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UTILITY BOARD OF THE CITY OF KEY WEST

March 1, 2017

Penelope Buys
Florida Public Service Commission
Sent via e-mail to pbuys@PSC.STATE.FL.US

RE: Storm Hardening Report for Keys Energy Services pursuant to
Rule 25-6.0343, FAC for 2016

Dear Ms. Buys:

Pursuant to Rule 25-6.0343, Florida Administrative Code, attached is the
Storm Hardening Report for 2016 for the Utility Board of the City of Key
West (Keys Energy Services - KEYS).

If any questions develop during your review, please do not hesitate to
contact me at 305.295.1042.

Sincerely,

A handwritten signature in blue ink that reads "Dale Finigan".

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

DF/mpa

Copied via electronic mail:

L. Tejada, General Manager & CEO
J. Wetzler, Asst. General Manager & CFO
F. Culpepper, Director of T&D
E. Zarate, Director of Customer Services
J. Torrado, Director of Human Resources & Communications
M. Alfonso, Supervisor of Engineering
P. Arencibia, Supervisor of T&D
B. Veliz, Supervisor of T&D
Amy Zubaly, FMEA

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

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NOTE: This report was developed by Dale Finigan.
For questions and/or clarifications please
contact 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
- 126 Employees
- KEYS Maintains and Operates Transmission, Distribution and Generation
- Number of Meters – 30,112
- 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 -239.8 OH & UG
 - Age of Poles -1954-2016
 - 90% Aerial
 - Pole Types Qty:
 - Concrete - 6,321
 - Ductile Iron - 90
 - Wood - 7,718
- Substation:
 - Voltage Level -138kV, 69kV and 13.8kV
 - Quantity of Substations: -9
- Generation:
 - Quantity of Units -7
 - Type -Medium Speed Diesel, Combustion Turbines, HSD
 - Capacity -111 MW

Customer Profile:

- Total of Customers -30,002
- Breakdown:
 - Residential -85.0%
 - Commercial -14.8%
 - Others -.2%
(Street Lights, churches)

Load Profile:

- 2016 Peak Demand -148.2MW
- 2016 Energy Sold -753.1GWH

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 2012 (ANSI C-2). These new standards took effect on February 1, 2012.

- KEYS' electrical facilities constructed prior to February 1, 2012, are governed by the edition of the NESC in effect at the time of the facilities' initial construction.

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 analyzed the wind impacts on its electrical facilities, and in 2006 KEYS structurally studied the modifications needed in order to accomplish/adhere to new Florida Public Service Commission (FPSC) Rule. The following was performed by KEYS in 2006:

- 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 systems
- 4) See Section (4) for status "report on poles replaced"

- KEYS submitted a significant amount of back up support data in its 2006 report.

3c) Flooding and Storm Surges:

- 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 substantial damage occurred to KEYS' underground system as a result of flooding due to this longstanding construction standard.

SECTION 3 continued

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

In order to comply with the Florida Public Service Commission's Order 25-6.0341 which states "in order to facilitate safe and efficient access for installation and maintenance, to the extent feasible, and cost-effective, electric distribution facilities shall be placed adjacent to a public road, normally in front of the customers' premises," KEYS developed a program with a long-term goal of constructing all electrical facilities adjacent to public roads and removing all facilities that are currently in inaccessible locations. The Utility Board and the City of Key West approved a three year program to relocate facilities to a more accessible location (see attached).

Step #1 - All future design work will ensure that new construction occurs adjacent to public roads. KEYS staff will work with developers, City and County staff regarding future construction and will not allow the construction of any facilities in rear or side lot lines.

Step #2 – Over a three-year program KEYS will relocate all primary high voltage facilities that are currently in inaccessible locations. KEYS will coordinate efforts with the customer, AT&T and Comcast to ensure existing facilities are ready for timely removal.

Step #3 – KEYS developed a multi-year program to relocate all primary high voltage facilities that are currently in inaccessible locations within unincorporated Monroe County. KEYS will coordinate efforts with the customer, AT&T and Comcast to ensure existing facilities are ready for timely removal. This is referred to as "Phase II."

