual inspection warrants no further action. All Southern Yellow Pine poles that pass visual inspection will be sounded and bored, fully excavated and treated.

1.2 Contract Definitions

Owner: Florida Keys Electric Cooperative

Contractor: The firm that has been awarded a formal contract to perform work described in this specification.

1.3 Contractor Requirements

The Contractor shall furnish all supervision, labor, tools, equipment, report forms and field adaptable handheld data collection devices, transportation and material necessary for the inspection and treatment of Owner's poles as identified. Owner will furnish copies of this specification and necessary maps and/or data showing locations of poles which are the subjects for inspection and/or treatment.

The Contractor must have documented programs/policies conforming to EPA, OSHA, DOT along with all Federal and State pesticide regulations. These policies must include Safety Manual, Pesticide Training Manual and test, standards for safe storage of preservatives on vehicles, operating policies for Contractor's personnel to handle preservatives and procedures for disposing of empty containers used for pole treatment in compliance with label requirements, and OSHA regulations involving personal protective equipment.

The Contractor shall maintain throughout the term of this Agreement, in full force and effect, in amounts reasonably satisfactory to Owner and otherwise in compliance with applicable law, the following insurance coverage's: workers' compensation, commercial general liability (including public liability, personal injury, property damage and contractual liability) and automobile liability, naming Owner as an additional insured. Prior to the commencement of the Work, Contractor shall furnish Owner with a certificate evidencing said coverage's. Notwithstanding any language to the contrary, any insurance coverage provided by Contractor shall not cover Owner for any negligent acts or omissions of Owner, its employees or agents.

1.4 Personnel Qualifications

1.4.1 Each Foreman shall have:

Foreman with less than six (6) months experience, who has completed a training program specifically designed to acquaint them with the procedures for pole inspection and treatment, may be used if all the following conditions are met:

- Weekly quality checks by his/her Contractor Supervisor are performed on the foreman's work for the first four weeks after completion of training. An Owner representative will be contacted regarding the scheduling of these quality checks and is encouraged to be present at the quality checks.
- Contractor quality control report forms are submitted to the Owner by the end of the following week.
- The Owner's representative may request that a quality control inspection be performed at anytime. The Contractor's supervisory personnel will be present at the quality checks.
- Other options as requested by the Owner

The Owner reserves the right to ask for evidence of previous experience and training in the form of letters of reference and test results. Personnel are subject to approval by the Owner before awarding the contract or at any time thereafter. Failure to maintain an adequately trained work force will result in payment being withheld by the Owner in the area being inspected until the quality of the work is verified.

1.4.2 The Supervisor shall have:

- A valid State Pesticide Applicator's License in the appropriate category for treatment of wood poles
- Hold the position of the Contractor's Supervisor in the State.
- Have a minimum of two (2) years field experience in the art of inspecting and treating poles.

1.4.3 The Manager shall have:

- A valid State Pesticide Applicator's License in the appropriate category for treatment of wood poles
- Hold the position of the Contractor's permanent Manager in the State.
- Have at least 4 years field experience in the art of inspecting and treating poles.

1.5 Workmanship and Damages

All work shall be performed in a workmanlike manner and shall be in accordance with this specification and all applicable Federal and State regulations. The Contractor shall exercise care at all times to prevent injury to any persons and to prevent damage to any property during performance of the work.

The Owner considers work not in accordance with this specification or work not in accordance with State or Federal regulations, or unskilled or careless work to be sufficient reason to order the Contractor to stop work. Work will not be allowed to resume until deficiencies are corrected to the reasonable satisfaction of the Owner. Further, the Owner reserves the right to require the Contractor to replace any worker before work is allowed to continue. If not satisfied, the Owner will consider this to be just cause for termination of the contract.

Any damages, real or personal, off the right-of-way arising directly from the performance of the work specified herein, or any damages on the right-of-way as a result of negligent operations, shall be settled promptly by the Contractor.

1.6 Quality Control

1.6.1 Quality Control Inspection

A quality control inspection shall be performed for each time period of not less than one (1) week's work but not to exceed four (4) weeks' previous work. The quality control will be conducted with the Contractor's supervisor and Owners' representative when available. The quality control inspection shall consist of the partial to complete re-inspection of those poles selected by the Owner's representative to compare the results shown on the pole report inspection sheets or data with those existing in the field. The re-inspection shall include, but not be limited to, the re-excavation and re-treatment and re-wrapping of those poles that were inspected below groundline. Contractor's cost of said re-treatments shall be borne by the Contractor. At least three (3) poles will be selected for each quality control. Owner shall be issued a copy of the quality control field report.

1.6.2 Discrepancies and Corrective Action

Any serious errors will be brought to the attention of the Contractor. Corrective action, reasonably satisfactory to the Owner, must be taken by the Contractor to remedy the situation before the next quality control check. The corrective action may include, but not be limited to re-working each pole back to the previous quality control check point at no cost to the Owner.

1.7 Definitions for Inspection and Treatment

Pole inspection and treatment categories are defined as follows:

1.7.1 Reported Pole (Visual Inspection)

A reported pole is a concrete pole or any wood pole which the Owner desires information or any pole that is judged to be unserviceable prior to excavation (per Section 3.2) or any pole which is determined by Contractor, in Contractor's reasonable opinion, to be inaccessible.

This inspection method provides no indication of groundline wood strength except for the possible notation of pole class. If used alone, this inspection provides little information to help the Owner improve its pole plant. It will miss most priority and reject poles.

1.7.2 Sounding and Boring

Poles shall be sounded with a hammer from either groundline or above groundline as applicable, to as high as an inspector can reach in order to locate exterior decay or interior pockets of decay.

Inspector shall bore pole at least once to detect interior decay. A shell thickness indicator shall be used to detect the existence and extent of any interior decay. If it is present, pole shall be bored a sufficient number of times to determine location and extent of decay. Bored holes shall be plugged with tight-fitting treated wood dowels.

1.7.3 Externally Treated Pole

A groundline treated pole is any pole designated by the Owner which, upon inspection, is found to be a candidate for external preservative treatment, provided enough sound wood remains.

Treatment shall consist of the treatment specified in Section 5.2 below.

1.7.4 Rejected Poles

The Owner is responsible for determining when a pole shall be deemed rejected. A rejected pole is any pole designated by the Owner which, upon inspection, is found deteriorated below the required minimum as indicated on the circumference table supplied or approved by the Owner. Poles may also be classified as visual or sound and bore rejects according to Section 3.2.

1.7.5 Externally Treated Reject Pole

An externally treated reject pole is defined as a rejected pole that, after inspection, meets criteria for pole restoration. A pole found to be restorable will be groundline treated. The inspector will make a notation on the pole report form as to whether a pole can or cannot be restored. If the pole top or pole hardware has defects, this will be noted in the remarks column on the pole report form.

1.7.6 Internal Treatment

Contractor's E.P.A. registered insecticide and preservative (Section 5.4) solution is applied internally under 40 PSI minimum pressure through a set of multiple borings to any insect cavities/voids and/or internal decay voids that constitute a size of 1/2" or larger.

1.7.7 Fumigant Treatment

Application of E.P.A. registered fumigant containing 97% Methylisothiocyanate or 32.7% Sodium methyldithiocarbamate to poles according to section 5.3.

1.7.8 Priority Pole

A pole that is in need of immediate attention (restoration or replacement); usually has average shell of one inch for distribution and two inches for transmission or less, or less than one-third of its original circumference. The location of priority poles will be reported to the Owner's representative daily.

2.0 General Precautions and Requirements for Preservative Applications

2.1 General Restrictions and Requirements

All preservatives shall be handled and applied in accordance with the product label, and in a manner that will prevent damage to vegetation and property. Only preservatives registered by the Environmental Protection Agency and the appropriate State Department of Agriculture for the intended use of remedial pole treatments will be considered for approval by the Owner.

No preservatives shall be applied by the Contractor where a pole is readily identifiable as (a) located on any school property; or (b) in a vegetable garden, or (c) within ten (10) feet of a stream or standing water body or (d) within fifty (50) feet of a private well.

Any container in which a preservative is stored shall be stored in a securely locked container or tool box or bolted to vehicles on the right-of-way and kept locked when left unattended. Empty preservative containers shall be removed from the right-of-way and kept in a locked compartment until disposal. Disposal of preservatives and their containers shall be in accordance with the product label as well as the rules and regulations of all appropriate Federal and State agencies.

2.2 Pesticide Licensing and Reporting Requirements

The Contractor shall be a certified commercial pesticide application for the preservative application set forth under this Agreement, and each crew shall be supervised by a full time Supervisor who is licensed and certified by the State where the work is performed. The Contractor shall be responsible for the accurate recording and submitting of all pesticide usage forms required by the various pesticide regulatory agencies and for meeting all applicable Federal and State rules and regulations.

The Contractor is required to have in his possession copies of the preservative labels and MSDS for all pesticides being used. Upon request, the MSDS and labels will be shown to anyone desiring this information. Properly completed shipping papers will also be carried on each vehicle which is transporting pesticides.

2.3 Material Handling

Incidental releases of preservative shall be immediately cleaned up in a manner consistent with label requirements, Federal and State regulations, and relevant environmental procedures.

The Contractor shall provide each crew with a recovery kit containing sufficient materials for cleaning up and neutralizing incidental releases of both paste and liquid preservatives. The recovery kit shall consist of, but not be limited to the following materials: absorption material (such as sawdust or oil dry), baking soda or laundry detergent, ammonia (undiluted) and trash bags for storage of waste.

2.4 Proper Equipment

The Contractor shall provide each crew with all required personal protective equipment (PPE) as specified by the label, such as goggles, sleeves, non-permeable gloves and aprons. In addition hard hats and a change of clothing will be provided. All field employees are required to provide and wear work boots.

The Contractor shall provide a truck that has covers and locks adequate to satisfy federal and state DOT regulations in which to store and transport the preservatives.

2.5 Pesticide Training

Each pole inspector or foreman shall be required to pass a pesticide training program which addresses biology of wood destroying insects and fungi, the proper and safe handling, storage, disposal and transport of pesticides, product labels and material safety data sheets, emergency procedures for pesticide spills, etc. The Contractor's Pesticide Training Program is to be in addition to state requirements for applicator licensing.

2.5.1 Hazard Communication and Safety Program:

The Contractor shall provide to its employees a hazard communication program which addresses the purpose of using pesticides, material safety data sheets and product labels, protective safety equipment and clothing and product information. A safety manual and program is to be provided and utilized by the Contractor and its employees.

3.0 Pole Inspection

3.1 Preparation

When work is to be done on private property, the property owner should be notified as to what is being accomplished. Light brush will be removed from around the pole to allow for proper excavation, inspection and/or treatment unless permission for removal is denied by property owner. Denial will be indicated in the remarks column on the pole report. If permission for excavation is denied, the pole will be sounded and bored and fumigant treated, providing the pole is serviceable. Contractor will not inspect or perform work on poles inaccessible by acts of God or by any causes beyond the control of Contractor. Reason for the lack of inspection will be noted in the remarks column of the pole report.

3.2 Above-Ground Inspection (Concrete and Wood Poles)

A visual inspection of all poles shall be made from groundline to the top of the pole. The following visible defects will be noted: concrete poles (large chips, significant cracks, exposed rebar), wood poles (woodpecker holes, split tops, decayed tops), and all poles (broken insulators, rotten/broken crossarms, slack/broken guy wires). If the pole is obviously not suited for continued service due to serious defects, it shall either 1.) Not be tested further and simply be reported and marked on the inspection form as a reported reject or 2.) The pole may be sounded and bored to determine whether or not it is a priority pole and be reported on the inspection form as a sound and bore reject.

3.3 Excavation (Southern Pine)

All Southern Pine poles passing the above ground visual inspection shall be excavated around the entire circumference to a depth of 18" below groundline. (Exceptions include poles in pavement, poles with underground power risers and poles in vegetable gardens. These poles will be Sound and Bore inspected.) Poles which cannot be excavated to the proper depth around the entire circumference for legitimate reasons, such as large rocks, large roots or other obstructions, will have the obstruction and the extent of excavation noted in either the remarks or notes section. The excavation will be approximately 10" from the pole at ground level and 4" from the pole at the 18" depth. For excavation in lawns, sod grass areas or flower gardens, care will be taken to keep surrounding area as clean as possible. The sod around pole shall be carefully cut and neatly stacked. Poles installed on slopes shall be excavated to a minimum depth of 18" on the down slope side and 18" on the high side. Tarpaulins or ground cloths shall be used whenever possible to minimize the possibility of any property damage and to aide in the tracking of excavated holes. (Exceptions should be rare, and would include situations where the slope is too steep or the ground surface too uneven to allow for effective use).

3.4 Sounding (Wood Poles)

Poles shall be sounded from as high as the inspector can reach to the exposed groundline area in order to locate interior pockets of decay. Hammer marks should be visible to indicate that the area was sounded.

3.5 Boring (Wood Poles)

Inspector shall bore pole with a 3/8" bit. Bore hole(s) shall be located at groundline and should be drilled at a 45 degree angle to a depth of the center line of the pole. A shell thickness indicator shall be used to detect the existence and extent of any interior decay.

If heart rot or enclosed decay pockets are evident in a pole, a minimum of four (4) borings will be taken to determine the size and extent of decay. Bored holes shall be plugged with tight-fitting treated wood dowels.

3.6 Chipping (Wood Poles)

All poles that will be externally treated will have all loose and decayed wood removed from 18" below groundline to 6" above groundline. A quality chipping tool will be used for this procedure to obtain a smooth, clean removal of wood. External decay pockets will be shaved or chipped to remove decayed wood from pole. Removed wood shall be removed from the hole and surrounding ground and disposed of properly. Care should be taken not to remove good wood as this will reduce the strength of the pole. The pole will be scraped using a check scraper or wire brush to remove dirt from treatment zone.

4.0 Evaluation of Pole

4.1 Determining Remaining Strength and Reject Criteria

Contractor is to define the data which is collected and explain how the data is processed to evaluate remaining pole strength. Contractor will further explain criteria used to determine whether a pole is serviceable, a reject restorable or a reject non-restorable.

This procedure should include measuring all decay, insect and mechanical damage in the groundline zone. The remaining sound circumference (after removing shell rot) is measured and then entered into the data collection software of the mobile computer. Exposed Pockets, Enclosed Pockets and Mechanical Damage include more precision in reference the orientation from the line of lead. The handheld computing software determines the remaining bending strength by calculating the remaining section modulus and displaying the remaining strength as a percent of the original strength.

It is expected to have the remaining pole strength quantified as a percent of the original pole capacity so that more effective prioritization can be accomplished.

4.2 Pole Loading Estimates

Contractor shall provide pole loading assessments on all poles with third party attachments to determine whether a pole has sufficient strength remaining to adequately support the attached facilities while maintaining applicable code requirements. Contractor shall define the data collected and explain the assessment process.

Reject Criteria Based on a Loading Assessment

Completing a pole loading analysis provides additional information for more accurate determination about serviceability. In many cases, poles will be less than fully loaded. In some of those cases, poles with enough loss of strength to be rejected when full load is assumed can remain safely in service because they still exceed code requirements. The loading analysis may find a small percentage of poles that are overloaded and this will help direct any follow up actions and reporting functions.

4.3 Determining Restoration Candidates

When the initial inspection results in the rejection of a pole, the pole shall be marked for replacement or restoration. The following inspections shall be performed to determine if the pole is restorable.

4.3.1 Sounding the pole

The pole shall be sounded thoroughly concentrating on the zone fifteen inches (15") to 5 feet (5') above groundline.

4.3.2 Borings at 5 feet

A minimum of two 3/8-inch diameter borings shall be made at 5 feet above groundline, to determine the average shell thickness at this level. The first boring shall be made perpendicular to the line of lead. A second boring shall be made opposite (180 degrees) the first boring, whenever possible. Additional borings should be made, as necessary, to determine the average shell thickness. If the average shell thickness at 5 feet above the groundline is four inches, the pole may be considered for restoration. If the average is less than the required four inches, the pole should be checked at 6 feet to determine if the required shell thickness exists at 6 feet. If the average shell thickness at 6 feet above the groundline is four inches, the pole can may be considered for restoration.

4.3.3. Borings at 15 inches

A minimum of two 3/8-inch diameter borings shall be made at 15 inches above groundline, to determine the average shell thickness at this level. The first boring shall be made perpendicular to the line of lead. A second boring shall be made opposite (180 degrees) the first boring, whenever possible. Additional borings shall be made, as necessary. If the average shell thickness, at 15 inches, is two inches or greater, the pole is a candidate for restoration. Poles with less than two inches of average shell, at 15 inches above groundline, may be restored if they have an average shell thickness of two inches or greater at 26 inches.

4.3.4 Special Notation

If it was necessary to go to 26 inches or 6 feet to obtain the required shell thickness, a notation will be made in the pole record.

4.3.5 Plugging Inspection Holes

All inspection holes shall be plugged with 7/16" diameter treated wood dowels.

5.0 Wood Pole Treatment

5.1 General

All excavated poles which are either serviceable or reinforcable candidates shall be treated in accordance with section 5.2. All non excavated poles shall be treated in accordance with fumigant according to section 5.3. (Note reinforcable candidates cannot be treated with MITC-FUME until after the pole has been restored) If internal decay is indicated, an appropriate solution shall be selected and applied (per Section 5.4).

5.2 External Groundline Treatment

All poles which are excavated and serviceable are to be groundline treated with a preservative paste which shall be applied to the pole (a minimum of 1/16" thick) from 18" below groundline to 2" above groundline. Reinforcable candidates will be externally treated. The preservative paste shall be composed of the following ingredients:

Sodium Fluoride	44.4%
Copper Naphthenate*	20.0%
Inert Ingredients**	35.6%
	100.0%

*Equivalent to 2% copper as metal
** Contains petroleum distillates

Liberally treat all exposed pockets and checks using brush or trowel. Where obstructions occur such as fences, curbs, and walls, the preservative shall be applied in excessive amounts next to obstruction to insure complete coverage.

5.2.1 Wrapping of External Treatment

A polyethylene backed kraft paper moisture barrier is to be applied over the wood preservative. The moisture barrier shall cover preservative to a depth of 18" and extend 2" above the top of treatment zone, for a total of 20". It shall be of sufficient length to go around the pole with an overlap of approximately 4" and shall be stapled to the pole at the top and side seams of the barrier. The thickness of the moisture barrier should be a minimum of 4 mils.

Pasture wrap shall also be used in areas of livestock; it will be stapled to top of the moisture barrier to act as an additional protective barrier.

5.3 Fumigant Treatment

Fumigant comprised of 97% Methylisothiocyanate shall be applied when prescribed below:

All poles which cannot be excavated (i.e., poles in concrete, poles with risers, poles with phone drops, etc.), all poles which cannot be 75% excavated due to obstructions (i.e., curbs, pole keys, large roots, fences etc.), and all poles where incipient decay is present.

5.3.1 Application

Pole Circumference in inches	Number of Holes Drilled
30" to 35"	3 holes spaced 120 degrees apart and 6" to 8" higher than the previously bored hole.
36" to 49"	4 holes spaced 90 degrees apart and 6" to 8" higher than the previously bored hole.
50" to 59"	5 holes spaced 70 degrees apart and 6" to 8" higher than the previously bored hole.
60" and larger	6 holes spaced 60 degrees apart and 6" to 8"

higher than the previously bored hole.

5.3.2 Boring

Bore 7/8" slanting holes to a minimum of 10" depth.

5.3.3 Insert Tube

Using impermeable gloves, insert 1 tube into each hole.

5.3.4 Plug Holes

Plug holes using 15/16" diameter plastic or treated wooden plugs.

OR

A fumigant comprised of 32.7% sodium methylditiocarbamate shall be applied when prescribed below:

All poles which cannot be excavated (i.e., poles in concrete, poles with risers, poles with phone drops, etc.), all poles which cannot be 75% excavated due to obstructions (i.e., curbs, pole keys, large roots, fences etc.), and all poles where incipient decay is present.

5.3.1 Application

Pole Circumference in inches	Amount of fumigant applied and Number of Holes Drilled
Less than 40"	1 pint. 4 holes spaced 120 degrees apart and 6" to 8" higher than the previously bored hole.
40" to 50"	1-1/2 pints. 6 holes spaced 60 degrees apart and 6" to 8" higher than the previously bored hole.
Greater than 50"	2 pints. 5 holes spaced 70 degrees apart and 6" to 8" higher than the previously bored hole.

5.3.2 Boring

Bore 7/8" slanting holes to a minimum of 15" depth.

5.3.3 Pour Fumigant

Using impermeable gloves pour 1/4 pint of WoodFume into each hole.

5.3.4 Plug Holes

Plug holes using 15/16" diameter plastic or treated wooden plugs.

5.4 Internal Treatment

Internal treatment will be with one of the following solutions: 1) A solution containing 17.71% copper naphthenate (equivalent to 1.95% copper metal) and 3.6% sodium fluoride or 2) A solution containing 2% copper metal copper naphthenate solution.

Poles containing decay pockets of 1/2" or larger shall be treated by pumping the preservative into the cavity through a series of 3/8" diameter holes. The solution will be applied at a minimum pressure of 40 psi. Beginning with the lowest hole, pump the preservative into the cavity until the material flows out of the next highest hole. This hole is then plugged and additional preservative is pumped into the cavity until the cavity is filled or a maximum of one gallon is used. Sufficient holes will be bored and preservative used to assure coverage of decayed area. All holes will be plugged with a 7/16" treated wood dowels. If wood destroying insects are encountered in the pole, sound the pole to locate top of the insect gallery and drill enough holes to thoroughly treat wood and flood the galleries.

6.0 Restoration of Work Site

6.1 Backfilling

After excavation and/or treatment, all poles will be solidly back-filled. The first half of excavation will be back-filled and tamped completely around the pole by walking on the replaced excavation; the second half back-filled and tamped completely around the pole. The excess earth should be banked up to a maximum of 3" above normal ground level to allow for settling. In grass areas the sod shall be carefully placed around the pole. Rocks or stones should not be laid against the pole except where they serve to key the pole or where no other fill is available. Extreme care should be taken not to tear the moisture barrier while back-filling.

6.2 Clean-up

No debris, loose dirt, etc., is to be left in the pole area. Private property turf, including that between curb and sidewalk, bushes, and plants, and shrubbery are to be replaced with care. If any preservative is released on the ground, it shall be immediately cleaned up. All containers shall be disposed of according to approved environmental practices.

7.0 Pole Marking

7.1 Tagging

All inspected poles shall be marked with a weather proof tag identifying the work performed, Contractor and date. The tagging scheme used by the Contractor must be shown to the Owner representative and approved before it is used.

Tags shall be supplied by the Contractor and placed 5 to 6 feet above groundline on the roadside of the pole, below the utility pole identification marker. If inspecting or treating a pole that has previously been inspected or treated, attach the tag directly below the existing tag(s)

8.0 Data Collection and Deliverable

8.1 Data Collection

Field data shall be collected on a handheld data capture device configured with a viewable landbase to be used for spatial reference of pole locations. The Company may provide pole plant data to pre-populate attributes in the handheld device for the Contractor to validate or correct.

Field data shall be supplied to the Company on a timely basis. The data will be delivered in a geospatial software application that provides information and support for decision making to coordinate lower cost repair, replacement or maintenance activities. The deliverable should include a map view of pole locations along with the ability to query the data and generate reports. The geospatial software application shall also be capable of exporting an Access database for use by the Company. The data shall be supplied by the Contractor to the Company on a CD or other format as agreed upon.

All topics represented in the specifications for inspection and treatment and any conditions of interest noticed during the Visual Inspection shall be provided in the electronically collected data.

8.2 Data Requirements

The Contractor will be required to demonstrate a successful history in completing similar field projects in electronic format. The Contractor will include, in the quoted price, all required hardware, software, setup services, field services, data processing, project management, data deliverables and customer support necessary to fulfill the outlined project requirements.

The Contractor will digitally capture and deliver pole attribute and condition information as part of this project. GPS coordinates and digital images of selected poles may be optional work items for delivery. The Contractor also will place pole locations relative to the specified landbase while in the field. The inspection data will be delivered with the landbase in a geospatial display for viewing, as well as querying the results of the inspections. The Company also requires the capability to create reports of the inspection data and to export the data in an Access database.

The Contractor will provide an option to purchase data collection software and specified configuration services for the Company to perform follow-up inspections of the contractor's work and other applications for field inspections typically performed in-house. The Contractor is not required to offer their specific pole inspection software for sale to the Company.

8.3 Data Specifications

8.3.1 Handheld Electronic Device

The Contractor will deploy to the field using handheld electronic data capture devices pre-populated with:

- The Company or Contractor provided land base to be used as spatial reference.
- The Company may elect, as an option, to provide the Contractor with Company pole location records and attribute data.

8.3.2 The Contractor will use the handheld device to:

- Input or validate pole locations.
- Input or validate pole attribute information.
- Note missing poles as "Not in Field."
- Correct pole location and pole ID errors.
- Capture inspection data.
- Determine the remaining pole bending strength using real-time calculations and deliver both an effective circumference and percent remaining pole strength.
- Add new pole locations and attributes.

8.3.4 Field data collection software will provide the following capabilities:

- Configuration for use on a handheld device.
- Data storage on removable media for back-up in case of hardware failure.

8.3.5 Data Deliveries

Data will be delivered in a geospatial software application that provides the following capabilities:

- Integrated display of pole position on the land base and inspection results.
- Queries of the inspection and maintenance data.
- View and manipulate digital images.
- Report generation.
- User friendly integration with e-mail
- Copy map views to other documents
- Export of data in an Access database format.
- Plotting of map display.
- Data loaders to streamline the installation process of incremental data deliveries.
- Compatibility with Windows NT, Windows 2000, Windows XP or other industry standard Windows operating system.

8.3.6 Software Support

Contractor shall offer support to the Company on all software.

8.3.7 Software Capabilities

Software capabilities must be extendable and scalable by allowing for the following extra cost upgrades:

- Multiple users.
- Network/Server configurations for multiple users.
- Editing of data for record maintenance.
- Data migration to specified target systems.
- Additional data collection applications.

8.3.8 Ownership

The Company shall retain ownership of all data.

9.0 Pole Inspection & Treatment Contractor Information

9.1 Information Required

Documentation of Contractor's policies for conforming to EPA, OSHA and DOT regulations must be made available to the Owner upon request.

Include at least the following information:

- Safety Manual
- Pesticide Training Manual and test used by Contractor
- Standards for safe storage of preservatives on vehicles
- Labels and Material Safety Data Sheets must be supplied for all preservatives to be used
- All operating policies for Contractor's personnel to handle preservatives, clean up spills, and disposing of empty containers used for pole treatment
- OSHA regulations on personal protective equipment

Attachment B
Florida Keys Electric Cooperative
Vegetation Management Program

Purpose: To provide safe and reliable power by managing vegetation from interfering with electric service. Maintain clearances between Transmission and Distribution lines from vegetation located on and along the right-of-way.

Overview: FKEC is comprised of about 796 miles of energized lines. This area is broken down into seven zones. FKEC trims for a three-year cycle depending on species, and a patrol will be performed of the distribution circuits to establish a mid-cycle trim for high growth rate species.

Scope:

- Define the clearances needed for the Transmission and Distribution voltages.
- Practices and approved procedures used to obtain these clearances.
- Work specifications relating to tree care operations as defined in ANSI A300.
- Inspection schedule on anticipated growth of vegetation and any other environmental or operational factor that could impact the integrity of the electrical system.

Clearance Requirements: Florida Keys Electric Cooperative (FKEC) operates there Transmission lines at 138kv and their Distribution at 25kv.

FKEC maintains a clearance of 15' on the Transmission and 10' of clearance on the Distribution.

Our other clearance requirements for FKEC's secondary voltages are, five feet on open wire secondary and three feet on insulated service wire.

Approved Procedures: FKEC practices directional trimming method of the International Society of Arboriculture (ISA), American National Standards Institute (ANSI), and the National Arbor Day Foundation.

FKEC uses such methods as manual clearing, mechanical clearing (brush hog), and herbicide treatments (cut stump applications). Trees growing along power lines can be safely maintained through directional pruning. Trees that pose hazards to power lines because of health status, high rate of growth or location must be removed.

FKEC encourages to plant smart (the right tree in the right place). FKEC utilizes a trade a tree program that replaces problem trees with a more suitable species.

Communication of a vegetation condition that poses an imminent threat that could cause an interruption of service will be reported in the form of a service order and a crew will be assigned to correct the problem.

A Tree Growth Regulator (TGR) pilot project was completed in 2006. The results were positive and a formal TGR program will be initiated in 2007.

Inspection: A yearly patrol either by ground or air will be performed on the entire transmission system to ensure that there are no vegetation issues. In the first stage of each calendar year (prior to hurricane season Jan. – Apr.) the Transmission line starting at mile marker (mm) 106 on the county road 905 all the way to the county line will be trimmed due to permit requirements.

A visual inspection will be preformed on the remaining transmission system to determine what action is needed.

All Substations will also be visually inspected for vegetation concerns and the proper actions will be taken as needed.

Monitoring: FKEC will monitor and inspect all reportable vegetation caused outages during the year. And take action to ensure problem does not occur again.

Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343,F.A.C. Calendar Year 2006

1) Introduction

Escambia River Electric Cooperative is located in Santa Rosa County and serves the Northern parts of Escambia and Santa Rosa Counties. EREC serves approximately 10,173 meters with approximately 1,600 miles of distribution line and no transmission lines or structures. EREC owns all of the distribution, which operates at 12,470 V, and our generation and transmission partner owns all of the transmission and substations that are used to serve our customers.

Contact Information

For additional information contact:
Clay Campbell
GM/CEO
P.O. Box 428
Jay, FL 32565
Phone: 850-675-4521
Email: clay@erec.com

2) Number of meters served in the calendar year 2006

Escambia River Electric Cooperative served 10,173 meters in 2006.

3) Standards of Construction

a. National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at Escambia River Electric Cooperative comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of 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 Escambia River Electric Cooperative are guided by the extreme wind loading standards specified by Figure 250-2(d) of the 2002 edition of the NESC for major planned work, including expansion, rebuild, or relocation of existing facilities, assigned on or after December 10, 2006.

c. Flooding and Storm Surges

Escambia River Electric Cooperative is a non-coastal utility, therefore, storm surge is not an issue.

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

Electrical construction standards, policies, guidelines, practices, and procedures at Escambia River Electric Cooperative provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Wherever new facilities are placed (i.e. front, back or side of property), all facilities are installed so that Escambia River Electric Cooperative's facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. Escambia River Electric Cooperative 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

The pole attachment agreements between Escambia River Electric Cooperative and third-party attachers include language which specifies that the attacher, not the cooperative, has the burden of assessing pole strength and safety, as set forth in the NESC, before they attach to the pole. Escambia River Electric Cooperative performs follow-up audits of attachments to ensure the attachment is properly installed, maintained, and meet NESC requirements for pole attachments.

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.

Escambia River Electric Cooperative inspects each distribution pole on an 8 year cycle using visual, sound and boring techniques in accordance with RUS standards. Additionally, Escambia River Electric Cooperative uses data gathered during outages to proactively identify troubled lines, poles, equipment, and right-of-way. All of the data feeds back to our pole selection process, which provides a method to determine which poles not to purchase.

b. Describe the number and percentage of transmission and distribution inspections planned and completed for 2006.

We planned for 3,740 (12.5%) of distribution poles to be inspected but only 2,666 (8.9%) were inspected for the 2006 year. Escambia River Electric Cooperative does not own any transmission poles.

c. Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2006 and the reason for the failure.

We found 7 (0.3%) of the poles inspected failed due to ground level decay. Escambia River Electric Cooperative does not own any transmission poles.

d. Describe the number and percentage of transmission poles and structures and distribution poles, by type and class of structure, replaced or for which remediation was taken after inspection in 2006, including a description of the remediation taken.

All 7 distribution poles were replaced after pole inspection was completed.

Number	Height	Class	Problem	Pole Treatment
1	30	6	Ground Level Decay	Unrecorded
2	35	6	Ground Level Decay	Unrecorded
3	30	6	Ground Level Decay	Unrecorded
4	40	4	Ground Level Decay	Unrecorded
5	30	6	Ground Level Decay	Unrecorded
6	40	3	Ground Level Decay	Unrecorded
7	30	6	Ground Level Decay	Unrecorded

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.

Escambia River Electric Cooperative uses a 5-year vegetation management cycle for all distribution lines. The primary reason for this is that the right-of-way is cleared 10 feet on both sides of the lines making a total clearance of 20 feet. While the crews are managing vegetation on a line they look for foreseeable future problems and take care of them at that time. If at anytime there is a problem tree or landscaping, Escambia River Electric Cooperative works with the home owner toward trimming, if possible, or removal, if necessary, while providing restitution if necessary for trees or landscaping that is outside the easement or right-of-ways. In all cases our current policy is providing the necessary vegetation management needed to reduce outages due to vegetation.

b. Describe the quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities in 2006.

