KISSIMMEE UTILITY AUTHORITY

CALENDAR YEAR 2012
STORM HARDENING REPORT TO THE FLORIDA PUBLIC SERVICE COMMISSION

PURSUANT TO RULE 25-6.0343, F.A.C.

Kissimmee Utility Authority
Storm Hardening Report to the Florida Public Service Commission Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2012

1) Introduction

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

a) Kissimmee Utility Authority (KUA)

b) 1701 West Carroll Street
Kissimmee, Florida 34741

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2) Number of meters served during calendar year 2012

During calendar year 2012, KUA served an average of 68,510 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 or later revisions of the code as determined by KUA. All facilities constructed on or after February 1, 2007, are constructed in compliance with the edition of the NESC in effect at the time of the construction.

b) Extreme Wind Loading Standards

Distribution

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 NESC for the following categories of construction initiated after December 10, 2006:

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.

During 2012, KUA replaced ten (10) distribution poles with spun concrete poles meeting or exceeding extreme wind loading requirements. Also, projects are currently in the design process to upgrade two sections of feeders. This upgrade will include installation of concrete poles for storm hardening purposes. These projects will be completed in calendar year 2013.

Transmission

KUA standards for construction of new transmission facilities have met or exceeded NESC extreme wind loading standards since approximately 1984. Extreme wind loading standards cover construction of transmission facilities for the following categories:

1) New construction;
2) Rebuilds or relocation projects;
3) All individual pole replacements.

During 2012 KUA replaced seven (7) existing wood transmission poles with spun concrete and tubular steel poles. Projects are currently underway that will include replacing an additional thirty-two (32) wood transmission poles. These projects will be completed in the Spring of 2013.

We continually evaluate our system to determine any immediate needs for system upgrades and hardening in specific areas. We take every opportunity to evaluate any situations that might afford us the ability to replace existing poles or facilities to increase their strength ratings. This includes evaluating increased pole strength ratings when poles are replaced, lines are relocated due to road projects or lines are upgraded with new conductor sizes. KUA is also participating in the Public Utility Research Center's (PURC) granular wind research study through the Florida Municipal Electric Association. We will monitor the results of this research to determine the most appropriate response for system upgrades and hardening.

c) Flooding and Storm Surges

The KUA service territory is not in a coastal area, and therefore 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 have been identified and are monitored when the flooding potential is present.

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. We will monitor the results of this research to evaluate the justification of converting overhead to underground.

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, within dedicated utility easements and adjacent to road rights-of-ways. Developments are required to provide easements as specified by KUA, to ensure adequate access by KUA crews and equipment. KUA has not constructed any new facilities on rear-lot lines for a number of years, and therefore has a very minimal amount of existing 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. All existing rear-lot construction areas are also monitored for reliability, maintenance and operational problems. Significant problems with any of these issues will result in a planned conversion to front-lot construction. KUA allocates funding each fiscal year for these types of conversion projects.

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 has taken the opportunity to negotiate new pole attachment agreements with attaching entities as the existing agreements reach the end of their term. The new attachment agreements address this issue in detail and require the appropriate loading analysis on poles for which attachments are being requested. These agreements place more of the burden of assessing pole strength on the attaching entity. KUA does spot check follow-up audits to review attachments made to KUA poles. We have also conducted a complete field inspection of all attachments to KUA poles and notified the attaching entity of any required modifications to the attachments.

4. Facility Inspections

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

KUA has a comprehensive inspection program for transmission and distribution lines, poles and structures. KUA outsources the pole inspection program to an experienced pole inspection company. Inspections utilize a sound and bore method for all wood poles. The base of the pole is exposed to 18 inches (where feasible) below ground line to inspect for indications of decay. Mitc-fume pesticide is also applied where necessary. During the pole inspection, visual inspections are also performed to identify problem areas such as cracks, splitting, woodpecker damage, obvious decay, missing ground wire molding, ground wire repair and missing guy guards. Rejected poles are classified as "priority" and "non-priority" rejects. Priority rejects are replaced immediately. Non-priority rejects are scheduled to be replaced as soon as possible. All inspection/treatment and follow up remediation is documented and tracked in a facility inspection database and through the GIS system.