Step #4 – KEYS will develop a multi-year program to relocate all secondary facilities that are currently in inaccessible locations in Key West and will coordinate efforts with the customer, AT&T and Comcast to ensure existing facilities are ready for timely removal. The program will be presented to the Utility Board for approval prior to implementation. This is referred to as "Phase II" but may be completed in multiple phases. The development of Phase III will occur after Phases' I and II's completion.

Advance Work

In advance of the program being fully developed, KEYS' Engineering Field Representatives will work with homeowners and electricians who are doing voluntary upgrades to ensure that placement of risers and meter centers will accommodate future relocation plans.

SECTION 3 continued

Remaining Reject Poles

In 2015, KEYS hired Osmose to survey all distribution poles in KEYS' service area to identify weak poles in need of replacement. Sixty-seven poles in inaccessible locations were identified as "reject poles." KEYS has stabilized 60 of these poles with a truss and bracing solution, and has replaced approximately seven. The remaining poles will be replaced by KEYS and AT&T crews.

3e) Attachments by Others:

- Electrical construction standards, policies, guidelines, practices, and procedures at KEYS 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. We inspect these attachments on an eight year cycle. KEYS was under contract with Osmose to test 100% of our poles. All testing was completed as of August 2015. Sections 3 and 4 indicate in the results from the testing.

SECTION 4

Facility Inspections

4a) KEYS' Policy, Guidelines, Practices and Procedures as they relate to Pole Testing:

•Distribution Poles:

- 1) KEYS contracted Osmose, Inc. in 2015 to perform a detail testing of **100%** of KEYS' utility poles one at a time.
- 2) KEYS elected to test all poles for NESC compliance. Osmose commenced testing in February 2015. Testing of 100% of poles was completed in August 2015.
- 3) In summary, Osmose performed 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 than 33" (on sidewalks).
20	Identify/document locations that clearance between pole and fire hydrant is - less than four feet (at ground level).
21	Identify/document locations where clearance b/w OH wire and structure is less than 10 ft. (overhead).
22	Joint Use Survey of two other utility attachments (for each of the foreign attachments).

SECTION 4 continued

- Transmission Poles:

- 1) KEYS has no "wood" transmission poles.
- 2) Since KEYS has only one incoming transmission line into its service territory. This is a combination of concrete and metal poles.

- KEYS completed a contract to repair concrete pylons and concrete poles shown to have damage after the last inspection. This work is currently underway.
- KEYS completed cleaning and repair of metal transmission poles with rust damage.
- KEYS performed protective coating of metal poles.
 - Detailed helicopter inspections of all concrete poles. This aerial inspection is performed every two years.
 - Infrared survey - KEYS performs a 100% infrared inspection every two years.

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

- Transmission Facility Inspections
 - ➔Concrete Foundations -100% inspected in 2008, 2010 and 2012.
 - ➔Aerial inspection - 100% inspected in 2014
 - ➔Underwater inspection completed in 2014
- Distribution Facility Inspection
 - ➔See detail summary table below.

4c) Number and percentage of transmission poles, structures and distribution poles failing inspection and reason for the failure:

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

SECTION 4 continued

POLE TESTING SUMMARY DISTRIBUTION - TESTING 2015			
TEST AREA	KEYS ENERGY	ATT	COMBINED TOTALS
TOTAL POLES TESTED	10225	2220	12445
TOTAL CONCRETE POLES TESTED TO DATE	5304	519	5823
TOTAL WOOD POLES TESTED TO DATE	4915	1701	6616
TOTAL OTHER TYPE POLES TESTED TO DATE	6	0	6
% OF TOTAL POLES TESTED TO DATE	100%	100%	100%
REJECT/ FAILED POLE SUMMARY			
TOTAL CONCRETE REJECTS TO DATE	69	1	70
% OF TOTAL CONCRETE	1.3%	0.2%	1.2%
TOTAL WOOD POLE REJECT TO DATE	326	158	484
% OF TOTAL WOOD	6.6%	9.3%	7.3%
TOTAL OTHER TYPE POLE REJECTS TO DATE	0	0	0
% OF TOTAL OTHER TYPE	0.0%	0.0%	0.0%
REJECT/ FAILURE REASONS			
DECAYED TOP	24	16	40
% DECAYED TOP	6.1%	10.1%	7.2%
EXCESSIVE CRACKING CHECKING	57	1	58
% EXCESSIVE CRACKING CHECKING	14.4%	0.6%	10.5%
EXCESSIVE SPUR CUTS	1	0	1
% EXCESSIVE SPUR CUTS	0.3%	0.0%	0.2%
HOLLOW	4	0	4
% HOLLOW	1.0%	0.0%	0.7%
MECHANICAL DAMAGE	16	2	18
% MECHANICAL DAMAGE	4.1%	1.3%	3.2%
ROTTEN BUTT	14	7	21
% ROTTEN BUTT	3.5%	4.4%	3.8%
GROUND SHELL ROT	261	129	390
% GROUND SHELL ROT	66.1%	81.1%	70.4%
WIND SHAKE	4	1	5
% WIND SHAKE	1.0%	0.6%	0.9%
WOOD BORERS	1	0	1
% WOOD BORERS	0.3%	0.0%	0.2%
WOODPECKER HOLES	13	3	16
% WOODPECKER HOLES	3.3%	1.9%	2.9%