The PURC research group will be holding a vegetation management conference in March, 2007. Escambia River Electric Cooperative will utilize any useful information that may result from this conference and this will be referenced in our report next year.

Clay Electric Cooperative, Inc.

February 20, 2007

Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Dear Mr. Devlin:

Enclosed is Clay Electric Cooperative, Inc.'s report to the Florida Public Service Commission as required by Rule 25-6.0343, F.A.C. for the calendar year 2006.

Also enclosed is Clay Electric Cooperative, Inc.'s reliability data for the calendar year 2006. This is a voluntary filing Clay agreed to provide using readily available data. As Clay has stated before we do not have sufficient data to calculate MAIFIe therefore this indices is not furnished.

Should you have any questions about these filings please do not hesitate to contact me.

Sincerely,

Herman Dyal
Director of Engineering

HD/ra

Cc: Bill Willingham, FECA

Department of Engineering
Post Office Box 308 Keystone Heights, Florida 32656-0308
FAX (352) 473-1407

Clay Electric Cooperative, Inc.
Report to the Florida Public Service Commission
Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1. Introduction

Utility: Clay Electric Cooperative, Inc.
PO Box 308
Keystone Heights, FL 32656

Contact: Herman Dyal, Director of Engineering
Phone: (352) 473-8000 ext. 8220
Fax: (352) 473-1407
Email: hdyal@clayelectric.com

2. Number of meters served:

Approximately 168,000

3. Standards of Construction:

a.) National Electric Safety Code Compliance

Clay's construction standards, policies, guidelines, practices, and procedures comply with the National Electrical Safety Code (ANSI C-2) [NESC]. Electrical facilities constructed on or after February 1, 2007 will be in compliance with the 2007 NESC. Electrical facilities constructed prior to February 1, 2007 are governed by the edition of the NESC in effect at the time of the facility's initial construction.

b.) Extreme Wind Loading Standards

Clay's construction standards, policies, guidelines, practices, and procedures for transmission facilities are guided by the extreme wind loading standards specified by Figure 250-2(d) of the 2002 edition of the NESC for transmission lines built after adoption of the 2002 NESC. Any transmission lines rebuilt or relocated since adoption of 2002 NESC has also been designed to the extreme wind loading standards.

Clay's construction standards, policies, guidelines, practices, and procedures for distribution facilities are not designed to be guided by the extreme wind loading standards specified by Figure 250-2(d) except as required by rule 250-C. Clay's experiences in the 2004 hurricanes did not indicate a need to go to the extreme wind loading standards. However, Clay is participating in the Public Utility Research Center's (PURC) granular wind research study through the Florida Electric Cooperative Association (FECA). Though Clay intends to continue to self-audit and evaluate our system to determine any immediate needs for system upgrades and hardening in isolated areas, Clay will consider the results of the PURC research before making any final commitments. At this time Clay does not have sufficient evidence or data to support the cost and effort required to increase our design standards to comply with the extreme wind loading.

c.) Flooding and Storm Surges

Clay is a non-coastal utility; therefore, storm surge is not an issue. Clay does experience minor localized flooding on underground and supporting overhead facilities. Clay continuously evaluates these flood prone areas for possible solutions. Clay is participating through the FECA in the PURC studies on the conversion of overhead electric facilities to underground and the effectiveness of underground facilities in preventing flood damage and outages. Clay will consider the results of this study before making final commitments on system hardening for flooding.

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

Clay's practice since the 70s has been to construct our underground and overhead facilities in subdivisions along lot lines adjacent to public/private roadways to facilitate safe and efficient access for installation, operation, and maintenance. In other locations Clay's policies, guidelines, practices, and procedures provide for placement of new and replacement facilities along roadways or areas readily accessible by our crews and vehicles to ensure efficient and safe operation and maintenance.

e.) Attachments by Others:

The pole attachment agreements between Clay and third-party attaches include language which specifies that the attached, not the cooperative, has the burden of assessing pole strength and safety before they attach to the pole. Clay periodically performs follow-up audits of attachments to ensure the attachment is properly installed. Clay performed no audits in 2006 but does have plans to inspect all attachments in 2007 and 2008.

4. Facility Inspections:

<u>Transmission</u>

a.) Clay prior to 2007 was on a ten (10) year ground line pole inspection cycle for all wooden transmission poles. The inspection method used involves the sound and bore technique including excavation at the ground line per RUS guidelines.

In 2006 Clay contracted with Pole Maintenance Company, LLC, to do a complete inspection of all Clay's wooden transmission poles. This involved some 2,281 poles and was done fourth quarter 2006. This inspection not only involves excavation and ground line inspection it also includes a complete visual inspection of pole for other maintenance needs. All discrepancies reported will be fixed by second quarter 2007. A copy of the inspection is included on the attached CD. Going forward Clay will perform this inspection every eight (8) years as previously committed to the Commission.

Clay will continue to perform ground patrol visual inspection of the transmission system every other year. Our last inspection was in late 2005, early 2006. Repairs to problems found during this inspection were repaired by 2nd quarter 2006. A ground patrol is scheduled for 2007. However, we will only be inspecting about 500 concrete poles because the ground line inspection performed by the contractor in fourth quarter 2006 included a visual inspection of all our wooden transmission poles.

Clay will also perform a climbing inspection of every structure on a six year cycle and repairs are made as soon as possible, but no later than the end of the year in which the inspection was performed. Our last climbing inspection was in 2003.

Clay's goal for 2006 was to perform quarterly helicopter inspections. Clay only performed two helicopter inspections in 2006, one in March and another in September. All discrepancies found in these inspections were corrected in 2006. For 2007, Clay will be reevaluating the helicopter inspections. During 2006 our usual helicopter service stopped operating and alternate services were much more costly. That is why we only did two inspections in 2006. We are evaluating reducing the number of helicopter inspections and replacing them with visual ground inspections.

b.) Clay planned to ground line inspect 100% (2,281) wooden transmission poles in 2006 and they completed inspection on 100% (2,281) of Clay's wooden transmission poles.

c.) Clay performed gound line inspection on all of Clay's wooden transmission poles some 2,281 poles. Twenty-one poles were rejected due to ground line decay. Eight poles needed to be replaced and thirteen poles can be reinforced. Clay replaced all 21 poles. This work will be completed by 2nd quarter 2007. This amounted to a reject rate of 0.88%.

d.) Wooden transmission poles replaced in 2006:

Pole Identification	Pole #	Pole Year	Species	Height	Class	Remediation Action
0-NWESCONNETT-OPN2020	20	1974	SP	65	1	Replaced
0-SFARMS23242	242	1948	SP	60	2	Replaced
0-NNEW RIVER-WATER OAK62B	2B	1983	SP	60	1	Replaced
0-NENEW RIVER-WATER OAK643A	43A	1983	SP	60	1	Replaced
0-WASTOR1257	57	1962	SP	55	1	Replaced
0-WATSOR1258	58	1962	SP	55	1	Replaced
0-Guy TP8-KEYSTONE444GS	44GS	1965	SP	40	4	Replaced
0-WTP8-KEYSTONE477A	77A	1965	SP	60	1	Replaced
0-End TapWESCONNETT-OPN2025	25	1974	SP	60	1	Replaced
0-SFARMS23234	234	1948	SP	60	2	Replaced
0-SFARMS23241	241	1948	SP	55	2	Replaced
0-NNEW RIVER-WATER OAK614A	14A	1983	SP	60	1	Replaced
0-NWNEW RIVER-WATER OAK626A	26A	1983	SP	60	1	Replaced
0-NNEW RIVER-WATER OAK637A	37A	1983	SP	65	1	Replaced
0-WHAWTHORNE1129A	29A	1975	SP	65	1	Replaced
0-NTP8-NEW RIVER58B	8B	1965	SP	55	1	Replaced
0-NWTP8-BROOKER213B	13B	1965	SP	55	1	Replaced
0-NNEW RIVER-WATER OAK62B	2B	1988	SP	60	1	Replaced
0-NNEW RIVER-WATER OAK643A	43A	1982	SP	60	1	Replaced
0-NWTP8-BROOKER236A	36A	1965	SP	55	1	Replaced
0-NTP8-KEYSTONE429A	29A	1982	SP	60	1	Replaced

Distribution

a.) Clay prior to 2007 was on a ten year ground line inspection cycle for all wooden distribution poles. The inspection program consists of excavation and sound and bore at the ground line according to RUS guidelines as well as a visual inspection of the of the pole for other maintenance items. This inspection cycle covered all distribution poles regardless of treatment type.

Going forward in 2007 Clay has revised the inspection cycle to eight (8) years. A copy of the revised inspection cycle is included on the attached CD. This revised cycle uses a phased-in approach so the next few years will still have some cycle times of ten (10) years while Clay compresses the inspection cycle. By 2010 and 2011 Clay will be predominantly on an eight (8) year cycle.

b.) Clay's planned and completed distribution pole ground line inspection for 2006:

Pole Inspection Schedule Planned 2006					
Substation	Feeder	Estimated Number of Poles	Scheduled Treat Year	Actual Complete Date	Actual Number of Poles
KEYSTONE	3	1333	2006	08-Feb-06	2066
SANDERSON	1	826	2006	24- Feb-06	1021
SANDERSON	2	1234	2006	31-Mar-06	1516
SANDERSON	3	1954	2006	03-May-06	2437
RIVERVIEW	3	1002	2006	20-June-06	134
RIVERVIEW	4		2006	31-May-06	1782
RIVERVIEW	6		2006	19-June-06	1269
HAWTHORNE	1	365	2006	26-Jun-06	404
HAWTHORNE	2	912	2006	19-Jul-06	1009
HAWTHORNE	3	1089	2006	16-Aug-06	1686
HAWTHORNE	4	650	2006	07-Sep-06	783
Ft. McCoy	1	2943	2006	08-Nov-06	3471
FORT MCCOY	2		2006	28-Dec-06	2648
Total		**14,856**			**20,226**

c. Clay inspected 20,226 poles in 2006. A summary of the inspection showing action taken, including rejects is in the table below. On the attached CD is a complete listing of the inspection for 2006 including reasons for rejection. The inspection rejected 391 poles or 1.9% of poles inspected. All poles rejected have been replaced as of this filing date.

POLE TREATING MONTHLY REPORT										
2006 SUMMARY BY MONTH										
Month	External Treat	Excavated Reject	Reject with External Treat	Visual Report	Sound and Bore	Internal Treat	Wood-Fume	Guy Markers	Ground Wire Repair	TOTAL Number Of Poles
January	1424	33	0	73	19	53	203	17	21	1549
February	1385	38	0	153	15	27	90	70	37	1591
March	1385	32	0	100	7	26	82	18	12	1524
April	1483	85	0	471	9	30	81	52	29	2048
May	1689	68	0	246	7	101	85	73	25	2010
June	1992	81	0	260	9	70	139	39	23	2342
July	1186	23	0	70	7	27	71	8	10	1286
August	1176	11	0	81	13	16	53	8	2	1281
September	1367	12	0	73	18	8	62	20	1	1470
October	1587	5	0	137	14	30	115	26	0	1743
November	1539	2	0	109	18	0	126	29	4	1668
December	1623	1	0	81	9	16	80	4	1	1714
Yearly Totals	17836	391	0	1854	145	404	1187	364	165	20226

d.) On the attached CD the complete inspection report for each rejection is included. All rejections have been replaced as of this filing. Summary grouping by height and class is:

Height	Class	Quantity	Remediation	% Total
25	7	13	Replaced	3.32%
30	5	1	Replaced	0.26%
30	6	85	Replaced	21.74%
30	7	7	Replaced	1.79%
35	4	6	Replaced	1.53%
35	5	2	Replaced	0.51%
35	6	198	Replaced	50.64%
35	7	13	Replaced	3.32%
40	3	1	Replaced	0.26%
40	4	14	Replaced	3.58%
40	5	22	Replaced	5.63%
40	6	19	Replaced	4.86%
45	3	2	Replaced	0.51%
45	4	4	Replaced	1.02%
50	3	2	Replaced	0.51%
55	2	1	Replaced	0.26%
65	3	1	Replaced	0.26%

5. Vegetation Management

Transmission

a.) Clay's vegetation management program for the transmission rights-of-way consists of mowing, herbicide spraying, and systematic recutting. Clay performs all three methods on its entire transmission system. While Clay is doing systematic recutting on our transmission corridor they attempt to remove any danger trees off right-of-way.

Clay's vegetation program has been very effective in keeping Clay's transmission system safe and reliable. During the hurricanes of 2004 Clay sustained no damage to its transmission system from vegetation.

Listed below is Clay's systematic program for mowing, spraying and systematic recutting.

3 Year Mowing Cycle Plan
Transmission Lines

Substation Name	Line Miles	Date Comp	Date Comp	Next Cycle Date
Belair West	3.11		05/04	2007

Black Creek to Lake Asbury	6.10	11/01	08/04	2007
FPC to Arredondo	0.44	06/02	08/04	2007
FPC to Cara	3.67		01/04	2007
FPL to Satsuma	1.08	07/01	09/04	2007
Fruitland to Salt Springs	8.45	11/01	09/04	2007
Green Cove Springs to Fleming Island	14.39	04/01	11/04	2007
New River to TP8	6.87		01/04	2007
New River to Water Oak	6.91		12/03	2007
Old JEA (Wright's Dairy to Old Farms)	5.30	11/01	09/04	2007
OPN to Clay/JEA Tie	1.58	06/01	03/04	2007
Pomona Park to Fruitland	6.35		02/04	2007
TP8 to KH	12.19		05/04	2007
Bland to Tustenuggee	16.10	12/02	09/05	2008
Fort McCoy O.C.B. to Fort McCoy	16.48	05/02	12/05	2008
FPL to Hammond	.10	09/02	06/05	2008
FPL to Maxville	.20	09/02	06/05	2008
FPL to Sanderson	1.04	01/02	12/05	2008
FPL to Tustenuggee	5.78	10/02	09/05	2008
Middleburg to Kingsley Lake	7.60	12/01	10/05	2008
Old JEA (Old Farms Tap to Foxchase)	3.70	11/01	08/05	2008
Old JEA (Old Farms to Old Farms Tap)	1.19	11/01	09/05	2008
RD Tap (S646) to Ridgewood (S645)	2.00	03/02	06/05	2008
TP8 to Brooker	9.10	12/02	09/05	2008
Worthington Springs to Bland	5.17	12/02	09/05	2008
Astor O.C.B. to Astor	7.46	02/03	06/06	2009
Belair West Tap (S624) to Belair West	0.95	07/03	03/06	2009
Black Creek to Doctors Inlet	.45	12/03	08/06	2009
Black Creek to JH Tap	6.31	08/03	03/06	2009
Black Creek to Ridgewood (S646)	4.90	12/03	06/06	2009
Brooker to Worthington Springs	6.71	08/03	06/06	2009
Doctors Inlet to Brickyard	4.59	09/04	09/06	2009
Fleming Island to Brickyard	4.12	08/04	11/06	2009
Fruitland to Georgetown	0.61	07/03	02/06	2009
Haile	2.20	01/03	10/06	2009
Hawthorne O.C.B. to Hawthorne	4.79	06/03	10/06	2009
JH Tap to Belair West Tap	1.79	09/03	03/06	2009
JH Tap to JH	2.78	09/03	03/06	2009
Lake Asbury to Green Cove Springs	10.40	11/04	11/06	2009
OPN to Wesconnett	2.00	09/03	03/06	2009
RD Tap (S646) to BW Tap (S624)	.024	06/04	12/06	2009
Ridgewood (SR 21) to Brickyard	2.61	09/04	11/06	2009
TP8 to Waldo	9.10	05/04	12/06	2009
Wesconnett to Ridgewood Tap (S625)	1.97	06/05	12/06	2009
Black Creek to Middleburg	5.75	Seminole Maintains R/W		

3 Year Herbicide Spraying Cycle Plan
Transmission Lines

Substation Name	Line Miles	Date Comp	Date Comp	Next Cycle Date
Black Creek to Lake Asbury	6.1	07/01	10/04	2007
Doctors Inlet to Brickyard	4.59	07/01	07/04	2007
Fleming Island to Brickyard	4.12	07/01	08/04	2007
FPC to Arredondo	.44	06/04	06/04	2007
FPL to Hammond	.1	02/01	06/04	2007
FPL to Maxville	.2	06/02	06/04	2007
FPL to Satsuma	1.08	09/04	09/04	2007
Fruitland to Georgetown	.61	06/01	08/04	2007
Fruitland to Salt Springs	8.45	06/01	08/04	2007
Green Cove Springs to Fleming Island	14.39	09/01	08/04	2007
JH Tap to Belair West Tap	1.79	09/01	08/04	2007
JH Tap to JH	2.78	08/01	04/04	2007
Lake Asbury to Green Cove Springs	10.4	09/01	08/04	2007
OPN to Clay/JEA Tie	1.58	09/01	04/04	2007
TP8 to Brooker	9.1	10/01	08/04	2007
Wesconnett to Ridgewood Tap (S625)	1.97		08/03	2007
Belair West (S636) to OPN	3.11	06/05	10/04	2008
Belair West Tap (S624) to Belair West	.95	07/05	10/04	2008
Bland to Tustenuggee	16.1	07/02	09/05	2008
Brooker to Worthington Springs	6.71	07/02	08/05	2008
FPL to Tustenuggee	5.78	08/02	09/05	2008
Middleburg to Kingsley Lake	7.6	07/01	10/05	2008
Old JEA (Old Farms Tap to Foxchase)	3.7	09/02	06/05	2008
Old JEA (Old Farms to Old Farms Tap)	1.19	08/02	06/05	2008
Old JEA (Wright's Dairy to Old Farms)	5.3	09/02	08/05	2008
Worthington Springs to Bland	5.17	07/02	09/05	2008
Astor O.C.B. to Astor	7.46	06/03	08/06	2009
Black Creek to Doctors Inlet	0.45	10/03	07/06	2009
Black Creek to JH Tap	6.31	08/03	04/06	2009
Black Creek to Ridgewood (S646)	4.9	10/03	08/06	2009
Fort McCoy O.C.B. to Fort McCoy	16.48	07/02	06/05	2009
FPL to Sanderson	1.04	06/06	06/04	2009
Haile	2.2	01/03	06/06	2009
Hawthorne O.C.B. to Hawthorne	4.79	08/03	06/06	2009
New River to TP8	6.87	10/03	09/06	2009
New River to Water Oak	6.91	09/03	09/06	2009
OPN to Wesconnett	2	09/03	09/06	2009
Pomona Park to Fruitland	6.35	02/03	09/06	2009
RD Tap (S646) to BW Tap (S624)	0.24	10/03	09/06	2009
RD Tap (S646) to Ridgewood (S645)	2	10/03	06/06	2009

Ridgewood (SR 21) to Brickyard	2.61	10/03	06/06	2009
TP8 to KH	12.19	09/03	09/06	2009
TP8 to Waldo	9.1	08/03	09/06	2009
Black Creek to Middleburg	5.75	Seminole Maintains R/W		

Systematic Recutting Cycle Plan
Transmission Lines

Substation Name	Line Miles	Date Comp	Date Comp	Next Cycle Date
Black Creek to JH Tap	6.31	10/02		2007
Black Creek to Ridgewood (S646)	4.90	10/02		2007
Bland to Tustenuggee	16.10	06/02		2007
FPL to Satsuma	1.08	10/02		2007
FPL to Tustenuggee	5.78	01/02		2007
Green Cove Springs to Fleming Island	14.39	06/01		2007
Hawthorne O.C.B. to Hawthorne	4.79	05/02		2007
JH Tap to Belair West Tap	1.79	06/02		2007
JH Tap to JH	2.78	07/02		2007
Worthington Springs to Bland	5.17	03/01		2007
Astor O.C.B. to Astor	7.46	12/03		2008
Belair West Tap (S624) to Belair	0.95	12/03		2008
Black Creek to Doctors Inlet	0.45	12/03		2008
Fruitland to Georgetown	0.61	06/03		2008
Lake Asbury to Green Cove Springs	10.40	07/03		2008
New River to TP8	6.87	02/03		2008
New River to Water Oak	6.91	02/03		2008
Fleming Island to Brickyard	4.12	08/04		2009
FPC to Arredondo	.44	08/04		2009
FPC to Cara	3.67	09/04		2009
FPL to Hammond	0.10	04/04		2009
FPL to Sanderson	1.04	05/04		2009
Fruitland to Salt Springs	8.45	09/04		2009
OPN to Clay/JEA Tie	1.58	06/04		2009
RD Tap (S646) to BW Tap (S624)	0.24	09/04		2009
Rd Tap (S646) to Ridgewood (S624)	2.00	09/04		2009
Ridgewood (SR 21) to Brickyard	2.61	09/04		2009
Wesconnett to Ridgewood Tap (S625)	1.97	11/03		2009
Belair West (S636) to OPN	3.11	12/03	06/05	2010
Black Creek to Middleburg	5.75	12/05		2010
Brooker to Worthington Springs	6.71	05/01	04/06	2010
Fort McCoy O.C.B. to Fort Mcoy	16.48	06/05		2010
FPL to Maxville	0.20	06/05		2010
Haile	2.20	05/01	05/06	2010

Middleburg to Kingsley Lake	7.60	04/06		2010
Old JEA (Old Farms Tap to Foxchase)	3.70	08/06		2010
Old JEA (Old Farms to Old Farms)	1.19	08/06		2010
Old JEA (Wright's Dairy to Old Farms)	5.30	06/05		2010
OPN to Wesconnett	2.00	04/03	10/06	2010
Pomona Park to Fruitland	6.35	02/01	09/04	2010
TP8 to Brooker	9.10	10/05		2010
TP8 to KH	12.19	10/05		2010
TP8 to Waldo	9.10	10/05		2010
Black Creek to Lake Asbury	6.10	02/01	09/06	2011
Doctors Inlet to Brickyard	4.59	06/01	08/06	2011

b.) In 2006 Clay completed the following mowing, spraying and systematic recutting on the transmission system.

2006 Herbicide Spraying
Transmission Lines

Substation Name	Line Miles	Date Comp
Astor O.C.B. to Astor	7.46	08/06
Black Creek to Doctors Inlet	0.45	07/06
Black Creek to JH Tap	6.31	04/06
FPL to Sanderson	1.04	06/06
Haile	2.20	06/06
Hawthorne O.C.B. to Hawthorne	4.79	06/06
New River to TP8	6.87	09/06
New River to Water Oak	6.91	09/06
Pomona Park to Fruitland	6.35	09/06
RD Tap (S646) to BW Tap (S624)	0.24	06/06
RD Tap (S646) to Ridgewood (S645)	2.00	06/06
Ridgewood (SR 21) to Brickyard	2.61	09/06
TP8 to KH	12.19	09/06
TP8 to Waldo	9.10	09/06

2006 Mowing Program
Transmission Lines

Substation Name	Line Miles	Date Comp
Astor O.C.B. to Astor	7.46	06/06
Blair West Tap (S624) to Belair West	0.95	03/06
Black Creek to Doctors Inlet	0.45	08/06
Black Creek to JH Tap	6.31	03/06
Black Creek to Ridgewood (S646)	4.90	06/06
Brooker to Worthington Springs	6.71	06/06
Doctors Inlet to Brickyard	4.59	09/06

Fleming Island to Brickyard	4.12	11/06
Fruitland to Georgetown	0.61	02/06
Haile	2.20	10/06
Hawthorne O.C.B. to Hawthorne	4.79	10/06
JH Tap to Belair West Tap	1.79	03/06
JH Tap to JH	2.78	03/06
Lake Asbury to Green Cove Springs	10.40	11/06
OPN to Wesconnett	2.00	03/06
RD Tap (S646) to BW Tap (S624)	0.24	12/06
Ridgewood (SR 21) to Brickyard	2.61	11/06
TP8 to Waldo	9.10	12/06
Wesconnett to Ridgewood Tap (S625)	1.97	12/06

2006 Recutting Program
Transmission Lines

Substation Name	**Line Miles**	**Date Comp**
Black Creek to Lake Asbury	6.10	09/06
Brooker to Worthington Springs	6.71	04/06
Doctors Inlet to Brickyard	4.59	08/06
Green Cove Springs to Fleming Island	14.39	12/06
Haile	2.20	05/06
Middleburg to Kingsley Lake	7.60	04/06
Old JEA (Old Farms Tap to Foxchase)	3.70	08/06
Old JEA (Old Farms to Old Farms Tap)	1.19	08/06
OPN to Wesconnett	2.00	10/06

Distribution

a.) Clay owns and operates over 8,700 miles of overhead primary distribution lines. All of our primary lines are under our vegetation management program.

Clay's vegetation management program has been developed taking into account the widely different service areas Clay serves. Presently Clay's vegetation management program consists of a three-year cycle (city), a four-year cycle (urban) and a five-year cycle (rural) for all its distribution primary circuits. The average time for the three cycles is 3.9 years. The reason for the difference in cycle times is simply the difference between re-growth speed and trimming clearance. In the city areas Clay often can not get the full 10' – 12' clearance Clay desires, plus these areas often have more water and fertilizers due to residential sprinkling and fertilizing. At the other extreme in rural areas Clay can often get the full 10' – 12' clearance plus much of the trees in these areas get only rain and not fertilizer. Every distribution primary feeder Clay has is assigned to one of these cycles and a schedule is developed to ensure completion of the cycle. On the attached CD is the complete right-of-way systematic recut plan. Annually after a feeder is recut, Clay's arborist evaluates the clearance obtained and the expected re-growth speed to establish the cycle for the next recut. The next recut could be 3, 4, or 5 years. Therefore, each year Clay's arborist evaluates a feeder's cycle and adjusts the cycle as needed to ensure safe and reliable operation of Clay's feeders.

Clay's Vegetation Management Program is a clear cut right-of-way maintenance program combined with mowing and spraying to provide a safe and reliable distribution system. Clay has approximately 25% of its feeder miles under a three-year cycle, 40% under a four-year cycle, and the remaining 35% is under a five-year cycle.

Clay has a Pre-Cycle Vegetation Maintenance Cycle consisting of annual inspections of 25% of the distribution feeders in the last year of their cycle for areas that may have the potential to cause an outage before the next cycle year. If Clay finds areas that need to be trimmed to carry the feeder to the next year these areas will be "hot spot" trimmed.

Clay administers a Dead/Danger Tree Removal Program with annual inspections of distribution circuits from the substation to the first down line recloser. Clay also receives requests from members throughout the year for removal of dangerous trees. All of these are field inspected by Clay and action taken as required.

Before Clay begins recutting a feeder, Clay places a bill insert announcing the beginning of recutting in those accounts affected. A copy of the insert is attached.

Clay also has several publications it produces to educate the public on Clay's right-of-way clearing program. These consist of a Tree Maintenance Notification door hanger as well as a brochure titled Keeping the Lines Clear. These are given to members when ever a member asks or when Clay needs to cut danger trees or vegetation that is not on an easement of Clay's. A copy of each is attached.

Clay also produces a guide titled "Landscape Planning" which describes ways to landscape within or near the right-of-way that would be compatible with the right-of-way but yet still provide a safe and beautiful landscape. A copy of the guide is attached.

Clay also has a systematic mowing and herbicide spraying program of three year cycles each.

Attached is a CD that shows our distribution feeder systematic recut, mowing, and spraying program.

Clay's vegetation management program addresses all areas of vegetation from landscape planting to danger tree removal. Clay has been following this program diligently for many years now. While tree limbs are still one of Clay's largest outage causes, Clay is confident its vegetation management program is an effective way to provide for a safe and reliable distribution system. Clay strongly feels the 3, 4, or 5 year cycle they have developed and follow is a realistic program to implement. Reducing the cycle times in Clay's opinion without regard to clearance and re-growth would not result in a significantly safer or reliable distribution system.

b.) Clay's systematic recut, mowing and spraying program for 2006 is recorded on the attached CD.

W:/Engineering/OSERV/DOC/Report to Florida PSC

Clay Electric Cooperative, Inc.
Outage Data for 2006

1. Table of Outage Events by Cause

Cause Code	Number
Unknown Cause	1510
Tree/Limb-Green	685
Tree/Limb-Dead	614
Animal	428
Defective Equipment	414
Consumer Problem	375
Damaged By Man	362
Bad Transformer	329
Bad R/W	150
Wire Down	93
Car Hit Pole	83
Bad Secondary	70
Bad Primary URD	58
Overloaded Equipment	48
Tree/Limb Sec./Service	23
Consumer Caused	9

2. Tables of Actual and Adjusted Outage Indices

The tables do not include the MAIFIe indice because Clay does not collect momentary data on its over 2,200 down line reclosures.

a.) Adjusted Outage Indices

Adjusted Outage Indices

Category	2006 Adjusted
SAIDI (Minutes)	152.2
CAIDI (Minutes)	62.02
SAIFI (Events)	2.45
L-bar (Minutes/Outage)	91.63
CEM15 (Cust>5 Events)	12191

*adjusted for events defined by FPSC.

b.) Actual Outage Indices

Category	2006 Actual
SAIDI (Minutes)	179.93
CAIDI (Minutes)	57.08
SAIFI (Events)	3.15
L-bar (Minutes/Outage)	100.82
CEM15 (Cust>5 Events)	23326

CHELCO

February 27, 2007

Mr. Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Re: Report for Rule 25-6.0343, F.A.C.

Attached is Choctawhatchee Electric Cooperative, Inc's (CHELCO) report for Rule 25-6.0343, F.A.C. due March 1, 2007. If you have any questions regarding the information provided in this report, please contact me at (850) 892-5069 x – 208.

Sincerely,

Brett A. Shaw
Vice President Engineering and Operations

cc; Michelle Hershel, FECA

HOCTAWHATCHEE ELECTRIC
OOPERATIVE, INC.

ice Box 512
e... ak Springs, Florida 32435

hone 850.892.2111
oll-Free 800.342.0990
ax 850.892.9560
Veb www.chelco.com

A Touchstone Energy Cooperative

Choctawhatchee Electric Cooperative, Inc.
Report to Florida PSC
Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006
Submitted March 1, 2007

1. Introduction
   - CHELCO - Choctawhatchee Electric Coop
   - P.O. Box 512
     1350 West Baldwin Avenue
     DeFuniak Springs, FL 32435
   - Contact:
     Brett Shaw
     Vice President Engineering and Operations
     850-892-5069 Ext. 208
     bshaw@chelco.com

2. Number of Meters Served in 2006: **44032**

3. Standards of Construction
   a) **National Electric Safety Code Compliance** - Construction standards, policies, guidelines, practices, and procedures at CHELCO comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, 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 CHELCO are guided by the extreme wind loading standards specified by Figure 250-2(d) of the 2002 edition of the NESC. This statement applies to new construction and maintenance work orders.

      CHELCO will be evaluating and reviewing findings from the PURC and research efforts on storm hardening. Any cost effective practices implemented from this research will be included in reports for the appropriate year of implementation.
   c) **Flooding and Storm Surges** - Electrical construction standards, policies, guidelines, practices, and procedures at CHELCO addresses the effects of flooding and storm surges on underground distribution facilities and supporting overhead facilities. CHELCO reviews each project on a case by case basis to determine the effects of flooding and storm

surge. We make recommendations to the counties that ultimately approve the developments.

d) **Safe and Efficient Access of New and Replacement Distribution Facilities** - Electrical construction standards, policies, guidelines, practices, and procedures at CHELCO provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. New facilities are placed in front or side of the property and all facilities are installed so that CHELCO's facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. CHELCO 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** - The pole attachment agreements between CHELCO and third-parties attaching to CHELCO facilities, include language which specifies that the attaching party, not the cooperative, has the burden of assessing pole strength and safety before they attach to the pole. These attachments are required to meet all applicable NESC requirements including clearances and wind loading. CHELCO performs follow-up audits of attachments to ensure the attachment is properly installed and maintained. We also inspect and physically count every attachment on a 3 year cycle.

4. Facility Inspections

a) CHELCO inspects new construction of power lines on a monthly basis. Each month work orders are closed and routed to the inspector. At random, work orders are selected which represent all types of construction and an accounting of the total dollars spent. Inspections include poles, conductor, equipment, and any attachments made on the poles for NESC requirements and specifications.

   CHELCO also hires an outside contractor for pole inspections. The inspection process is conducted on an eight year cycle to cover all the poles on our system. Annual inspections range between 5000 and 7500 poles.

b) During 2006, 5604 poles were inspected by our contractor. This represents 100% of the poles scheduled for inspection in 2006. Also in 2006, 314 construction work orders were inspected through the work order inspection process

c) During the 2006 inspection cycle, our contractor identified 90 poles that met the criteria for replacement. This represents 1.6% of those poles inspected.

d) During 2006 all 90 of the distribution poles mentioned above were replaced.

