BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

Review of 2007 Electric Infrastructure Storm Hardening Plan Filed pursuant to Rule 25-6.0342, F.A.C., Submitted by Florida Public Utilities Company.	**Docket No. 070300-EI**

DIRECT TESTIMONY OF MICHAEL T. HARRELSON ON BEHALF OF FLORIDA CABLE TELECOMMUNICATIONS ASSOCIATION, INC.

DECEMBER 27, 2007

Introductory Issues

Q. Please state your name, title, and business address.

A. My name is Michael T. Harrelson. I am a registered professional engineer (Electrical), and an engineering consultant.

Q. On whose behalf are you filing this testimony?

A. I am appearing on behalf of the Florida Cable Telecommunications Association, Inc. ("FCTA"), an intervener in this proceeding.

Q. Would you please summarize your education, experience and qualifications?

A. Certainly. I have a Bachelor of Science in Industrial Engineering from Georgia Tech where I was a co-op student while working for Georgia Power Company. I started working at Georgia Power in electric distribution in their co-op program in 1963 when I was 18. I was at Georgia Power in various districts and in various capacities of electric distribution, engineering, construction and maintenance until 1992. In 1992 I began a career as an Engineering Consultant. I am a registered professional engineer in Georgia and Florida. A more detailed rendering of my work history is included in my CV which is attached as Harrelson Exhibit 1 ("MTH-1").

Q. Have you had any experience in working with joint use of electric distribution poles by communications companies?

A. Yes. I have had extensive experience in this area.

Q. Do you have knowledge of the National Electrical Safety Code ("NESC")?

A. Yes, I do. The NESC is the national safety standard for electric supply stations and electric supply and communication lines. The current edition is ANSI C2-2007, ISBN No. 0-7381-4893-8. The purpose of the NESC is the practical safeguarding of persons

during the installation, operation, or maintenance of electric supply and communication lines and associated equipment. This code is not intended as a design specification or as a construction manual. The NESC rules contain the basic provisions that are considered necessary for the safety of employees and the public under the specified conditions. If the responsible party wishes to exceed these rules, he may do so for his own purposes, but need not do so for safety purposes. NESC compliance is mandatory in Florida for electric power and communications companies.

Q. Do you consider yourself knowledgeable in these areas?

A. Yes. I consider myself to be an expert in the NESC and its application to construction, installation, maintenance, inspection, and audit of electric and communications facilities on poles.

Q. Why is that?

A. I worked for Georgia Power Company for a total of 27 years, including during the late 1960s and early 1970s when the first cable television systems were being built in Georgia and elsewhere around the country. Because I worked for Georgia Power until 1992, I also witnessed the upgrade and rebuild of improved generations of cable television systems and saw how both cable companies and pole owners, including power companies, work together to complete these system upgrades and rebuilds. Since retiring from Georgia Power, I have worked as a consulting engineer and an expert witness to electric companies, cable companies and others.

Q. Have you ever been qualified as an expert witness?

A. Yes.

Q. In what subjects or fields have you been so qualified?

A. I have been qualified as an expert in (1) the NESC requirements; (2) electric power distribution design, construction, engineering, operation, and maintenance procedures; (3) joint use of utility poles by power and communications companies; (4) OSHA electric power and communications safety regulation; and (5) the National Electric Code, which applies to electric power utilization systems.

Q. On how many occasions have you given testimony as an expert witness in these areas?

A. I have testified either in deposition or at trial approximately 42 times in the past 18 years. I testified in a pole attachment dispute before the Utah Public Service Commission in a matter closely related to some issues in this proceeding. That dispute involved attachment permitting procedures, engineering guidelines for attachments, and interpretations of the NESC. In addition, in a similar dispute in Arkansas, I submitted written testimony to the Federal Communications Commission ("FCC") and participated in a mediation session before the FCC. I have also submitted written comments to the Louisiana Public Service Commission in a proceeding to reconsider regulations regarding pole attachment procedures in Louisiana. Moreover, in the spring of last year I gave deposition testimony, submitted direct testimony and testified live on cross examination before the Chief Administrative Law Judge ("ALJ") at the FCC on behalf of the FCTA and four of its member operators. The issue in that proceeding was whether Gulf Power was entitled to charge pole attachment rates in excess of rates produced using the FCC formula for cable operator attachments based on, among other things, Gulf Power's claim that its poles were "full" and that no capacity for further attachments existed. I testified that safe and customary engineering practices, based on my years of experience and the NESC, demonstrated that Gulf Power's poles had capacity and the Chief ALJ agreed with

my analysis. The matter is now on appeal. I also participated in the Florida Public Service Commission (hereinafter "FPSC" or the "Commission") rulemaking proceeding in Dockets No. 060172-EU and 060173-EU, through which Rule 25-6.0342, Florida Administrative Code ("F.A.C."), was developed. Furthermore, I submitted Comments to this Commission in the Storm Preparedness proceeding, Docket No. 060198-EIQ. And, I recently testified concerning the storm hardening plans filed by Florida Power and Light, Inc. in FPSC Docket 070301 and Progress Energy Florida Inc. in Docket 07298.

Q. Do you have additional relevant experience?

A. Yes. I have participated in more than 100 pieces of litigation or accident investigations as a consultant.

Q. Are there other aspects of your training and background that may be relevant to your testimony?

A. Yes. In addition to working in this industry for quite a number of years, I regularly attend conferences on joint use, conduct training sessions and conduct pole-line inspections for pole owners like electric utilities, not unlike the inspections that are, at least in part, at issue in this proceeding. Through these activities I am very familiar not only with standard industry practices as they relate to outside aerial utility plant and joint use, but I am also very familiar with the trends and "state-of-the-art" utility and communications company practices in this area.

Q. Have you had experience with hurricanes in South Florida?

A. Yes. I worked in South Florida for an electric cooperative in restoration of service after Hurricanes Jean, Francis, Charlie and Wilma. I personally observed the destruction of trees and buildings and their impact on distribution lines, as well as the poles leaning in

softened soil and cascading failures caused by one pole being broken that resulted in several more poles being broken. I saw places where several poles broke and fell in one direction but several adjacent poles in the same line fell in the opposite direction indicating tornado type winds in localized areas. The greatest numbers of power outages were caused by tree limbs and broken wires, not broken poles.

Q. Has your work been limited to field work?

A. No. I have consulted as a Registered Professional Engineer in joint use contract interpretation and application for 15 years. This includes inspecting joint use facilities, training field engineers and line workers in the NESC, joint use contracts and safe-work rules, and negotiating specific separation, clearance and arrangement requirements (which are additional requirements sometimes imposed by power companies). I have also negotiated procedures, techniques and schedules to complete safety audits, make-ready engineering, make-ready construction and post inspection for joint use projects. I have prepared and conducted numerous workshops or seminars for national joint use conferences and personally conducted several NESC code compliance audits, as well as prepared the make-ready engineering for the power companies and communications companies involved that was necessary to correct violations uncovered in those audits.