KUA's inspection guidelines, practices and procedures are summarized as follows:

Transmission System:

KUA's current guidelines, practices and procedures include inspection of all wood transmission poles on a biennial cycle. The pole inspection process includes sound and bore and ground-line excavation and treatment.

During the pole inspection process, facilities are also visually inspected for any signs of broken grounds, broken or damaged guy wire, missing guy wire covers and other problems that can be seen via a visual inspection. Infrared scans are also conducted on all transmission circuits on an annual basis. Vegetation inspections of all transmission lines are conducted on an annual basis. During this process, visual inspections of transmission circuits are conducted for potential problem areas.

Distribution System:

KUA currently targets for the inspection of all wood distribution poles on an eight-year cycle. KUA currently outsources pole inspections to an experienced contractor. Pole inspections include sound and bore and ground-line excavation and treatment. During pole inspections, facilities are also inspected for problems such as missing grounds, broken guy wires, missing guy guards and other problems that can be spotted via visual inspection. Digital photos are also taken of each structure. These photos also enable KUA personnel to review the facility for problem areas.

Infrared scanning of all main distribution feeders is conducted on an annual basis. KUA also currently targets a more thorough visual inspection of all distribution facilities on a five-year cycle. Infrared technology assists in locating potential problem areas such as bad connectors, bad insulators and other potential faulty or failing equipment. The

scanning process also provides for visual contact with all distribution feeders on an annual basis. Outage data for all distribution feeders is also evaluated on a regular basis. Detailed component by component inspections are conducted on feeders experiencing higher than normal outage incidents.

b) Number and percentage of transmission and distribution inspections planned and completed for 2012.

Transmission

KUA conducts inspection of transmission poles on a biennial cycle. All transmission poles were inspected during 2011. Therefore no transmission pole inspections were conducted during 2012.

Visual inspection of all transmission circuits are conducted semi-annually during transmission vegetation management inspections. All of KUA's transmission circuits were inspected through this process during 2012. These inspections look for problem areas such as clearance issues, broken or tracking insulators, broke grounds, woodpecker holes, etc.

Inspection	Planned	Completed	% of System Completed
Pole Inspection	0	0	NA
Circuit Inspection	All Circuits	All Circuits	100%

Distribution

KUA planned for the inspection of 1,700 distribution poles during 2012. This number would complete our current cycle of inspections for all distribution poles. A total of 1,872 poles were actually inspected during 2012. During the pole inspection process, the pole is also inspected for obvious maintenance issues such as damaged grounds, missing guy guards, slack guys, vegetation issues, attachment issues, etc.

KUA also conducts a more thorough visual inspection of the distribution system on a five-year cycle. Therefore, we inspection targets are to inspect an average of 20% of the system annually. This includes inspection of underground system equipment.

Current practices include infrared scanning of targeted major distribution facilities on an annual basis. Ninety-eight distribution facilities meet this criterion and are scanned on an annual basis. During 2012 all major distribution facilities were inspected via infrared scanning. Visual inspections were also conducted during the pole inspection process.

For 2012 the planned and completed distribution system inspections were as follows:

Facility	Planned	Completed	% of System Completed
Pad Mount Transformers	890	1,294	145%
Pad Mount Switches	227	219	97%
OH Pole Hardware	2,707	1,975	73%
Overhead Circuit Miles	63	89	139%
Pole Equipment	1,700	1,872	111%
Infra-Red Scanning	98	98	100%

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

Transmission:

Transmission poles were not inspected during 2012.

Distribution:

A total of 18 (0.96%) of the 1,872 poles that were inspected were classified as rejects and will require restoration or replacement. The average age of the poles failing inspection was 34 years. Reasons for failure are as follows:

Reason for Failure	Number of Poles
Split Top	4
Decayed Top	4
Woodpecker Holes	5
Shell Rot	2
Exposed Pocket	3
TOTAL	18

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.