5. Vegetation Management

a) CHELCO's current right of way program is designed on a five year cycle. We cut and mow an average of three to four substations (350 to 450 miles) each year to maintain this cycle. All circuits feeding out of a substation designated to be cut are cut /mowed. The method for cutting is ten feet either side of the primary line from ground to sky. We work to remove any existing problem trees under the primary line(s), this helps to reduce hot-spotting requirements between cycles. CHELCO does not require the cutting of service conductors but only the removal of limbs that are directly touching and/or may cause a problem before the next cutting cycle for that area. Patrols are conducted on an on going basis of all non-scheduled circuits for danger trees that could affect a primary line through our service department, construction crews, right of way contractors, right of way supervisor and calls from consumers.

Costs feasibility studies are being conducted for additional programs such as a two year mowing cycle for all right of ways. This type of program would minimize the required base clearing during the current five year cutting cycle, provide a better access for construction/maintenance/restoration of the primary lines and keep them more aesthetically pleasing to our membership. CHELCO is also investigating other programs and incentives to actively engage our members to be proactive participants in our vegetation management program.

The PURC research group will be conducting a vegetation management conference in March 2007. CHELCO will utilize any useful information that may result from this conference. All new programs implemented from this conference and any other ongoing studies will be referenced in our report next year.

b) In 2006, CHELCO scheduled 490.1 miles of distribution right of way to be cleared. Right of way crews cut/cleared a total of 507.7 miles of distribution right of way in 2006. This completed total includes carry over facilities from 2005.

CENTRAL FLORIDA
ELECTRIC COOPERATIVE, INC.
P.O. Box 9
Chiefland, Florida 32644
Phone (352) 493.2511

February 27, 2007

Mr. Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Report to the FPSC Pursuant to Rule 25-6.0343, F.A.C

Mr. Devlin,

Central Florida Electric Cooperative, Inc. has attached with this letter the report to the Florida Public Service Commission pursuant to Rule 25-6.0340, F.A.C. If there is any questions please contact me at your convenience.

Sincerely,

Benjamin R. Dawson

Benjamin R. Dawson
Director of Engineering

RECEIVED
FLORIDA PUBLIC SERVICE
COMMISSION
07 MAR -2 AM 9:37
DIVISION OF
ECONOMIC REGULATION

Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.

Calendar Year 2006

1) Introduction

a) Central Florida Electric Cooperative, Inc.

b) 1124 N Young Blvd.
Chiefland, Florida 32644

c) Contact information:
Ben Dawson
Director of Engineering
(352) 493-2511 Ext. 228

d) Central Florida Electric Cooperative, Inc., is an electric distribution cooperative in north central Florida, serving approximately 34,950 meters as of year-end, 2006. The Cooperative maintains 4,060 miles of overhead distribution line, 187 miles of underground distribution line, and 12 miles of transmission line. Central Florida Electric Cooperative, Inc. serves consumers in Alachua, Dixie, Gilchrist, and Levy Counties. The Cooperative operates 15 distribution substations, purchasing power at 69 kV from Seminole Electric Cooperative, Inc., a statewide cooperative power supplier.

The Cooperative's service territory, located in the "Big Bend" area of Florida, is flanked by the Gulf of Mexico on the west; Tri-County and Clay ECI's to the north and northeast; and Sumter and Withlacoochee ECI's to the south and southeast. The majority of the area is rural, where small farms, multiple dairies, and timberlands are the predominant land usage. There are several relatively urban areas within the service area, along with some "pockets" of residential development.

The service area is bisected by U.S. Highway 19 & 98, which runs from the northwest to the southeast, and by U.S. Highway 27A, which runs west to east.

2) Number of meters served in calendar year 2006:

34,950 connected meters.

3) Standards of Construction:

a) National Electric Safety Code Compliance:

Construction standards, policies, guidelines, practices, and procedures at Central Florida Electric Cooperative, Inc. comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 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, 2007.

b) Extreme Wind Loading Standards:

The wind standard for the Central Florida Electric Cooperative, Inc. facilities is between 100 mph inland and 130 mph at the coast. At this time, Central Florida Electric Cooperative, Inc. facilities are not designed to be guided by the extreme loading standards on a system wide basis. Central Florida Electric Cooperative, Inc. is participating in the Public Utility Research Center's (PURC) granular wind research study through the Florida Electric Cooperative Association. Though we continue to self-audit and evaluate our system to determine any immediate needs for system upgrades and hardening in isolated areas. At this time we do not have sufficient data to substantiate the effort and cost of making major upgrades to our system. We feel that it is important to wait for the results of this research before making such a commitment.

c) Flooding and Storm Surges:

Central Florida Electric Cooperative, Inc. is in the process of evaluating our standards, policies, guidelines, practices and procedures that address the effects of flooding and storm surges on underground facilities and supporting overhead facilities. Central Florida Electric Cooperative, Inc. is 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 Electric Cooperative Association. We continue to evaluate and address the effects of flooding and storm surge but we feel that it is important to wait for the results of this research.

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

Electrical construction standards, policies, guidelines, practices, and procedures at Central Florida Electric Cooperative, Inc. provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Wherever new facilities are placed (i.e. front or side of property), all facilities are installed so that Central Florida Electric Cooperative, Inc.'s facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. Central Florida Electric Cooperative, Inc. does not install facilities in the rear of property. Central Florida

Electric Cooperative, Inc. 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 the Central Florida Electric Cooperative, Inc. 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. By pole attachment agreement, we ensure attachments to our poles comply with the above before we approve pole attachment permits.

4. Facility Inspections

a) It is the policy of Central Florida Electric Cooperative, Inc. to inspect all of its transmission facilities, above and at the ground level, with its crews on a yearly basis. These inspections are coordinated to be performed as crews become available when higher priority work is complete. All distribution poles are inspected or repaired at the ground line by contractors within a planned 8-year program. Poles are replaced by Central Florida Electric Cooperative, Inc. crews if found deteriorated beyond repair. Above ground line inspection is performed by Central Florida Electric Cooperative, Inc. crews on a daily basis as they do routine work.

b) Central Florida Electric Cooperative, Inc. planned and inspected the Usher to Chiefland #2 transmission tap in 2006. Central Florida Electric Cooperative, Inc. has 40 remaining transmission poles to inspect to complete inspections of all of its transmission poles. This should be completed early in 2007. Central Florida Electric Cooperative, Inc. contracted a ground line inspection and treatment of approximately 11,000 distribution poles in 2006. This was approximately 13 % of all distribution poles in the system. Approximately 11570 poles will be inspected in 2007.

c) Of the 63 transmission structures inspected in 2006, 3-55/1 poles were found to be deteriorated beyond repair. These poles were replaced with 55/1 poles. Another 26 poles were cut at the top to remove deterioration and capped. There were 16 crossarms replaced with standoff of insulators. There were 15-woodpecker holes repaired. Of the approximately 11,000 distribution poles inspected, 18 were found to be deteriorated beyond repair. The size and class are as follows:

Existing	Replacement
5-30/7	5-30/7
2-35/6	2-35/6
6-35/6	6-40/5
2-35/7	2-40/5
1-40/6	1-40/5

1-40/5	1-40/5
1-40/3	1-40/3

There were 93 deteriorated poles replaced in 2006 due to routine work. Information on the size and class is not readily available.

5. Vegetation Management

a) Central Florida Electric Cooperative, Inc. is currently 2 years into a 4-year right-of-way vegetation clearance plan. Trees are trimmed or removed within 10 feet of all main lines, taps, and guys. Dead trees, which could fall on the line from outside of our easements, are downed with owner's permission. Vines are removed from poles, guys and lines. In 2006 541 miles of the approximately 2934 miles of line in the system were cleared.

b) The PURC research group will be holding a vegetation management conference in March 2007. Central Florida Electric Cooperative, Inc. will utilize any useful information that may result from this conference and this will be referenced in our report next year.

Florida Public Service Commission Report
Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

The following information is submitted pursuant to the Florida Public Service Commission rule 25-6.0343, F.A.C. for the calendar year of 2006.

1. **Reporting Utility**

Glades Electric Cooperative, Inc.
P.O. Box 519
1190 U.S. Hwy 27 East
Moore Haven, FL 33471

Submitted by:

Jody Dotson
Power Supply Manager
863-946-6280
863-946-6265
jdotson@gladesec.com

John Eisinger
Engineering Services Manager
863-946-6244
863-946-6265
jeisinger@gladesec.com

2. **Number of meters served in calendar year 2006:** 16,258

3. **Standards of Construction -** Glades Electric Cooperative (GEC) established a Construction Standards Committee in the latter part of 2006 that meets on a monthly basis to evaluate construction and material standards currently in place and to make recommendation on any changes. This committee consists of the Manager of Engineering Services, the Power Supply Manager, Line Superintendents, Purchasing Agent, Supervisor of Staking Engineers, one Lead Lineman, and one Journeyman Lineman.

   a) **National Electric Safety Code Compliance:**

   Construction standards, policies, guidelines, practices, and procedures at Glades Electric Cooperative, Inc. comply with the National Electrical Safety Code (ANSI C-2) [NESC] as set forth by RUS Regulations. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction. RUS regulation is as follows:
   RUS Regulation 7 CFR Ch. XVII (1-1-06 Edition), Subpart E – Electric System Design § 1724.50 Compliance with National Electrical Safety Code (NESC).

The provisions of this section apply to all borrower electric system facilities regardless of the source of financing.
(a) A borrower shall ensure that its electric system, including all electric distribution, transmission, and generating facilities, is designed, constructed, operated, and maintained in accordance with all applicable provisions of the most current and accepted criteria of the National Electrical Safety Code (NESC) and all applicable and current electrical and safety requirements of any State or local governmental entity. Copies of the NESC may be obtained from the Institute of Electrical and Electronic Engineers, Inc., 445 Hoes Lane, Piscataway, NJ 08855. This requirement applies to the borrower's electric system regardless of the source of financing.
(b) Any electrical standard requirements established by RUS are in addition to, and not in substitution for or a modification of, the most current and accepted criteria of the NESC and any applicable electrical or safety requirements of any State or local governmental entity.
(c) Overhead distribution circuits shall be constructed with not less than the Grade C strength requirements as described in Section 26, Strength Requirements, of the NESC when subjected to the loads specified in NESC Section 25, Loadings for Grades B and C. Overhead transmission circuits shall be constructed with not less than the Grade B strength requirements as described in NESC Section 26.

b) Extreme Wind Loading Standards

Construction standards, policies, guidelines, practices, and procedures at Glades Electric Cooperative 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, rebuilds, or relocation of existing facilities assigned on or after the effective date of the 2002 NESC edition.
3. Targeted critical infrastructure facilities and major thoroughfares.

c) Flooding and Storm Surges

Glades Electric Cooperative is a non-coastal utility but recognizes the potential for flooding should a catastrophic failure of the Herbert Hoover dike along the Lake Okeechobee southwestern shoreline occur. GEC is currently in the process of evaluating our standards, policies, guidelines, practices and procedures that address the effects of flooding and storm surges on underground facilities and supporting overhead facilities. GEC is participating in the Public Utility Research Center's (PURC) study on the conversion of overhead electric facilities to underground and the effectiveness of underground facilities in preventing storm damage and outages through the Florida Electric Cooperative Association. We continue to evaluate and address the effects of flooding and storm surge but we feel that it is important to wait for the results of this research to justify the effort and cost of converting overhead to underground.

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

Electrical construction standards, policies, guidelines, practices, and procedures at the Glades Electric Cooperative provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Wherever new facilities are placed (i.e. front, back or side of property), all facilities are installed so that GEC's facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. GEC 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.

The Glades Electric Cooperative Board of Trustees adopted Right of Way Policy 411 on December 19, 1996 as follows:

POLICY NO. 411

RIGHTS-OF-WAY

I. OBJECTIVE:

To establish policy for procurement of rights-of-way by applicable for service and to provide for the clearing, re-clearing, and maintenance of rights-of-way by the Cooperative.

II. CONTENT:

Rights-of-way are required of landowners for the purpose of providing location of and access to electric distribution lines and other necessary appurtenances for construction, operation, and maintenance.

A. Procurement by Applicants

1. Applicants for service may be required to secure to, and for, the Cooperative all necessary and convenient rights-of-way and to pay the costs of securing same.

2. Applicants for service shall also be responsible for initial clearing of rights-of-way necessary for line extensions for provision of service unless the Cooperative determines that it is in the best interests of the Cooperative to provide said initial clearing.

B. Delays

1. Applications for service for an extension to be constructed where right- of-way is not owned by the Cooperative will only be accepted subject to delays incident *to obtaining satisfactory right-of-way, highway and railroad crossing permits, or other permits which may be required.*

2. Satisfactory right-of-way clearance for electric lines to the point of delivery of a new service must be accomplished before the service connection will be made.

C. Clearing, Re-clearing, and Maintenance of Rights-of-Way

1. A minimum 20 foot right-of-way is required. Exceptions from this normal range will be made only by special arrangement in consideration of the Cooperative's requirements and conditions affecting the landowner's property.

2. The Cooperative shall have the rights of ingress and egress from the rights of way at reasonable times and as required. The Cooperative shall have the right to cut, trim, chemically treat with herbicide, trees and shrubbery to the extent necessary to keep them clear of the electric lines and meter bases and to cut all dead, weak, and dangerous trees which may endanger the line by falling.

3. The member shall allow the Cooperative to clear and trim trees which will endanger the lines of the Cooperative and imperil service to that member or other members.

4. The member shall refrain from:

a. Planting trees, shrubs, et cetera, in the Cooperative's right-of-way which may at some time in the future endanger the lines.

b. Placing structures on the right-of-way. If the member does place vegetation or structures within the right-of-way, the Cooperative will not be responsible for damages done to same. Members shall gain the approval of the Cooperative before placing fences on the right-of-way. Members may be required to install gates at locations designated by the Cooperative to ensure that access to Cooperative facilities is not inhibited.

c. Planting trees, shrubs, et cetera, around underground transformers.

5. The Cooperative shall use reasonable care and diligence in the clearing, re-clearing, and maintenance of rights-of-way. The Cooperative shall make reasonable attempt to give notice to the landowners of scheduled or planned clearing and re-clearing and alterations within the existing right-of-way.

III. APPLICABILITY:

This policy applies to all members and applicants for service of the Cooperative.

IV. ***RESPONSIBILITY:***

It shall be the responsibility of the General Manager or his/her designee to carry out the provisions of this policy.

Original Policy Dated: 12-19-96

Revised: ________________

Attest: ________________
Secretary

e) Attachments by Others

The pole attachment agreements between Glades Electric Cooperative and third-party attachers include language which specifies that the attacher, not the cooperative, has the burden of assessing pole strength and safety before they attach to the pole. GEC performs system wide attachment inspections on a two year cycle. It has been a growing concern of GEC that existing pole attachment agreements are weakened by telecommunication/cable television mergers and buyouts. In addition to the terms of pole attachment agreements, Glades Electric Cooperative is currently adopting a new company policy that places the burden of assessing pole strength and safety to all third party attachers. It is the intent of this policy to ensure all third party attachment agreements are uniform in responsibility assignments.

4. Facility Inspections

a) **Glades Electric Cooperative policies, guidelines, practices and procedures for inspections and maintenance -** Glades Electric Cooperative effectively inspects and maintains its transmission and distribution lines, poles, and structures through a number of regulations, procedures, and guidelines. These practices have proven to be invaluable during the storm season of 2004 and 2005. Inspection and maintenance work is completed by utilizing GEC's System Restoration Plan, wood pole inspection cycle as established in RUS bulletin 1730B-121, and GEC's annual Strategic Work Plan. Details of these regulations, procedures, and guidelines are as follows:

i. **Glades Electric Cooperative System Restoration Plan (SRP) -** Glades Electric Cooperative adopted a System Restoration Plan in 1998 to execute effective maintenance and inspection programs on the GEC system. The System Restoration Plan was later developed into procedure during 2005 to ensure that these practices continue. GEC will have completed System Restoration on all its distribution circuits by the end of the 2007 calendar year. System Restoration will continue in 2008 just as it began in 1998. The SRP procedure is as follows:

PROCEDURE BULLETIN NO. 407.2
SYSTEM RESTORATION PLAN

I. OBJECTIVE

To provide a systematic approach for conducting system restoration on the GEC system.

II. CONTENT

A. Scope:

The System Restoration Program (SRP) at Glades Electric Cooperative, Inc. (GEC) is utilized to maintain our Distribution and Transmission Systems as well as Substations. This program includes all elements of system maintenance. The program specifically addresses poles and structures, conductors, grounding, guying and inspection. Additionally the SRP includes testing, maintenance and inspection of substations.

GEC's system is designed to meet or exceed the National Electric Safety Code (NESC).

Safety is our number 1 priority at GEC.

B. Restoration Plan:

The SRP has been developed to ensure that each and every mainline section undergoes system restoration within approximately an 8 year period. Work is divided such that approximately 1/8of the circuits are worked each year. Phase 1 restoration (Mainline) focuses on 3 Ø line sections that are connected directly to the supplying substation. Sections of those circuits that are downstream of three Ø or single Ø line breakers, are considered part of the mainline. Sections of the circuit that are fused, regardless of the number of phases, are generally considered to be taps, and are covered in Phase 2 of the SRP. Any exceptions regarding the sections of circuits included in each phase will be handled on an individual basis.

Upon completion of the Phase 1, Phase 2 commences. In Phase 2, all taps, or line sections, that did not undergo system restoration in Phase 1 are completed. Phase 2 is completed within approximately the same time period as Phase 1.
During system restoration, any inactive services are handled per established procedures.

C. Distribution System Restoration Program:

Each year, distribution circuits, or portions of circuits, are earmarked for the SRP. The project is budgeted, manpower is allocated and schedules are established for timely completion.

The program specifically addresses the following:

Poles/structures:
- *Deterioration*
- *Woodpecker holes*
- *Proper grounding*
- *Groundline inspection*

Guys:
- *Condition*
- *Guy guards*
- *Grounding*
- *Link sticks*
- *Attachments*

Cross Arms:
- *Clearance*
- *Deterioration*
- *Braces*
- *Framing*
- *Bird protection*

Insulators:
- *Damage*
- *Correct voltage*
- *Deterioration/arcing*

Switches/Fused switches:
- *Damage*
- *Deterioration/arcing*
- *Proper operation*
- *Fuse barrel*
- *Correct fuse size*
- *Tagging/numbering*

Surge Arrestors
- *Damage*
- *Deterioration/arcing*
- *Proper grounding*

Transformers:
Leaks
PCB's
Deterioration/rusting
Connections

Capacitors:
Leaks
Deterioration/rusting/bulging cans
Blown fuses
Controller Operation

Right of Way:
Encroachments
Accessibility
Vegetation

Note: Accessibility is addressed annually with major land owners on the system.

Line Breakers (OCB's):
Leaks
Deterioration/rusting
Tagging/numbering

Note: Line breakers are addressed in the Oil Circuit Breaker Change-Out Program. Under this program, each OCR is replaced with a new/rebuilt Oil Circuit Breaker every five (5) years.

Line Regulators:
Leaks
Deterioration/rusting
Grounding
Operation

Note: Line regulators are addressed in the Regulator Maintenance Program. Under this program, each regulator is maintained and tested every four (4) years. These tests are identical to the station regulator program. Additionally, each line regulator is inspected and operationally checked every quarter.

Code Violations:
Any code violations are corrected under the SRP

General Inspection:
During SRP, the selected portions undergoing restoration are given an overall

inspection to ensure that the entire system is built utilizing generally accepted utility practices and that no hazards exist.

If any hazards or code violations are found on any part of the system, they are addressed. GEC has established a procedure for addressing hazards to ensure they are eliminated.

D. Transmission System Program:

The transmission system program addresses all elements of the transmission system, and is similar to the Distribution System Restoration Program.

Aerial Inspection:

Each transmission line is aerially inspected annually. Items that are identified during this inspection are classified into two categories. Category 1 consists of those items that must be addressed prior to the next inspection. These items are recorded on the inspection form and assigned to work crews.
Category 2 items are less critical and are recorded on the inspection form for future reference. Items in this category are given special attention during subsequent inspections and are corrected as required.

The Transmission System Restoration Program addresses the following:

Poles/structures:

- *Deterioration*
- *Ground line inspection*
- *Woodpecker holes*
- *Grounding*
- *Numbering*

Guys:

- *Condition*
- *Guards*
- *Grounding*
- *Attachments*

Cross Arms:

- *Deterioration*
- *Braces*
- *Bird protection*

Insulators:

- *Damage*
- *Deterioration/arcing*

Right of Way:
Encroachments
Accessibility
Vegetation

Code Violations:
Any code violations are corrected under the SRP

General Inspection:
During SRP, the transmission lines are given an overall inspection to ensure that the entire system is built utilizing generally accepted utility practices and that no hazards exist.

If any hazards or code violations are found on any part of the system, they are addressed. GEC has established a procedure for addressing hazards to ensure they are eliminated.

E. Substation Program:

Substations are inspected two (2) times per month. One inspection is a visual inspection of the overall facility; the other inspection includes operational checks of certain equipment. Problems encountered or observed in any of these inspections are budgeted, scheduled and corrected. Problems that are deemed critical are corrected immediately.

The program addresses the following:
Pull-off structures:
Deterioration/rust
Connections
Grounding

Insulators:
Damage
Deterioration/arcing
Grounding
Surge arresters:
Damage
Deterioration/arcing
Grounding

High side switches:
Damage
Deterioration/arcing
Operation

Grounding
Tagging/numbering

Circuit switchers:
Damage
Deterioration/arcing
Operation
Voltage drop-open/close
Grounding
Tagging/numbering

Transformers:
Leaks/PCB
Deterioration/rusting
Connections
Temperature
Oil level
Cooling
Tank pressure
Nitrogen pressure (cylinder)
Grounding

Station breakers:
Leaks
Deterioration/rusting
Connections
Oil level
Grounding
Targets
Tagging/numbering
Emergency trip
Operation
Ammeter readings

Metering devices:
Condition
Accuracy

Station Regulators:
Leaks
Deterioration/rusting
Grounding
Operation
Drag hands

Note: Station regulators are addressed in the Substation Maintenance Program. Under this program, each station regulator is maintained and tested every four (4) years. Additionally, each station regulator is inspected twice each month and operationally checked once every month.

Battery/battery charger:
Electrolyte level
Temperature/voltage/current
Condition

In addition to the above, batteries undergo a quarterly maintenance. The following is addressed during this maintenance:
Temperature
Individual cell voltage/electrolyte level
Bank voltage
Ground integrity
Charger operation (float/equalize)
Visual

Relay panels:
Targets
Condition
Alarms

Additional checks include:
Safety concerns
Fire extinguisher
Air Conditioner
Control building lights
Switch numbers
Switch stick
Grounding
Conduit/cable
Station integrity
Eyewash station
Fence
Rock cover
Vegetation
Signage

Code Violations:
Any code violations are corrected under the SRP
General Inspection:
During SRP, substations are given an overall inspection to ensure that the entire

station is in good condition and that no hazards exist.

F. Substation- Major Maintenance & Testing Program:

This program is performed on each station every four (4) years and includes the following:

Circuit Switcher:
- *Power Factor (Doble) test*
- *Clean & re-torque connections*
- *Operational Check*
- *Voltage drop-open/close*
- *Visual Inspection*

Transformer:
- *Power Factor (Doble) test*
- *Clean & re-torque connections*
- *Turns Ratio Test (TTR)*
- *Dielectric Test Oil*
- *Dissolved Gas Analysis (DGA)**
  - **Performed annually*
- *Current Transformer (CT) test*
- *Visual Inspection*

Surge Arrestors:
- *Power Factor (Doble) test*
- *Clean & re-torque connections*
- *Visual Inspection*

Bus & Bus Insulators:
- *Visual Inspection*

Circuit Breakers:
- *Power Factor (Doble) test*
- *Clean & re-torque connections*
- *Current Transformer (CT) test*
- *Timing test*
- *Contact Resistance test (Ductor)*
- *Dielectric Oil test*

Circuit Breakers:
- *Hi-pot test*
- *Operational check*
- *Visual Inspection*

Regulators:

Power Factor (Doble) test
Clean & re-torque connections
Dielectric Oil test
Operational check
Visual Inspection

Relays:

Check settings
Test
Clean

If any hazards or code violations are found on any part of the system, they are addressed. GEC has established a procedure for addressing hazards to ensure they are eliminated.

III. APPLICABILITY

This procedure applies to all GEC employees involved with the System Restoration Plan.

IV. RESPONSIBILITY

The General Manager shall be responsible for carrying out the provisions of these procedures through sub-delegation to appropriate GEC personnel.

--*End of Procedure*--

ii. **Wood Pole Inspection Cycle** – Glades Electric Cooperative utilizes a ten (10) year sound/bore with excavation inspection cycle for all wood poles on the GEC system. This procedure is in compliance with RUS bulletin 1730B-121 which recommends an eight (8) year cycle but allows a three (3) year deviation as set forth in Section 3.4 of the bulletin. These inspections are done in addition to GEC's System Restoration Plan inspections as outlined in the section above. Inspection details are as follows from the RUS bulletin 1730B-121.

1. **PURPOSE:** The purpose of this guide bulletin is to furnish information and guidance to Rural Utilities Service (RUS) electric borrowers in establishing or sustaining a continuing program of effective, ongoing pole maintenance. Discussed are methods and procedures for inspecting and maintenance of standing poles and for determining the minimum required groundline circumferences for distribution and transmission poles.

2. **GENERAL DISCUSSION OF POLE DECAY:** Decay of a treated pole is usually a gradual deterioration caused by fungi and other low forms of plant life. Damage by insect attack (termites, ants and wood borers) is usually considered jointly with decay because preservative treatment of wood protects against both fungi and insects. In most cases, the decay of creosote and pentachlorophenol treated poles occurs just below the groundline where conditions of moisture, temperature and air are most favorable for growth of fungi. Decay factors affecting pole life are discussed below.

2.1 **Pole Species:** Of the millions of poles installed on RUS borrowers' systems, about 85 percent are deep sapwood southern pines. Untreated, southern pine sapwood is especially vulnerable to attack by wood destroying fungi, termites, and carpenter ants. In the Gulf States, where temperature and moisture are most favorable for fungi growth and environmentally favored by termites and carpenter ants, pole replacement time of an untreated southern pine pole would be 2 to 3 years. In areas of lower rainfall and average lower temperatures, the time to pole failure for untreated pine would increase to 5 to 10 years.

The bulk of the remaining pole population is classified as the western species, comprised of Douglas-fir, western red cedar, lodgepole pine, and ponderosa pine. The northern pine species, red and jack, are used in relatively small amounts.

Adequate preservative treatment (pole conditioning and preservative penetration and retention) provides relatively good protection of pole sapwood and the underlying heartwood. Heartwood of most species varies widely in decay resistance, and is almost impossible to treat with preservatives. Species resistance to decay are classified as follows:

Durable - Western red cedar.

Moderately Durable - Douglas-fir and most of the pines.

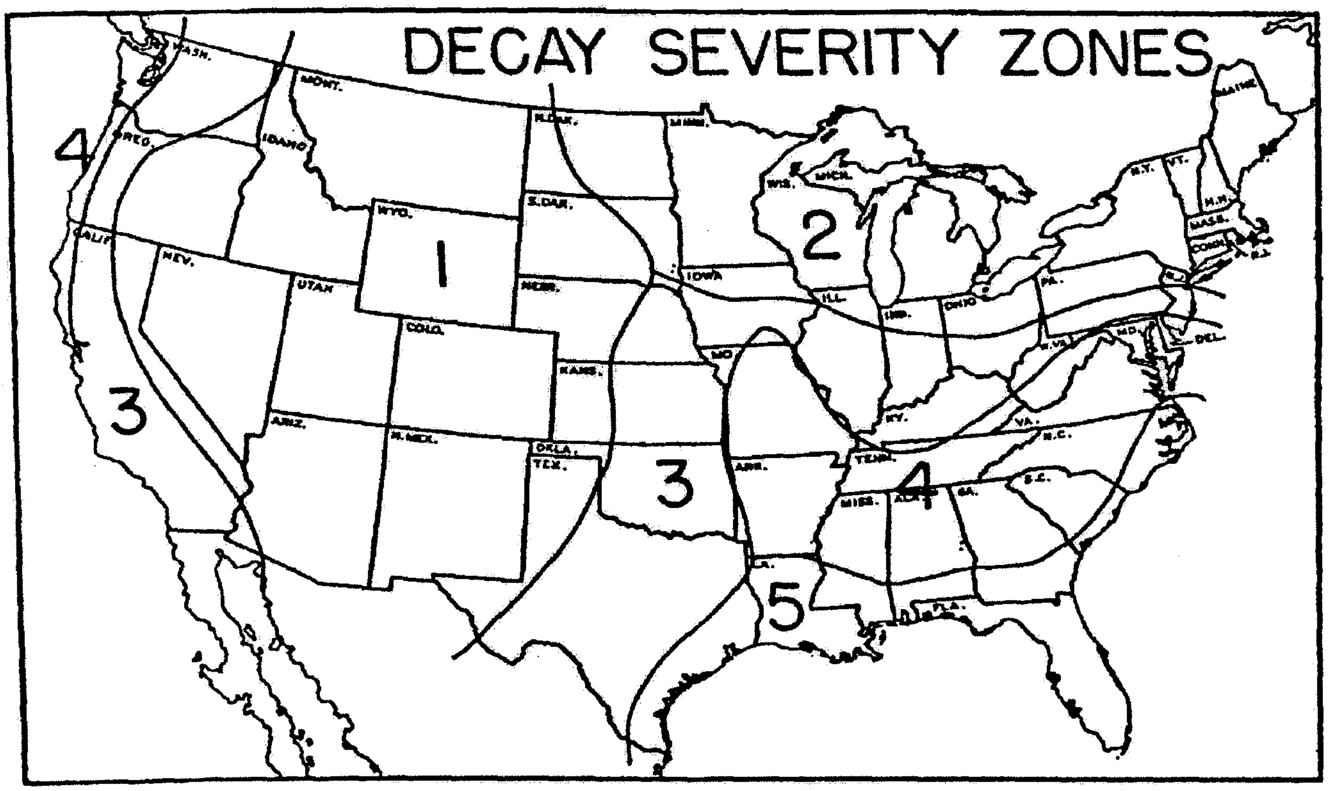
Least Durable - Lodgepole pine. (The use of this species has been limited primarily to the Mountain States areas.)

2.2 Preservative Treatments: There are two general classes of preservative treatment, oilborne (creosote, pentachlorophenol (penta) in petroleum, and Copper Naphthenate) and waterborne (arsenates of copper). Creosote was the only preservative used on rural system poles until 1947, when post-war chemical shortages prompted the introduction of penta and Copper Naphthenate. Both of these preservatives were dissolved in fuel oils from petroleum or mixed with creosote. Today these preservatives are blended with petroleum distillates.

Penta is now the most widely used pole preservative. Where decay problems have occurred, they have not been attributed to any deficiencies of the preservative, but to one or more of the following: (1) loss of solvent carrier due to gravitation and bleeding, (2) poor conditioning of the poles, and (3) loss of dissolved penta to retentions below the effective threshold. To overcome these deficiencies, treatments and quality control have been improved.

Wood preservatives used in waterborne solutions include ammoniacal copper zinc arsenate (ACZA), and chromated copper arsenate (CCA) (types A, B, and C). These preservatives are often employed when cleanliness and paintability of the treated wood are required. Several formulations involving combinations of copper, chromium, and arsenic have shown high resistance to leaching and very good performance in service. Both ACZA and CCA are included in many product specifications for wood building foundations, building poles, utility poles, marine piles, and piles for land and fresh water use. Treatment usually takes place at ambient temperature. During treatment of Douglas-fir, experience has shown that care needs to be taken to ensure that the pole is sterilized.

2.3 Decay Zones: The map on the following page details the five Decay Severity Zones of the United States. These zones were originally based on summer humidity and temperature information and later on a pole performance study conducted by the Rural Electrification Administration (REA). Decay severity ranges from least severe in Zone 1 to most severe in Zone 5. Service life records, individual experience, and/or a planned sample inspection should indicate if the decay hazard for a particular system is typical of the zone in which the system is located.



2.4 Types of Decay: After installation, decay organisms may invade the heartwood of poles through the poorly treated sapwood zones, checks, or woodpecker holes. Internal decay may occur in pole tops cut after treatment and in holes bored in the field where supplementary treatment has been neglected. Insufficient amount of preservative or migration of oil-type preservatives are the principal causes of external decay in southern pine poles. Poles in storage can decay because being stacked horizontally can encourage migration of the oil to the low side, depleting oil and preservative from the top side. For this reason, it is recommended that poles in storage be rolled annually to eliminate depletion of preservative from the top side.

Internal decay may be found in southern pine poles that were not properly conditioned or in which penetration or the amount(retention) of preservative is lacking entirely or insufficient. Internal decay of the western species usually involves the heartwood which has been improperly seasoned prior to treatment.