Q. Anything else?

A. Yes. In the past I have been President of the local utility coordinating committees in Brunswick and Milledgeville, Georgia and periodically attend national joint use conferences.

Q. Please describe your work as President of the local utility coordinating committees.

A. These are organizations that are established to foster better communication among the different industries and users that need to use poles and be in the right-of-way. We discuss, design and implement ways to accommodate safe, practical and timely access and use of the limited facilities that all these different companies need to provide their services.

Q. Do these committees facilitate joint use of poles?

A. Yes, in part. Other issues such as joint trenching, right-of-way restoration, tree-trimming and the like have also been considered. But the principal motive for these particular organizations and ones like them is to provide a forum for inter-industry understanding and to find real-world solutions to real-world problems in the joint use area.

Q. Are you sponsoring exhibits in this case?

A. Yes. MTH-1 (my curriculum vitae and list of testimonies).

Q. Could you please explain what your assignment from FCTA was in this proceeding?

A. Certainly. My assignment was to evaluate the Storm Hardening Plan (the "Plan") filed by Florida Public Utilities Company (hereinafter "FPUC" or the "Company") in this docket for the purpose of determining whether the Plan meets the overall objective of the Commission, as set forth in Rule 25-6.0342, F.A.C., of enhancing the reliability of electric transmission and distribution service in a prudent, practical and cost-effective manner.

Company Plan

Q. Have you read the Storm Hardening Plan filed by the Company in the referenced docket?

A. Yes.

Q. Have you reviewed the Direct Testimony and Exhibits of the Company's witness, P. Mark Cutshaw, dated November 27, 2007 filed in support of the Company's Plan?

A. Yes.

Q. Have you reviewed the answers to interrogatories and responses to document requests filed by the Company to date in this proceeding?

A. Yes.

Q. Do you have any concerns about the Company's Plan?

A. Yes. My primary concern is that the Company's Plan is not fully developed and thus does not include a sufficiently detailed description of its deployment strategy. For example, it is not clear from the Plan the precise methodologies the company will use to strengthen its poles to meet extreme wind loading (EWL) requirements. It is also unclear how the Company intends to assess the strength and loading of its existing poles, including the loading impact of third party attachments. And, while the Company intends to rely in part upon its ground line inspection and joint use audits to strengthen its poles to withstand extreme weather, critical details about how the Company intends to conduct its inspection and audit are lacking. Without the requisite detailed information, it is impossible for third party attachers to provide the input into the Plan that they are entitled to provide under the governing regulation, Rule 25-6.0342, or to assess whether FPUC's application of EWL will be prudent, practical and cost effective. My understanding is that the parties in this docket are discussing entering into a stipulation setting forth a process to engage third party attachers in a continuous dialogue about the Plan and that this may address some of my concerns in this regard.

I also have concerns about certain provisions relating to attachment standards and procedures that the Company has left open-ended and unresolved. On the one hand, the Company states that it intends to rely upon the attachment standards and procedures in the pole attachment agreements it has negotiated with third party attachers (and which are governed by federal law), which is appropriate. However, the Company's Plan states "additional construction specifications will be developed that can be used in conjunction with the contracts." Plan at 15. And, Mr. Cutshaw, in his testimony, states, "These contracts do not cover certain issues regarding pole loading capacity and overlashing. These standards will be developed and negotiated into new contracts that will cover these issues and other issues related to storm hardening. These requirements will be dependent upon final approval of the Storm Hardening Plan." Cutshaw Testimony at 14. I am concerned that FPUC has left these certain specifications, including requirements for pole loading capacity and overlashing, an area extensively regulated by the Federal Communications Commission ("FCC"), for future resolution.

Finally, the lack of specificity about the Company's deployment strategy and the open questions about its attachment standards and procedures makes it impossible for third party attachers to assess the costs and benefits the plan may have on their operations, and also calls into question whether the Company's plan satisfies the overall requirement of the rule, i.e., that the Plan strengthen the Company's poles in a prudent, practical and cost-effective manner.

EWL

Q. Please explain FPUC's Plan to build to EWL.

A. FPUC lists certain critical infrastructure circuits in its plan which it will "consider" for upgrade to extreme wind loading (EWL) strength standards. Plan at 11-12. The Plan does not state whether EWL Grade C or EWL Grade B will be used, or whether terrain features, such as tall trees near the individual portions of the circuits to be upgraded, will be considered.

Q. Does the NESC require EWL criteria for distribution poles that are 60 feet or less in height?

A. No. Rule 250C of the 2007 NESC contains the EWL standard and describes the application of the extreme wind loading required in Rule 250A1 on poles and their supported facilities, including wires, transformers, etc. for purposes of determining the required strength of the pole. The current and previous editions of the NESC exempt from the EWL criteria any structure and its supported facilities that are 60 feet or less above ground. As a clarifying point, only Rule 250C specifies when extreme wind loading is required, not Figure 250-2(d), which is the NESC provision referenced in F.A.C. 25-6.0342. Figure 250-2(d) specifies three-second gust wind speeds for Florida, which are then referenced in Rule 250C.

Q. In your opinion, does it make sense to apply EWL to poles less than 60 feet tall?

A. In general, no. The common causes of hurricane related pole failures are falling trees, flying building debris, soft soil made worse by heavy rains, weak guy failure, rotten pole failure, and finally wind force on poles, lines and attachments. Another common cause of wood pole failures is cascading of solid (strong) poles because an adjacent pole breaks in high wind because of a weak or missing guy wire, flying debris, rot or another defect.

The NESC subcommittee considered and rejected adopting EWL for distribution poles because the application of EWL to distribution poles generally is not prudent or cost effective. In fact, the application may have the unintended consequences of increasing vehicular injuries and deaths resulting from cars hitting a greater number of heavier poles, increased storm restoration delay resulting from more pole failures and harder to replace poles, and creating a steep learning-curve for engineers not yet trained in these types of applications. Increasing the number of poles, which is one way to build to EWL, can multiply the number of poles that are knocked down by flying debris during high wind. EWL should be applied to distribution poles, if at all, on a limited basis.

Q. Does FPUC's Plan explain the specific construction techniques and engineering designs it will employ to meet EWL standards?

A. No.

Q. Are there alternatives to building to EWL that strengthen power lines and improve their resilience to storm winds and reduce storm restoration expenses?

A. Yes. There are many proven distribution power system initiatives and storm recovery preparations other than replacing poles and building to standards that exceed the NESC that can produce greatly increased electric service reliability, decreased storm damage, and reduced restoration time and expense. For example, ensuring that poles are not rotten or otherwise defective should significantly assist in efforts to prevent storm outages and in storm restoration. Rotten poles in particular are a serious problem in high wind situations because they can cause a cascading effect, which breaks several adjacent sound poles. In addition, guying, bracing and trussing of existing poles which fail strength assessments are practical, cost effective ways to strengthen poles to the desired level.