General

KUA pole inspections are conducted during the last quarter of the calendar year. Any required remediation, except for priority rejects, is typically completed during the following calendar year. Therefore, the remediation data presented below is for those poles identified during the calendar year 2011 inspections.

Transmission:

Thirty-eight (39) poles were identified as needing some remediation. Seven (7) of these poles were replaced during 2012. The remaining thirty-two (32) of the poles were repaired and are scheduled for replacement during a transmission line upgrade project that is currently underway. This project will be completed in the Spring of 2013. A summary of the size, class and type of poles referenced above is shown below:

Transmission Pole Remediation

Length	Class	Species	Treatment	Qty	Remediation
85	H1	Douglas Fir	Penta	31	Repaired-Scheduled for replacement in Spring 2013
90	H1	Douglas Fir	Penta	1	Repaired-Scheduled for replacement in Spring 2013
70	H3	Douglas Fir	Penta	1	Replaced
75	H3	Douglas Fir	Penta	6	Replaced
TOTAL				39	

Distribution:

The remediation taken in 2012 was for poles identified during the calendar year 2011 inspection cycle. The 2011 inspection resulted in thirty-one (31) poles failing inspection. Of those, nine (9) poles were replaced in 2011 and included in the 2011 report. The remaining twenty-two (22) were replaced in 2012. Summary data on the poles replaced is shown below:

Distribution Pole Remediation

Lgth.	Class	Species	Treatment	Qty.	Remediation
30	4	South. Pine	Creosote	1	Replaced
35	4	South. Pine	CCA	1	Replaced
35	4	South. Pine	Creosote	8	Replaced
40	4	South. Pine	CCA	7	Replaced
40	3	South. Pine	Creosote	3	Replaced
45	4	South. Pine	CCA	2	Replaced
Totals				22	

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.

All KUA construction is planned in order to ensure adequate right-of-way widths are obtained. KUA only constructs new distribution circuits on front lots and the majority of new distribution lines are constructed with dedicated utility easements. This helps to minimize the planting of vegetation near electric infrastructure. Thirdly, local ordinances dictate that all new distribution construction be constructed underground. While KUA believes our vegetation management program is sufficient, we also recognize that vegetation management is an ongoing process and improvements can be made with the ability to gather and analyze data. The Public Utility Research Center held a vegetation management conference January 26-27, 2009. The FMEA and KUA have a copy of the report and will use the information to continually improve vegetation management practices.

Transmission

KUA has a written Transmission Vegetation Management Plan (TVMP) that details our policies, procedures and practices for transmission line vegetation management. KUA's TVMP has been found to be in full compliance with the applicable North American Electric Reliability Corporation (NERC) reliability standards.

KUA's TVMPP calls for an annual inspection of all transmission lines for potential vegetation problems. However, in practice an inspection is performed on a semi-annual basis. Any problem areas identified during this inspection are scheduled for remediation based on the severity of the problem. A vegetation work plan is prepared as a result of the inspection. The work plan identifies the location, type and scheduled date for any required remediation. Inspection and remediation is planned each year in order to complete any required work prior to the next hurricane season.

Distribution

KUA guidelines currently target a vegetation inspection/trim cycle on the overhead distribution system on a three-year cycle. In addition, we utilize our outage analysis system to categorize outages, including those attributable to vegetation. Analysis of this data is also performed to target potential problem areas. We have recently converted the contract with our vegetation management contractor to a line-mile basis. This requires the contractor to inspect trim (if necessary) 33% of our distribution circuits annually.

Based on past experience on the KUA system, we believe our vegetation management process and practices are adequate and very effective. This is partly evidenced by the fact

that our total number of vegetation related outages on the distribution system decreased by 76% since 2003. The number of vegetation related outages during 2012 was 28.

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

Transmission

During calendar year 2012, vegetation inspections were performed on all transmission circuits. All required remediation identified during the inspection was also completed during 2012.

Distribution

Distribution vegetation management planned for 2012 included inspection/remediation on approximately 107 pole miles. All 107 pole miles were inspected and/or remediated during 2012.

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.