External decay above ground, more commonly known as "shellrot", occurs frequently in butt-treated western red cedars after 12-15 years of service.

3. PLANNED INSPECTION AND MAINTENANCE PROGRAM: The purpose of a planned inspection program is to reveal and remove danger poles and to identify poles which are in early stages of decay so that corrective action can be taken. The end result of the inspection program is the establishment of a continuing maintenance program for extending the average service life of all poles on the system. The steps in developing a planned pole inspection and maintenance program are outlined below:

3.1 Spot Checking: Spot checking is the initial step in developing a planned pole inspection and maintenance program. Spot checking is a method of sampling representative groups of poles on a system to determine the extent of pole decay and to establish priority candidates for the pole maintenance measures of the program. A general recommendation is to inspect a 1,000-pole sample, made up of continuous pole line groupings of 50 to 100 poles in several areas of the system. The sample should be representative of the poles in place. For instance, all the poles on a line circuit or a map section should be inspected as a unit and not just the poles of a certain age group. The inspection of the sample should be complete, consisting of hammer sounding, boring, and excavation as described in Section 4. Field data should be collected on the sample as to age, supplier, extent of decay, etc.

The data should be analyzed to determine the areas having the most severe decay conditions and to establish priorities for a pole-by-pole inspection of the entire system. It may be desirable to take additional samples on other portions or areas of the system to determine if the severity of decay is significantly different to warrant the establishment of an accelerated pole inspection and maintenance program for that portion of the system. The results of the spot check will aid in scheduling a continuous pole inspection and maintenance program at a rate commensurate with the incidence of decay.

3.2 Scheduling the Inspection and Maintenance Program: If an ongoing maintenance program is not in place, the suggested timing for initial pole-by-pole inspection and subsequent reinspection is shown in Table 3-1. Supplementary treatment is performed where necessary after the initial inspection.

Decay Zone	Initial Inspection	Subsequent Reinspection	Percent of Total Poles Inspected Each Year
1	12 - 15 Yrs	12 Yrs	8.3%
2 & 3	10 - 12 Yrs	10 Yrs	10.0%
4 & 5	8 - 10 Yrs	8 Yrs	12.5%

Table 3-1 - Recommended Pole Inspection Schedules

The vulnerability of poles to decay is generally proportionate to the decay zone in which they are installed. As a general recommendation, the initial pole-by-pole inspection program should be inaugurated at a yearly rate of 10 percent of the poles on the entire system when the average age of the poles reaches 10 years. If a spot check indicates that decay is advanced in 1 percent of the pole sample, the inspection and maintenance program should be accelerated so that a higher percentage of poles are inspected and treated sooner than the figures shown in Table 3-1. If the decay rate is low for a particular decay zone or area of the system, the pole-by-pole inspection can be adjusted accordingly. Historical inspection data indicates that the ratio between the decaying/serviceable poles to reject poles in the 10-15 year age group is about six or more to one. In a 30-year age group, the ratio was down to about one to one or less. In the latter group, the survivors have more than sufficient residual preservative to protect them indefinitely. The poorly treated poles in the 30-year old group usually have already decayed and been replaced.

The greatest economic benefit from regular inspection is in locating the decaying/serviceable group. Treatment of poles in this group can extend pole life, thereby avoiding the cost of emergency replacement. Inspection and proper maintenance can more than pay dividends by extending the serviceable life of the poles. With the costs of replacing poles rising, the economics of extending the service life become more favorable.

3.3 Setting Up the Program: The pole-by-pole inspection and maintenance work may be done by system employees or by contracting with an organization specializing in this type of work. The choice should be made on the basis of the amount of work to be done, availability, depth of trained people on staff, and a comparison of the costs. Developing the necessary skills in the system's own crews may require considerable time and be contingent upon the availability of an experienced inspector to train system employees. Therefore, qualified contract crews may be preferable for this work in many instances. To be considered qualified, the individual should have inspected, at a minimum, 5,000 poles under a qualified inspector and another 5,000 poles independently, but under close supervision. When the inspection program is underway, the work of the person chosen to inspect should be checked every week or two by the system's representative and the inspector's supervisor. The best way to check an inspector's work is to select at random about 10 poles inspected in the last few weeks, and perform a complete reinspection of the 10 poles. The reinspection should include: re-excavating, removal of paper and treatment, testing for hollow sounds, taking a boring, checking soft surface wood, remeasuring the pole, rechecking the calculations, then retreating and backfilling. If any serious first inspection errors are discovered, all work performed by the inspector between these spot checks should be reinspected.

The pole inspection and maintenance program may result in a large number of replacements. If the reject rate is high, the system's crews may not be able to replace rejected poles in a reasonable time because of other work. The temporary addition of skilled personnel for inspection or pole replacement may be required. It is generally necessary to use at least one crew full time to keep up with the pole inspector. An average pole inspector can check 150-200 poles per week or 800 poles per month. It is desirable to have one person responsible for supervision and coordination.

3.4 Reinspections: Information obtained during the first pole-by-pole inspection can serve as the basis for scheduling subsequent inspections. It is recommended that a reinspection be made every 8 to 12 years as mentioned in Paragraph 3.2, according to the decay zone and severity of decay. These recommendations should be modified by personal experience, but the intervals should not be extended by more than 3 years. It is advisable to recheck some poles which have been groundline treated at intervals sooner than recommended in Paragraph 3.2 to assure field applied treatment is working properly and recommended time intervals for reinspection can be trusted.

4. INSPECTION METHODS: There are varying types of inspection, each with a different level of accuracy and cost. Inspection methods with low accuracy require more frequent reinspection than methods which are detailed and more accurate.

4.1 Visual Inspection: Visual inspection is the easiest and lowest cost method for inspecting poles and has the lowest accuracy. Since most decay is underground or internal, this method will not detect the majority of any existing decay. Obvious data can be collected on each specific structure, such as the above ground relative condition of the pole, crossarm, and hardware. However because this method misses the most crucial part of a true pole inspection and maintenance program, this method is not recommended.

4.2 Sound and Bore: This method involves striking a pole with a hammer from groundline to as high as the inspector can reach and detecting voids by a hollow sound. An experienced inspector can tell a great deal about a pole by listening to the sounds and noticing the feel of the hammer. The hammer rebounds more from a solid pole than when hitting a section that has an internal decay pocket. The internal pocket also causes a sound that is dull compared to the crisp sound of a solid pole section.

Some inspection methods require all poles to be bored, while others require boring only when decay is suspected. Boring is usually done with either an incremental borer or power drill with a 3/8" bit. An experienced inspector will notice a change in resistance against the drill when it contacts decayed wood. The shavings or the borings can be examined to determine the condition of the wood, and the borings can be analyzed for penetration and retention.

When voids are discovered a shell thickness indicator can be used to measure the extent of the voids. This information can be used to estimate the reduction in strength caused by the void, as discussed in Section 8.

The effectiveness of the sound and bore method varies with different species. For southern yellow pine poles, which represent a majority of the poles in North America, decay normally is established first on the outside shell below ground. The decay moves inward and then upward to sections above ground. By the time sound and bore inspection methods can detect internal decay pockets above ground, the pole is likely to have extensive deterioration below ground.

The sound and bore method is more effective with Douglas-fir and western red cedar poles. Decay on these poles is likely to begin internally near the groundline, or in the case of Douglas-fir, above the groundline. Therefore, sounding and boring can identify at least some decay at a stage before the groundline section is severely damaged.

All borings should be plugged with a treated wood plug which is properly sized for the respective hole.

Sound and bore method is recommended for the inspection of Douglas-fir and western red cedar poles but should be used in combination with excavation for southern pine poles.

4.3 <u>Excavation</u>: The effectiveness of the sound and bore inspection is greatly increased when excavation is added to the process. Excavation exposes the most susceptible section of the pole for inspection. For southern yellow pine this is particularly true, since decay begins externally and below ground.

Poles should be excavated to a depth of 18 inches in most locations. Deep excavation may be required in dry climates. After excavation the exposed pole surface should be scraped clean to detect early surface decay. The best results can be obtained by using a triangular scraper.

Shell rot and external decay pockets should be removed from the pole using a specially designed chipper tool. Axes or hatchets should never be used for this application. The remaining pole section should be measured to determine if the pole has sufficient strength with the reduced circumference. Tables 2, 3, and 4 on page 19, assist in determining the effective

After complete inspection and application of preservative treatment, the pole is backfilled by tamping every 6 to 8 inches of dirt at a time until the hole is filled. The backfill should mound up around the pole to allow for future settling and drainage away from the pole.

5. **ADDITIONAL INSPECTION TOOLS AND METHODS:** Additional equipment and methods are available which can be incorporated into the inspection process.

5.1 **Shigometer:** The Shigometer uses electrical resistance to detect incipient decay before it can be detected with the human eye or sensed with a drill. During the decay process, negative ions form in the infected wood and cause the electrical resistance to lower. The Shigometer measures electrical resistance and detects incipient decay when there are sudden drops in resistance readings.

The Shigometer employs test leads consisting of a twisted pair of insulated wires with bare metal tips. Both metal tips are slowly inserted into a 7/64" diameter hole bored in the pole. The instrument delivers an electric current pulse through the probes each second. The resistance of the wood tissue is measured between the contact points of the two tips.

By detecting incipient decay, the inspector can decide what further steps of inspection and preservative treatments to take.

5.2 **Poletest:** Poletest is a sonic instrument developed through research funded by the Electric Power Research Institute. During the development of this instrument, spectral analyses of sound waves that traveled through cross sections at various locations were compared to the actual breaking strength of poles. The end result of the research is a field test device that provides a statistically reliable direct readout of the strength of a pole at a specific cross section.

The intent of the Poletest instrument is to provide a strength assessment for individual poles as opposed to assuming pole designated fiber stresses of the American National Standards Institute (ANSI) 05.1. However, Poletest is not a substitute for traditional inspection because it does not detect decay, especially below ground. Measured strength values can be used to assist in determining when pole replacement is necessary.

5.3 **De-K-Tector:** The De-K-Tector and other waveform analysis instruments analyze sound wave patterns as they travel through a cross section of a pole. A calibrated mechanical striker impacts the pole and the sound wave or vibration wave caused by the impact is sensed by an accelerometer on the opposite side of the pole.

impact is sensed by an accelerometer on the opposite side of the pole.

The waveform that is detected by the accelerometer is electronically divided into high and low frequency components. Research has shown high frequencies are absorbed more by decayed wood. Therefore, a reading with a low magnitude, high frequency component would indicate a "questionable" pole because decay absorbed some of the high frequency component before the waveform reaches the opposite side of the pole. That pole would need further inspection by traditional methods.

6. RESULTS OF WOOD POLE INSPECTION

6.1 Inspection Results: Inspection results should be used to update pole plant records, evaluate pole conditions, plan future inspection and maintenance action, and provide information for system map revisions. The inspection process will result in identifying the condition of each individual distribution and transmission pole.

In general ANSI C2, "National Electric Safety Code (NESC)," requires that if structure strength deteriorates to the level of the overload factors required at replacement, the structure shall be replaced or rehabilitated. The inspection results should indicate if a pole is "serviceable" or a "reject".

6.1.1 A pole is considered "serviceable" under any of the following conditions:

a. Large portion of completely sound wood exists.
b. Early stages of decay which have not reduced the pole strength below NESC requirements.
c. Pole condition is as stated in (1) or (2) but a defect in equipment may exist, such as a broken ground or loose guy wire. Equipment defects should be subsequently repaired.

6.1.2 Any pole that does not meet the above conditions should be classified as a "reject". Any of the following conditions are characteristics of rejects:

a. Decay, insect or mechanical damage has reduced pole strength at the groundline below NESC requirements.

b. Severe woodpecker hole damage has weakened the pole such that it is considered below NESC requirements.

c. Hazardous conditions exist above ground, such as split top.

6.1.3 Rejected poles may be classified further depending on the severity of the deterioration and whether they are reinforceable:

a. A "reinforceable reject" is any reject which is suitable for restoration of the groundline bending capacity with an industry acceptable method of reinforcement.

b. A "replacement" candidate is a rejected pole which is not suitable for necessary rehabilitation.

c. A "priority reject" is a reject pole that has such severe decay deterioration, it should be removed as soon as possible.

7. REMEDIAL TREATMENT

7.1 The purpose of remedial treatment of a standing pole is to interrupt the degradation by the addition of chemicals, such as pesticides, insecticides and fungicides, thereby extending the useful life of the structure. Treatment may be external groundline treatment or internal treatment.

7.2 **Regulations and Licensing:** Most states require applicators or job supervisors to obtain a pesticide applicator license. Testing for this license includes a "basic skills test" to show knowledge of the rules and regulations governing pesticides. Some states also give a "category test" which is specific to wood poles and wood preservation.

The uses of pesticides are classified by the United States Environmental Protection Agency (EPA) as either "general" or "restricted". A "general use" pesticide is not likely to harm humans or the environment when used as directed on the label. These pesticides may be purchased and applied without a pesticide applicator license. However, a manufacturer may choose not to make a product available for purchase by the general public.

A "restricted use" pesticide could cause human injury or environmental damage unless it is applied by competent personnel (certified applicators) who have shown their ability to use these pesticides safely and effectively. These wood preservatives can only be purchased and applied by someone who has a pesticide applicator license or whose immediate supervisor has a pesticide applicator license.

7.3 **Groundline Treatment:** All treated poles eventually lose resistance to decay, and groundline treatment provides an economical extension of their useful life. Experience has shown that groundline decay can be postponed almost indefinitely in cases where periodic inspection and maintenance programs are in effect. Groundline treatment is recommended under the following conditions:

a. Whenever a pole is excavated during an inspection, and the pole is sound or decay is not so far advanced that the pole has to be replaced or repaired,

b. Whenever a pole over 5 years old is reset, or

c. Whenever a used pole is installed as a replacement.

The two general types of external preservatives used for groundline treatment are either waterborne or oilborne. The fungitoxic components of waterborne preservatives are water soluble while the oilborne preservatives carry oil soluble fungicides. There are formulations that contain both waterborne and oilborne solutions.

Sodium fluoride is the most commonly used water soluble active ingredient in remedial treatments. Historically, oilborne preservatives have included creosote and pentachlorophenol. However, use of penta in supplemental preservatives appears to be declining. In recent years, Copper Naphthenate has been used in external preservative pastes. Boron has also been introduced as an ingredient in a groundline paste.

Before application of external preservatives, decayed wood should be stripped from the pole and removed from the excavation. The preservative paste or grease is most commonly brushed onto the pole. A polyethylene backed paper is then wrapped around the treatment and stapled to the pole. The paper helps to facilitate the migration of the preservative into the critical outer shell.

7.4 <u>**Internal Treatment**</u>: The three basic types of preservatives used for internal treatment are liquids, fumigants, and solids.

7.4.1 <u>Liquid Internal Preservative</u>: Liquid internal preservatives should be applied by pressurized injection through a series of borings that lead to internal decay pockets or voids. Adequately saturating the pocket and surrounding wood should arrest existing decay or insect attack and prevent further degradation for an extended time.

Liquid internal preservatives contain water soluble or oil soluble active ingredients. Sodium fluoride is the principle active ingredient in the water based formulations. Moisture that is present in the pole will help facilitate diffusion of the active ingredients into the wood beyond a decay pocket.

Oil based internal preservatives most often incorporate Copper Naphthenate as an active ingredient with fuel oil or mineral spirits as the solvents. Since Copper Naphthenate is not soluble in water, it is likely to migrate into the surrounding wood only as far as the oil will travel.

7.4.2 Fumigants: Most of the fumigants in use for wood poles today were originally developed for agricultural purposes. Applying fumigants to soil will effectively sterilize the ground. Due to high levels of microorganisms and chemical activity in soil, the fumigants will degrade fairly rapidly and dissipate so that new crops can be planted in a short time.

These same fumigants do not degrade rapidly in wood and will remain affixed to sound wood cell structure for many years. Fumigants have also been found to migrate longitudinally in wood, several feet away from the point of application. This helps control decay in a large section of the pole. When the vapors migrate into a decay void, however, they may dissipate through associated checks and cracks. This reduces the long term effectiveness and requires more frequent application.

Registered pole fumigants include Sodium N-methyldithiocarbamate (NaMDC), Methylisothiocyanate (MITC), Chloropicrin and Vorlex. Vorlex has not yet been commercially used for utility poles, since it requires a closed application system. Chloropicrin is a very effective wood fumigant. However, the liquid has to be applied from pressurized cylinders, and the applicator has to wear a full-face air respirator.

NaMDC and MITC are the most widely used wood pole fumigants. NaMDC is soluble in water to a maximum amount of 32.7 percent. Treatment holes drilled in a wood pole are filled with the aqueous solution so the appropriate dosage is applied. Recommended dosages vary according to pole size. The NaMDC solution decomposes and generates MITC as the main fungitoxic ingredient. The maximum theoretical amount of resultant MITC at ideal conditions is 18.5 percent by weight. The MITC vapors then migrate up and down the pole to help control decay.

Pure MITC is a solid below 94°F and contains 97 percent active ingredient. Solid MITC sublimes directly into fumigant vapors. Avoiding the liquid stage helps to minimize loss of fumigant during application through checks and cracks. MITC is packaged in vials to facilitate installation. Just before placing the vial into a treatment hole, the cap is removed. As with any fumigant, application holes should be plugged with pressure treated plugs.

7.4.3 Solids: Currently, one solid preservative, a boron rod, is available in North America as a supplemental preservative treatment for wood poles. However, the American Wood Preservers' Association (AWPA) Standards do not include borates for ground contact applications like utility poles. Research and development continues in evaluating formulations of borates with other compounds.

7.5 **Woodpecker Damage:** Woodpecker damage is another problem that requires attention. Many methods have been used in attempts to prevent such damage, but nothing has been entirely successful.

It appears that a woodpecker selects a pole only by chance, and that the first hole invites further attack by other woodpeckers. For these reasons, it is good maintenance practice to seal up the smaller holes. Various materials are available for plugging the holes, and a wire mesh can be used to cover the plugged hole as well as large areas of a pole.

8. DETERMINING THE SERVICEABILITY OF DECAYED POLES

8.1 The decision to treat or replace a decayed pole depends upon the remaining strength or serviceability of the pole. The permissible reduced circumference of a pole is a good measure of serviceability. The following procedure may be used to assist in determining if a pole should be replaced or reinforced.

8.2 **Decay Classifications**. Decay at the groundline should be classified as:

a. General external decay,
b. External pocket,
c. Hollow heart, or
d. Enclosed pocket.

8.3 **Permissible Reduced Circumference Safety Factors**. Wood pole lines are designed using designated fiber strengths and loads multiplied by an overload capacity factor (OCF). For tangent structures the NESC prescribes an OCF "when installed" (new) for Grade B construction (transmission lines) of 4.0 and requires replacement or rehabilitation if the OCF reaches below 2.67. For Grade C construction (usual distribution line grade of construction) the "when installed" OCF is 2.67 and replacement or rehabilitated OCF is 1.33.

Using Tables 1 through 4, on pages 17 and 19 of this bulletin, will give assistance in determining when replacement or rehabilitation is necessary. If the reduced circumference indicates a pole at or below the "at replacement" OCF, the pole should be replaced, splinted, stubbed immediately, or otherwise rehabilitated. Appendix A, of this bulletin, shows the typical pole stubbing detail for distribution poles. Poles are successfully rehabilitated using steel channels, fiberglass reinforcing and epoxy.

8.4 General Procedures For Using Tables 1, 2, 3 and 4:

8.4.1 General External Decay. After removing all decayed wood, measure the circumference above and below the decayed section to determine the original circumference. Then measure the reduced circumference at the decayed section. If the line is built to Grade B construction (transmission), enter the original circumference in the OCF 4.0 column of Table 1. Move right across from the original circumference column of Table 1 until you find the reduced circumference. Once you find the reduced circumference, read the OCF at the top of the column in which your reduced circumference ended. If this OCF meets or exceeds the 2.67 OCF column, replacement is not necessary. However, poles with values close to the minimum should be monitored frequently to ensure that the pole's OCF does not fall below the minimum.

For Grade C construction (usually distribution) enter Table 1 using the original circumference in column 4, OCF 2.67. These poles have to stay above the values of the OCF 1.33 column.

8.4.2 External Pockets. Remove decayed wood and make measurements of the depth and width of the pocket. Measure the pole for the original circumference. Refer to Table 2 to determine the circumference reduction. Enter Table 1 with the original circumference and the reduced circumference to determine the current OCF.

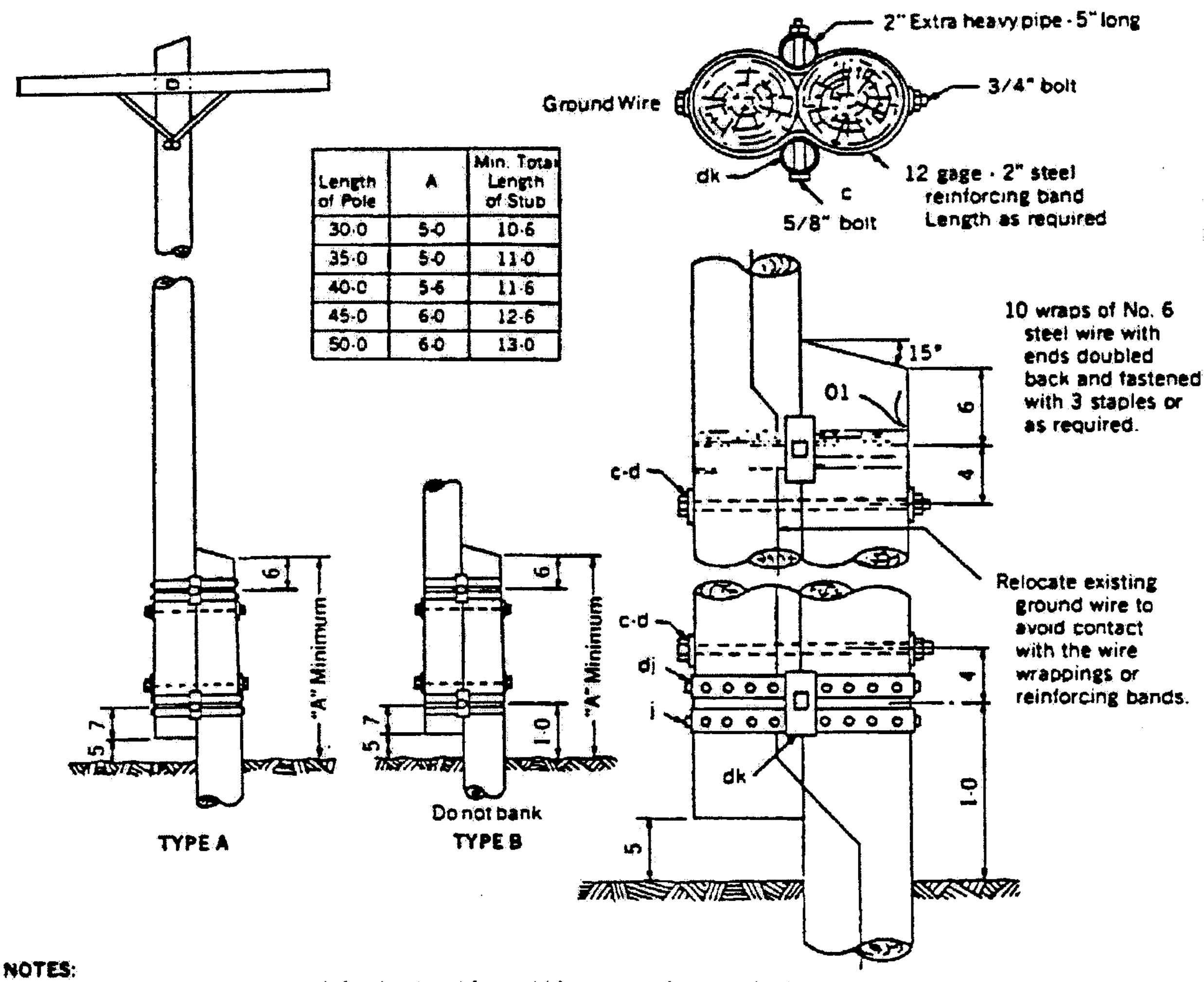
8.4.3 Hollow Heart (Heart Rot). If hollow heart is found, determine the shell thickness and measure the original circumference of the pole. Refer to Table 3 to determine the circumference reduction. Enter Table 1 with the original circumference and the reduced circumference to determine the current OCF.

To determine the shell thickness, bore three holes (preferably of 1/4- or 3/8-inch diameter), 120° apart; measure the shell thickness at each hole, and average the measurements. After shell thickness is determined, treat and plug holes with tightly fitting cylindrical wood plugs that have been treated with preservative. No transmission pole should remain in service with a shell thickness less than 3 inches.

8.4.4 Enclosed Pocket. An enclosed pocket is an off-center void as shown in Table 4, and its diameter should be measured by boring holes as described in section 8.4.3. Using the minimum thickness of the shell, refer to Table 4 for the reduction in circumference. Measure the original circumference. Enter Table 1 with the original circumference and the reduced circumference and determine the current OCF.

Table 1
Pole Circumference Overload Capacity Factors (OCF)

Original circumference (inches)	Reduced circumference (inches)						
OCF 4.0	OCF 3.5	OCF 3.0	OCF 2.67	OCF 2.5	OCF 2.0	OCF 1.5	OCF 1.33
30.0	28.7	27.3	26.1	25.6	23.8	21.6	20.7
31.0	29.7	28.2	27.0	26.5	24.6	22.3	21.4
32.0	30.6	29.1	27.8	27.4	25.4	23.0	22.1
33.0	31.6	30.0	28.7	28.3	26.2	23.8	22.8
34.0	32.5	30.9	29.6	29.1	27.0	24.5	23.5
35.0	33.5	31.8	30.5	29.9	27.8	25.2	24.2
36.0	34.4	32.7	31.4	30.8	28.6	25.9	24.9
37.0	35.4	33.6	32.3	31.6	29.4	26.6	25.6
38.0	36.3	34.5	33.1	32.5	30.2	27.4	26.3
39.0	37.3	35.4	34.0	33.3	31.0	28.1	27.0
40.0	38.3	36.3	34.9	34.2	31.8	28.8	27.7
41.0	39.2	37.3	35.8	35.1	32.5	29.5	28.4
42.0	40.2	38.2	36.7	35.9	33.3	30.2	29.0
43.0	41.1	39.1	37.5	36.8	34.1	31.0	29.7
44.0	42.1	40.0	38.4	37.6	34.9	31.7	30.4
45.0	43.0	40.9	39.3	38.5	35.7	32.4	31.1
46.0	44.0	41.8	40.2	39.3	36.5	33.1	31.8
47.0	45.0	42.7	41.0	40.2	37.3	33.8	32.5
48.0	45.9	43.6	41.9	41.0	38.1	34.6	33.2
49.0	46.9	44.5	42.8	41.9	38.9	35.3	33.9
50.0	47.8	45.4	43.6	42.7	39.7	36.0	34.6
51.0	48.8	46.3	44.5	43.6	40.5	36.7	35.3
52.0	49.7	47.2	45.4	44.5	41.3	37.4	36.0
53.0	50.7	48.2	46.3	45.3	42.1	38.2	36.7
54.0	51.6	49.1	47.1	46.2	42.9	38.9	37.4
55.0	52.6	50.0	48.0	47.0	43.7	39.6	38.1
56.0	53.6	50.9	48.9	47.9	44.4	40.3	38.7
57.0	54.5	51.8	49.8	48.7	45.2	41.0	39.4
58.0	55.5	52.7	50.6	49.6	46.0	41.8	40.1
59.0	56.4	53.6	51.5	50.4	46.8	42.5	40.8
60.0	57.4	54.5	52.4	51.3	47.6	43.2	41.5



Length of Pole	A	Min. Total Length of Stub
30-0	5-0	10-6
35-0	5-0	11-0
40-0	5-6	11-6
45-0	6-0	12-6
50-0	6-0	13-0

NOTES:
Use either wire wrapping or reinforcing band for stubbing material as required.
Position stub at side of pole (At right angle to direction of line and outside of angle.)

ITEM	NO REQ'D	MATERIAL		ITEM	NO REQ'D	MATERIAL	
c	2	Bolt, machine, 3/4" x required length				Wire, No. 6 galvanized steel, as required	
c	2	Bolt, machine, 5/8" x required length		ai		Staples, as required	
d	4	Washer, 2 1/4" x 2 1/4" x 3/16", 13/16" hole					
i	4	Screw, lag, 1/2" x 4"					
dj	4	Band, reinforcing, 12 gage x 2" x req'd length					
dk	4	Pipe spacer, 2" extra heavy x 5" long					

STUB REINFORCING OF DISTRIBUTION LINE POLES

SCALE: NTS

DATE:02/20/95

M15

iii. **GEC's Annual Strategic Work Plan** – Glades Electric Cooperative utilizes an annual strategic work plan that is formulated from input from GEC's management staff, employees, and Board of Trustees. Strengths, Weaknesses, Opportunities, and Threats (SWOT analysis) are identified and evaluated on an annual basis as part of the strategic planning process. Goals and specific action steps are created as a result of the SWOT analysis and a work plan is devised. The work plan utilizes the Harvard Business School's "Balanced Scorecard" system to assure our Board of Trustees of our performance in all areas of the Strategic Work Plan. Pole inspection cycles, maintenance schedules, and system upgrades are included in the strategic work plan.

***Note:** Glades Electric Cooperative is currently in the process of migrating to GIS mapping of all its facilities. This new mapping system will enable GEC to efficiently maintain accurate accounting of all facilities on the system. The mapping system is expected to be fully operational within two years.

b) **Transmission and distribution inspections planned and completed in 2006** – Glades Electric Cooperative planned and completed 100% of its 2006 maintenance and inspection goals. This work consisted of the following:
   i. **Distribution Inspections** - GEC completed pole inspections on approximately 4,241 distribution poles in 2006 representing approximately 10.6% of GEC's distribution system. In addition to pole inspections, GEC line superintendents visually inspected all 2,136.5 miles of GEC distribution lines for NESC code violations and hazardous conditions. GEC line crews conducted inspections on 22.27 miles of underground distribution representing 100% of GEC's URD.
   ii. **Transmission Inspections** – GEC visually inspected 100% of its 85.42 miles of transmission line through aerial inspections. Ground line and climbing inspections were completed on approximately 100 structures representing 11.71% of the GEC transmission system.

c) **Number and percentage of transmission poles and structures and distribution poles failing inspection and the reason for the failure.**
   i. **Distribution Pole Rejects** – GEC had approximately 192 reject poles representing 4.5% of the poles inspected during 2006. Ninety nine (99) poles were rejected due to decay representing 51.6% of the rejects and 2.3% of total poles inspected. Ninety three (93) poles were rejected due to visual observations representing 48.4% of the rejected poles and 2.19% of the poles inspected in 2006.
   ii. **Transmission Pole Rejects** – GEC had approximately five (5) transmission pole rejects representing 5% of the transmission poles inspected during 2006. All five (5) transmission poles failed due to ground line decay.

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.**

i. **Distribution Poles** – One hundred percent 100% of the reject poles identified in the 2006 pole inspection were replaced or repaired during 2006. Approximately forty four (44) of the one hundred ninety two (192) reject poles were repaired using an approved banded truss method for reinforcement. One hundred forty eight (148) poles were replaced. All reject poles were typically thirty five foot (35') class six (6) and forty foot (40') class five (5) pentachlorophenol treated wood poles. Replacement poles consisted of Chromated Copper Arsenate (CCA) wood poles. Thirty five foot (35') reject poles were replaced with forty foot (40') class five (5) CCA wood poles. Forty foot (40') reject poles were replaced with like size and class CCA wood poles. In addition to the pole inspection/replacements, GEC straightened approximately 8,014 distribution poles and backed filled with crushed rock. These leaning poles were the result of the 2004 and 2005 hurricanes.

ii. **Transmission Poles** – One hundred percent (100%) of the rejected transmission poles identified in the 2006 inspection cycle were replaced during 2006. All five (5) reject transmission poles were sixty foot (60') class two (2) pentachlorophenol wood poles with wood cross arm and suspension insulator construction. Replacement poles consisted of sixty foot (60') class one (1) pentachlorophenol wood poles with standoff poly insulators attached in a delta configuration. In addition to the pole inspections/replacements, GEC upgraded anchors and storm guying on approximately 55 transmission poles.