Indeed, many proven distribution power system initiatives and storm recovery preparations can produce greatly increased electric service reliability, decreased storm damage, and reduced restoration time and expense. Storm hardening initiatives for overhead electric power distribution lines which are prudent, practical and cost effective should include:

- Small conductor replacement projects to decrease line breakage during storms. Many more outages in hurricanes involve broken wires than broken poles, especially in the impacted areas outside the central path of strong storms. These projects should be coordinated with pole inspections and vegetation management and include major maintenance and guying improvements.
- Right of way access improvement projects for lines which are inaccessible due to ditches, fences, small roadways, etc., including removing or providing access across such strategic obstacles to line sections. This will allow repair crews to access lines much more quickly during emergencies.
- The use of specialized equipment and or contractors for work in difficult right of way conditions such as back lot line, off road or swampy area lines for more efficient restoration.
- Pole inspection with strengthening or replacement or guying of deteriorated or overloaded poles. All deteriorated, broken or missing guys should be replaced. All buried anchor heads should be extended to above grade or water levels to prevent guy wires from rusting off.

- Installation of storm guying projects for line segments where it is feasible, including lines where poles are subject to lean over in soft soil during high winds. Larger poles do little to solve the problem of leaning in soft soil without guying.
- Adding line segment sectionalizing switches, breakers and fuses as needed to isolate sections of line which sustain heavy storm damage. This can greatly improve time to restore power to lightly damaged main line segments before all major storm damage in an area is repaired.
- Updating automatic electric primary circuit coordination of breakers and line sectionalizing fuses, and adding devices as appropriate to assure automatic line sectionalizing initially and facilitate power restoration after storms pass.
- Converting selected distribution systems' voltage from 12 or 13 kV to 25 kV. Four times the electric power can be delivered by the same circuit if the voltage is doubled. Higher distribution voltage decreases the need for larger primary wire sizes and multiple circuits as electric system load grows. The long-term effect on wind loading is positive, and there are many other economic benefits of 25 kV systems.
- Developing an improved procedure to avoid cutting of fiber optic cables by debris clearing and electric repair crews. In many instances fiber optic circuits have survived the hurricanes, still functional, but on the ground in places only to be cut repeatedly by others' restoration efforts.

Q. How could FPUC's Plan be improved?

A. The wind speed zones in FPUC's service areas are 120 mph and 110 mph. NESC Grade B construction is equivalent to approximately an EWL Grade C strength required for a

118 mph wind design. The prudent practical and cost effective way to implement the FPUC plan would be to use NESC Grade B construction in the sections of the selected CIF circuits which are not likely to be torn down by tall trees. The complex engineering calculations required to design poles and lines to EWL are much more difficult than those required for Grade B construction. Grade B can usually be achieved with commonly available class 3 wood poles, such as FPUC is now using on Amelia Island, and good guying practices. Existing poles which do not already meet Grade B can be strengthened to Grade B requirements by adding a steel truss as explained by the Osmose Company (provided by FPUC in response to OPC Request for Production 1 in this docket) at a substantial cost savings compared to replacing poles and transferring all attachments.

The NESC requires Grade C construction as the basic strength standard for distribution lines. The NESC also requires Grade B strength which is much stronger than Grade C for distribution poles and lines where lines cross limited access highways and railroads. The Florida PSC has required IOUs to determine where EWL is prudent, practical and cost effective for distribution poles less than 60 feet high even though it is not required by the NESC.

The FPSC has approved a storm hardening plan using Grade C as the basic strength standard, with EWL for limited pilot projects. (Docket 070298, Progress Energy Florida) The FPSC also approved a plan using Grade B as the basic strength standard (Docket 070297, Tampa Electric Company) and another proposing a transition to Grade B from Grade C (Docket 070299, Gulf Power Company). The FPSC also approved a plan to apply EWL and incremental hardening to existing and new distribution lines. (Docket 070301, Florida Power and Light, Inc.).

FPUC should also take into account the effect of other lines and guy wires attached to existing poles in determining the strength of those poles. Of course, even if Grade B is used instead of EWL, it does not make sense to upgrade otherwise sound poles to Grade B where the poles are likely to come down because of trees falling on lines. If FPUC adopts Grade B for those CIF circuits being considered for EWL and takes into account the guying effect of other lines and guy wires as well as the surrounding terrain it will achieve the objectives of storm hardening in a very prudent, practical and cost effective way. Few if any concrete poles would be required for distribution lines.

Q. Why should the effects of trees near distribution lines be taken into account?

A. Trees near lines shelter the line from the full force of the wind so long as the trees do not get blown over by the wind or loose large limbs. They also fall into lines and cause pole failures when the winds get too high. In fact if the 110 to 120 mph winds specified for FPUC service territory occur, many of the tall trees near lines will be blown onto the lines and destroy even lines designed to EWL standards. The NESC, which only requires EWL for poles exceeding 60 feet, accounts for the fact that trees often tower over shorter poles.

Strength and Loading Assessments

Q. Please explain your concerns about the methods the company will use to assess strength and loading of the existing poles?

A. I am concerned that FPUC may not take into account all of the relevant criteria for assessing the true strength of the pole and its ability to withstand wind loading. For example, it is not clear from the Plan whether FPUC will take into account the guying effect of lateral lines on the pole without special application procedures. I am also

concerned that third parties will be deemed to be the cause of overloading, when in fact, utility facilities create substantially more load on the pole. If the attachers are permitted to be on the pole, they should not be found to be the cause of loading violations. CATV attachments are made by an application process where the pole owner has an opportunity to approve or disapprove the proposed attachment. The pole is modified or replaced if necessary through a make-ready process which assures compliance with applicable standards, including loading, and can include a post-construction inspection. Third party attachers then pay annual rent for the right to be on the pole. FPUC has allowed parties to overlash existing attachments. Thus, third parties should not be deemed to have caused overloading discovered through inspections or audits, unless FPUC can demonstrate that the attachment was made illegally.

Q. What causes a pole to be overloaded?

A. The strength of wood poles deteriorates over time, and other entities add facilities and attachments to poles. Wind load is a product of the surface area exposed to the wind multiplied times the force of the assumed wind and also multiplied times the pole height from the fixed point (often the ground line or the highest guy wire) on the pole. It is unreasonable to assume that third parties have caused overloading. In my experience third party attachments do not significantly increase the wind load on poles. Rather, power lines, hardware for attaching lines to poles and power apparatus such as transformers, fused switches, lightning arrester assemblies, outdoor lights and many other power company attachments usually account for most of the wind load on a pole because they have a larger cross sectional area and are attached to the top part of poles.

Q. Please explain what you mean by the guying effects of lateral lines and other beneficial loading effects of guy wires on poles.