SECTION 4 continued

4d) Number and Percentage of T&D Poles Replaced and the Remediation Plan to Correct

- Transmission Facilities Plan

No transmission facilities failed inspection. Concrete spalling repairs was completed in January 2011. An extensive inspection of all transmission facilities was done in December 2013. There are no significant issues or concerns.

- Distribution Facilities Plan

KEYS completed 100% field check of all poles in 2015. The Utility Board completed an aggressive schedule to correct and replace failed facilities (Tab 7 & 8 for detailed plan). Below are some of the highlights of the remediation plan:

- ➔KEYS went out for bids in January 2016, and closed the bid process in February 2016. KEYS awarded a multi-year contract to Michels to provide labor services to replace approximately 485 poles. The \$2 million contract will serve to replace the 485 poles with storm harden facilities.

- ➔KEYS approved a multi-year contract with McWane Poles (ductile iron pole manufacture) to manufacture 485 new ductile iron poles designed to the extreme wind load design.

SECTION 5

Keys Energy Services

Vegetation Management Program

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 consists of 240 OH & UG miles of three phase distribution lines & 66.3 miles of transmission lines.

KEYS Staff and Contractual Crews:

- KEYS has a total of five tree trimming crews, two in-house crews and three 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 work 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 two year cycle for system trimming, which KEYS has been able to complete in this time frame. This two-year cycle has been in place since 2000 which includes trimming of all three-phase feeders, laterals, secondary and communication conductors.
- KEYS performs a quarterly maintenance of tree clearances on all of the 66.3 miles of transmission lines and maintains these clearances.
- KEYS averages approximately five 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 requests, the KEYS' crews work on revisits and zone trimming.

SECTION 5 continued

- 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.

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

- For customer trees that are infringing into KEYS lines, KEYS makes contact with the customer and explains 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 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 put in 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 and 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 helps customers determine the proper placement of the tree to maintain adequate clearance from facilities with one-on-one consultation. KEYS personnel reviews a site layout of the customer's yard and advice on the best placement for shade benefit and proper clearance. During the consultation, KEYS gives the customer a brief summary 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 two 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 maintains records and produce an annual report of all outages throughout the system. In 2016, KEYS had three reclosers, four feeder outages, and nine lateral outages due to trees. 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 to the public and KEYS employees.

SECTION 5 continued

LINE CLEARANCES

KEYS strives to maintain the following line clearances where practical as follows:

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

The Public Utility Research Center held two vegetation management workshops in 2007 and 2009. KEYS reviewed their reports and will use the information to continually improve vegetation management practices.

SECTION 6

Storm Hardening Research

Key West/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 Amy Zubaly, Interim Executive Director, FMEA, 850-224-3314, ext-7, or azubaly@publicpower.com.

SECTION 7

Supplemental Data



October 2016

Inaccessible
Electrical Facilities

Phase 2 – Primary Lines
(Lower Keys)

Revised Oct 20th 2016

Executive Summary

Florida Public Service Commission

In 2006, following the 2004 and 2005 hurricane seasons that were damaging to electrical systems throughout Florida, the Florida Public Service Commission (FPSC) passed Order #25-06.0342 which "requires 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."