5. Vegetation Management

a) Glades Electric Cooperative's policies, guidelines, practices, and procedures for vegetation management

i. **Distribution Right of Way** - Glades Electric Cooperative began a system wide circuit by circuit right of way trimming program in 1999. This initial trimming by circuit took four years to complete as GEC had never trimmed right of way in this manner. The trim cycle started over in 2003 and GEC was able to reduce and maintain the system wide circuit by circuit trimming to a three (3) year cycle. Trimming guidelines are established in RUS Bulletin 1728F-803 (D-803) Specification Unit M1.30G which states the following:

RIGHT-OF-WAY CLEARING SPECIFICATIONS

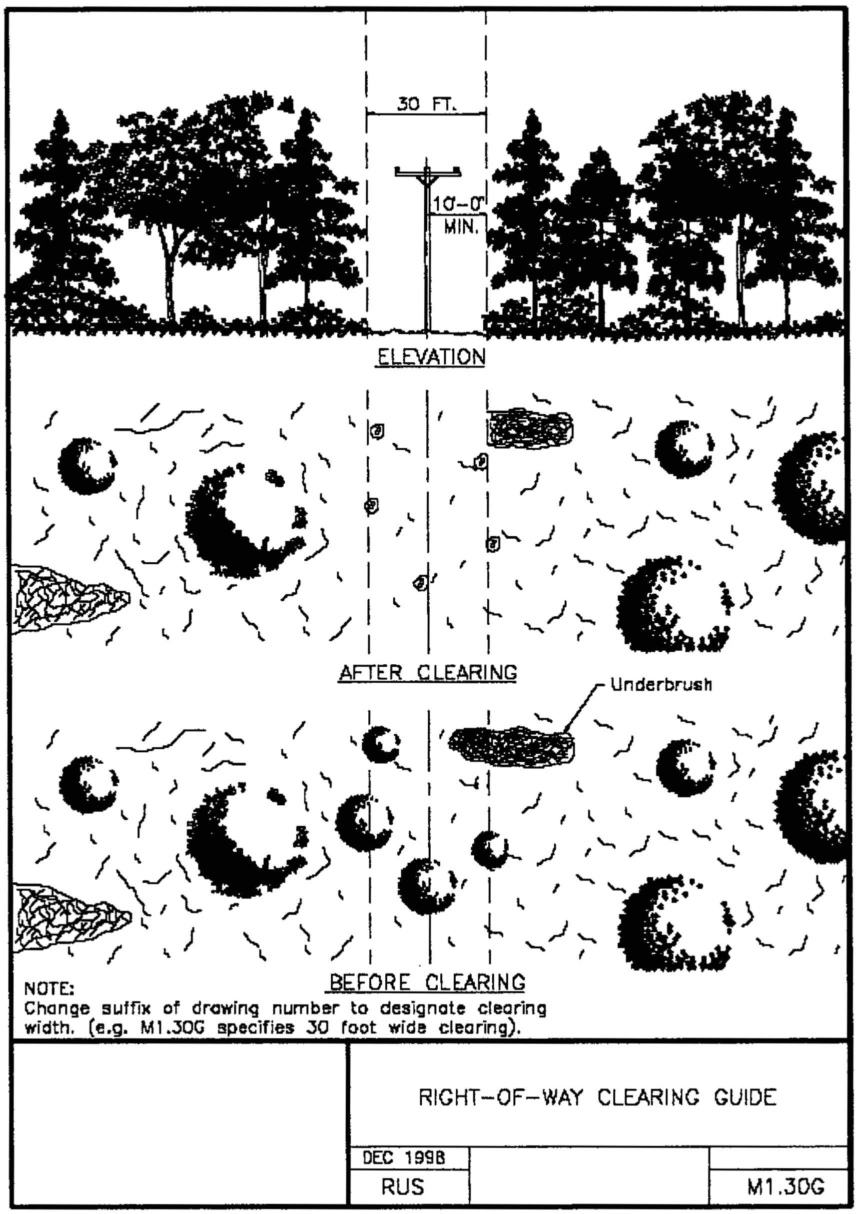
The right-of-way shall be prepared by removing trees, clearing underbrush, and trimming trees so that the right-of-way is cleared close to the ground and to the width specified. However, low growing shrubs, which will not interfere with the operation or maintenance of the line, shall be left undisturbed if so directed by the owner. Slash may be chipped and blown on the right-of-way if so specified. The landowner's written permission shall be received prior to cutting trees outside of the right-of-way. Trees fronting each side of the right-of-way shall be trimmed symmetrically unless otherwise specified. Dead trees beyond the right-of-way which would strike the line in falling shall be removed. Leaning trees beyond the right-of-way which would strike the line in falling and which would require topping if not removed, shall either be removed or topped, except that shade, fruit, or ornamental trees shall be trimmed and not removed, unless otherwise authorized.

Additional right of way management practices are included in Glades Electric Cooperative's Right of Way Policy 411 as previously published in Section 3, subsection d) of this report. GEC's current Right of Way contract utilizes GEC's ROW guidelines, practices and procedures as follows:

Provide Supervision, labor and equipment to clear Glades Electric Cooperative Inc. distribution right of way as per the following specifications. Provide all necessary supervision, labor, tools, equipment and materials for the proper application of herbicides along Glades Electric Cooperative, Inc. right of ways. The State of Florida Utility Accommodations Manual (attached) shall have precedence over all herbicide applications.

1. *All distribution lines shall be trimmed to obtain ten feet of clearance or three years clearance for slow growing species, from primary phase wire.*
2. *All open wire secondary shall be trimmed to obtain five feet of clearance from each side of line.*
3. *All service lines shall be trimmed to obtain three feet of clearance on all sides.*
4. *If proper clearance cannot be obtained due to property owner objection, contractor shall secure a reasonable minimum amount of temporary clearance and review with Glades Electric.*
5. *Vines growing on pole shall be cut at a height of ten feet above grade level and at ground line then treated with approved herbicide.*
6. *Remove all danger trees to a height below Glades Electric facilities.*
7. *Remove 15% to 20% of trees within Glades Electric right of way that are four inches in diameter or less and have a mature growing height of over twenty feet.*
8. *All debris resulting from clearing and trimming shall be chipped with brush chipper or shredded on site with mower.*
9. *All stumps greater than two inches in diameter shall be treated with approved herbicide to prevent re-sprouting.*
10. *Dead and open distribution lines shall not be cleared.*
11. *Attempt to remove Palm Trees, directly under utility lines, that are within one frons lengths from conductor.*
12. *Provide a minimum of three-foot clearance around all poles, structures & guy wires.*
13. *Apply herbicide via foliar and basal treatment to selective vegetation within primary right-of way. See Herbicide specification.*
14. *Chemical selection, application rates as well as any customer notification, complaints or damage due to services rendered.*
15. *Obtaining any licenses and/or permits necessary to perform herbicide applications.*

16. *Supply Glades Electric with all labels, material safety data sheets and application rates for all chemical selections.*
17. *Providing herbicide application records to Glades Electric on a weekly basis.*
18. *Guarantee a 90% control rate, based upon stem count. Any areas that do not meet the specification will be retreated at no additional cost.*
19. *The Crew Leader shall hold a valid State of Florida Pesticide Applicators License for right-of-way vegetation control.*
20. *Herbicide applications shall consist of both foliage and basal bark applications.*
21. *The decision not to apply herbicides, due to the presence or proximity of live stock, agricultural products, highly visible and sensitive areas.*



ii. **Transmission Right of Way -** Glades Electric Cooperative follows RUS guidelines set forth in RUS Bulletin 1724E-200 Chapter 5 as follows:

5. HORIZONTAL CLEARANCES FROM LINE CONDUCTORS TO OBJECTS AND RIGHT-OF-WAY WIDTH

5.1 General: The preliminary comments and assumptions in Chapter 4 of this bulletin also apply to this chapter.

5.2 **Minimum Horizontal Clearance of Conductor to Objects:** Recommended design horizontal clearances of conductors to various objects are provided in Table 5-1. The clearances apply only for lines that are capable of automatically clearing line-to-ground faults.

Clearance values provided in Table 5-1 are recommended design values. In order to provide an additional cushion of safety, the recommended design values exceed the minimum clearances in the 2002 NESC.

5.2.1 Conditions Under Which Horizontal Clearances Apply:

Conductors at Rest (No Wind Displacement): When conductors are at rest the clearances apply for the following conditions: (a) 167°F but not less than 120°F, final sag, (b) the maximum operating temperature the line is designed to operate, final sag, (c) 32°F, final sag with radial thickness of ice for the loading district (0 in., ¼ in., or ½ in.).

Conductors Displaced by Wind: The clearances apply when the conductor is displaced by 6 lbs. per sq. ft. at final sag at 60°F. See Figure 5-1.

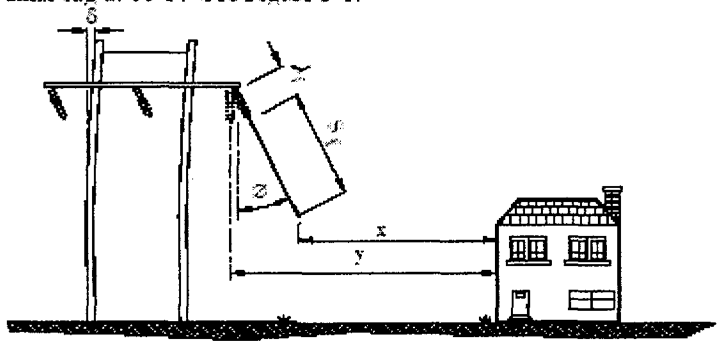


FIGURE 5-1: HORIZONTAL CLEARANCE REQUIREMENT

where:

ϕ = conductor swing out angle in degrees under 6 psf. of wind
S_f = conductor final sag at 60°F with 6 psf. of wind.
x = horizontal clearance required per Table 5-1 and conductors displaced by wind (include altitude correction if necessary)
ℓ_i = insulator string length (ℓ_i = 0 for post insulators or restrained suspension insulators).
y = total horizontal distance from insulator suspension point (conductor attachment point for post insulators) to structure with conductors at rest
δ = structure deflection with a 6 psf. Wind

TABLE 5-1
RUS RECOMMENDED DESIGN HORIZONTAL CLEARANCES FROM OTHER SUPPORTING STRUCTURES, BUILDINGS AND OTHER INSTALLATIONS (in feet)
(NESC Rules 234B, 234C, 234D, 234E, 234F, 234I, Tables 234-1, 234-2, 234-3)

Conditions under which clearances apply:

No wind: When the conductor is at rest the clearances apply at the following conditions: (a) 120°F, final sag, (b) the maximum operating temperature the line is designed to operate, final sag, (c) 32°F, final sag with radial thickness of ice for the loading district (1/4 in. for Medium or 1/2 in. Heavy).

Displaced by Wind: Horizontal clearances are to be applied with the conductor displaced from rest by a 6 psf wind at final sag at 60°F. The displacement of the conductor is to include deflection of suspension insulators and deflection of flexible structures.

The clearances shown are for the displaced conductors and do not provide for the horizontal distance required to account for blowout of the conductor and the insulator string. This distance is to be added to the required clearance. See Equation 5-1.

Clearances are based on the Maximum Operating Voltage

		NESC Basic Clear						
Nominal voltage, Phase to Phase, kV_{L-L}			34.5 & 46	69	115	138	161	230
Max. Operating Voltage, Phase to Phase, kV_{L-L}			----	72.5	120.8	144.9	169.1	241.5
Max. Operating Voltage, Phase to Ground, kV_{L-G}			----	41.8	69.7	83.7	97.6	139.4
Horizontal Clearances - (Notes 1,2,3)			Clearances in feet					
1.0 From a lighting support, traffic signal support or supporting structure of another line								
At rest	**(NESC Rule 234B1a)**	5.0	6.5	6.5	7.2	7.8	8.1	9.5
Displaced by wind	**(NESC Rule 234B1b)**	4.5	6.2	6.7	7.6	8.1	8.5	9.9
2.0 From buildings, walls, projections, guarded windows, windows not designed to open, balconies, and areas accessible to pedestrians								
At rest	**(NESC Rule 234C1a)**	7.5	9.2	9.7	10.6	11.1	11.5	12.9
Displaced by wind	**(NESC Rule 234C1b)**	4.5	6.2	6.7	7.6	8.1	8.5	9.9
3.0 From signs, chimneys, billboards, radio, & TV antennas, tanks & other installations not classified as buildings								
At rest	**(NESC Rule 234C1a)**	7.5	9.2	9.7	10.6	11.1	11.5	12.9
Displaced by wind	**(NESC Rule 234C1b)**	4.5	6.2	6.7	7.6	8.1	8.5	9.9
4.0 From portions of bridges which are readily accessible and supporting structures are not attached								
At rest	**(NESC Rule 234D1a)**	7.5	9.2	9.7	10.6	11.1	11.5	12.9
Displaced by wind	**(NESC Rule 234D1b)**	4.5	6.2	6.7	7.6	8.1	8.5	9.9
5.0 From portions of bridges which are ordinarily inaccessible and supporting structures are not attached								
At rest	**(NESC Rule 234D1a)**	6.5	8.2	8.7	9.6	10.1	10.5	11.9
Displaced by wind	**(NESC Rule 234D1b)**	4.5	6.2	6.7	7.6	8.1	8.5	9.9

TABLE 5-1 (continued)
RUS RECOMMENDED DESIGN HORIZONTAL CLEARANCES FROM OTHER SUPPORTING STRUCTURES, BUILDINGS AND OTHER INSTALLATIONS (in feet)
(NESC Rules 234B, 234C, 234D, 234E, 234F, 234I, Tables 234-1, 234-2, 234-3)

Conditions under which clearances apply –See the previous page and section 5.2.1 of this bulletin
Clearances are based on the Maximum Operating Voltage

Nominal voltage, Phase to Phase, kV_{L-L}		**34.5 & 46**	**69**	**115**	**138**	**161**	**230**
Max. Operating Voltage, Phase to Phase, kV_{L-L}		----	72.5	120.8	144.9	169.1	241.5
Max. Operating Voltage, Phase to Ground, kV_{L-G}		----	41.8	69.7	83.7	97.6	139.4
Horizontal Clearances - (Notes 1,2,3)	NESC Basic Clear	Clearances in feet					
6.0 Swimming pools – see section 4.4.3 of Chapter 4 and item 9 of Table 4–2. (NESC Rule 234E)							
Clearance in any direction from swimming pool edge (Clearance A, Figure 4-2 of this bulletin)	25.0	27.2	27.7	28.6	29.1	29.5	30.9
Clearance in any direction from diving structures (Clearance B, Figure 4-2 of this bulletin)	17.0	19.2	19.7	20.6	21.1	21.5	22.9
7.0 From grain bins loaded with permanently attached conveyor							
At rest (NESC Rule 234F1b)	15.0	17.2	17.7	18.6	19.1	19.5	20.9
Displaced by wind (NESC Rule 234C1b)	4.5	6.7	7.2	8.1	8.6	9.0	10.4
8.0 From grain bins loaded with a portable conveyor. Height 'V' of highest filling or probing port on bin must be added to clearance shown. Clearances for 'at rest' and not displaced by the wind. See NESC Figure 234-4 for other requirements. **Horizontal clearance envelope (includes area of sloped clearance per NESC Figure 234-4b)**		(24+V) + 1.5V (Note 3)					
9.0 From rail cars (Applies only to lines parallel to tracks) See Figure 234-5 and section 234I (Eye) of the NESC **Clearance measured to the nearest rail**		14.1	14.1	15.1	15.6	16.0	17.5
ALTITUDE CORRECTION TO BE ADDED TO VALUES ABOVE Additional feet of clearance per 1000 feet of altitude above 3300 feet		.02	.02	.05	.07	.08	.12

Notes:
(A) Clearances for categories 1-5 in the table are approximately 1.5 feet greater than NESC clearances.
(B) Clearances for categories 6-9 in the table are approximately 2.0 feet greater than NESC clearances.
(C) "V" is the height of the highest filling or probing port on a grain bin. Clearance is for the highest voltage of 230 kV.

Bulletin 1724E-200
Page 5-4

5.2.2 Clearances to Grain Bins: The NESC has defined clearances from grain bins based on grain bins that are loaded by permanent or by portable augers, conveyers, or elevator systems.

In NESC Figure 234-4(a), the horizontal clearance envelop for permanent loading equipment is graphically displayed and shown Figure 5-2.

P = probe clearance, item 7, Table 4-2
H = horizontal clearance, item 7, Table 5-1
T = transition clearance
V_1 = vertical clearance, item 2&3, Table 4-2
V_2 = vertical clearance, Table 4-1

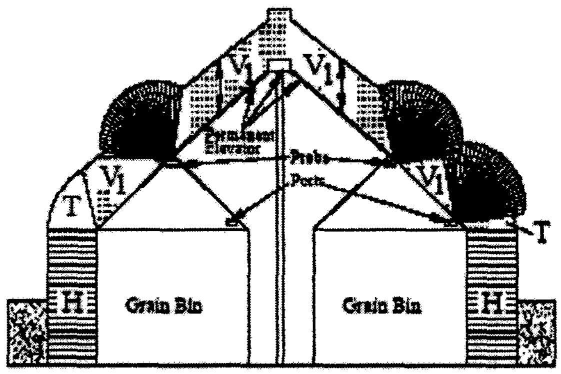


FIGURE 5-2: CLEARANCE TO GRAIN BINS
NESC FIGURE 234-4a

Because the vertical distance from the probe in Table 4-2, item 7.0, is greater than the horizontal distance, (see Table 5-1, item 7.0), the user may want to simplify design and use this distance as the horizontal clearance distance as shown below:

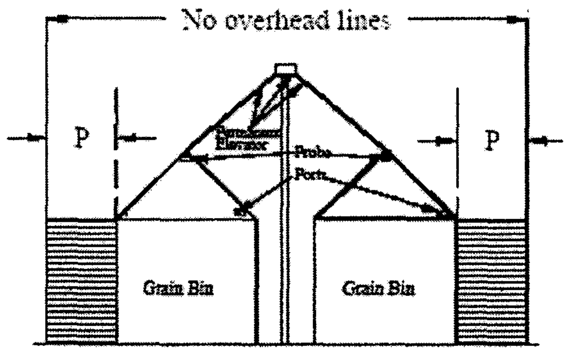


FIGURE 5-3: HORIZONTAL CLEARANCE TO GRAIN BINS. CONDUCTORS AT REST
P = clearance from item 7, Table 4-2

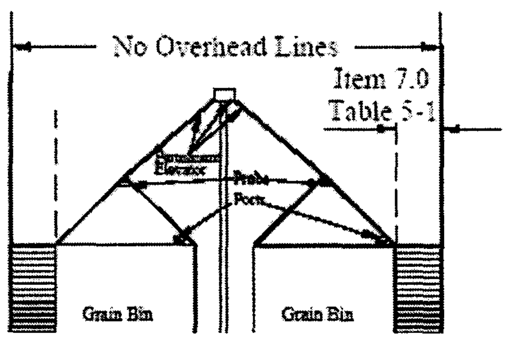
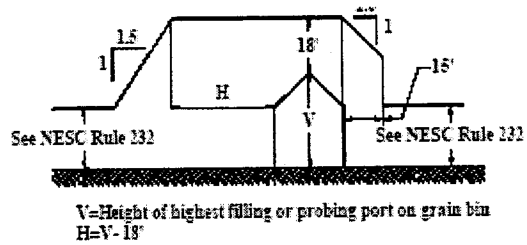


FIGURE 5-4: HORIZONTAL CLEARANCE TO GRAIN BINS, CONDUCTORS DISPLACED BY WIND

The clearance envelope for portable loading equipment from NESC Figure 234(b), is shown in Figure 5-5.



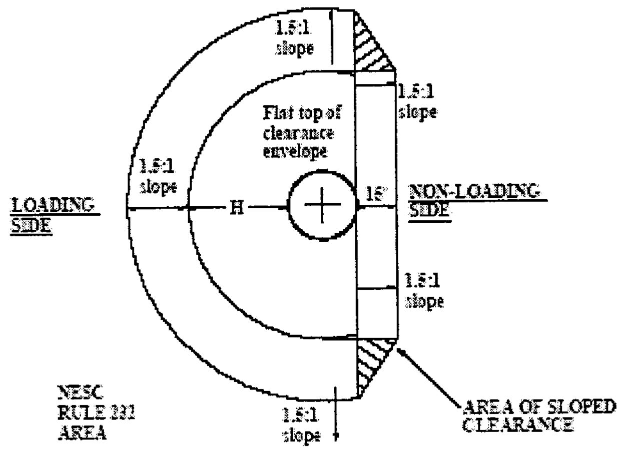


FIGURE 5-5: NESC CLEARANCE TO GRAIN BINS WITH PORTABLE LOADING EQUIPMENT

RUS has a simplified the clearance envelope. The horizontal clearances in category 8 of Table 5-1 are shown as 'H' in the drawing below:

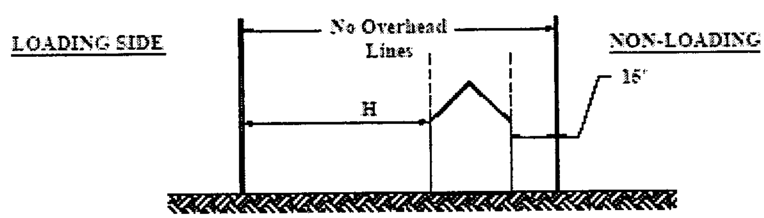


FIGURE 5-6: RUS SIMPLIFIED RECOMMENDATIONS FOR CLEARANCES TO GRAIN BINS WITH PORTABLE LOADING EQUIPMENT

5.2.3 Altitude Greater Than 3300 Feet: If the altitude of the transmission line or portion thereof is greater than 3300 feet , an additional clearance as indicated in Table 5-1 has to be added to the base clearance given.

5.2.4 Total Horizontal Clearance to Point of Insulator Suspension to Object: As can be seen from Figure 5-1, the total horizontal clearance (y) is:

$$y = (\ell_i + S_f)\sin\phi + x + \delta \qquad \text{Eq. 5-1}$$

Symbols are defined in Section 5.2.1 and figure 5-1.

The factor "δ" indicates that structure deflection should be taken into account. Generally, for single pole wood structures, it can be assumed that the deflection under 6 psf of wind will not exceed 5 percent of the structure height above the groundline. For unbraced wood H-frame structures the same assumption can be made. For braced H-frame structures, the deflection under 6 psf of wind will be considerably less than that for a single pole structure, and is often assumed to be insignificant.

For the sake of simplicity when determining horizontal clearances, the insulator string should be assumed to have the same swing angle as the conductor. This assumption should be made only in this chapter as its use in calculations elsewhere may not be appropriate.

The conductor swing angle (ϕ) under 6 psf of wind can be determined from the formula.

$$\phi = \tan^{-1}\left(\frac{(d_c)(F)}{12\, w_c}\right) \qquad \text{Eq. 5-2}$$

where:

d_c = conductor diameter in inches
w_c = weight of conductor in lbs./ft.
F = wind force; use 6 psf in this case

The total horizontal distance (y) at a particular point in the span depends upon the conductor sag at that point. The value of (y) for a structure adjacent to the maximum sag point will be greater than the value of (y) for a structure placed elsewhere along the span. See Figure 5-8.

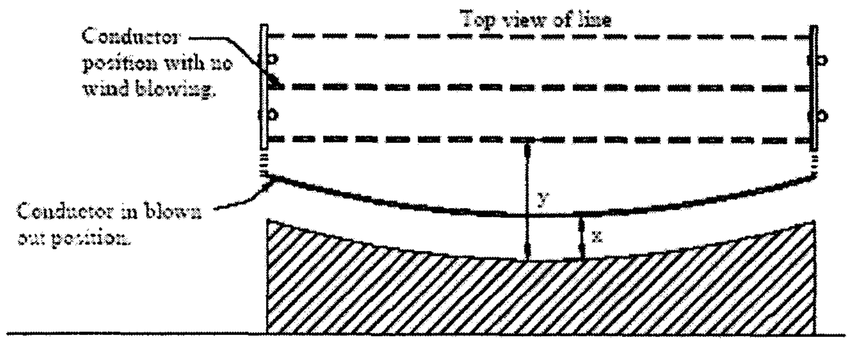


FIGURE 5-7: A TOP VIEW OF A LINE SHOWING TOTAL HORIZONTAL CLEARANCE REQUIREMENTS

5.2.5 <u>Examples of Horizontal Clearance Calculations</u>: The following examples demonstrate the derivation of the horizontal clearance in Table 5-1 of this bulletin.

To determine the horizontal clearance of a 115 kV line to a building (category 2.0 of RUS Table 5-1), the clearance is based on NESC Table 234-1 and NESC Rule 234.

At rest:

NESC Horizontal Clear.	= NESC Basic Clearance(Table 234-1) + .4(kV_{L-G} – 22)/12
	= 7.5 feet + .4(69.7-22)/12 feet
	= 7.5 feet + 1.59 feet
NESC Horizontal Clear.	= 9.09 feet
RUS Recommended Clearance	= NESC Horizontal Clearance + RUS Adder
	= 9.09 feet + 1.5 feet
	= 10.59 feet (10.60 feet in RUS Table 5-1)

Conductors displaced by wind:

NESC Horizontal Clear.	= NESC Basic Clearance (Table 234-1) + .4(kV_{L-G} – 22)/12
	= 4.5 feet + .4(69.7-22)/12 feet
	= 4.5 feet + 1.59 feet
NESC Horizontal Clear.	= 6.09 feet
RUS Recommended Clearance	= NESC Horizontal Clearance + RUS Adder
	= 6.09 feet + 1.5 feet
	= 7.59 feet (7.6 feet in RUS Table 5-1)

5.3 <u>Right-of-Way (ROW) Width</u>: For transmission lines, a right-of-way provides an environment allows the line to be operated and maintained safely and reliably. Determination of the right-of-way width is a task that requires the consideration of a variety of judgmental, technical, and economic factors.

Typical right-of-way widths (predominantly H-frames) that have been used by RUS borrowers in the past are shown in Table 5-2. In many cases a range of widths is provided. The actual width used will depend upon the particulars of the line design.

TABLE 5-2
TYPICAL RIGHT-OF-WAY WIDTHS

	Nominal Line-to-Line Voltage in kV				
	69	115	138	161	230
ROW Width, ft	75-100	100	100-150	100-150	125-200

5.4 <u>Calculation of Right-of-Way Width for a Single Line of Structures on a Right-of-Way</u>: Instead of using typical right-of-way width provided in Table 5-2, widths can be calculated using either of the two methods below. They yield values that are more directly related to the particular parameters of the line design.

5.4.1 First Method: This method provides sufficient width to meet clearance requirements to buildings of undetermined height located directly on the edge of the right-of-way. See Figure 5-7.

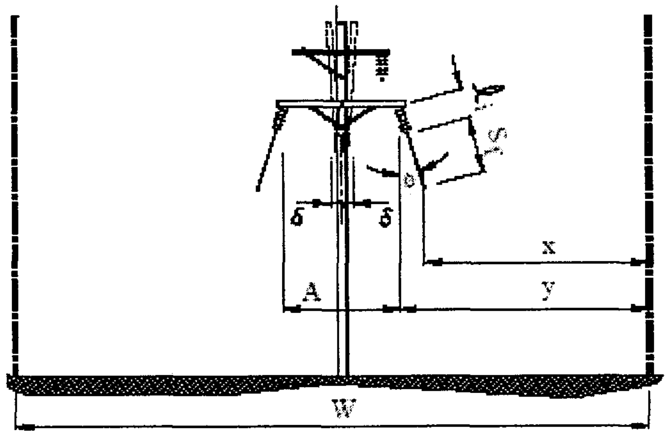


FIGURE 5-8: ROW WIDTH FOR SINGLE LINE OF STRUCTURES (FIRST METHOD)

$$W = A + 2(\ell_i + S_f)\sin\phi + 2\delta + 2x \qquad \text{Eq. 5-3}$$

where:

W = total right-of-way width required

A = separation between points of suspension of insulator strings for outer two phases

x = clearance required per Table 5-1 of this bulletin (include altitude correction if necessary)

Other symbols are as previously defined.

There are two ways of choosing the length (and thus the sag) on which the right-of-way width is based. One is to use a width based on the maximum span length in the line. The other way is to base the width on a relatively long span, (the ruling span, for instance), but not the longest span. For those spans that exceed this base span, additional width is added as appropriate.

5.4.2 Second Method: The right-of-way width can be based on allowing the phase conductor to blow out to the edge of the right-of-way under extreme wind conditions (such as the 50 or 100-year mean wind). See Figure 5-9. This method is used when there is an extremely low probability of structures being built near the line.

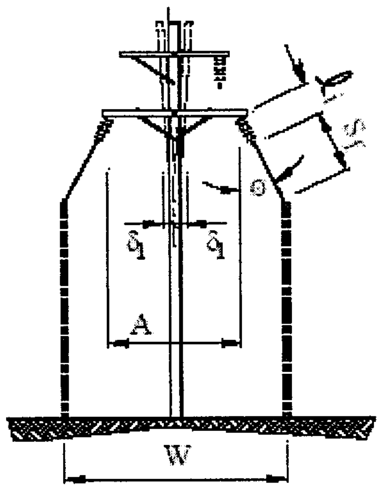


FIGURE 5-9: ROW WIDTH FOR SINGLE LINE OF STRUCTURES
(SECOND METHOD)

From Figure 5-9 it can be seen that the formula for the width is:

$$W = A + 2(\ell_i + S_f)\sin\phi + 2\delta_1 \qquad \text{Eq. 5-4}$$

where:

ϕ = conductor swing out angle in degrees at extreme wind conditions. ϕ can be determined using Equation 5-2 with a wind force value F for the extreme wind condition (see Appendix E for conversion of wind velocity to wind pressure).

S_f = conductor final sag at extreme wind conditions at the temperature at which the wind is expected to occur

δ_1 = structure deflection under extreme wind conditions

Other symbols are as previously defined.

As with the previous method, the sags in the calculations can be based on either the maximum span or the ruling span, with special consideration given to spans longer than the ruling span.

5.5 Right-of-Way Width for a Line Directly Next to a Road: The right-of-way width for a line next to a road can be calculated based on the two previous sections with one exception. No ROW is needed on the road side of the line as long as the appropriate clearances to existing or possible future structures on the road side of the line are met.

If a line is to be placed next to a roadway, consideration should be given to the possibility that the road may be widened. If the line is on the road right-of-way, the borrower would generally be expected to pay for moving the line. If the right-of-way is on private land, the highway department should pay. Considerations involved in placing a line on a road right-of-way should also include evaluation of local ordinances and requirements.

5.6 Right-of-Way Width for Two or More Lines of Structures on a Single Right-of-Way: To determine the right-of-way width when the right ROW contains two parallel lines, start by calculating the distance from the outside phases of the lines to the ROW edge (see Section 5.4). The distance between the two lines is governed by the two criteria provided in section 5.6.1. If one of the lines involved is an EHV line (345 kV and above), the National Electrical Safety Code should be referred to for additional applicable clearance rules not covered in this bulletin.

5.6.1 Separation Between Lines as Dictated by Minimum Clearance Between Conductors Carried on Different Supports: The horizontal clearance between a phase conductor of one line to a phase conductor of another line shall meet the larger of C_1, or C_2 below, under the following conditions: (a) both phase conductors displaced by a 6 psf wind at 60°F, final sag; (b) if insulators are free to swing, one should be assumed to be displaced by a 6 lbs/sq. ft. wind while the other should be assumed to be unaffected by the wind (see Figure 5-10). The assumed wind direction should be that which results in the greatest separation requirement. It should be noted that in the Equations 5-5, and 5-6, the 'δ_1-δ_2' term, (the differential structure deflection between the two lines of structures involved), is to be taken into account. An additional 1.5 feet have been added to the NESC clearance to obtain design clearances 'C_1' and 'C_2'.

$$C_1 = 6.5 + (\delta_1 - \delta_2) \text{ (NESC Rule 233B1)} \qquad \text{Eq. 5-5}$$

$$C_2 = 6.5 + \frac{.4}{12}\left[(kV_{LG1} + kV_{LG2}) - 129\right] + (\delta_1 - \delta_2) \text{ (NESC Rule 233B1)} \qquad \text{Eq. 5-6}$$

where:

C_1, C_2 = clearance requirements between conductors on different lines in feet (largest value governs)
kV_{LG1} = maximum line-to-ground voltage in kV of line 1
kV_{LG2} = maximum line-to-ground voltage in kV of line 2
δ_1 = deflection of the upwind structure in feet
δ_2 = deflection of the downwind structure in feet

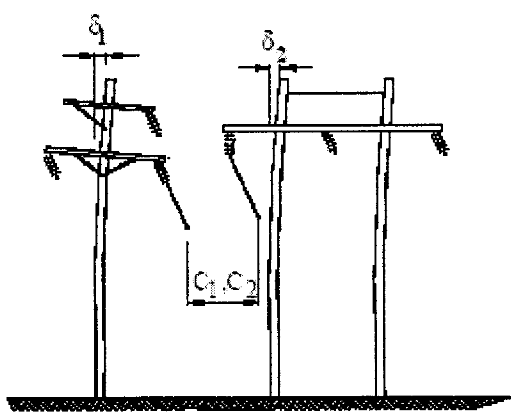


FIGURE 5-10: CLEARANCE BETWEEN CONDUCTORS OF ONE LINE TO CONDUCTOR OF ANOTHER LINE

5.6.2 <u>Separation Between Lines as Dictated by Minimum Clearance of Conductors From One Line to the Supporting Structure of Another</u>: The horizontal clearance of a phase conductor of one line to the supporting structure of another when the conductor and insulator are displaced by a 6 psf wind at 60°F final sag should meet Equation 5-7.

$$C_3 = 6' + \frac{.4}{12}(kV_{LG} - 22) + (\delta_1 - \delta_2) \qquad \text{Eq. 5-7}$$

where:

kV_{LG} = the maximum line-to-ground voltage in kV
C_3 = the clearance of conductors of one line to structure of another in feet

Other symbols are defined in Figure 5-1.