A. Poles or any tower can be designed to be held upright by as few as three guy wires when nothing else is attached. A guy wire is a strong steel wire which is attached to a pole near the height on the pole where the pole needs additional support. The other end of the guy may be attached to a strong steel anchor in the ground or to another pole in the direction that the pull of the guy is needed. The requirements are that the guys and their anchors must have enough strength to overcome the horizontal force of wind on the structure. The structure must have enough strength to withstand the vertical load, if any, of the guys' downward component of pull on the tower. The horizontal component of the pull of the guys is what must equal or exceed the applied force of the wind.

Power lines near the top of the poles create the effect of having two sets of "guys" attached to the poles. These wires are much stronger than the tension at which they are strung from pole to pole. The amount that the strength of each of these wires exceeds the pounds of tension on the wire is available to help strengthen the pole in that direction. This is the same effect on pole strength as guying. The lines are either straight through, turn an angle or stop on each pole. The straight line poles are called tangent structures, the angles are angle structures and the last ones are called dead end poles.

A tangent structure must have enough strength to withstand the force of the assumed speed of the wind for which it is designed. The wind direction must be assumed to be that which results in the most load on the pole. For a tangent pole with no other wires or guys attached, the worst direction is perpendicular to the line because of the ability (guying effect) of the line to support the pole in two directions as stated above.

The wind force is based on the exposed surface area of the structure and all of its attachments. This strength may be provided by the structure alone or other support such as guy wires and other electric wires and cables attached to the pole. These other attachments leave individual poles in various directions and at different heights. All of these attachments must have greater strength than the tension under which they operate. The operating tensions and strength of various wires and cables generally is known and the tension depends on the distance to the next pole. The amount that the strength of any attachment exceeds its operating tension produces a guying effect on the pole.

Angle poles are similar to a tower which is guyed three ways. The line provides guying effects in two directions and the third is provided by a guy and anchor, a horizontal guy wire to another pole or another line leaving the pole and acting as a guy. A dead end pole normally is strengthened in one direction by the power lines and by a guy wire or guy wires in the opposite direction. Dead end poles can be guyed if space is available by two guys whose anchors are spread apart enough to effectively storm guy the pole. The horizontal component of all of these guying effects can and often does make a common diameter pole strong enough to meet EWL or Grade B standards.

Q. Do you have an understanding of how FPUC considers these guying effects on poles?

A. No. FPUC has discussed this concern with me but it is not yet clear to me how it will account for the guying effects of other lines, cables and guys on poles in the evaluation of the strength of a given pole. If these guying effects are not taken into account, many poles strong enough to meet grade C, or Grade B or even EWL, may be changed out unnecessarily by FPUC at great expense.

Q. In your experience does the relative placement of cable operators' strand and overlash in the communications space on the poles have any beneficial effect on the stability of the pole or ability to withstand wind and other forces?

A. Yes it can.

Q. Would you please explain?

A. Cable plant is deployed similar to power and telephone plant on pole lines. However, due to the needs of each utility the cable television lines often turn or "pull off" the power pole at locations where the power lines do not turn. This pull off must be guyed unless it pulls off in two opposite directions as at some street crossings. These pull off cable lines with their steel messenger wires provide guying effects on the affected poles which strengthen the pole substantially because the pole is supported at 18 to 22 feet high. It is the same effect as storm guying. This helps keep the poles in a run stable and minimizes cascading as the strand helps keep the lateral poles from pulling down adjacent poles, thus keeping the circuits intact and causing fewer outages, unless of course there is a tree collapse, in which event it is likely no design feature could keep the facilities from being damaged.

Inspections and Audits

Q. Please explain your concerns about the manner in which the Company intends to conduct its ground line inspections and audit?

A. FPUC states that as part of its overall effort to strengthen its poles to better withstand extreme weather, it will rely in part upon the Company's wood pole inspection plan (Plan at 3-5) and its joint use pole attachment audit (Plan at 6-7). While I agree in concept that inspection and audit can be a useful deployment strategy for storm hardening, I am

concerned that FPUC may use its inspection and/or audit to unfairly shift blame (and with that blame certain hardening costs) to third party attachers. I am also concerned that FPUC may use the inspection and/or the audit to assess whether each attachment complies with FPUC's clearance requirements, some of which exceed the NESC. Such an inspection would unnecessarily divert important resources from legitimate efforts to strengthen the poles.

The primary purpose of the eight year pole strength inspections is to find rotten or damaged poles and replace or rehabilitate them to the required strength. In addition, the audit of joint use poles is for the purposes of identifying third party attachments to assure that the owner has authorization to attach facilities to poles. The CATV operators in FPUC's service areas are authorized to attach to FPUC poles. Additionally, a determination is to be made if poles are overloaded or if serious safety violations exist.

The pole strength inspection should not attempt to identify all violations of spacing requirements of the attachment agreement and the NESC. Many of those requirements have nothing to do with the strength of poles or safety of the public or workers who follow applicable safe work practices but instead have to do with management of pole space for business purposes. Although it is not stated in the plan, Mr. Cutshaw has stated that serious violations will be identified and corrected, and that it is not FPUC's intend to measure clearances on every pole. Mr. Cutshaw has also stated in a workshop that CATV attachers will be allowed to have input into the procedures to be used in the pole inspection process.

Q. Please explain your concerns about assessing responsibility for non-compliance discovered in the course of the wood pole inspection or audit.

A. I am concerned that third party attachers will be presumed to be the last entity to have touched the pole and therefore the cause of any non-compliance with applicable space or loading requirements, and that to disprove this assumption; they will be required to produce paper records of permit applications. Third party attachers often have inadequate paper records of authorizations. This is the result of the fact that many attachments were made decades ago, and the system ownership has changed hands many times since the attachments were made. This does not mean that a loading determination was not performed by the attaching entity or FPUC at the time of attachment. In fact, it is standard industry practice to conduct a pre-construction engineering ride out and assess the impact of the attachment on the pole. If the new attachment would bring the pole out of compliance, then work is performed—at the cost of the attacher—to make the pole ready for its attachment (i.e., compliant with governing separation and loading criteria). If third-party attachers pay make-ready at the time of attachment it would be double charging to now assess third-party attachers with additional costs of compliance.

Moreover, despite the availability of paper copies of "approved applications," FPUC is well aware of the third party attachments to its poles and third party attachers have been paying rent on the attachments for years.

Q. Please explain how the Plan should be changed to address your concerns.

A. I am concerned that FPUC may conduct a complete safety inspection of the attachments on the poles and not just a weight and loading analysis of third party attachments. Although FPUC said at the December 13, 2007 workshop that it did not intend to measure clearances on every pole, the Plan should so state. There is no mandate in the FPSC Docket No. 060198-EI storm hardening initiative #2 to do a complete NESC safety

audit. FCTA agrees that serious safety violations of the NESC should be reported if found during the field inspections and promptly repaired.