The PSC also adopted a companion Order 25-6.0341 which states "in order to facilitate safe and efficient access for installation and maintenance, to the extent feasible, and cost-effective, electric distribution facilities shall be placed adjacent to a public road, normally in front of the customers' premises."

Keys Energy Services' Response

As a result of PSC Order#25-06.0342, Keys Energy Services (KEYS) has undertaken a multi-year program to respond to the PSC Order which has included testing all poles, replacing all poles identified as deficient, changing our construction standards, and fortifying infrastructure designated as critical (feeder to hospital). Additionally, in order to comply with Order 25-6.0341, KEYS Staff has developed a plan to address facilities that are in inaccessible locations in order to comply with PSC orders and to further have a strong, reliable system. KEYS Utility Board members participated in a workshop on the subject on August 23, 2011 in order to better understand the scope of the project and the impacts on customers. Based on input from the Utility Board and continued analysis, KEYS Staff has determined that inaccessible facilities should be divided into two categories – those that support primary lines and those that support secondary lines. KEYS is near completion of primary lines in Key West and would like to commence the primary locations in the Lower Keys.

Program Description

Phase II will address inaccessible facilities that support primary lines in the Lower Keys and will be addressed over a 24-month period starting in 2016. In total, approximately 110 primary and 13 tap poles will be installed, and this will affect up to 120 customer meters. KEYS' Engineering Department will complete all design work and it is anticipated that all construction work will be completed by outside contractors. The total cost for constructing the new lines and removing the old lines is estimated at \$1.1 million.

KEYS' Engineering Department will work closely with the affected customers to help them identify a solution. KEYS (or a contractor to be determined) will either set a customer pole, which the customer will assume ownership of, so the customer can continue to use the existing meter center/riser or KEYS will reimburse the customer up to \$2,100, including Monroe County permit fee for the costs associated with hiring an electrician to modify the meter center/riser (relocate or extend) so it can receive power from the new lines. The rebate for condominium/apartment buildings will be based on the number of meters; (for example if four meters, then KEYS will pay $4 \times \$2,100 = \$8,400$). This cost estimate for all riser relocations is estimated to be \$252,000.

Coordination

KEYS will work closely with Monroe County throughout the project on a variety of issues including customer coordination, tree trimming, and street lights. Additionally, KEYS will work with AT&T and Comcast and urge these telecommunications companies to move expediently.

KEYS' Engineering Field Representatives will meet with each customer to help establish a solution that best meets the customer's and KEYS' needs.

Customer Assistance

In order to meet the Florida Public Service Commission Storm Hardening Orders – and specifically Order #25-06.0341 which states, “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,” KEYS developed the Inaccessible Facility Project – Phase II. The project specifically works to relocate inaccessible primary facilities to public roads. KEYS’ goal is to not only construct accessible facilities, but also to remove the old, inaccessible facilities as soon as possible so that KEYS does not have the continuing maintenance costs and so that customers do not have unsightly facilities. Please note, this last initiative is dependent upon the telecommunication companies removing their services.

In Phase II, a total of 110 poles in the easements affecting 120 customers will ultimately be removed and replaced with 123 new poles installed along public roadways. As a result of the facilities being moved to the public road, customers may need to relocate their risers and meter centers to accommodate the move. Recognizing that this relocation may create a financial burden on KEYS customers, KEYS developed a plan to minimize this burden on customers.

*Option 1 – Customer-Owned Pole

For customers who do not wish to incur any costs, KEYS crews will set a customer pole so that the service drop can utilize the existing riser/meter center. The responsibility of setting the pole and transferring service to the pole will be KEYS responsibility (customer will be required to provide underground clearance for KEYS to set the pole). The customer will be required to assume ownership of this pole. If there is any damage to this pole in the future, for example: normal wear and tear or hurricane damage, it will be the customer’s full responsibility to replace, repair or remove the pole.

*Option 2 – Modify Riser/Meter Center (Riser Extension)

For customers who prefer to avoid having a pole set on their property (and the ongoing responsibility of said pole), KEYS will provide a rebate per riser on the electrical work required to move the riser/meter center. Customers will be required to provide KEYS with three quotes from licensed electricians, and in turn KEYS will provide a rebate to the customer in the amount of the lowest quote. The customer can select whichever licensed electrician they wish, but the rebate will be based upon the lowest quote provided up to but not exceeding \$2,100 including Monroe County permit fees. The rebate will be issued to the customer in a check at the time KEYS is provided final inspection by the County. In order to qualify for the rebate, work must be completed by a licensed electrician. KEYS will not provide rebates for work done as an owner/builder.