Additional 1.5 feet have been added to the NESC clearance and included in equation 5-7 to obtain the design clearance 'C_3'.

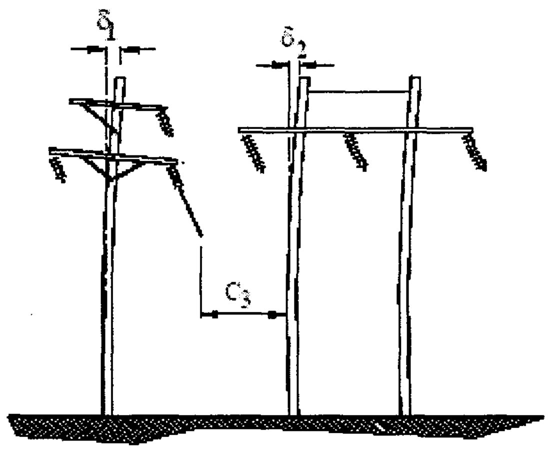


FIGURE 5-11: CLEARANCE BETWEEN CONDUCTORS OF ONE LINE AND STRUCTURE OF ANOTHER

The separation between lines will depend upon the spans and sags of the lines as well as how structures of one line match up with structures of another. In order to avoid the unreasonable task of determining separation of structures span-by-span, a standard separation value should be used, based on a worst case analysis. Thus if structures of one line do not always line up with those of the other, the separation determined in section 5.6.2 should be based on the assumption that the structure of one line is located next to the mid-span point of the line that has the most sag.

5.6.3 <u>Other Factors</u>: Galloping should be taken into account in determining line separation. In fact, it may be the determining factor in line separation. See Chapter 6 for a discussion of galloping.

b) **Quantity, Level, and Scope of vegetation management planned and completed in 2006 -** Glades Electric Cooperative completed all planned right of way trimming in 2006 consisting of approximately 674 miles of distribution line. This work involved ten (10) distribution circuits from five (5) GEC substations. All completed vegetation management work was done in accordance with the guidelines published in Section 5, subsection a) of this report.

GEC's transmission rights of ways were inspected during 2006 and did not require vegetation trimming. Transmission rights of ways are inspected annually and trimmed if necessary. Most of GEC's transmission lines are located on cultivated land and vegetation growth is not an issue.

GEC believes that its right of way program is a valuable asset to its members and feels that the current program is effective. The PURC research group will be holding a vegetation management conference in March, 2007. Glades Electric Cooperative will utilize any useful information that may result from this conference and this will be referenced in our report next year.

www.gcec.com

Gulf Coast
Electric Cooperative

A Touchstone Energy® Cooperative

Gulf Coast Electric Cooperative, Inc. Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction:

The Gulf Coast Electric Cooperative, Inc. main office is located in Wewahitchka, Gulf County, Florida approximately seventeen miles inland from the Gulf of Mexico. The cooperative's district office is located in Southport, Bay County, Florida approximately thirteen miles inland from the Gulf of Mexico. The cooperative serves electricity to 20,139 customers in Gulf Calhoun, Bay, and Washington counties, with a few customers in Walton and Jackson counties in the central panhandle of Florida. Gulf Coast Electric's distribution system is composed of power distribution lines operating at 14.4/24.94kv with one substation still operating at 7.2/12.47kv, both aerial and underground. Gulf Coast Electric Cooperative, Inc. receives power from the Alabama Electric Cooperative's transmission system operating in Andalusia, Alabama. The transmission voltage is rated at 115kv at the 14.4/24.94kv substations and 46kv at the 7.2/12.47kv substations.

1) Gulf Coast Electric Cooperative, Inc.
722 West Highway 22
P.O. Box 220
Wewahitchka, Fl 32465

2) Contacts:

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Southport, Fl 32409
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Cell 850-819-0298
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or

Sid Dykes
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e-mail sdykes@gcec.com

2) The number of meters served in calendar year 2006 was 20,671

3) Standards of Construction

1) National Electrical Safety Code Compliance: Grade C construction. Construction standards, policies, guidelines, practices, and procedures at Gulf Coast Electric Cooperative, Inc. comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction.

2) Extreme Wind Loading Standards
At this time, Gulf Coast Electric Cooperative, Inc. facilities are not designed to be guided by the extreme loading standards on a system wide basis. We continue to self-audit and evaluate our system to determine any immediate needs for system upgrades and hardening in isolated areas. At this time we do not have sufficient data to substantiate the effort and cost of making major upgrades to our system. We feel that it is important to wait for the results of the PURC research before making such commitment.

3) Flooding and Storm Surges
Gulf Coast Electric Cooperative, Inc. is in the process of evaluating our standards, policies, guidelines, practices and procedures that address the effects of flooding and storm surges on underground facilities and supporting overhead facilities. Gulf Coast Electric Cooperative, Inc. is 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 Electric Cooperative Association. We continue to evaluate and address the effects of flooding and storm surge but we feel that it is important to wait for the results of this research to justify the effort and cost of converting overhead to underground.

4) Safe and Efficient Access of New and Replacement Distribution Facilities:
Electrical construction standards, polices, guidelines, practices, and procedures at Gulf Coast Electric Cooperative, Inc. provide for placement of new and replacement distribution facilities to facilitate safe and efficient access for installation and maintenance. Wherever new facilities are placed (i.e. front, back or side of property), all facilities are installed so that Gulf Coast Electric Cooperative, Inc.'s facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. Gulf Coast Electric Cooperative, Inc. 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.

5) Attachments by Others
Electrical construction standards, policies, guidelines, practices, and procedures at Gulf Coast Electric Cooperative, Inc. include written safety, pole reliability, pole loading capacity, and engineering standards and procedures for attachments by others to the utility's distribution poles. Quarterly pole line inspections of 'work-orders' are performed by Gulf Coast Electric Cooperative, Inc.'s consulting Engineer for RUS purposes, for newly constructed jobs. The inspections encompass all pole line construction criteria. General inspections are currently done on an eight year cycle.

4) Facility Inspections

1) 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.

Gulf Coast Electric Cooperative, Inc has no transmission lines.
Gulf Electric Cooperative, Inc. conforms to RUS Bulletin 1730B-12 for Pole Inspection and Maintenance, and performs general pole inspections on its distribution lines on an eight-year cycle. Poles that do not pass inspection are changed out to satisfy service and safety reliability and to meet the requirements of the National Electrical Safety Code in effect at the current time. The pole selection process is by substation and by distribution feeder.
Gulf Coast Electric Cooperative, Inc also inspects with the PSC, a percentage of new completed pole line construction called for by the PSC. The selection process is done by the PSC.
Gulf Coast Electric Cooperative, Inc. also inspects a percentage of new pole line construction chosen quarterly on its own. The selection process is done by random choice.

2) Describe the number and percentage of transmission and distribution inspections planned and completed for 2006.

The general pole inspection for 2006 was not completed, and carries over into year 2007.

Gulf Coast Electric Cooperative, Inc. has no transmission lines.
For Gulf Coast Electric Cooperative, Inc's general pole inspection, the number of poles inspected in year 2002 was 9,061 poles. A total of 62 poles were found to have fallen below minimum strength requirements and were rejected (51 were rejected poles with below ground line decay and 11 for other reasons).
4. 2, 2004)The number of poles inspected for the year of 2004 was 9,904 poles.
The Gulf Coast Electric Cooperative, Inc. Quarterly pole line inspections were completed in the year 2004. Gulf Coast Electric Cooperative, Inc.'s quarterly pole line inspections encompasses a minimum of 15% of new pole line construction for each quarter of the year.

3) Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2004 and the reason for the failure.

Gulf Coast Electric Cooperative, Inc. has no transmission lines.
For Gulf Coast Electric Cooperative, Inc.'s general pole inspection, referring to 4. 2, 2004) above, of the 9,904 poles that were inspected in 2004, 195 poles failed inspection. The percentage of failed poles to the number of poles inspected was 1.97%. The reason for failure was rotten tops, holes at the tops, broken pole, pole split and pole leaning.

(4. 2), 2006 Gulf Coast Electric Cooperative, Inc. has no transmission lines.
For Gulf Coast Electric Cooperative, Inc's general pole inspection, the number of planned poles to be inspected for the year of 2006 was 14,297 poles, and of the 14,297 poles 3,443 poles were inspected. The general pole inspection was not completed in 2006 and continues in 2007.
The PSC pole line construction inspection was completed for the year of 2006.
The Gulf Coast Electric Cooperative, Inc.'s Quarterly pole line inspections were completed in the year 2006. Gulf Coast Electric Cooperative, Inc.'s quarterly pole line inspections encompasses a minimum of 15% of new pole line construction for each quarter of the year.

3) Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2006 and the reason for the failure.

Gulf Coast Electric Cooperative, Inc. has no transmission lines.
For Gulf Coast Electric Cooperative, Inc.'s general pole inspection, referring to 4. 2 2006) above, of the 3443 poles that were inspected in 2006, 130 poles failed inspection. The percentage of failed poles to the number of poles inspected was four percent. The reason for failure was rotten tops, holes at the tops, broken pole, pole split and pole leaning.

5) Vegetation Management

Gulf Coast Electric Cooperative, Inc. owns and operates approximately 1632 miles of overhead and underground Primary power lines. We strive to cut all the ROW on a 5-year cycle. We are at present on a definitive 5-year program. According to the particular line construction specifications, we cut between 20 feet and 30 feet width, ground to sky. Certified Arborist personnel manage Gulf Coast Electric Cooperative, Inc.'s ROW program. We also utilize ROW contractors for our clear-cut ROW maintenance program.
Estimated ROW clearing costs are approximately $750,000 annually to cut 100% on a 5-year program. At this time, it is cost prohibitive for our members to cut 100% on

a 3-year cycle. Gulf Coast Electric Cooperative, Inc. cuts on a geographic and substation selective basis to maintain a respectful and systematic program. In year 2006 Gulf Coast Electric Cooperative, Inc. cut approximately 400 miles of ROW. We have started year 2007 already on another 400 mile cut.

Gulf Coast Electric Cooperative, Inc. is working progressively into a systematic herbicide-spraying program. Our plans are to spray 12 to 18 months behind our clearing and mowing program.

Gulf Coast Electric Cooperative, Inc. works closely with the Florida DOT and the various County governments' accommodations guidelines for our vegetation management. Gulf Coast Electric Cooperative, Inc. also works closely with property owners for problem tree removal and in selective cases, planting and landscaping.

Gulf Coast Electric Cooperative, Inc. will be attending the vegetation conference in March, 2007 that the PURC research group is holding. Gulf Coast Electric Cooperative, Inc. will utilize any useful information that may result from this conference, and this will be referenced in our report next year.

LCEC
LEE COUNTY ELECTRIC COOPERATIVE, INC.

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February 28, 2007

Mr. Tim Devlin, Director
Division of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Dear Mr. Devlin,

Enclosed is Lee County Electric Cooperative, Inc.'s (LCEC) Annual Report on Standards of Construction, Facility Inspections, and Vegetation Management for calendar year 2006. We are making this filing pursuant to Rule 25-6.0343 F.A.C.

If you have any questions please do not hesitate to call me (239) 656-2360.

Sincerely,

LEE COUNTY ELECTRIC COOPERATIVE, INC.

Clark Hawkins
Manager, Design & Engineering

CH/td

Annual Report on Lee County Electric Cooperative, Inc.'s (LCEC)
Standards of Construction, Facility Inspections, and Vegetation Management
for calendar year 2006

Standards of Construction:

a) LCEC's construction standards, policies, guidelines, practices, and procedures comply with the National Electrical Safety Code (ANSI C-2) [NESC]. Electrical facilities constructed through December 31, 2006 comply with the edition of the code in effect at the time of the facility's initial construction.

b) LCEC has construction standards, for required facilities, that meet the extreme wind loading standards specified by Figure 250-2(d) of the 2002 edition of the NESC.

c) Although not waterproof, LCEC's equipment and constructed facilities are designed to be water resistant. The majority of our underground facilities (excluding conduits and cables) are at or above existing/surrounding grade. Even with these design and installation considerations, LCEC experienced some significant damage to our underground facilities as the result of flooding and storm surges. On the other hand, it has been LCEC's experience that flooding and storm surges have little effect on overhead facilities whether part of an underground or overhead system.

d) Although often at odds with the desires of customers and governmental entities, LCEC's current practice is to place the majority of new and replacement distribution facilities in the front of lots. This does provide in most cases the safest and most efficient access for installation and maintenance. If necessary, easements for placement of distribution faculties are requested from customers.

e) LCEC's standards for joint use provide clearances (distances) for conductors, equipment, and risers. The joint use agreements that are entered into with pole attachment parties detail the process for evaluating pole loading capacity. Additionally, the agreements define the responsibilities for pole reliability and upgrading. Currently, LCEC does not permit attachments to transmission poles.

Facility Inspections:

a) <u>Transmission inspection annual (230 kV) and 2-year cycle (138 kV):</u> Inspect all poles and structures by either climbing or with the use of a bucket truck. Inspect poles, structures, guys, anchors, insulators, crossarms, conductors, shield wires, right-of-way, for any structural deficiency or any situation that may impact the structural integrity of the facility. Inspections are conducted by either climbing the pole/structure or with the use of a bucket truck.

<u>Distribution three-phase inspection 10-year cycle</u>: Inspect all poles for splitting, cracking, decay, twisting, and bird damage. Patch minor woodpecker holes.

When digging around ground line of poles for ground rod checks, check pole for ground rot. Sounding and assessing each pole for deteriorating by probing with a screwdriver. Examine concrete poles for evidence of cracks and physical damage. Plumb poles if they are (1+) pole top out of plumb.

Distribution single-phase visual inspection 10-year cycle: Inspect all poles for splitting, cracking, visual decay, twisting, and bird damage. Patch minor woodpecker holes, sound test suspect pole with a hammer and assess each pole for deteriorating by probing with a screwdriver. Examine concrete poles for evidence of cracks and physical damage. Repair or replace as needed. Plumb poles if they are (1+) pole top out of plumb.

b) In 2006, LCEC inspected 1359 out of a total of 2065 transmission poles and structures. This included 100% of the 230 kV facilities and 52% of the 138 kV facilities. This was 100% of scheduled.

In 2006, LCEC completed inspections of six (6) distribution three-phase circuits. This was 100% of scheduled; 6% of the total number of circuits.

In 2006, LCEC completed inspections of six (6) distribution single-phase circuits. This was 100% of scheduled, 6% of the total number of circuits.

c) During the 2006 inspection of the transmission facilities, 58 poles (4% of inspected) failed inspection criteria to the extent that replacement was required. Of these 58, there were 26 that failed due to woodpecker damage and 32 that failed due to rot. An additional 62 poles (4.5% of inspected) failed inspection criteria due to woodpecker damage. These poles did not require replacement.

During the 2006 inspection of the distribution facilities, LCEC inspected 2215 distribution poles. Of these, 26 poles (1% of inspected) failed inspection criteria to the extent that replacement was required. All of these failed due to rot. An additional 564 poles (25% of inspected) failed inspection criteria due to being out of plumb; and an additional 151 poles (7% of inspected) failed inspection criteria due to woodpecker damage. These 715 poles did not require replacement.

d) In 2006, LCEC repaired through patching 62 (52% that failed inspection) transmission poles. The remaining 58 (48% that failed inspection) transmission poles will be replaced during 2007-2008. These poles are 65-foot Class 2 in tangent and angle structures. The replacement poles will be wood ranging in height from 60-foot to 85-foot and will be either Class 2 or Class 1.

In 2006, LCEC repaired through re-plumbing 564 (76% that failed inspection) and repaired through patching 151 (20% that failed inspection) distribution poles. The remaining 26 (4% that failed inspection) distribution poles were replaced in 2006. The replaced poles consisted of: sixteen (16) 40-foot Class 5, three (3) 40-foot Class 4, two (2) 35-foot Class 5, and five (5) undocumented poles.

Vegetation Management:

(a) LCEC has developed the following Vegetation Management Program for the control of vegetation on its distribution facilities. This Program covers the maintenance of vegetation for the 3,850 miles of single, double and three-phase distribution lines. Goals and strategies of the program are:

1) Maintain reliability of the distribution lines by controlling vegetation to meet the requirements of NESC and ANSI.

2) Strategies for control include cultural, mechanical, manual, and chemical treatments.

3) LCEC's practices planned circuit trimming on a six year cycle for single phase and a three year cycle for double and three phase distribution.

4) Approved procedures include directional trim techniques per ANSI A300 standard. Maintain side clearance of 8-10 feet or employ the use of directional trim technique of taking the cut to the next lateral beyond the standard clearance point. Standard ground/horizontal clearance is one foot below the lower most cable attachment or 12 feet from the primary, which ever is greater. Palm trees are tipped back so fronds will not make contact with the primary when they drop. Overhang less than 15 feet above the primary is removed. All vines are cut and sprayed.

LCEC's TREES (To Respect Electricity and the Environment Safely) communication program focuses on planting and landscaping. Key messages are incorporated into the customer newsletter at least twice a year. Door hangers with brochures containing detailed information about planting the right tree in the right place are distributed throughout neighborhoods prior to circuit trimming. Through LCEC's Public Relations Department, presentations are used to promote smart landscaping to city government, builders and local agencies

LCEC maintains a bi-annual ground inspection of ROW Restriction Vegetation with trim/maintenance done as required.

LCEC's Vegetation Management Program resulted in a significant drop in Vegetation related outages (27.2% from 2005 to 2006) along with a 22.2% drop in customer requests.

(b) 2006's Planned Vegetation Management for transmission and distribution was completed as scheduled.

2006 Vegetation Management Schedule				
	YTD Actual	YTD Goal	% YTD	YE Goal
Transmission trimming*	80	80	100.0%	80

Three-phase trimming*	519.38	519.38	100.0%	519
Single-phase trimming*	582.38	582.38	100.0%	582
Transmission mowing*	102	102	100.0%	102
230 kV Inspection	Feb & Aug	Bi-annual	100.0%	Bi-Annual
138 kV inspection	Jan thru Sep	Annual	100.0%	Annual
ROW Restriction Inspection/Maintenance**	August	Bi-annual	50.0%	Bi-Annual

* Miles
** Program initiated August 2006

OKEFENOKE

REMC

Okefenoke Rural Electric Membership Corporation

POST OFFICE BOX 602
NAHUNTA, GA 31553-0602
912-462-5131
912-462-6100 FAX
800-262-5131

2475 VILLAGE DRIVE
SUITE 106
KINGSLAND, GA 31548
912-882-1362

POST OFFICE BOX 1229
HILLIARD, FL 32046-1229
904-845-7477
904-845-7510 FAX

"Owned By Those We Serve"

February 22, 2007

Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

RE: Final 2006 Report, for Rule 25-9.0343, F.A.C.

Mr. Devlin,

Please find enclosed our final report pursuant to Rule 25-6.0343, F.A.C. for the year 2006.

Sincerely,

Ernie Thomas
Manager of Engineering
Okefenoke Rural Electric Membership Corporation

Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2006

1) Introduction

Okefenoke Rural Electric Membership Corporation
P.O. Box 602
147 East Cleveland Street
Nahunta, Georgia 31553

Contact Information:

Ernie Thomas
Manager of Engineering
800-262-5131 Ext. 1138
912-462-6100 Fax
ernie.thomas@oremc.com

2) Members Served

As of December 31st 2006, Okefenoke Rural Electric Membership Corporation serves 23,428 meters in the state of Georgia, and 9,703 meters in the state of Florida. The total number of meters served system-wide is 33,131.

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at the Okefenoke Rural Electric Membership Corporation comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 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, 2007.

b) Extreme Wind Loading Standards

At this time, Okefenoke Rural Electric Membership Corporation's facilities are not designed to be guided by the extreme loading standards on a system wide basis. Okefenoke Rural Electric Membership Corporation is participating in the Public Utility Research Center's (PURC) granular wind research study through the Florida Electric Cooperative Association. Though we continue to self-audit and evaluate our system to determine any immediate needs for system upgrades and hardening in isolated areas, at this time we do not have sufficient data to substantiate the effort and cost of making major upgrades to our system. We feel that it is important to wait for the results of this research before making such a commitment.

c) Flooding and Storm Surges

Okefenoke Rural Electric Membership Corporation is in the process of evaluating our standards, policies, guidelines, practices and procedures that address the effects of flooding and storm surges on underground facilities and supporting overhead facilities. Okefenoke Rural Electric Membership Corporation is 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 Electric Cooperative Association. We continue to evaluate and address the effects of flooding and storm surge but we feel that it is important to wait for the results of this research to justify the effort and cost of converting overhead to underground

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

Electrical construction standards, policies, guidelines, practices, and procedures at the Okefenoke Rural Electric Membership Corporation provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Wherever new facilities are placed (i.e. front, back or side of property), all facilities are installed so that Okefenoke Rural Electric Membership Corporation's facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. Okefenoke Rural Electric Membership Corporation 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

The pole attachment agreements between Okefenoke Rural Electric Membership Corporation and third-party attaching companies, with the exception of BellSouth of Florida and BellSouth of Georgia, include language which specifies that the attaching company, not the cooperative, has the burden of assessing pole strength and safety before they attach to the pole. A registered professional engineer licensed in the state in which the attachment is made, is required to certify that new permitted attachments fully comply with the latest edition of the National Electrical Safety Code. Okefenoke Rural Electric Membership Corporation performs follow-up audits of attachments to ensure the attachment is properly installed and maintained.

The Bell South of Georgia Joint Use Agreement requires each party to at all times, maintain all of its attachments in accordance with the specifications of the agreement. This includes as a minimum, the requirements of the National Electrical Safety Code (NESC) and subsequent revisions thereof. As a part of the permitting process for new attachments, the attaching company is required to submit all technical information necessary for verification by the pole owner of compliance with the NESC. Okefenoke Rural Electric Membership Corporation performs follow-up audits of attachments to ensure the attachment is properly installed and maintained.

Okefenoke Rural Electric Membership Corporation is currently negotiating a new agreement with Bell South of Florida. It is anticipated that the agreement will be similar in scope to the Georgia agreement, thereby including as a minimum, the requirements of the National Electrical Safety Code for attachments. Okefenoke Rural Electric Membership Corporation performs follow-up audits of attachments to ensure the attachment is properly installed and maintained.

4. Facility Inspections

a) Guidelines, Practices, and Procedures

Okefenoke Rural Electric Membership Corporation inspects its distribution lines, poles, and structures in accordance with RUS Bulletin 1730B-121, entitled "Pole Inspection and Maintenance". The cooperative owns no transmission facilities. The cooperative utilizes a contractor to administer the inspection and maintenance program. This procedure includes visual inspection from ground-line to the top of the pole, sound and bore with excavation, and chemical treatment of the poles. Okefenoke Rural Electric Membership Corporation has traditionally utilized a 10-year pole inspection cycle, and we have seen very low rejection rates using this pole inspection cycle. But, the decision has been made to accelerate the cycle to an 8-year inspection cycle, since the IOU's and most cooperatives in the state of Florida are on the 8-year cycle.

b) 2006 Inspections

Okefenoke Rural Electric Membership Corporation planned to inspect 5,500 distribution poles, or 10% of the number of poles on the system in the year 2006. Inspection of 6,535 distribution poles was actually completed for the year 2006. This represents approximately 12.2% of the

53,572 poles on the system as of December 2006. This coincides with the 8-year inspection cycle.

c) Rejections

During the 2006 pole inspections, 38 distribution poles were rejected. This represents a rejection rate of less than 0.6% of the 6,535 poles inspected in the year 2006. The reason for the rejection of each of these poles was excessive pole decay.

d) Replacement and Remediation

Of the 38 rejected wooden distribution poles found during the 2006 inspections, 19 poles were replaced and remediation for 19 poles is scheduled for Spring 2007. The remediation method will consist of reinforcement of these 19 deficient poles. The metal C-Truss method will be used, providing restoration of ground-line bending capacity with this industry acceptable method. The following table summarizes: the pole length and class, the number of poles replaced, and the number of poles to be restored using the remediation method described above.

Summary of OREMC 2006 Pole Inspection Rejections and Actions Taken

Pole Length – Class	Number Replaced	Number to be Restored
30-7	1	
30-6	3	2
30-5	2	2
35-7	2	1
35-6	8	4
35-5	2	7
35-3	1	
40-5		1
45-5		1
50-3		1
Totals	19	19

5. Vegetation Management

a) Guidelines, Practices, and Procedures

Okefenoke Rural Electric Membership Corporation utilizes contractors for its vegetation management programs, with supervision from the cooperative's staff. Vegetation control practices consist of complete clearing to the ground-line, trimming, and herbicide application. The herbicide is generally applied to the sections of line cleared the previous year, thereby extending the clearing cycle beyond what would normally be needed. The cooperative is also widening right of ways from twenty to thirty feet wide, wherever practical. These practices have allowed the cooperative to move to a five-year trim cycle, rather than a three-year cycle.

Problem trees outside the road right of way or easement are handled on a case-by-case basis. Often a landowner will contact the cooperative, requesting danger tree removal. The cooperative's right of way foreman will investigate and facilitate the tree removal if it is feasible to do so. In other instances, problem trees are reported by cooperative employees or other persons, and the right of way foreman will attempt to obtain landowner permission to remove the problem tree. If permission is granted, the process is essentially the same as if the landowner reported the problem tree. The majority of the cooperative's system is rural, and the rural consumers are generally very supportive of the effort to remove the problem trees to help avoid power interruptions.

b) 2006 Vegetation Management

Okefenoke Rural Electric Membership Corporation planned to address 500 miles of right of way trimming and clearing for the year 2006. 500 miles per year has been the benchmark, which the cooperative has targeted for several years. For the year 2006, the cooperative actually cut and trimmed 476 miles of right of way. This equates to approximately 19.5 % of the cooperative's 2,444 miles of overhead distribution. Herbicide was also applied to 443 miles of the distribution line right of way in the year 2006. These numbers are on track for the cooperative's five-year trim cycle.

The PURC research group will be holding a vegetation management conference in March 2007. Okefenoke Rural Electric Membership will utilize any useful information that may result from this conference. This information will be referenced in our report next year.

Peace River Electric Cooperative, Inc.
P.O. Box 1310 • Wauchula, Fl. 33873 • (863) 773-4116 • www.preco.org

A Touchstone Energy Cooperative

Engineering Fax: 863.767.4662

1) Introduction

   a) Peace River Electric Cooperative

   b) 1499 North Hwy 17, Wauchula, Florida, 33873

   c) Jerry Twiggs, V.P. Engineering, 1-863-767-4602, jerry.twiggs@preco.coop

2) Number of meters : 32,457

3) Standards of Construction

Peace River Electric Cooperative is an RUS (Rural Utilities Service) borrower and as such our standards, practices and procedures are in compliance with construction regulations of the Federal government. One of the requirements of RUS is that Peace River Electric Cooperative has construction standards in compliance with applicable rules in the National Electric Code.

   a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at Peace River Electric Cooperative comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction.

b) Extreme Wind Loading Standards

At this time, Peace River Electric Cooperative facilities are not designed to be guided by the extreme loading standards on a system wide basis. Peace River Electric Cooperative is participating in the Public Utility Research Center's (PURC) granular wind research study through the Florida Electric Cooperative Association. We continue to self-audit and evaluate our system to determine any immediate needs for system upgrades and hardening in isolated areas. At this time we do not have sufficient data to substantiate the effort and cost of making major upgrades to our system. We feel that it is important to wait for the results of this research before making such a commitment and seeking approval from RUS.

c) Flooding and Storm Surges

Peace River Electric Cooperative is in the process of evaluating our standards, policies, guidelines, practices and procedures that address the effects of flooding and storm surges on underground facilities and supporting overhead facilities. Peace River Electric Cooperative is participating in the Public Utility Research Center's (PURC) study on the conversion of overhead electric facilities to underground and the effectiveness of underground facilities in preventing storm damage and outages through the Florida Electric Cooperative Association. We continue to evaluate and address the effects of flooding and storm surge but we feel that it is important to wait for the results of this research to justify the effort and cost of converting overhead to underground.

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

Electrical construction standards, policies, guidelines, practices, and procedures at the Peace River Electric Cooperative provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Wherever new facilities are placed (i.e. front, back or side of property), all facilities are installed so that Peace River Electric Cooperative's facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. Peace River Electric Cooperative 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

The pole attachment agreements between Peace River Electric Cooperative and third-party attachers include language which specifies that the attacher, not the Cooperative, has the burden of assessing pole strength and safety before they attach to the pole. However, Peace River Electric Cooperative notifies attachers of non-compliance and when joint-use counts are performed by representatives of both parties also verify the attachments are 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.

Peace River Electric Cooperative uses its best efforts to follow the guidelines including, but not limited to, planned inspection and maintenance programs outlined in RUS bulletin 1730B-121. Peace River Electric Cooperative, each calendar year, monitors the process, guidelines and procedures to determine if changes are needed to improve our current program and to evaluate the results of our current inspection/treatment program. Under Bulletin 1730B-121, Peace River Electric Cooperative is located in Decay Zone 5 with a guideline of an initial inspection of 8-10 years and subsequent inspection of 8 years. Also, contained in the guidelines that, if inspections indicate a low decay rate in certain areas of the system, the inspection can be adjusted accordingly; likewise, if the inspections in a certain area have a high decay rate, then the inspections would be adjusted accordingly in that area of our system. Currently Peace River Electric Cooperative has implemented a 8 year cycle.

Peace River Electric Cooperative, at the current time, has adopted a more aggressive inspection on transmission poles by having all 292 transmission poles inspection every two (2) years. However, as with distribution poles, Peace River Electric Cooperative reviews, monitors and evaluates the current program on an annual basis.

b) Describe the number and percentage of transmission and distribution inspections planned and completed for 2006.

Peace River Electric Cooperative replaced six (6) transmission poles during the calendar year of 2006. The Cooperative has seventy-two (72) concrete transmission poles, two (2) steel transmission poles and two hundred eighteen (218) wooden transmission poles. On a percentage basis, Peace River Electric Cooperative inspected 100 % of the transmission poles in 2006.

Peace River Cooperative, under the formal inspection program, inspected 3604 wooden distribution poles, replaced 140 poles as a result of the formal pole inspection program and replaced 102 poles identified outside the formal inspection program. In calendar year 2006, the Cooperative had approximately 53,158 wooden distribution poles.

c) Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2006 and the reason for the failure.

Under RUS Bulletin 1730B-121, a pole is "serviceable" under the following conditions:

1. Large portion of completely sound wood exists
2. Early stages of decay which have not reduced the pole strengths below NESC requirements.
3. Pole condition is as stated in (1) or (2) but a defect in equipment may exist, such as a broken ground or loose guy wire. Equipment defects should be subsequently repaired.

If the pole does not meet the above conditions, the pole has failed the inspection and is classified as a reject.

Under the formal inspection program, approximately 3604 distribution poles were inspected and 140 poles were classified as rejects. The percentage of inspected poles requiring replacement under the formal pole inspection program was 3.9 percent.

Peace River Electric Cooperative rejected/replaced six (6) transmission poles that failed either under the formal inspection program or identified outside the inspection program. If you divide the six replaced transmission poles by the total number of transmission poles (292), Peace River Electric Cooperative experienced a two percent (2) failure rate during the calendar year of 2006. Four (4) of the poles are wood and failed due to excessive decay at the ground level. One (1) concrete transmission pole was replaced due to lightning damage. One (1) concrete transmission pole was replaced due to damage by the third party contractor's equipment during the construction of a road expansion in Manatee County.

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 2006, including a description of the remediation taken.

The number and percentage of poles rejected was provided in the previous answer.

The number of "serviceable poles" (number of poles inspected under the formal program and identified to have some decay) that did receive remediation as provided in RUS Bulletin 1730B-121. Under the formal inspection program, 925 poles were classified as serviceable. Listed below is a breakdown of the size and class of poles receiving remediation on a percentage basis:

Height-Class	Percentage
30-6	27%
35-4	5%
35-5	5%
35-6	14%
40-4	23%
40-5	21%
45-3	2%
50-3	2%

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.