As we know from experience, there are many alleged violations of NESC requirements and FPUC attachment standards which exceed the NESC on certain poles in the field. It is frequently difficult or impossible to accurately determine if one or more attachers caused a spacing or separation of communications and power violation or if the power company caused it. These allegations can and should be vigorously disputed because a power company does not have unilateral authority to dictate standards which exceed NESC or decide who caused alleged violations. The NESC requirements are always subject to grandfathering provisions. It is difficult at best to determine when different cable and power facilities were installed and if they violated NESC rules at the time.

Moreover, many clear violations of FPUC's standards and even NESC rules do not affect pole strength or employee or public safety. If a complete NESC safety audit is added to the pole strength assessment, it will require much more detailed work in scope of the project. It will also require much more training of the field inspectors. A complete safety inspection would undoubtedly be controversial and detract from the proper focus on pole strength. At a minimum, FPUC should be required to seek input from, and incorporate in good faith concerns raised by, third party attachers concerning any proposed safety audit as well as the strength assessment guidelines.

Attachment Standards and Procedures

Q. Please explain your concerns about the attachment standards and procedures?

A. FPUC says it will not displace existing pole attachment agreements. This is good because it is my understanding that these are governed by federal law. However, FPUC also leaves open the possibility of imposing additional construction standards on third party attachers, including standards relating to overlashing and loading assessments.

Q. Please explain what is meant by "overlashing."

A. What a cable operator initially attaches to the pole (i.e., a "new attachment") is not usually the coaxial or fiber conductor itself, but a steel wire support strand attached to the pole with a clamp and through bolt. The operator then places communications conductors parallel to the strand and secures them by wrapping the strand and the conductor(s) with a thin steel filament called a lashing wire applied by a lashing machine. The cables are not wrapped around the support strand. Through the life of the plant, the cable operator may alter that plant, including by lashing additional conductors to the existing strand, i.e., overlashing. For example, growing neighborhoods may be served by lashing additional or rerouted trunk cables to the existing strand, using another filament lashing the new line to the existing strand. More often, in today's applications, fiber optic cable is "overlashed" to the coaxial cables in order to increase bandwidth and to provide capacity to offer new services. In addition, operators use overlashing in emergency situations to repair customer outages. Overlashing is used to eliminate amplifiers (which are potential points of failure); to expand channel capacity; and to provide capacity for additional services.

Q. Does overlashing require the use of more space on the pole?

A. No. Overlashing does not use more pole space, because the same strand remains attached to the same licensed position on the pole. Indeed, it is common for more than one cable

to be held in place by lashing it to an already existing and already licensed strand or messenger.

In my experience third party attachments do not significantly increase the load on poles, and overlashing has only a very small incremental effect on the already attached strand and cable assembly. Rather, power lines, hardware for attaching lines to poles and power apparatus such as transformers, fused switches, lightning arrester assemblies, outdoor lights and many other power company attachments usually account for most of the wind load on a pole because they have a larger cross sectional area and are attached to the top part of poles. Wind load is a product of the surface area exposed to the wind multiplied times the force of the assumed wind and also multiplied times the pole height from the fixed point (often the ground line or the lowest guy wire) on the pole. As stated above, today's overlashing typically is of fiber optic cable—a very light weight material that is quite small in diameter. A common fiber optic cable is .59" diameter and weighs .05 pounds per foot. Thus, overlashing will not in the large majority of cases bring a pole out of compliance.

Q. What do you propose as a prudent, practical and cost effective solution for overlashing?

A. I recommend that cable operators be permitted to overlash existing strand provided that they assess the loading impact on the pole within 30 days of overlashing. To the extent that the loading analysis demonstrates that the overlashing brings the pole out of compliance (or, as is more likely to be the case when poles are found to be overloaded, that the pole was already out of compliance) the operator should notify the pole owner, and make-ready should be planned.

Q. Is this ever done?

A. Yes, all the time. In fact, other Florida utilities, including FPUC, have been doing this in practice for years. Progress only recently, in 2004, instituted any requirements for overlashing. Historically, Gulf Power Company did not perform any loading analysis on the poles caused by overlashing. Tellingly, of the four utilities that filed storm hardening plans on May 7, 2007, not one has pointed to a single instance in which overlashing has caused a pole failure in response to FCTA's interrogatories on the subject.

Q. Is your suggested approach consistent with the NESC?

A. Yes. The NESC is a performance standard. The NESC rules provide for what is to be accomplished. The utilities covered by the NESC, including power and communications companies, all have practicable industry practices and reasonable engineering guidelines available to assure compliance with the rules. An exhaustive engineering loading analysis on every pole is not necessary or practicable every time a communication or power attachment is added or modified on a pole. Indeed, given the delays and expense associated with a full engineering loading analysis for overlashing, and the likelihood that the overlash will not be a factor contributing to any overload, any such requirement would not be cost-effective, prudent or practical.

Q. Is this consistent with generally accepted engineering practices for the utility's service territory?

A. Yes. Several Florida pole owners and pole owners throughout the southeast allow cable operators to overlash existing strand and notify the pole owner after the fact. It is common practice throughout the industry to allow cable operators to notify pole owners after the fact that they have attached to a "drop" pole—i.e., an oftentimes shorter pole used to carry a few service lines to a residence or business.

.Q. Are you suggesting that overlashing should be permitted to bring a pole out of compliance?

A. No. First, it is highly unlikely that the incremental wind load caused by overlashing will bring the pole out of compliance. The strand-supported coaxial cable that typically comprises the initial attachment is itself one of the attachments that contributes the least to the wind loading of the pole. The wind load is determined by the diameter and length of wires and cables attached to poles as well as the diameter of the pole and the area of equipment on the pole. The area of each attachment is multiplied times the wind force and its attachment height. The wind load, expressed in foot pounds, causes a mechanical "moment" on the pole at the ground line. The final step in the calculation is to multiply the wind load on each attachment times the height of the attachment above ground i.e., the moment arm.

Coaxial cables, used by cable television companies, are smaller and lighter than the common multi conductor copper communications cables used by telecommunications carriers. Moreover, initial attachment of strand-supported cable plant is handled through the application and make-ready process where the pole strength is evaluated and determined to be adequate. Even lighter than coaxial cables, however, are the fiber optic conductors which are most commonly used for cable television construction today. Indeed, .59-inch fiber optic conductors weigh only 50 pounds per 1000 feet.

In contrast, there are typically three power wires attached to the top of poles (primary voltage wires) with the neutral and secondary wires a few feet below the primaries but at least 40 inches above the highest communication cable. These wires frequently weigh more than coaxial cable. Power equipment mounted on poles above

communications cables also adds wind load as well as the surface area of the pole itself. All of the power lines and equipment wind loads have to be multiplied times the longer moment arm determined by their higher attachment points above ground.