Within six months after the customer has met with KEYS’ Field Representative to discuss possible solutions, the customer should decide between Option 1 or Option 2. If the customer has not signed an agreement to take ownership of their new customer pole or has not had an electrician complete the work, KEYS reserves the right to disconnect service until customer takes action.

*Modify Riser is the preferred option as it will avoid future pole maintenance by the customer and will be aesthetically more pleasing.

Service Fee Waiver

Typically, KEYS charges customers an after-hours fee when a service disconnect is performed. This is typically done at the customer's or the electrician's request when they are performing an upgrade of the customer-owned wire or meter center for connects/disconnects that are specifically related to this project. The Utility Board has authorized Staff to waive these fees.

Collaboration with Customer

The Engineering Field Representatives will meet with each affected customer in order to identify the customer's needs and to customize a design solution that best meets the customer's and KEYS' needs. This plan anticipates that Engineering Field Representatives may have to meet with customers during the evenings or weekends. All design alternatives within NEC & NESC requirements will be considered to make the process as simple and inexpensive as possible for customers. The Engineering Field Representatives will provide each customer with a meter location form indicating a recommended solution that the customer can then provide to their electrician. Additionally, the Engineering Field Representatives will meet with the customer and electrician upon request.

Lower Keys Primary Easement Locations (primary wire)

Balido Terrace, Stock Island
Prado Circle, Big Coppitt Key
Caribe St, Sugarloaf Key
Sandy Circle, Big Pine Key
Chapman Ln/5th Ave, Big Pine Key
Hibiscus/Coconut Hwy, Big Pine Key
Poincianna Rd, Big Pine Key
Bittersweet, Big Pine Key
Warner St, Big Pine Key

Monroe County Coordination

In order for the inaccessible facilities project to succeed, KEYS will need to have a high level of support and coordination with Monroe County which include:

- Meet with Monroe County electrical inspector for clarification.
- Coordinate closely with Monroe County to minimize customer financial impacts (ongoing).
- Work with Monroe County in respect to customer complaints on public right-of-ways as a result of the proposed pole location/design.
- Minimize tree trimming impacts on public right-of-ways.
- Work with Monroe County on street light adjustments due to new pole lines in right-of-ways.
- Work with Monroe County to encourage telecommunication companies to expedite relocating of their facilities.

Monroe County Coordination Customer Riser and NEC Code Compliance

The following is the program that Monroe County and KEYS approved:

NEC Code Clarifications

Riser Extensions:

- Monroe County will allow riser upgrades to five feet above the roof line – vehicle access only.
- Riser conduit to be 2.5 rigid
- No guy required
- Will allow 3' vertical clearance over flat roof for "drip loop"

Riser Clarifications

Electrical upgrades required beyond riser relocations:

- No Customer panel upgrade needed if no additional KW load is added

Permits, Inspections and Fees:

- Contractor must be licensed in Monroe County
- Permit fees are applicable to customer; however, this is reimbursable as part of KEYS rebates.

Section 1. Monroe County supports the Utility Board in its efforts to fortify the electrical system with storm hardened poles and with replacing facilities that are located near inaccessible locations to locations adjacent to public roads.

Section 2. Monroe County supports KEYS' program to construct primary lines along public roads. Such program requires that affected property owners to either modify/extend their riser/meter center or accept ownership of a tap pole, and provides rebates to offset the cost customers may incur hiring a licensed electrician.

Section 3. Monroe County will not waive the cost of permitting the electrical work associated with specifically relocating or extending risers and meter centers as a result of this project.

Section 4. Monroe County supports an approach by their electrical inspectors that allows for:

- Requiring customer or his/her designee to follow normal permitting process for all work associated with this project.
- Not requiring customers to upgrade their electrical panels (or anything past the meter on the condition that no load is added).
- Replacing risers located in the rear of the property up to five feet above the roof line on the condition that this type of location meets the three foot clearance above the entire roof that NESC requires for service drops.
- Utilizing a vertical three foot drip loop clearance on the condition that this type of solution meets the three foot clearance above the entire roof that NESC requires.