Peace River Electric Cooperative, during the calendar year of 2006, performed right of way maintenance on 17 percent of our 2646 miles of overhead distribution. The right of way maintenance utilized guidelines suggested in either RUS bulletins or other materials available from RUS.

In addition, Peace River Electric Cooperative will be working through the PURC research group and a conference to be held in March, 2007. Any useful information that may result from the conference will be referenced in our report next year.

Currently, Peace River Electric Cooperative has implemented a four-year formal vegetation management cycle which has been reviewed by RUS.

SUBMITTED BY:
Jerry Twiggs
Jerry Twiggs
V.P. of Engineering
Peace River Electric Cooperative, Inc.

Seminole Electric
COOPERATIVE, INC.
IN PARTNERSHIP WITH THOSE WE SERVE

February 22, 2007

Mr. Tim Devlin
Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

RE: FPSC Report Pursuant to Rule 25-6.0343 Calendar Year 2006

Dear Mr. Devli:

Attached for your information is Seminole's response to the FPSC request for information concerning hardening of facilities. Although Seminole is a Generation and Transmission Cooperative, with no distribution facilities, we felt we should reply to this survey.

Please let me know if you have any additional questions.

Sincerely,

Kenneth L. Bachor

Kenneth L. Bachor P.E.
Director of Transmission Services

07 FEB 26 AM 9:38

KLB/jcd

Attachment

cc: M. Opalinski

16313 North Dale Mabry Highway P.O. Box 272000 Tampa, Florida 33688-2000
Telephone 813.963.0994 Fax 813.264.7906 www.seminole-electric.com

Outline for Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2006

1) **Introduction**

   a) **Name of city/utility**
   Seminole Electric Cooperative, Inc. (SECI)

   b) **Address, street, city, zip**
   16313 North Dale Mabry Highway, Tampa, Florida 33618

   c) **Contact information: Name, title, phone, fax, email**
   Kenneth L. Bachor, P.E.
   Director Transmission Services
   W) 813.739.1217
   F) 813.264.7906
   kbachor@seminole-electric.com

2) **Number of meters served in calendar year 2006**
   SECI is a generation and transmission cooperative with no distribution facilities.

3) **Standards of Construction**
   NESC, IEEE, ANSI and RUS guidelines are followed where applicable.

   a) **National Electric Safety Code Compliance**
   Construction standards, policies, guidelines, practices, and procedures at SECI comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, 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 SECI are guided by the extreme wind loading standards specified by Figure 250-2(d) of the 2002 edition of the NESC for:

   - Major planned works, including expansion, rebuild, or relocation of existing facilities assigned on or after December 10, 2006.
   - New construction.

   c) **Flooding and Storm Surges**
   Does not apply.

d) **Safe and Efficient Access of New and Replacement Distribution Facilities**
Does not apply.

Attachments by Others

- Bulk Transmission, 230kV: does not apply.
- Non-Bulk Transmission: loading models of the additional attachments are studied; the attachment agreements and inspections are then handled by the individual SECI member cooperative.

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.**
All SECI transmission lines are inspected annually. High priority areas are located during inspections and maintenance activities of these areas are addressed immediately.

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

- There were twenty-two (22) transmission lines (100% of SECI's system) that were inspected by SECI in 2006. These inspections were completed fully and on time.

c) **Describe the number and percentage of transmission poles and structures and distribution poles failing inspection and the reason for the failure.**
The bulk of SECI's transmission lines (230kV) are on steel or concrete structures which basically do not fail. SECI owned 69kV lines are primarily supported by wood poles; however, this system is relatively young, with most lines in the 25 year old range and thus is experiencing a very small percentage of poles failing inspection (estimated at less than half of one percent). Some typical SECI failures that have been noted include:

- Crossarm Failures: 69kV transmission lines that utilize crossarms and porcelain insulators are starting to show end-of-life symptoms. Projects are underway to replace the cross-arms with polymer post insulators.
- Rotting Transmission Poles: identified poles have been replaced.
- Insulator failure: multiple failures on relatively new insulators over a short time-span prompted a preemptive project to replace insulators on an entire 230kV circuit over a 5 year timeframe.
- Bulk Transmission Steel Crossarm Failures: excrement from birds of prey has corroded the steel crossarms on a few structures. These structures have been identified and materials are in the process of being procured for crossarm replacement.

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.**
See section 4.c

5) Vegetation Management

a) **Utility 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.**
SECI has documented the vegetation management program to NERC and is committed to strictly follow the procedures and schedule.

b) **Quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities.**

- Cultural Controls: include the use of existing vegetation to control the germination and growth of woody vegetation that can grow to heights that can be problematic for transmission lines. Existing vegetation controls problem vegetation through competition for nutrients, moisture and light. Some species, such as wax myrtle are allelopathic, which involves the release of chemicals from roots that restrict growth of problem species. Low volume herbicide spraying, used extensively on SECI's ROWs are designed to leave wax myrtles and other low growing shrubs, herbs, and grasses to allow for maximum coverage of the ROW by species that will shade out or out compete problem vegetation growth.

- Manual Controls: include removing vegetation by hand. Equipment used includes machetes, chain saws, and string trimmers. This method is used in wetland areas or residential areas where trees have grown too tall or too dense for normal herbicide application. The leftover debris is removed from areas that have surface water flow, or in residential areas where aesthetics are a concern. Manual controls are also used when problem trees are found between routine vegetation management cycles. Tall trees are removed to maintain proper clearance.

- Mechanical Controls: include the use of mowers, bushogs, roller choppers, and other large, low ground pressure equipment as needed. This method is used in cases where herbicide or manual controls are not practical. Because roots are not harmed using this method, follow-up herbicide treatment is required to prevent massive growth from cut stems. This method is also used to remove dangerous side growth and danger trees from the edge of the ROW.

- Chemical controls: include the use of herbicides and plant growth suppressors. Due to permit conditions for the transmission lines, broadcast herbicide application is not used on SECI transmission lines. Low volume foliar herbicide application from backpacks or hoses connected to tanker trucks are used only on tall growing vegetation on the ROW. Wetland areas require the use of foliage type, wetland approved EPA and Florida Department of Environmental Protection approved herbicides. Herbicides used in upland areas are foliage absorbed types and are chosen based on ease of application, fate in the environment, and effectiveness. Woody vegetation growing adjacent to structures is controlled with long acting granule type systemic herbicide.

- Danger trees: defined as dead snags or live trees that are adjacent to the ROW tall enough to damage conductors, if felled, are removed as soon as practicable once discovered.

- Scheduling: Routine maintenance activities are normally performed every 3-5 years depending on the amount of growth observed during inspections. Maintenance activities include removing or killing of all potentially tall growing species and all other species that exceed 10 feet in height from the edge of the original ROW. Low growing shrubs, herbs and grasses are allowed to remain as practical in order to allow for cultural controls.

Sumter Electric Cooperative, Inc.

07 FEB 28 AM 9: 14

February 27, 2007

Tim Devlin
Director of the Division of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Dear Mr. Devlin:

Enclosed is Sumter Electric Cooperative, Inc.'s report to the Florida Public Service Commission to comply with Rule 25-6.0343.

Sincerely,

R. Ben Brickhouse, P.E.
Director, Engineering & IT

John J. LaSelva
Director, Reliability & Operations

A Touchstone Energy® Cooperative
The power of human connections

Sumter Electric Cooperative, Inc. Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2006

1) Introduction

   a) Sumter Electric Cooperative, Inc. (SECO)

   b) 330 South US Highway 301 (PO BOX 301), Sumterville, FL 33585-0301

   c) John LaSelva, Director of Reliability & Operations
   352-793-3801, x 1288
   Ben Brickhouse, Director of Engineer & IT
   352-793-3801, x 1257

2) Number of meters served in calendar year 2006 = 158,454 as of December 31, 2006.

3) Standards of Construction

   a) National Electric Safety Code Compliance - Sumter Electric Cooperative's design and construction standards follow RUS guidelines which are in compliance with the NESC.

Construction standards, policies, guidelines, practices, and procedures at SECO comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction.

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   b) Extreme Wind Loading Standards

At this time, SECO transmission facilities are designed to be guided by the extreme loading standards on a system-wide basis. Our distribution facilities are designed to withstand 100 mph according to the 2002 NESC. SECO is participating in the Public Utility Research Center's (PURC) granular wind research study through the Florida Electric Cooperative Association. Though we continue to self-audit and evaluate our system to determine any immediate needs for system upgrades and hardening in isolated areas. At this time we do not have sufficient data to substantiate the effort and cost of making major upgrades to our system. We feel that it is important to wait for the results of this research before making such a commitment.

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c) Flooding and Storm Surges

SECO is a non-coastal utility. Storm surge is not a consideration. While we serve a coastal county (Citrus), the closest SECO facility is 14 miles from the coast.

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

Electrical construction standards, policies, guidelines, practices, and procedures at the SECO provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Wherever new facilities are placed (i.e. front, back or side of property), all facilities are installed so that SECO's facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. It is the policy of SECO to install electrical facilities on the front of lots except those cases that are prohibited by land covenants. SECO 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.

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e) Attachments by Others

Electrical construction standards, policies, guidelines, practices, and procedures at SECO 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. SECO inspects all new attachments. In 2007 all attachments will be inspected and field verified and subsequently SECO will inspect all attachments every six years.

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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.

It is the policy and practice of SECO to inspect its facilities to increase reliability to our members. SECO inspects its transmission facilities, substation facilities, and distribution facilities.

Since the transmission system is the most critical because it serves the most number of members per line, SECO has instituted a policy of completing a climbing inspection every five years, with the last inspection being completed in 2006. In the past, a ground inspection on these transmission structures were completed once every nine years, and now will be completed once every eight years. The ground inspection includes sound and boring tests, and excavation of all poles for treatment per RUS Bulletin 1730B-121. All transmission poles replaced are being replaced with concrete poles.

The next most critical items in the electrical system are the substations. SECO does a visual inspection every month at every substation. Also it is the policy and practice to conduct an infrared inspection bi-monthly on every substation to reveal hot spots that could cause substation outages. This has been very effective, and is one reason our substation reliability has been extremely good in recent years.

It has been the policy and practice to perform a ground inspection on 100% of its distribution poles every nine years. The ground inspection includes sound and boring tests, and excavation of all poles for treatment per RUS Bulletin 1730B-121. This was modified in 2007, and now 100% of our distribution poles will be inspected every eight years. Also SECO will perform a security inspection on 100% of its underground equipment every eight years.

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b) Describe the number and percentage of transmission and distribution inspections planned and completed for 2006.

We began our transmission climbing inspections in 2005 and did not complete the entire system until 2006. So we are including the entire transmission inspection results for 2005 and 2006 on one line.

a. Transmission System

Year	# of Structures – Planned Inspections	% of total structures	# of Structures – Actual Inspected	% complete vs. planned
2005-2006	1411	100%	1411	100%
2004	1411	100%	1411	100%

b. Distribution System

Year	# of Structures – Planned Inspections	% of Total Structures	# of Structures – Actual Inspected	% Complete vs. Planned
2006	14,391	11%	14,391	100%
2005	12,710	11%	12,710	100%
2004	11,903	11%	11,903	100%

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c) Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2006 and the reason for the failure.

Transmission and Distribution System

Year	System	# Failed	% Failed	Cause
2005-2006	Transmission	17	1.2%	Ground Rot
2005-2006	Transmission	19	1.3%	Top Deterioration
2005-2006	Transmission	19	1.3%	Woodpecker holes
2006	Distribution	226	1.6%	Ground Rot
2006	Distribution	106	0.7%	Top Deterioration

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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 2006, including a description of the remediation taken.

The following numbers for SECO represent the remediation taken during 2006 by pole type for both transmission and distribution poles. For all transmission poles the remediation is replacement with a concrete transmission pole. For distribution poles the remediation is either replacement or reinforcement with a steel reinforcing member. It is estimated that all transmission pole remediation will be completed by June 1, 2007, and all distribution pole remediation will be completed by the end of 2007.

Pole Type and Class	# Failed	% Remediation complete
25/7	8	25%
30/4	1	100%
30/5	2	0%
30/6	213	14%
30/7	1	0%
35/4	1	100%
35/5	6	33%
35/6	77	10%
35/7	1	0%
40/4	2	0%
40/5	77	16%
45/4	11	18%
45/5	6	0%
50/4	3	67%
65/1	6	17%
70/1	34	89%
75/1	10	100%
80/1	3	67%

5. Vegetation Management

Sumter Electric Cooperative -Vegetation Management Policies, Guidelines, and Practices:

From 1996 through April 2006, SECO followed a structured vegetation management program. This program's foundation was a three-year maintenance trim cycle for all overhead conductors. This included all feeder circuits and laterals. SECO had attempted to maintain at least a 10 foot clearance on conductors during the trim process. However, this was not strictly enforced due to customer reluctance to grant trimming permission. This reluctance also contributed to SECO's negligible tree removal rate. In spite of customer trimming reluctance, SECO's vegetation management contractor during this period, Asplundh Tree Experts Inc., managed to maintain a three-year trimming cycle. Asplundh Tree Experts followed trimming guidelines that they used throughout the southeast.

The 2004 Hurricanes were the catalyst for SECO to evaluate its trimming policies. Although SECO adhered to a three-year trim cycle, the majority of outages during the hurricanes were tree caused. Poles remained standing in many cases while trees caused conductors to fall. This is illustrated below.

Poles are up / Wires are down

In 2005 SECO hired a consultant, ACRT, to evaluate SECO's trimming practices, specifications and the overall impact of vegetation on SECO's electrical system. ACRT found that SECO's past practices were acceptable but could be improved. As a result of ACRT's recommendations, SECO developed a new set of trimming specifications, developed an aggressive easement reclamation program, and modified its contracting method from "Lump Sum Pricing" to "Unit Pricing". These changes were implemented when a new vegetation management contract was awarded to Lewis Tree Service, Inc (LTS) on April 1, 2006.

The following are significant changes to SECO's vegetation management policies, guidelines, and practices that were implemented in April 2006:

- **Trimming Clearances**: Clearances are based on species growth rates to maintain a three-year trim cycle. Slow growth species are trimmed at 10 feet; medium growth species are trimmed at 12 feet; fast growth species are trimmed at 15 feet.
- **Vegetation Removal**: SECO utilized ACRT arborists to contact customers and plan work. They concentrated on gaining permission to remove trees that mainly fell in the 4"-10" diameter at breast height (dbh) range.
- **Brush Removal**: SECO removed all brush from under its conductors. This prevents future tree growth.

- **Pruning Practices**: SECO now requires all its vegetation management contractors to follow "SHIGO" industry standard pruning practices. Adherence to these standards allows trees to remain healthy after pruning.
- **Unit Price Contracting**: SECO's vegetation contractor, Lewis Tree Service, Inc. was awarded a contract on April 1, 2006 that required all trimming to be paid on a per-unit basis. This allowed SECO to accurately track work performed by type trim, removal, etc.
- **Circuit Prioritization**: Although SECO is attempting to remain on a three-year cycle, the circuits are prioritized based on reliability indices. Those circuits that have experienced the most tree related outages are trimmed first.
- **Tree Replacement Program**: In 2006, SECO began to experiment with a "Tree Replacement Program". In certain instances, SECO offered customer's either low-growing or slow-growing trees when customers allowed the removal of danger trees or tree lines in close proximity to conductors.

Vegetation Management Procedures:

Maintenance Trimming: From January 1996 through April 2006 SECO provided its contractor Asplundh Tree Experts, Inc. (ATE) with circuits to be trimmed by year for three years. ATE would then plan their own work and notify customers of trimming. If a customer did not grant trimming permission, ATE would not trim the trees. This procedure was completely modified in 2006. ACRT now performs all work planning and customer notification. ACRT then provides their work plans to SECO and in turn SECO provides them to the actual crews that will do the trimming. This three party approach to permission and planning has resulted in a huge increase in tree removals from 2005 to 2006. ***In 2006 SECO removed 12,877 trees*** during the maintenance trimming process. In prior years this number was negligible.

New Construction / System Upgrade Trimming: In April 2006, SECO implemented a "Ground to Sky" trimming practice for all circuits that are newly constructed or are being significantly upgraded. These circuits are being clear-trimmed at 15 foot clearance. In addition, all underbrush is being removed.

2006 Results:

In 2006 SECO trimmed 746 circuit miles and removed 12,877 trees. The following table is a summary:

DESCRIPTION	MEASUREMENT
Miles cut "Ground-to Sky" with 15 foot clearance on circuits for system improvement projects	117 miles
Miles "Maintenance Trimmed" per species growth rate (10 ft, 12 ft, or 15 ft)	629 miles
Total miles trimmed in 2006	**746 miles**
Total trees removed in maintenance trimming process	12,877

SECO's goal was to remain on a three-year trim cycle and trim approximately 1500 circuit miles in

2006. SECO was only able to accomplish about 50% of that goal. There were three major reasons for not meeting this target:

- SECO revised its entire vegetation management program and awarded a new contract on April 1, 2006. This was approximately one quarter into 2006.
- The successful unit priced bidder, Lewis Tree Service, Inc. (LTS) was not able to trim 1500 miles in 2006. They cited manpower issues as the cause. SECO had to add a second contractor in the 4th quarter of 2006 to perform maintenance trimming.
- Tree removals far exceed any projections. SECO customers are extremely willing to have trees either trimmed or removed. This shift in cooperation has been very dramatic since the hurricanes and continues to this day. Since removals are so high, actual circuit miles trimmed is reduced. ***This is clearly illustrated in attached V-1.***

Obstacles Ahead:

There are two major obstacles that SECO's vegetation management program faces. These are available contracting resources and cost to maintain a three-year trim cycle. Both obstacles are intertwined.

Since the Florida Public Service Commission (FPSC) has mandated revised tree trimming requirements for Investor Owned Utilities (IOUs) in Florida, the demand for tree trimming labor has greatly increased while the available labor pool has remained constant. This labor shortage was cited as a primary reason that LTS could not trim SECO's 1500 circuit miles in 2006 and again in 2007. ACRT cannot maintain a static work force due to work force shortages which has caused delays in work planning. Finally, Nelson Tree Service, Inc (NTS), SECO's secondary trimming contractor can only supply out-of-state labor that is unstable and very costly. These labor shortages make it difficult, if not impossible to reach trim goals.

In addition to not meeting trim targets, the labor shortage translates into price increases. SECO has already realized an increase in price from its contractors. Since labor is tight or not available in Florida, contractors must either pay higher wages to in-state employees or bring personnel from other states. Out-of-state workers require per-diem and expenses that are directly passed to SECO and its customers. In 2005, SECO spent approximately $3 million dollars to trim 1500 circuit miles. SECO estimates that to perform 1500 miles of circuit trimming in 2007 the cost would be approximately $6.4 million dollars. This is a 113% increase in price. If this expense was equally shared among SECO's 150,000 customers, it would represent an annual bill of approximately $43 to each customer. That cost is not possible to absorb or pass on.

If SECO and is members could bear the huge cost increase, the contractors will not likely be able to muster the manpower to complete the work. This is truly a problem that SECO and utilities across the state will face in 2007 and the beyond.

2007 Plan:

Since SECO was not able to complete all the planned circuit trimming in 2006, those circuits as well as the 2007 scheduled circuits were prioritized based on tree related outages and customers impacted. The worst performing circuits will be trimmed first and the best performing will be trimmed last.

In order to maintain a three-year trim cycle, SECO would need to trim approximately 2300 circuit miles in 2007. This is a monumental goal given the obstacles described above. However, at this time, SECO is continuing with this plan until the conclusion of the 1st quarter of 2007. At that time, SECO will analyze the status of the program. This analysis includes:

- Project the circuit miles that will be completed in 2007 with the present production rates, manpower, and units planned per mile.
- Closely analyze the units cut per mile and determine if this is going up or down. This is the principle driver in ascertaining how many miles a contractor can trim.
- Project the cost to trim all 2007 circuit miles and compare it to the 2007 budget.

Based on this analysis, SECO has two options. Continue with the plan or make philosophical adjustments. These possible adjustments may be:

- Increase the trim cycle from three years to some higher interval.
- Trim major feeder circuit backbone on a three year cycle but increase the cycle on laterals.
- Review the pricing structure of the contractors and determine if there is a more cost effective alternative.

SECO recognizes the importance of an integrated vegetation management program. It is an essential component of providing safe and reliable electric service. Although there are obstacles to maintaining a three-year cycle, SECO will continue to analyze its policies and procedures to determine the best course of action. To date, SECO has clearly demonstrated its commitment to vegetation management by maintaining a three-year trim cycle from 1996 to 2006, completely revising the procedures to address the concerns raised in 2004, and seeking improvement opportunities moving forward.

Attachment V-1

Members / Customers Modify Paint Marks

Example: Crown Reduction (Dot) to Remove ("X")

SECO marked this tree for a crown reduction with a "Dot". The member / customer modified the marking with their own paint to an "X". This signifies removing the tree. SECO has experienced this since the hurricanes of 2004.

This clearly illustrates the change in customer's willingness to trim / remove trees. It also presents the potential for a large increase in projected cost and time to trim (cycle). The price for a crown reduction is $79.00. Since this tree is in the feeder circuit, SECO will remove it. Since this tree is over 40" in diameter, it will be removed at "hourly rates". The cost (including wood removal) is $1,740.00. This is an increased cost of 2103% for one tree.

Suwannee Valley Electric Cooperative, Inc.

POST OFFICE BOX 160 • LIVE OAK, FLORIDA 32060 • PHONE (904) 362-2226

February 23, 2007

Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Construction Standards Report

Dear Mr. Devlin:

Enclosed please find our final Construction Standards Report as required per Rule 25-6.0343, F.A.C. for calendar year 2006.

Should you have any questions or concerns, please feel free to contact me directly at (386) 362-2226 ext. 140.

Sincerely,

Kurt Miller
Director of Engineering

JM:pk

Enclosure

Outline for Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. Calendar Year 2006

1) Introduction

a) Suwannee Valley Electric Cooperative Inc.

b) 11340 100th St.
Live Oak, FL 32060

c) **Contact information:** Kurt Miller, 386-362-2226(ext.140), kurtm@svec-cop.com

2) Number of meters served in calendar year 2006

23,970

3) Standards of Construction

SVEC adheres to the U.S. Department of Agriculture Rural Utility Service construction standards.

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at the Suwannee Valley Electric Cooperative comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facility's initial construction.

b) Extreme Wind Loading Standards

At this time, Suwannee Valley Electric Cooperative facilities are not designed to be guided by the extreme loading standards on a system wide basis. Suwannee Valley Electric Cooperative is participating in the Public Utility Research Center's (PURC) granular wind research study through the Florida Electric Cooperative Association. Though we continue to self-audit and evaluate our system to determine any immediate needs for system upgrades and hardening in isolated areas. At this time we do not have sufficient data to substantiate the effort and cost of making major upgrades to our system.

We feel that it is important to wait for the results of this research before making such a commitment.

c) Flooding and Storm Surges

Suwannee Valley Electric Cooperative is a non-coastal utility; therefore, storm surge is not an issue.

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

Electrical construction standards, policies, guidelines, practices, and procedures at the Suwannee Valley Electric Cooperative provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Wherever new facilities are placed (i.e. front, back or side of property), all facilities are installed so that Suwannee Valley Electric Cooperative's facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. Suwannee Valley Electric Cooperative 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

The pole attachment agreements between Suwannee Valley Electric Cooperative and third-party attachers include language which specifies that the attacher, not the cooperative, has the burden of assessing pole strength and safety before they attach to the pole. Suwannee Valley Electric Cooperative performs follow-up audits of attachments to ensure the attachment is properly installed and maintained per NESC and RUS standards.

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

Suwannee Valley Electric Cooperative inspects all structures every eight years. Inspection is followed up with the following as needed; treatment, repair, replacement. This work is performed in accordance with RUS standards and procedures.

b) Transmission and distribution inspections planned and completed

Inspection is two step process, visual evaluation of pole and all attached hardware and sound and bore. 2006; 6,702 inspections were completed representing 8.3% of system total distribution structures, 5 inspections were completed representing 100% of the system total of transmission structures. 2007 10,500 inspections are planned representing 12.8% of system total distribution structures, 5 inspections are planned representing 100% of transmission structures.

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

2006 182 inspections of distribution structures failed representing 2.7% of inspections. 100% of these failures were due to excessive splitting, 0 inspections of transmission structures failed.

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.

2006 1,625 poles were remediated by ground line treatment representing 24% of total inspected distribution structures, 0 transmission structures were remediated. Ground line treatment is dig/excavate and/or bore/inject pole with RUS approved wood treating products.

5. Vegetation Management

b) 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.

Suwannee Valley Electric Cooperative inspects, cuts, and sprays all right-of- away every 4 years. Danger trees outside right-of-way are located and cut when permission is obtained from the land owner.

c) Quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities.

2006: 701 miles of right-of-away were cut representing 25% system right-of-away and 704 miles of right-of-away was sprayed. 2007: 717 miles of right-of-away are planned to be cut representing 25% system right-of-away and 701 miles of right-of-away are to be sprayed.

TALQUIN ELECTRIC COOPERATIVE, INC.

Post Office Box 1679
Quincy, Florida
32353-1679

1640 West Jefferson Street
Quincy, Florida
32351-5679

Quincy: (850) 627-7651

Tallahassee: (850) 878-4414

February 22, 2007

Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Dear Mr. Devlin,

I have enclosed a copy of Talquin Electric Cooperative's Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C. for Calendar Year 2006.

Talquin is committed to providing reliable service to our members. The report shows our commitment to hardening our system to minimize outages during storms.

Thank You,

Bobby Kimbro

Bobby Kimbro, P.E.
Director of Engineering &
Operations Services

Talquin Electric Cooperative
Report to the Florida Public Service Commission
Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) Introduction

   1) Name of cooperative – Talquin Electric Cooperative, Inc.

   2) Address, street, city, zip – 1640 W. Jefferson Street, Quincy, Florida 32351-5679

   3) Contact information: Bobby Kimbro, P. E.
   Director of Engineering & Operations Services
   Phone # 850-627-7651
   Fax # 850-627-2553
   Email: bkimbro@talquinelectric.com

2) Number of meters served in calendar year 2006: 53,250

3) Standards of Construction

   a) National Electric Safety Code Compliance & Rural Utilities Services Standards

Construction standards, policies, guidelines, practices, and procedures at the Talquin Electric Cooperative comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, 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 the Talquin Electric Cooperative are guided by the extreme wind loading standards specified by Figure 250-2(d) of the 2002 edition of the NESC for:

a) New construction.
b) Major planned work, including expansion, rebuild, or relocation of existing facilities, assigned on or after December 10, 2006.
c) Targeted critical infrastructure facilities and major thoroughfares.

c) Flooding and Storm Surges

Only a very, very small percentage of Talquin Electric Cooperative's service area includes areas subject to storm surge. Talquin is in the process of evaluating our standards, policies, guidelines, practices and procedures that address the effects of flooding and storm surges on underground facilities and supporting overhead facilities. Talquin Electric Cooperative_is 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 Electric Cooperative Association. We continue to evaluate and address the effects of flooding and storm surge but we feel that it is important to wait for the results of this research to justify the effort and cost of converting overhead to underground. Some measures that have already been made include installation of grounding sleeves to further secure underground switching cabinets. Talquin is investigating the use of anchor systems to further strengthen our padmount transformers.

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

Electrical construction standards, policies, guidelines, practices, and procedures at the Talquin Electric Cooperative provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Wherever new facilities are placed (i.e. front, back or side of property), all facilities are installed so that Talquin Electric Cooperative's facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. Talquin Electric Cooperative 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, based on Talquin's ability to secure easements from associated property owners.

e) Attachments by Others

Talquin Electric is in the process of updating our pole attachment agreements between Talquin Electric and third-party attachers to include language which specifies that the attacher, not the cooperative, has the burden of assessing pole strength and NESC compliance and be certified by an engineer before they attach to the pole. After the attachment has been made, the third-party's engineer will certify that the work has been inspected and built according to the NESC standards. Talquin Electric and the third-party attacher will jointly inspect these attachments on a regular basis within a five (5) year cycle.

4) Facility Inspections

a) Talquin Electric Cooperative inspects the transmission lines annually checking the pole, hardware and conductors. An outside pole-treating contractor inspects distribution & transmission poles each year. For year 2007 and beyond, poles will be inspected on an eight-year rotation.

b) Talquin Electric Cooperative inspected 9,197 poles in 2006, which included 247 transmission poles. All the poles that were scheduled to be inspected in 2006 were inspected in 2006.

c) There were fifty-six (56) distribution poles rejected for a total of 0.6% of the distribution poles inspected. All of the rejected poles were rejected for decay. In 2006 Talquin Electric Cooperative had one (1) transmission pole rejected out of 247 poles that were inspected. The distribution poles were (36) 30 class 7s, (14) 35 class 6s and (6) 40 class 4s and (1) 50 class 2. Of the 8,951 distribution poles inspected 56 were rejected including 43 rejected poles and 14 priority poles. The percentage of rejected poles in 2006 was 0.6%. The priority poles were replaced with new poles and the rejected poles were inspected and repaired if possible or replaced if not.

d) When replacing 30 class 7 poles in the future, Talquin will install stronger 35 class 6 poles.

e) Talquin has an independent engineering consulting firm to perform inspections on its new and existing line construction on a quarterly basis.

f) Talquin performs monthly inspections on its substation facilities to insure that any needed maintenance is performed. Talquin has performed infrared inspections of it substations and lines to insure that any weak connections are detected and repaired before outages occur.

g) Talquin has hired a helicopter contractor to ride its transmission lines to detect any problems that could not be detected from the ground.

5) Vegetation Management

a) Talquin Electric Cooperative maintains its right of ways by mechanical cutting, herbicide applications and mowing. Talquin utilizes a variety of contractors and some in-house crews to maintain its rights of way. For 2007 and beyond, Talquin is on a three (3) year inspection & trimming cycle. The Cooperative uses the RUS bulletin for right of way maintenance and local governmental rules to perform this clearance. Talquin Electric Cooperative has substantially increased its right of way budget for 2007. The budget was increased from $2,132,000 in year 2006 to $3,820,000 in year 2007 which was an increase of 79.17% with the goal of accomplishing its trimming cycles goals to minimize outages to our members and harden our system from storms.

b) Talquin Electric Cooperative performed right of way maintenance on 513.7 miles of line in 2006, which represents 14.25% of Talquin's overhead lines. The routine maintenance was in addition to responding to approximately 1100 member request for tree maintenance.

The PURC research group will be holding a vegetation management conference in March 2007. Talquin Electric Cooperative will utilize any useful information that may result from this conference and this will be referenced in our report next year. Talquin will send a team of employees to the conference to learn new vegetation management techniques for implementation.

Tri-County Electric Cooperative, Inc.

POST OFFICE BOX 208
HIGHWAY US 90 WEST
MADISON, FLORIDA 32340

850-973-2285
800-999-2285

"Owned By Those We Serve"

February 26, 2007

RECEIVED
FLORIDA PUBLIC SERVICE
COMMISSION
07 MAR -1 AM 10: 02
DIVISION OF
ECONOMIC REGULATION

Mr. Tim Devlin, Director of Economic Regulatioin
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Tri-County Electric Cooperative, Inc.
Report for Rule 25-6.0343, F.A.C.
Calendar Year 2006

Dear Mr. Devlin:

Enclosed you will find Tri-County Electric Cooperative's Report for Rule 25-6.0343, F.A.C. for the calendar year 2006.

Sincerely,

Ronald Bass

Ronald Bass
General Manager

ROB/lfw

Enclosures

cc: Florida Electric Cooperative Association

WPWIN12\LETTERS07\FPSC\DEVLIN.LTR

Tri-County Electric Cooperative, Inc.
P. O. Box 208, Madison, Florida 32341

Report to the Florida Public Service Commission
Pursuant to Rule 25-6.0343, F.A.C.

Calendar Year 2006

1. Introduction:

a) Tri-County Electric Cooperative, Inc.

b) Mailing Address: Post Office Box 208
Madison, Florida 32341-0208

Physical Address: 2862 West U.S. 90
Madison, Florida 32340

c) Contact Information:

1. Ronald O. Bass
General Manager
Phone: (850) 973-2285 Extension 201
Cell: (850) 973-0100
Fax: (850) 973-1209
Email: rbass@tcec.com

2. George L. Webb
Manager of Finance and Administration
Phone: (850) 973-2285 Extension 217
Cell: (850) 973-0416
Fax: (850) 973-1209
Email: gwebb@tcec.com

3. V. Wayne Bass
Manager of Engineering and Operations
Phone: (850) 973-2285 Extension 232
Cell: (850) 973-0058
Fax: (850) 973-6884
Email wbass@tcec.com

2. Number of meters served in calendar year 2006

Tri-County Electric Cooperative served 17,362 meters at the end of 2006. Those meters were located in Tri-County Electric's service territory, which consists of Madison, Jefferson and Taylor Counties and the northern portion of Dixie County in the State of Florida.