For all of these reasons and more, the loading effect of cable plant is often treated as insignificant in utility practice. The loading effect of overlashing is even less significant. In my experience, I have found no instance in which overlashed fiber was the "straw that broke the camel's back" by pushing an otherwise compliant pole into violation of applicable loading criteria.

Second, any slight non-compliance that might possibly be caused by overlashing could be quickly remedied. Attachers would be required to notify the pole owner within 30 days of overlashing and/or would assess the loading on the poles themselves.

Costs and Benefits to Third Party Attachers

Q. Has FPUC provided adequate information to assess the costs and benefits of the Plan?

A. FPUC states in the Plan at 14 that it estimates it will spend approximately $3.6 million on storm hardening efforts over the next three years, including close to $1 million on EWL (although it states in its Testimony, "Based on the results of the final evaluation, additional projects may be proposed." Cutshaw Testimony at 10.) However, it also states I n the Plan that "FPUC does not have the supporting data to develop the benefits analysis for these programs." Plan at 14. Based upon the information provided, it does not appear that FPUC has show that the benefits of the proposed Plan justify the proposed expense. Moreover, I am also concerned about the potential cost impact on third party CATV attachers.

Q. Please explain your concerns about the cost impact on CATV attachers.

A. My understanding is that the Company is limited in what it may recover from third party CATV attachers by federal law. Under the federal scheme, FCTA members pay both make-ready costs—i.e., the cost of making the pole ready for its attachments (including the cost of rearranging existing facilities on the pole, guying the pole to increase strength, or replacing the pole where necessary) and annual rent pursuant to the FCC's rate formula, which assures that pole owners receive the fully allocated costs of accommodating the attachment. The annual pole attachment rent is determined by multiplying the percentage of the total usable space occupied by the pole attachment by the sum of the operating expenses and actual capital costs of the utility attributable to the entire pole. In addition, depending upon the circumstances, cable operators may incur the cost of transferring their facilities to a new pole.

FCTA's members could potentially incur significant additional costs as a result of the Company's Plan due to the new processes and standards the Company may adopt in connection with storm hardening. For example, at a minimum, third party attachers will have to transfer their facilities to new poles that are set as a result of FPUC's hardening efforts.

FPUC's storm hardening plan may also result in significant delays in attaching entities' provisioning of service to customers. Attaching entities rely upon FPUC to facilitate their attachments – they perform pre-construction surveys and makeready work before third parties can attach. If these processes are delayed because increased steps are involved CATV members will not be able to provide valued services to Florida residents in a timely many. Any such delays likely would result in lost customers.

The lack of detailed information in the Plan makes it impossible to estimate with any precision the true costs and benefits to third party attachers that will result as the Plan is deployed. The Plan should be modified to include the Process to Engage Third Parties that was adopted by the other four utilities in their respective dockets.

Q. Does this conclude your testimony?

A. Yes.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the Direct Testimony for Mr. Michael Harrelson was served via Electronic Mail and First Class US Mail to the persons listed below on this 27th day of December, 2007:

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Registered Professional Engineer (Electrical) GA#10724 (1976)
Registered Professional Engineer (Electrical) FL #51788 (1997)

EDUCATION: B.S. Industrial Engineering (Co-op) GA TECH, 1970

WORK EXPERIENCE:

1959-	Worked part-time with Harrelson Electric Co., owned by my father.
1963	W. T. Harrelson, doing residential, commercial, & industrial electrical and repair work in McRae, GA.
Dec. 1963- Mar. 1970	Co-op student of Georgia Power Co. in Electric Distribution Operating, McRae, GA, & Commercial Sales, North Atlanta.
Apr. 1970- Jan. 1972	Lieutenant in U. S. Army Air Defense, Minneapolis, MINN, & Yong Son, KOREA. Served as Battery Commander, Korea. Military Status: Inactive, Army Reserves; Rank: Captain.
Feb. 1972- June 1974	Operating Engineer, Brunswick, Georgia Power Co.; Designing, operating, and maintaining distribution system and operating transmission system.
June 1974- Feb. 1976	Senior Commercial Marketing Engineer, Brunswick. Selling wise use of electricity to new and existing commercial customers in Brunswick area. This included lighting design to I.E.S. standards, and consultations regarding the National Electrical Code.
Feb. 1976- June 1978	Operating Engineer, St. Simons Island, Ga. Power; Designing, operating, & maintaining distribution system & operating transmission system.
June 1978- May 1986	District Engineer; Supervised engineering and operation of Brunswick District of Ga. Power Co., including Kingsland Operating Headquarters.

May 1986- Sept. 1989	Area Manager, McRae, Ga. Power Co; Restructure McRae, Eastman, Hazlehurst into area operation, and supervise and coordinate all company activities in the area.
Sept. 1989- April 1992	District Power Delivery Manager, Milledgeville District; Manager of Engineering, Construction, & Maintenance of the electric distribution system and operation of the transmission & distribution system.

Note: During 28 years with Georgia Power Company, I was involved with claims, damage and accident investigations. From 1978 through 1992, I was in charge of these activities at my location.

April 1,1992	Resigned from Georgia Power Company, Reason for leaving: Early retirement incentive package gave excellent opportunity to pursue independent consulting engineer goals.
April 1,1992 to present	Electric Utility Consulting Engineer. Investigated accidents and testified in matters involving the National Electrical Safety Code, OSHA regulations, utility company safety manuals, employee training courses, accepted good work practices, and the National Electrical Code. These cases have involved electrical contact, flash, and burn injuries, collisions with poles and guy wires, falls from poles, etc., hydraulic oil fires, crushing injuries, property losses from fires, stray voltage, etc. The companies involved have been electric, telephone, cable TV, and product manufacturing companies. I do management consulting and safety and engineering training for electric cooperatives, engineering consulting companies and private industry I do electric power line inspections for electric cooperatives as required by the Rural Utility Service. I inspect power lines and communications lines built jointly for National Electrical Safety Code compliance. I teach N.E.S.C. compliance and train field engineers and technicians in joint use compliance. I assist CATV, Power, and Telephone companies in interpreting the NESC and applying its rules to joint use of utility poles.

OTHER COURSES AND SEMINARS:

1974	13 weeks Commercial Sales Training by Ga. Power Co., including interior & exterior lighting design, & National Electrical Code.
1975	1 week General Electric Outdoor Lighting School, Hendersonville, NC.
1976	8 weeks Electric Operations Training by Ga. Power Co.