Telecommunications Coordination

KEYS will coordinate closely with AT&T and Comcast, and in doing so plans to:

- Meet with AT&T and Comcast to present our plan overview in an effort for them to budget and plan accordingly.
- Encourage AT&T and Comcast to transfer their facilities in a timely manner to reduce customer complaints, and keep Monroe County informed of the project so that they can encourage the telecommunication companies to affect timely transfers from public right-of-ways.

Inaccessible Facilities Relocation Project

February 14th 2017

Status Update

Executive Summary

Construction

- Installation of utility poles progressing well with no construction concerns. Project layout and details of work completed are on the attached map/table.
- KEYS completed 78% of all the high voltage line construction.
- 3300/3400 blocks of Riviera & Flagler, all electric, communication lines, and poles have been removed.
- 1300 block of Flagler & Johnson have been completed with all poles installed.
- 2300/2600/2800/2900 blocks of Harris & Fogarty, Staples, Seidenberg, Patterson are completed with the high voltage placed out front.
- 1st to 12th Street - KEYS completed installation of the high voltage feeder of TSS-4.
- All KEYS high voltage work projected to be completed by Sept-2017.

Customer Interface

- KEYS continues to have an aggressive outreach program via letters, on-site meetings, dedicated KEYS phone line, website and FAQ's.
- One customer issue. Customer does not want to pay above the \$2,100 maximum rebate.
- Engineering is waiting for the last customer to complete their riser modifications within Zone D.
 - 2811 Harris Ave (Harry Sody)
- Current target zone with riser relocations are Fogarty, Staples, Patterson and Harris Avenues; along with Seidenberg and Flagler Avenues. There are 139 meters remaining to relocate.

AT&T, Comcast & City Coordination

- KEYS continues to coordinate with AT&T and Comcast on performing their transfers in accordance with the City's requirement of a two-year time frame.
 - Letters on the two-year time frame were sent to AT&T and Comcast in January 2013. KEYS has made concerted efforts to have them relocate their facilities. AT&T is looking to have their facilities completed by December 2017.
- City of Key West's Staff is very helpful and supportive on resolving issues ranging from tree trimming, ADA and pole location concerns on the City's Rights-of-Ways.
- AT&T, Comcast & the City continue to work together to keep the project moving forward.

Riser Relocations

- Relocation of risers is taking longer to perform than Staff expected.
- Riser relocation delays are not significantly impacting KEYS high voltage portion of the project at this time, but Staff will continue to monitor.
- Total of 94 meter relocations to date out of 233. There are 139 meters remaining to relocate.
- The average of the 77 meter rebates processed is \$1,958. Fourteen customers have paid more than the rebate cap of \$2,100, with an average of \$590 over the maximum.

Project Cost and Budget

- Project overall funding is on track. There are no issues or concerns at this time.
- KEYS has processed over \$150,000 in customer rebates.

Current and Future Issues to Resolve

- KEYS expressed concerns to AT&T and Comcast about their non-conformance to the City resolution of 24 months to transfer to the front.

Overall Project Summary/Status

- ✓ Overall the project is progressing well considering the project's complexity.
- ✓ Staff is working to resolve one customer riser objection/issue. Customer's objection is not impacting KEYS' easement project schedule.
- ✓ High voltage line construction is within budget.
 - All KEYS high voltage work projected to be completed by Sept-2017.
 - All riser transfers & pole removals to be completed by 2018.
- ✓ Customer risers continue to be relocated, but at a slower rate than expected.
- ✓ City, AT&T and Comcast are cooperative and helpful. However, local utilities are falling behind on the City's two-year transfer requirement. KEYS had a follow-up meeting in March 2016 in regards to the two-year time frame for Comcast and AT&T transfers.