3. Standards of Construction

Tri-County Electric Cooperative has followed the standards, policies, guidelines, practices and procedures set forth by the Rural Utilities Service (RUS), previously known as the Rural Electrification Administration (REA) since the Cooperative was organized in the early 1940's. Tri-County Electric's main construction standards are those set forth in the following bulletins: (1) REA Bulletin 160-2 "Mechanical Design Manual for Overhead Distribution Lines", (2) REA Bulletin 50-3 "Specifications and Drawings for 12.5/7.2 Line Construction", (3) REA Form 803 "Specifications and Drawings for 14.4/24.9 kV Line Construction", (4) REA Bulletin 50-6 "Specification and Drawings for Underground Electric Distribution", (5) REA Form 805 "Electric Transmission Specifications & Drawings", (6) RUS Bulletin 1728F-810 "Electric Transmission Specifications and Drawings 34.5 kV through 69 kV."

a) National Electric Safety Code Compliance

The RUS construction bulletins are updated as required to stay in compliance with the National Electric Safety Code (ANSI C-2) (NESC). However, Tri-County Electric Cooperative considers the standards in the NESC as well as the standards in the National Electric Code (NEC) to be the minimum standards and historically Tri-County Electric has worked to exceed these minimum standards. Proper clearance and safety, especially the public's safety, has and is a main focal point for Tri-County Electric.

1. Tri-County Electric's crew leaders inspect every new job as well as two (2) adjacent spans in each direction before leaving the job site for any NESC or NEC code violations. If any violations are found, they are corrected at that time.

2. After the job is completed, Tri-County Electric employs an outside engineering firm to inspect and verify that all new jobs are constructed to RUS standards and are free of code violations. The engineering firm field inspects 100% of the jobs consisting of

primary or high voltage lines for code violations and 20% of all completed jobs for code violations and construction standards. These inspections are done every 3 months. If NESC or NEC code violations are noted, Tri-County Electric corrects the violations before the Professional Engineer certifies the work order report (RUS Form 219), which is sent to RUS in Washington.

3. Tri-County Electric sends a quarterly report of the jobs completed to the Florida Public Service Commission (FPSC). The FPSC selects the jobs to be inspected and provides Tri-County Electric with a list of the jobs. Tri-County Electric personnel provide maps to aid in the location of the jobs to be inspected for code violations. If the inspector finds any violations, Tri-County Electric is notified and the violations are corrected.

4. The RUS Field Representative requires Tri-County Electric to perform a random inspection of approximately 10 to 15 locations consisting 1 to 2 miles in size within our system as well a system wide review every two years. If any unsafe construction standards are found or if any code violations are noted, these are corrected at that time.

b) Extreme Wind Loading Standards

1. Tri-County Electric constructs Class B construction when crossing railroads, limited access highways and interstate highways. However, we have begun to construct Class B construction in congested areas for safety reasons. These heavier demand loads along with the desire to build larger capacity which will withstand heavier wind loading as specified in the NES tables for ice and wind loading will cause all critical infrastructure facilities to be examined to see if an increase to Class B construction is needed and can be justified.

c) Flooding and Storm Surges

1. Tri-County Electric is currently reviewing our standards, policies and procedures relating to the effects of flooding and storm surges on underground facilities and supporting overhead structures. We will continue to evaluate the effects of flooding and storm surge but we feel it is important to wait for the research data, which is being

compiled by the Public Utility Research Center's study in conjunction with the Florida Electric Cooperative Association.

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

1. Tri-County Electric's construction standards, policies and procedures provide for the installation of new facilities and the replacement and maintenance of existing distribution facilities. In addition, the same standards, policies and procedures provide efficient access by Tri-County Electric's personnel and vehicles for installation and maintenance as safely and quickly as possible. Tri-County Electric decides on a case-by-case basis if the relocation of facilities is warranted. If Tri-County Electric determines that facilities need to be relocated, then they are placed in the most accessible area available.

e) Attachments by Others

1. The Joint Pole Use Attachment Agreements utilized by Tri-County Electric and the third-party includes language specific to the construction standards of Tri-County Electric, policies, guidelines, practices and procedures of Tri-County Electric including but not limited to safety, pole reliability as well as engineering safety guidelines and procedures.

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

1. Historically, Tri-County Electric's distribution poles have been inspected on an eight-year inspection cycle.

2. Tri-County Electric visually inspects two 69 kV transmission line located in Dixie and Taylor County, Florida, owned by Seminole Electric Cooperative, Inc., and a 115 kV transmission line owned by Tri-County Electric located in Madison County, Florida, each year. We utilize a pole inspection contractor to perform both ground and visual inspections. The 69 kV transmission lines in Dixie and Taylor County were inspected in 2005. Tri-County Electric plans to

inspect the 115 kV transmission line located in Madison County during 2007.

3. Tri-County Electric's employees visually inspect our distribution lines as they go about their daily tasks. Tri-County Electric utilizes pole inspection contracts to perform ground inspection on our distribution poles. Tri-County Electric has typically utilized an eight-year inspection cycle. This inspection is in addition to those performed by FPSC personnel on select new jobs as well as the quarterly inspection performed by Tri-County Electric's outside engineering firm for new jobs completed.

b) <u>Transmission and distribution inspections planned and completed</u>

1. Tri-County Electric maintains a 69 kV transmission line which is 1.7 miles in length, located in Dixie County, Florida and a 69 kV transmission line which is 16.4 miles in length located in Taylor County, Florida. These two lines are actually owned by Seminole Electric Cooperative, Inc., but are maintained by Tri-County Electric. Tri-County Electric has a 115 kV transmission line located in Madison County, Florida. We visually inspect all three lines annually. If these inspections reveal a bad pole, cross arm, damaged insulator, or right of way problem, these problems are corrected as soon as possible. In 2005, we had a pole inspection contractor perform a ground line inspection as well as a visual inspection of the lines in Dixie and Taylor County. These lines had a rejection rate of 1.46%. It is Tri-County Electric's plan to have the contractor inspect the 115 kV transmission line and its structures in 2007. Tri-County Electric's employees will continue to patrol our distribution lines as they go about their daily work, as well as our required inspections by RUS.

c) <u>Number and percentage of transmission poles and structures and distribution poles failing inspection and the reason for the failure.</u>

1. Tri-County Electric contracts pole line inspectors to check our distribution and transmission poles at the ground line. Historically, Tri-County Electric had been on an eight-year cycle. A rejection rate of approximately 1.5% was noted during the latest cycle. Due to the number of hurricanes in 2004, which affected not only Tri-County Electric's system, but many other systems in Florida, the

contractors were busy with storm restoration work. Tri-County Electric decided to postpone inspections in 2004 or 2005. However, we began inspections in November 2006 and inspected approximately 5,900 distribution poles and two radial 69 kV transmission lines or over 34 miles of transmission line. We are not through inspecting all the poles we had planned to inspect during 2006. Currently our rejection rate is 1.91% for distribution poles and 1.46% for transmission poles. Our plans are to complete the inspections we had planned for 2006 and continue inspecting poles during 2007. This will put us close to being on the 8-year cycle again.

d) Number and percentage of transmission poles and structures and distribution and class of structure, replaced or for which remediation was taken after inspection, including a description of remediation taken.

1. In 2003, Tri-County Electric lost a 65-foot transmission pole on the 69 kV line located along US 19 from Cross City, Florida to Steinhatchee, Florida, when a vehicle ran off the road late one afternoon and hit the pole breaking it 2 feet above the ground and again approximately 15 feet above the ground. This line is a radial feed line to the Steinhatchee, Florida area. When the pole was hit, the transmission line tripped out and there was no power to the entire Steinhatchee area. The transmission line was strong enough so we untied the conductors from the broken pole and allowed them to go back into the air. After verifying proper ground clearance, we reenergized the line in order to avoid an extended outage. The pole was replaced the next day with a wooden pole of the same size and class.

2. In 2004, during a hurricane on the 69 kV line from Cross City to Steinhatchee we lost two poles (one in Hurricane Frances and one pole during Hurricane Jeanne). These poles were broken because of large trees falling on the lines during the storms and breaking the poles. This was the only transmission line we lost during the storms. The 65-foot poles were replaced with wooden poles of the same size and class.

3. In 2005, during our annual inspections, we found three poles badly damaged with woodpecker holes so large that they compromised the integrity and strength of the pole. The poles were on the 69 kV lines in Taylor County, Florida. We concluded from past experience if we replaced the poles with wooden poles, the

woodpeckers would peck holes into them within a short period of time. Therefore, we contracted to have the 65-foot poles replaced with steel poles. The steel poles are stronger and less susceptible to damage than the wooden poles.

4. All of the distribution poles we change out are usually replaced with poles of a taller height and a larger class. In the 1940's and 1950's the standard size pole for Cooperatives in the rural areas where lines were built around agriculture fields (shortest distance, as the crow flies) were 35-foot class 6 poles. In the 1960's Tri-County Electric began constructing new facilities along the roadways and slowly the standard pole installed became 40-foot class 4 and class 5 poles. It was also during this period, we saw the use of copper wire give way to the installation of stronger and less expensive aluminum conductor. Now as we begin to construct new lines using narrow profile construction, we expect to see the 45-foot class 4 poles becoming the standard.

5. As we prepare new work plans for future years, (Tri-County Electric's current work plan covers the period of 2007 through 2010), even in slow growing rural areas such as those served by Tri-County Electric, the loads are requiring larger conductors, shorter span lengths and larger class poles.

5. Vegetation Management

Tri-County Electric's operation procedures and practices for vegetation management are as follows:

1. Tri-County Electric attempts to acquire right-of-way easements 30-foot wide when constructing three-phase facilities. If only a 20-foot wide right-of-way easement can be obtained then narrow profile construction is considered.

2. On new single-phase construction, a 20-foot wide easement is desired with a 10-foot wide easement as the minimum standard. If a 10-foot easement cannot be obtained then an alternate route is required.

3. Tri-County Electric committed to right-of-way trimming and mowing our complete system in a three-year period in 2001 at a cost of 3 million dollars. This three-year cycle was complete in early 2004. It proved to be effective during the storms of 2004. Tri-County Electric

reduced our right of way program budget in 2004, 2005 and 2006 to one half million dollars per year. In 2004 and 2005, Tri-County Electric began a vegetation herbicide program on the cut over areas. Due to a lack of funds, as well as proof of effectiveness, we did not spray in 2006. In 2007, Tri-County Electric plans to increase the number of miles we are going to re-cut. It is our desire to be on a 6-year cycle or less. In some of Tri-County Electric's service areas, a 6-year cycle is insufficient due to the vegetation growth in those areas.

4. It is Tri-County Electric's opinion that you cannot have a strong system without proper vegetation management. During a thunderstorm or hurricane, it is the trees, which take down the lines, not the wind. Only a small percentage of weather related outages are caused by direct wind on the lines. The major cause is the wind in the trees.

5. The only landscaping Tri-County Electric has done is to satisfy landowners when we have cut and/or removed trees without obtaining the landowners permission.

6. Tri-County Electric believes our current right-of-way practices have been sufficient in the past based on our outage records per annual consumer hours off. It is Tri-County Electric's desire to improve our practices not just to be efficient but also to be excellent. Tri-County Electric plans to have employees present at the Vegetation Management Conference in March 2007 to exchange and discuss ideas for vegetative management.

West Florida Electric Cooperative Association, Inc.

A Touchstone Energy® Cooperative

P.O. Box 127
Graceville, FL 32440-0127
(850) 263-3231
Florida Toll Free: 1-800-342-7400
Web Address: www.wfeca.net

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February 28, 2007

RECEIVED
FLORIDA PUBLIC SERVICE COMMISSION
07 MAR -1 PM 3:11
DIVISION OF ECONOMIC REGULATION

Mr. Tim Devlin
Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Mr. Devlin,

Please fine enclosed West Florida Electric Cooperative's report 25-6.0343 as requested by the Florida Public Service Commission.

Thank you:

Ty Peel
Vice President, Engineering & Operations
West Florida Electric Cooperative
5282 Peanut Road
Graceville Florida 32440

850-263-3231

West Florida Electric Cooperative Association, Inc. Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2006

1) **West Florida Electric Cooperative Association, Inc. (WFEC)** is a non-profit, Touchstone Energy® Cooperative owned by its members and locally operated. WFEC serves approximately 24,000 meters, providing dependable electricity and other services at competitive prices in Calhoun, Holmes, Jackson and Washington Counties in Northwest Florida. WFEC is headquartered at 5282 Peanut Road in Graceville, Florida and maintains district offices in Bonifay and Sneads. WFEC's service area is divided into nine (9) districts, each represented by a member-elected trustee. WFEC's distribution system: (overhead and underground) is composed of power distribution circuits operated at 14.4/24.9kv and 7.2/12.47kv. WFEC's substations are owned and maintained by Alabama Electric Cooperative, Inc.

   WFEC receives wholesale power from Alabama Electric Cooperative, Inc. (AEC), a generation and transmission cooperative, based in Andalusia, Alabama. AEC is wholly owned by WFEC and the 19 other distribution cooperatives and municipalities it serves in Alabama and Northwest Florida. Two (2) WFEC delegates, along with representatives from AEC's other member-systems, participate in the management of AEC's policies, rules, and regulations and the establishment of rates, terms and conditions affecting the wholesale power supply.

West Florida Electric Cooperative Association, Inc.
5282 Peanut Road
P.O. Box 127
Graceville, FL 32440

Contacts:

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Keith Varnum, Mgr., Engineering
5282 Peanut Road
Graceville, FL 32440
850-263-3231, ext 1194
Cell 850-326-0661
e-mail: kvarnum@westflorida.coop

2) The number of meters served in calendar year 2006 was 23,084

3) Standards of Construction

   1) National Electric Safety Code Compliance: Grade C construction.
      Construction standards, policies, guidelines, practices, and procedures at WFEC comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February1, 2007, the 2007 NESC applies. Electrical facilities

West Florida Electric Cooperative
2006 Outage Report

Outage Data Actual

Total Number Consumer Hours Out	93,785.78
Times 60 Minutes	5,627,146.80
Divided By Number Service Interruptions	2,202
CAIDI	**2,555.47**
Total Customer Minutes Interruption	5,627,146.80
Divided By Total Customers Served	23,084
AVG Minutes of Service Interruption Duration (SAIDI)	**243.77**
Year 2006 Total Service Interruptions	2,202
Number of Customers Served	23,084
System Average Interruption (SAIFI)	**0.096**
Year 2006 Outage Event Duration for All Outage Events	2,975.93
Divided By Number of Outage Events	2,202
L-Bar	**1.352**

Outage Data Adjusted

Total Number Consumer Hours Out	61,210.68
Times 60 Minutes	3,672,640.80
Divided By Number Service Interruptions	1667.86
Total Customer Minutes Interruption	3,672,640.80
Divided By Total Customers Served	23,084
AVG Minutes of Service Interruption Duration (SAIDI)	**159.09**
Year 2006 Total Service Interruptions	2107
Number of Customers Served	23084
System Average Interruption (SAIFI)	**0.092**
Year 2006 Outage Event Duration for All Outage Events	2,803.42
Divided By Number of Outage Events	2107
L-Bar	**1.331**

WITHLACOOCHEE
RIVER
ELECTRIC
COOPERATIVE, INC.

February 27, 2007

Tim Devlin, Director of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Mr. Devlin:

Enclosed please find our report on construction standards as is required by PSC 25 – 6.0343. Our engineering, operations, and administrative departments have worked together very closely to provide accurate and concise information for your consideration. The attachments to the document are meant to be a brief example of some of the discussion here and should be self-explanatory.

We believe that our overall construction and maintenance program here at Withlacoochee River Electric Cooperative is based on realistically established industry practices. Monthly surveys go out to a sample of our customer base and according to the response that we receive; our membership is mostly content with our service.

If you have questions, need further information or clarification, please contact us.

Sincerely,

Billy E. Brown
Executive Vice President and General Manager

P.O. Box 278, Dade City, FL 33526-0278 Phone (352) 567-5133 / Fax (352) 521-5971

Tuesday, February 27, 2007

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

1) *Introduction*

a) **Withlacoochee River Electric Cooperative, Inc**
b) **PO Box 278, Dade City, FL 33-526-0278**
c) **Billy E. Brown, Executive Vice President & General Manager**
352-567-5133, extension 6100
bbrown@wrec.net
352-521-5971 (fax)

2) *Number of meters served in calendar year 2006*

209,178

3) *Standards of Construction*

a) *National Electric Safety Code Compliance*

All electrical facilities constructed by Withlacoochee River Electric Cooperative, Inc. on or after February 1, 2007, will comply with the 2007 edition of the NESC; facilities constructed prior to this date comply with the edition in effect at the time of the initial construction.

Withlacoochee River Electric Cooperative's (WREC) <u>Specifications and Drawings for 14.2/24.9 KV Overhead and Underground Distribution Line Construction</u> are based on RUS bulletins, drawings and engineering specifications. All of those specifications meet or exceed the requirements of the National Electrical Safety Code (ANSI C-2) [NESC]. Due to the nature of capital funding from the Department of Agriculture (RUS), WREC is held accountable to a very comprehensive set of Federal guidelines (including the NESC). A <u>Construction and Operations Manual</u> was created and distributed to all line crews, supervisors, and

other affected employees. Lines, cables and related equipment are installed and maintained according to these manuals, and both are used in the training program registered with the State of Florida. All field staking technicians have been trained in, and have access to, software that verifies NESC construction compliance. This PoleForeman software is based on specific WREC design templates that include framing guides and corresponding material specifications. The program will calculate strength capabilities and clearances of specified spans, and compare results to the minimum NESC requirements (Grade C, B and Extreme Wind Loading).

b) *Extreme Wind Loading Standards*

WREC facilities are not designed to be guided by the "extreme wind loading standards" on a system wide basis. However, most new construction, major planned work assigned on or after December 10, 2006 and targeted critical infrastructure meets design criterion that comply with standards of construction for the wind loading projections in our service area. The NESC extreme wind loading standards are being considered for major distribution feeders. The difficulty in this consideration is the impact of joint use facilities. The concept of allowing joint use of overhead electrical distribution facilities is beneficial to all concerned, including the resulting pricing efficiencies for all affected Customers. Allowing multiple or large diameter cable attachments makes compliance with the extreme wind loading standards economically and aesthetically impractical due to the drastic reduction of span lengths.

c) *Flooding and Storm Surges*

Storm surge effects on WREC's underground distribution facilities and supporting structures have been evaluated and for several years all pad mounted equipment, transformers, switchgear, etc., is specified with stainless steel construction. This requirement helps mitigate the need for premature replacement due to coastal erosion and high surge salt water intrusion.

We will continue to monitor all relative studies through the Florida Electric Cooperative Association and we will adjust our design standards accordingly. We strongly believe that it is essential to maintain current practices until we are able to thoroughly evaluate the results of current studies so that a cost/benefit can be established for conversion of overhead to underground.

All underground system designs include conduit installation for all primary and secondary cables, to both lengthen the life of the cable and shorten replacement times.

Additionally, WREC was the first Cooperative in the U.S. to receive RUS approval for

cost capitalization of the rehabilitative "cable-cure" process. This process prolongs the useful life of the cable and drastically reduces outages associated with cable failures. EPR (Ethylene-Propylene-Rubber) insulated cable is used exclusively for all underground primary distribution installations. Compared to standard cross-linked polyethylene insulation, EPR has a proven superior life span. All primary cables are also fully jacketed and strand-filled for additional long term reliability.

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

All Withlacoochee River Electric Cooperative, Inc. electrical construction standards, policies, guidelines, practices, and procedures provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. With few exceptions, all new facilities are placed on the front or side of properties, ensuring accessibility by its crews and vehicles and that proper maintenance/repair is performed as expeditiously and safely as possible. WREC 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*

All joint use attachment requests are evaluated on a case by case basis. Joint use companies send a written request to attach to WREC's poles. Each request is evaluated as to loading and clearance requirements per the NESC and PoleForeman software (referenced in 3(a) above). WREC has extensive written and signed joint use agreements on file with each joint use company that specify compliance with the NESC and Rural Utilities Services (RUS) requirements, specifications and drawings. Such items as placing, transferring, or rearranging attachments, erecting, replacing, or relocating poles are specifically addressed to meet all requirements as per the NESC and RUS.

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 completed, processed, and the appropriate corrective action is taken.

With approximately 5,000 miles of overhead primary distribution lines, a considerable portion of WREC's system is physically checked annually according to the following methods:

Line Patrol	**340 Miles**
Voltage Conversion	**350 Miles**
Right-of-Way	**1,000 Miles**
S.T.A.R. [1]	**800 Miles**
Total	**2,490 Miles (Approximate numbers)**

A new position was created a couple of years ago – Superintendent, System Reliability. Among other duties, this long-term employee is charged with reducing consumer outage hours through the overall improvement of the system's reliability. Intense line patrols and inspections result from the detailed analysis of available reports and records that are available to this department. A full time employee utilizes an infra-red system to analyze weak switches, connections, lightning arresters, transformers and other equipment and service orders are immediately produced to correct any and all deficiencies.

b) *Transmission and distribution inspections planned and completed*

WREC owns and maintains fifty-three miles of transmission line with voltages of 69KV and 115KV.

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[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.

All of the transmission feeders are patrolled annually by walking, riding or aerial patrol. An intense aerial patrol that included detailed infra-red inspections of every pole, switch, and connection on the system was conducted after it was exposed to tropical storm and hurricane force winds in 2004.

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

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

All 317 wooden transmission structures were inspected and treated by OSMOSE in July of 2003. Last year (2006) eighteen transmission poles were changed out due to decay under plastic wood pecker wrap. 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 and changed out as necessary. WREC utilized a contractor (OSMOSE) for pole inspection and treatment during 2003-2004. They found 6.2% pole rot and 1.0% pole rejection. A decision was made at that time to discontinue that type of inspection/treatment plan, due to the fact that the majority of our wooden poles are CCA, having a life expectancy well in excess of 20 years. The poles with older treatments ("penta" and "creosote") are being systematically changed out.

While no data is currently readily available to indicate exact failure percentage rates of distribution poles that include reasons for failure, over twenty-five thousand were inspected by various methods in 2006. WREC is currently evaluating methods to effectively capture data relevant to future PSC reporting.

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.*

Eighteen wood transmission poles were replaced due to decay under the "*wood pecker wrap*" which trapped moisture. Seventeen were 75/1 and replaced with the same size/class and one 85/1 was replaced with a round fiberglass pole of equal size/class. The wood transmission poles were replaced with wood poles because the transmission line segment is planned to be relocated in the future. (See Attached)

Attached is a summary of size/class of distribution poles installed and removed in 2006. (Detailed data is not available)

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.*

A very aggressive Vegetation Management Program (VMP) has been adopted over the last couple of years that is inclusive of problem tree removal, increased horizontal and vertical clearances and under-brushing to ground level (See attached pictures). The overall goal is to eventually have the entire system on a well documented trim cycle with problem circuits/areas clearly identified enabling a proactive right of way program.

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 feels this will be accomplished 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. The VMP was implemented in early 2004 as a five-six year program with respect to addressing the entire system, but provides reduced right of way related line problems as each circuit is addressed.

WREC maintains over 150 overhead feeder circuits that comprise ~ 5,000 miles of line. The current trim cycle is between four and five 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).

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 2006 WREC addressed 3,320 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 annually and associated right of way issues are considered top priority and addressed immediately, but WREC did not find any transmission right of way issues during 2006.

WREC recognizes the fact that the entire system is not currently on a three year trim cycle for distribution lines with respect to the intentions of the PSC, but the company has undertaken steps to become more proactive to right of way issues opposed to reactive and has set a goal of achieving the objectives of the PSC. WREC believes that this will be accomplished through the implementation of our aggressive vegetation control program.

The PURC research group will be holding a vegetation management conference in March, 2007. WREC will utilize any useful information that may result from this conference and this will be referenced in our report next year.

ATTACHMENTS

1. Listing of distribution poles changed out or added in 2006

2. Transmission inspection "field report" listing poles inspected/changed out

3. "Before" and "After" photographs representing our typically aggressive stance on "Vegetation Management."

RU	Description	Additions	Retirements
F050	POLES,WOOD,45'	2	0
F060	POLES,WOOD,50' & OVER	0	0
F070	POLES,WOOD,50 FT.	0	0
F080	POLES,WOOD,55 FT.	0	0
F085	POLES,CONCRETE 60'	9	0
F100	POLES,WOOD,65'	0	0
F105	POLES,CONCRETE,65'	4	0
F155	POLES,CONCRETE, 90 FT.	0	4
F165	POLES,CONCRETE,95'	0	0
F175	POLES,CEMENT,100'	0	1
Y090	POLES,WOOD,30FT.	1	1
Y100	POLES,WOOD,35'	266	0
1070	POLES,WOOD,35'& UNDER	1810	1804
1080	POLES,WOOD,40'& 45'	3241	1363
1090	POLES,WOOD,50'& OVER	818	262
1100	POLES,CEMENT,35'& UNDER	124	19
1110	POLES,CEMENT,40'& 45'	22	21
1118	POLES,STEEL,50FT	0	1
1120	POLES,CEMENT 50FT.	5	5
1122	POLES,WOOD 60FT	20	6
1124	POLES,WOOD 65 FT	3	1
1125	POLES,CONCRETE 55FT	16	0
8080	POLES,APOLLO	9	0
8085	POLES,FIBERGLASS	397	139
8090	POLES,WOOD,35'& UNDER	248	206
8100	POLES,CONCRETE,35'& UNDER	724	41
8105	POLES,CONCRETE,35' & UNDER (B)	134	1
8117	POLES,ALUMINUM, 14'	52	2
8118	POLES, ALUMINUM 12'	1756	22
8119	POLES,ALUMINUM, 15'	156	0
8130	POLES,WOOD,40'& 45'	10	20
8135	POLES,CEMENT,40'& 45'	43	0
		9870	3919

TRANSMISSION LINE INSPECTION AND MAINTENANCE LOG SHEET

Transmission Line: PASCO TRAILS TRANS | **Map No.:** | **Sheet No.:** 1 – 2

Pole or Station Number	Pole: Pole Age	Pole: Length & Class	Pole: Replace	Pole: Reinspect	Pole: Reset	Pole: Note	Guy Anchor: Add Guard	Guy Anchor: Repair	Guy Anchor: Replace	Ground Rod: Install	Ground Rod: Repair	NOTES
82	30yrs	75/1	✓									Replaced 75/1 Rotten Pole With 75/1 New Pole Wood
84	30yrs	75/1	✓									Replaced 75/1 Rotten Pole With 75/1 New Pole Wood
90	30yrs	75/1	✓									Replaced 75/1 Rotten Pole With 75/1 New Pole Wood
91	30yrs	75/1	✓									Replaced 75/1 Rotten Pole With 75/1 New Pole Wood
92	30yrs	75/1	✓									Replaced 75/1 Rotten Pole With 75/1 New Pole Wood
93	30yrs	75/1	✓									Replaced 75/1 Rotten Pole with 75/1 New Pole Wood
94	30yrs	75/1	✓									Replaced 75/1 Rotten Pole With 75/1 New Pole Wood
95	30yrs	75/1	✓									Replaced 75/1 Rotten Pole With 75/1 New Pole Wood
96	30yrs	75/1	✓									Replaced 75/1 Rotten Pole With 75/1 New Pole Wood
97	30yrs	75/1	✓									Replaced 75/1 Rotten Pole With 75/1 New Pole Wood
98	30yrs	75/1	✓									Replaced 75/1 Rotten Pole With 75/1 New Pole Wood

Inspector: [illegible signature]

Date: 6-23-06

All Work Completed 12-21-06

Copies to: Greg Musser, Engineer - David Wardwell, Safety Dir. - W[illegible] HQ

Marlin Sexton

TRANSMISSION LINE INSPECTION AND MAINTENANCE LOG SHEET

Transmission Line:	Map No.:	Sheet No.: 2-2

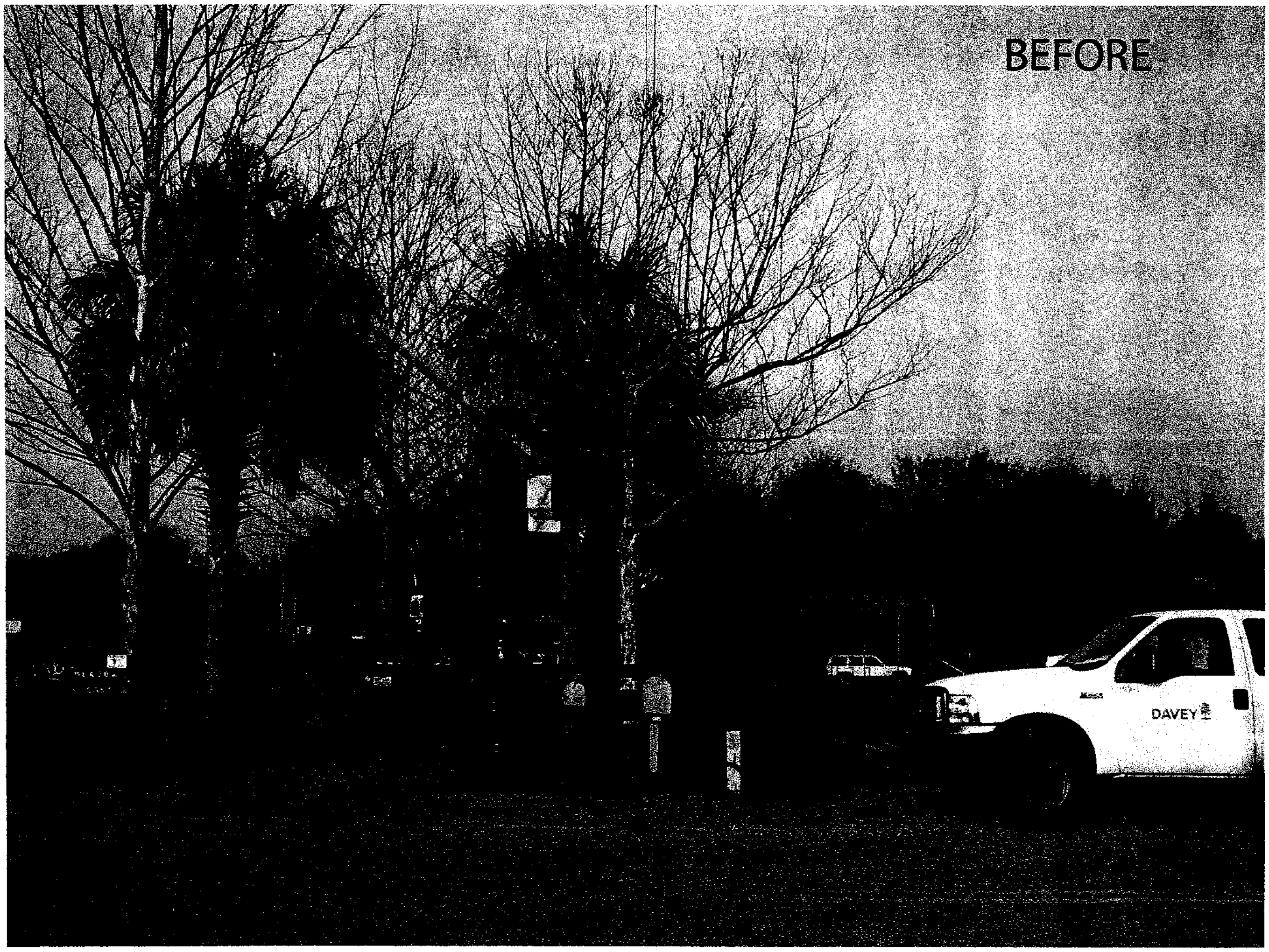
Pole or Station Number	Pole						Guy Anchor			Ground Rod		NOTES
	Pole Age	Length & Class	Replace	Reinspect	Reset	Note	Add Guard	Repair	Replace	Install	Repair	
99	30 yrs	75/1	✓									Replaced 75/1 Rotten Pole
												With 75/1 New Pole Wood
100	30 yrs	75/1	✓									Replaced 75/1 Rotten Pole
												With 75/1 New Pole Wood
101	30 yrs	75/1	✓									Replaced 75/1 Rotten Pole
												With 75/1 New Pole Wood
105	30 yrs	75/1	✓									Replaced 75/1 Rotten Pole
												With 75/1 New Pole Wood
106	30 yrs	75/1	✓									Replaced 75/1 Rotten Pole
												With 75/1 New Pole Wood
111	30 yrs	85/1	✓									Pole had a crack a bottom
												Insulator Bracket Replaced
												85/1 Wood Pole with a
												Round Fiberglass Pole
												(RStandard utility structures)
												6 section of Pole

Inspector: [signature]

Date: 6-23-06

All Work Completed 12-21-06

Copies to: Greg Musser, Engineer - David Wardwell, Safety Dir. - Walt Hudnall, HO


BEFORE
DAVEY


AFTER