1977	1 week Principles of Leadership Training, Ga. Power Co.
1979	1 week Basic Management Training by Ga. Power Co.
1980-1985	Served as "Leader" of Engineering Dept Quality Circle.
1981	1 week Communications-General Training by Ga. Power Co.
1982	1 week Human Relations Skills Training by Ga. Power Co.
1987	3 days Interpersonal Skills Seminar by Ga. Power Co.
1988	1 week Management Grid School, Mobile, AL, Training by Southern Co.
1988	13 weeks Community Leadership Class sponsored by University of GA Cooperative Extension Service and Telfair County.
1989	1 week Negotiating Edge Seminar, Athens, GA., Training by Ga. Power Co. and Susan Wise
1989	Basic Economic Development Course, GA Institute of Technology
1990	3 months- Committee assignment (met bi-weekly) to formulate Ga. Power Company Guarantee Policy
1991	6 months-Committee assignment (met bi-weekly) to develop "District Operations Performance Measurement" facilitated by Ernst & Young Co.
1991	3 months-Committee assignment (met bi-weekly) to assess Georgia Power Company Marketing Dept Readiness for Incentive pay.
1992	1 week advanced Negotiating Skills Seminar, Peachtree City, Training by Ga. Power Co. & The Executive Speaker, Inc.
1992	1 day IEEE Seminar on 1993 National Electrical Safety Code
1993	2 day NRECA Safety Accreditation Team Training & Testing Seminar
1994	3 day Seminar-The Development & Application of the National Electrical Safety Code by Allen Clapp
1995	2 day ILCI (International Loss Control Institute, Inc.) Seminar on accident investigation
1996	1 day IEEE Seminar - "Changes in me 1997 NESC."
1997	3 day Seminar - "Application of 1997 NESC."

MEMBERSHIPS AND AFFILIATIONS:

1970-present	Member, Georgia Tech Alumni Association
1974-present	Member, Georgia & National Society of Professional Engineers
1978-1986	Member, Glynn County GA Electrical Inspection Board
1992-present	Member, Telfair Co. Chamber of Commerce
1992-present	Member, Institute of Electrical & Electronics Engineers (IEEE)
1993-2002	Board Member, Telfair County Industrial Development Authority

1993-2002	Member, Illuminating Engineering Society of North America (IECNA)
1993-present	Rural Electric Safety Accreditation Program (RESAP) certified accreditation inspector
1994-present	Member, National Fire Protection Association

TESTIMONY BY MICHAEL T. HARRELSON, P. E.

1. 5-2006 to 10-2007 — Florida Public Service Commission for FCTA

Testimony — Dockets Nos. 070298-EI and 070301-EI

Maria Browne, Attorney
John Seiver, Attorney
Beth Keating, Attorney

Written and Verbal Comments

Michael Gross, Attorney
Maria Browne, Attorney
Beth Keating, Attorney

2. 4-27-06 & 5-1-06 — FCTA, et. al vs. Gulf Power Company Before the FCC

Testimony

John Seiver
Cole, Raywid & Braverman, L.L.P.
1919 Pennsylvania AVE, NW – Suite 200
Washington, D.C. 20006

3. 3-31-06 — FCTA, et. al vs. Gulf Power Company Before the FCC

Written Testimony

John Seiver
Cole, Raywid & Braverman, L.L.P.
1919 Pennsylvania AVE, NW – Suite 200
Washington, D.C. 20006

4. 3-16-06 & 3-21-06 — FCTA, et. al vs. Gulf Power Company Before the FCC

Deposition Testimony

John Seiver
Cole, Raywid & Braverman, L.L.P.
1919 Pennsylvania AVE, NW – Suite 200

Washington, D.C. 20006

5. 3-13-06 Comcast of Arkansas v. Entergy Arkansas
Before the FCC

Deposition Testimony

John D. Thomas
Hogan & Hartson LLP
555 Thirteenth ST, NW
Washington, D.C. 20004

6. 4-16-05 Louisiana Public Service Commission
For LCTA

Written Testimony

John D. Thomas
Cole, Raywid & Braverman, L.L.P.
1919 Pennsylvania Ave., NW - Suite 200
Washington, D.C. 34358

7. 2-15-05 CTA Arkansas vs. Entergy

FCC Written Testimony

John D. Thomas -- *for Plaintiff*
Cole, Raywid & Braverman, L.L.P.
1919 Pennsylvania Ave., NW - Suite 200
Washington, D.C. 34358

8. 1-10-05 Clinton vs. Florida Keys Electrical Cooperative, Inc.

Deposition & Trial

Sixteenth Judicial Circuit Court in and for Monroe Co., Florida

Eric Peterson -- *For Defendant*
Peterson Benard
P. O. Drawer 15700
700West Palm Beach, FL 33416

H. Clay Roberts -- Plaintiff
Proenza, Roberts, Hurst, P.A.
2900 W 28th Terrace, Suite
Miami, Florida 33133

9. 12-03-04 MEAG vs. Goodman

Testified at Hearing

Mr. Robert Wilmot -- *For Plaintiff*
P. O. Draw 1287
Tifton, GA 31793

MEAG Power Company right-of-way encroachment suit to clear transmission line

right-of-way of mobile homes.

10. 10-22-04 Caldwell vs. Howard Industries, No. 4:03-cv-198-3
Deposition

United States District Court, Middle District of Georgia, Columbus Division

Lester Tate -- *For Plaintiff*
Akin & Tate
P. O. Box 878
Cartersville, GA 30120

William T. Mitchell, Defense
Cruser & Mitchell, LLP
3500 Parkway Lane
Norcross, GA 30092

11. 6-23-04 Comcast Cable vs. Pacificorp
Deposition

Angela W. Adams -- *For Claimant*
Ballard Spahr Andrews & Ingersoll, LLP
One Utah Center, Suite 600
201 Main Street
Salt Lake City, Utah 84111-2221

12. 6-8-04 Saffold vs. Aldrich Rent-All
Deposition

Heather B. Bush -- *For Defendant*
Peterson Bernard
1550 Southern Boulevard, Suite 300
West Palm Beach, Florida 33416

13. 9-04-03 Perkins v. Georgia Power Company and Altec
Deposition

Attorneys Langston Bass and Hugh McNatt
Defendant
State Court Candler Co., GA

Contractor Lineman contacted 27,000 volts hand-to-band. He was not wearing rubber gloves. He lost both arms. He sued Altec for inadequate bucket truck design and GA Power for inadequate planning and supervising of work. *Settled out of Court.*

14. 5-02-03 McKeown v. CHELCO, et al Deposition
& Trial

Attorney Alan E. Horkey -- *For Defendant*
700 S Palofex Street, Suite 170
Pensacola, Florida 32501
Circuit Court, Walton Co., FL

A teen-aged boy hit power pole with pick-up truck in rain on a curve. He had a severe head injury. He sued electric co-op, claimed they should have moved the pole since it

had been hit twice before. Pole location complied with code and DOT guidelines. *Jury verdict gave court cost only to plaintiff.*

15. 11-09-01 Duffie vs. Clay Electric Co-op & Cox Cable et al

Deposition & Arbitration

Attorney Craig Cooley -- *For Defendant*
200 East Robinson Street, Suite 555
Orlando, Florida 32801
Circuit Court Alachua Co., FL