Status Update

Schedule	Circuit Legend	Location (Block & Street)	KEYS Work				ATT and Comcast		Customers & Riser Issues					
			KEYS Poles to Install	% Work Completed	Engineering Design	Projected Construction Date	% Comcast Transferred	% ATT Transferred	Total Customers in Area	Qty of Meters Needing Modification	Meter Upgrades Completed	% of Riser Upgrades Completed	Qty Rebates Paid	Total Rebates Paid by KEYS
Year-1	C	3300/3400 Blk Riviera & Flagler	8	100%	Completed	Completed	100%	100%	42	15	15	100%	15	\$ 24,524
	F	800 Blk Waddell & Washington*	1	100%	Completed	Completed	30%	25%	55	9	9	100%	9	\$ 7,695
	E	800 Blk South & Washington*	6	100%	Completed	Completed	30%	30%	26	11	11	100%	11	\$ 30,270
	D	2800 & 2900 Blocks of Harris*	8	100%	Completed	Completed	100%	0%	48	9	7	77%	6	\$ 8,010
	D	2800 & 2900 Blocks of Fogarty*	8	100%	Completed	Completed	100%	0%	30	4	4	100%	4	\$ 7,240
	D	2700 Blk Harris*	0	100%	Completed	Completed	100%	0%	11	1	1	100%	1	\$ 2,100
			31	100%	Completed	Completed	77%	26%	212	49	47	96%	46	\$ 79,839
Year-2	G	2400 Blk Harris & Seidenberg	8	70%	Completed	Dec-16	0%	0%	32	12	0	0%	0	\$ -
	H	2600 Blk Flagler & Staples	10	80%	Completed	Nov-16	0%	0%	22	12	1	1%	1	\$ 2,064
	I	2600 Blk Harris & Fogarty	6	100%	Completed	Completed	20%	0%	29	14	4	28%	4	\$ 8,400
	I	2500 Blk Patterson & Fogarty	5	100%	Completed	Completed	0%	0%	36	6	4	66%	3	\$ 6,977
	I	2400 Blk Patterson & Fogarty	11	100%	Completed	Completed	0%	0%	50	14	0	0%	0	\$ -
	I	2300 Blk Patterson & Fogarty	5	60%	Completed	Dec-16	0%	0%	33	12	2	8%	1	\$ 2,060
	I	2200 Blk Fogarty & Patterson	8	100%	Completed	Completed	0%	0%	18	10	3	30%	3	\$ 5,303
	I	1900 Blk Fogarty & Patterson	9	100%	Completed	Completed	0%	0%	26	17	10	58%	5	\$ 17,084
	I	2000 Blk Fogarty & Patterson	6	100%	Completed	Completed	0%	0%	42	18	7	33%	4	\$ 8,925
	I	2100 Blk Fogarty & Patterson	6	100%	Completed	Completed	0%	0%	37	16	1	6%	1	\$ 1,990
	I	1900 Blk Patterson & Roosevelt	3	75%	Completed	Dec-16	0%	0%	35	7	7	100%	2	\$ 5,040
	I	2000 Blk Patterson & Roosevelt	3	75%	Completed	Dec-16	0%	0%	13	7	4	57%	3	\$ 4,920
	I	2100 Blk Patterson & Roosevelt	0	100%	Completed	Completed	0%	0%	8	6	0	0%	0	\$ -
			80	89%			2%	0%	381	151	43	30%	27	\$ 62,763
Year-3	M	1200/1300 Blk Johnson & Flagler	3	100%	Completed	Completed	20%	0%	18	4	3	75%	3	\$ 6,180
	A	3500 Blk Flagler & Eagle (East)	4	0%	Completed	Feb-17	0%	0%	14	6	1	0%	1	\$ 2,000
	B	3500 Blk Flagler & Eagle (West)	4	0%	Completed	Feb-17	0%	0%	15	7	0	0%	0	\$ -
	J	1800 Blk Harris & Seidenberg	9	25%	Completed	Feb-17	0%	0%	27	4	0	0%	0	\$ -
	K	1700 Blk Catherine & HOB School	4	0%	Completed	Feb-17	0%	0%	13	7	0	0%	0	\$ -
	K	1600 Blk Catherine & HOB School	3	0%	Completed	Feb-17	0%	0%	11	4	0	0%	0	\$ -
	L	2600 Blk Seidenberg & Harris	2	50%	Completed	Nov-16	0%	0%	6	1	0	0%	0	\$ -
			29	25%			3%	0%	104	33	4	0	4	\$ 8,180