A motorcycle rider hit a power line which fell across a U. S. Highway. A contributing factor was that a Cox Cable anchor had been improperly installed. This allowed a Clay Electric Co-op pole to break in four pieces. *Settled at arbitration by Clay, Cox and two Cox sub-contractors.*

16. 12-13-00 Darley vs. Amusements of America, Inc.
Deposition

Attorney Robert R. Gunn -- *For Defendant*
P. O. Box 1606
Macon, GA 31202
State Court, Bibb County, GA

A young man got electric shock when he took hold of a metal rail on the platform of an amusement ride. *Settled*

17. 11-21-00 Causey vs. Okefenoke REMC
Deposition

Attorney Mark Barber -- *For Defendant*
136 N Fairground Street, Suite 100
Marietta, GA 30060
Superior Court, Brantley Co., GA

An onlooker was killed by burning transformer oil. He was watching a lineman attempt to stop an oil leak when the explosion and fire occurred. *Settled*

18. 10-18-00 Malin vs. McElmurray & Oellerich Electrical Service

Deposition & Trial

Attorney David Bell -- *For Plaintiff*
P.O. Box 1011
Augusta, GA 30903
Superior Court, Richmond Co., GA

A young man was killed while cleaning pipes in a milking barn when he touched a light fixture which was not grounded. *Jury verdict for $1,000.000.00*

19. 10-04-00 Moses vs. Bill's Dollar Store, et al
Deposition & Trial

Attorney David Bell -- *For Plaintiff*
P.O. Box 1011
Augusta, GA 30903
State Court, Gwinnett Co., GA

A gas company employee was killed when he touched a metal rack which held an air conditioning unit. The unit was not grounded. *Settled*

20. 1-25-00 Byrd vs. Glades Electric Co-op
Deposition

Attorney Robert Swartz -- *For Defendant*
Ft. Lauderdale, Florida
Circuit Court, Glades Co., FL

A flatbed truck crane operator was killed when he put the steel cable into a 7200-volt line. He jumped clear of the truck, then attempted to get in the cab and was electrocuted. *Settled.*

21. 9-10-99 Scruggs vs. Georgia Power Company
Deposition

Attorney Rowland Dye -- *For Defendant*
P. O. Box 2426
Augusta, GA 30903
State Court, Georgia

A truck hit a low power line service which had been previously hit by an over-height load of hay. *Settled.*

22. 3-12-97 Price vs. City of Thomasville
Deposition & Trial

Attorney Hugh McNatt -- *For Defendant*
Vidalia, GA
Federal Court, Albany, GA

A contractor lineman was badly burned and electric shocked when he lost control of a large wire and violated several other safe-work practices. *Settled.*

23. 12-06-96 Dennard vs. Altec
Deposition

Attorney Lester Tate -- *For Plaintiff*
P. O. Box 878
Cartersville, GA 30120

A lineman's hand was crushed when it was caught between the control lever of his bucket truck and the bottom of a transformer. The control levers were poorly designed. *Settled.*

24. 7-17-96 Raulerson vs. Okefenoke REMC
Deposition

Attorney Richard Rumrell -- *For Defendant*
One Hundred BLDG, Suite 250
Jacksonville, FL 32256
Circuit Court, Duval Co., FL

A laborer was killed when the electric meter pole he was setting contacted a 14,400-:volt power line. Telephone drop wires and cable television were a factor in making the power line lower. *Settled.*

25. 7-02-96 McCoy vs. Coach & Campers of Atlanta
Deposition

Attorney Nikolai Makarenko, Jr, -- *For Defendant*
100 Galleria Parkway, Suite 1510
Atlanta, GA 30309
State Court, Dekalb Co, GA

A customer separated his shoulder when the RV home shocked him. He was on the ladder on back, touched a grounded chain link fence and fell. The electric circuit to the RV was not grounded. *Settled.*

26. 6-07-96 Habeishi vs.Greystone Power Corp.
Deposition & Trial

Attorneys Tisinger, Tisinger, Vance & Greer -- *For Defendant*
P.O. Box 2069
Carrollton, GA 30117
Federal Court, Northern District, GA

The electric power was off to a traffic signal because an electrical connection failed. It had been made improperly by Fulton County Traffic Dept. Two cars collided in the intersection killing both wives of the two drivers. *Jury Verdict $7,000,000.00!*

27. 5-16-96 Crossin vs. Central Illinois Light Co.
Deposition

Attorney Richard Glisson - *For Plaintiff*
837 South Fourth Street
Springfield, Illinois 62705
Circuit Court, Sahgamon Co., Illinois

A lineman was electrically shocked when he disconnected a ground wire at the top of a joint transmission and distribution pole. A transformer was connected to the pole ground. The ground was burned open before it connected to the distribution neutral. *Settled.*

28. 3-16-95 Lockhart vs. TCI Cable & BellSouth
Deposition & Trial

Attorney M. Francis Stubbs - *For Plaintiff*
P. O. Box 9
Reidsville, GA 30453
Superior Court, Toombs Co., GA

A young man was killed when he struck a TCI guy wire with his neck while riding a motorcycle. The guy wire was abandoned but not maintained in a safe condition. The young man was violating the law by riding off the roadway. *Jury Verdict Defendant's Verdict.*

29. 9-21-94 Vandevender vs. Klein Tools, Inc.

Deposition & Arbitration

Attorney Michael Smith - *For Defendant*
240Third ST
Macon, GA 31201
Federal Court, Middle District, GA

A truck operator was badly shocked and burned when he removed his rubber gloves and touched a bucket truck while a hot 7200-volt line was on the ground nearby. He sued Klein Tool Company claiming the grip used broke the wire allowing it to fall. *Arbitration-Defendant's ruling 2 to 1.*

30. 8-24-94 Underwood vs. Georgia Power Company
Deposition

Attorney Rowland Dye — *For Defendant*
P.O. Box 2426
Augusta, GA 30903
State Court, Emanuel Co., GA

A laborer attempted to use a 20-foot re-bar to unclog a grain bin auger. He contacted a 7200-volt. power line with the metal bar and lost one arm and had serious burns. He claimed the line was too close. The line complied with the NESC. *Settled.*

31. 4-20-93 Buckner vs. Colquitt Electric Co-op
Deposition

Attorney John Austin — *For Defendant*
400 Perimeter Center Terrace, Suite 1050
Atlanta, GA 30346
Superior Court, Colquitt Co, GA

A laborer was shocked and fell from a pecan tree. He was using a 20-foot long aluminum pole to knock pecans from the limbs. *Settled.*

32. 8-05-90 Lockett vs. Georgia Power Company

Deposition & Trial

Attorney Hugh McNatt — *For Defendant*
Vidalia, GA
Superior Court, Telfair Co., GA

Three laborers were raising an aluminum extension ladder under a 7200-volt power line. One was killed, one shocked, one was not hurt. The power line complied with the NESC. *Jury Verdict paid funeral expenses only.*