ORIGINAL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Proposed Adoption of New Rule 25-6.0343, F.A.C., Standards of Construction - Municipal Electric Utilities and Rural Electric Cooperatives	Docket No. 060512-EU Filed: September 8, 2006

AFFIDAVIT OF DR. LAWRENCE M. SLAVIN

The undersigned, being duly sworn, states as follows:

1. I am currently Principal of Outside Plant Consulting Services, Inc. Previously, I had an extensive career at Lucent (formerly AT&T), Bell Telephone Laboratories and Telcordia Technologies (formerly Bellcore). My career at Bell Laboratories, at which I was selected to be a Distinguished Member of Technical Staff, spanned more than 28 years (1961-1989), primarily in telecommunications product design and development. During the subsequent 12 years (1990-2001), I was a member of Telcordia's research and professional service organizations, and served as Director of the Network Facilities, Components, and Energy Group, responsible for requirements, testing, and analysis of outside plant media, components, and powering for telecommunications applications, as well as related installation and construction guidelines.

2. I received my Ph.D in mechanical engineering from New York University in 1969, my Master of Science in engineering mechanics from New York University in 1963 and my Bachelor of Science in mechanical engineering from The Cooper Union for the Advancement of Science & Art in 1961.

3. I have been an active member of NESC Subcommittee 5 since 1998, and in that capacity helped to develop the 2002 edition of the NESC and the recently issued

CMP ____
COM ____
CTR ____
ECR ____
GCL ____
OPC ____
RCA ____
SCR ____
SGA ____
SEC 1
OTH ____

2007 edition. Subcommittee 5 (Overhead Lines – Strength & Loading) is directly responsible for specifying the storm loads and associated structural strength requirements referenced by the PSC. I am Chair of Working Group 5.7 (Seminars and Presentations; Subcommittee 5), and have served on Working Group 5.2 (Complete Revision of Sections 25 and 26; Subcommittee 5), and on the immediately relevant Working Group 5.8 (Application of Extreme Wind to All Structures; Subcommittee 5). I have also been Chair of Working Group 4.10 (New Ice Loads and Clearances; Subcommittee 4, Overhead Lines – Clearances), and serve on as the Accredited Standards Committee ASC-O5 (responsible for *ANSI O5.1, Wood Poles, Specifications and Dimensions*).

4. As Chair of WG 5.7, I have been responsible for organizing and coordinating the following industry information sessions, as well as providing some of the associated technical presentations:

- ***Panel Session: Structural Reliability-Based Design of Utility Poles and the National Electrical Safety Code*, 2003 IEEE Transmission & Distribution Conference and Exposition, 2003**
- ***Panel Session on National Electrical Safety Code (NESC), 2002 Edition, ANSI C2*, 2001 IEEE Transmission & Distribution Conference and Exposition, 2001**
- ***Panel Session on Proposed Changes to Strength & Loading Requirements for the 2002 Edition of the National Electrical Safety Code (NESC)*, IEEE Power Engineering Society, Towers, Poles & Conductors (TP&C) Subcommittee Meeting, 2000**

I will be chairing a panel session regarding the strength and loading requirements of the 2007 edition of the NESC, and presenting related technical information, at the TP&C Subcommittee Meeting in January 2007.

5. Appendix 1 attached to this Affidavit is a report I have prepared concerning proposed Rule 25-6.034 that is being considered in a related proceeding concerning investor owned electric utilities. Because proposed Rule 25-6.0343(1)(e) is substantially the same as proposed Rule 25-6.034 (except that it applies to municipal electric utilities and rural electric cooperatives instead of investor owned electric utilities), my report applies with equal force to proposed Rule 25-6.0343(1)(e). As I discuss in detail in the report, the proposed rule's requirement that electric utilities be guided by the extreme wind loading standards specified in the 2002 edition of the NESC could result in substantially higher facilities costs and lead to significant unintended consequences. Accordingly, I recommend that this requirement not be included in the proposed rule, or (if this recommendation is not accepted), that certain limitations be adopted.

6. Appendix 2 attached to this Affidavit provides more detailed information concerning my career in the telecommunications and related utility industries, including my activities in relevant professional organizations, such as the Main Committee and several Subcommittees for the NESC.

Further Affiant sayeth naught.

Lawrence M. Slavin

Subscribed and sworn to before me this 7 day of SEPTEMBER, 2006.

Notary Public, State of New Jersey

My commission expires:

Sworn to and subscribed before me this 7 day of 09, 2006

DARRELL MCMILLAN
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires 6/20/2010

APPENDIX 1

Report Concerning Proposed Rule 25-6.034
As It Relates to Extreme Wind Loading Requirements

1. Introduction

This note provides comments regarding the proposed Florida Public Service Commission (PSC) Rule 25-6.034 to require that the extreme wind loading of the 2002 edition of the National Electrical Safety Code (NESC) be reflected in the design of electric utility-owned poles, including those with third-party (telecommunications) attachments. In particular, NESC-2002 Figure 250-2(d), part of NESC Rule 250C, is cited as a guide. The stated objective of the PSC is to "enhance reliability and reduce restoration costs and outage times" due to hurricane events, such as recently experienced during Hurricane Wilma. The present comments discuss the NESC rules (2002 edition), as applicable to the State of Florida, recent relevant discussions and decisions within the NESC Committee, and the impact of adopting the Extreme Wind Loads of Rule 250C throughout Florida.

2. NESC-2002

The NESC is an American National Standards Institute (ANSI) standard based upon a consensus of those substantially concerned with its scope and provisions, including the Institute of Electrical and Electronic Engineers (IEEE), which also acts as the Secretariat. Other members of the NESC Committee include organizations representing providers of electric power or communications service, their suppliers, and other affected or interested parties. The NESC includes various provisions for the safeguarding of persons from hazards from the installation, operation, and maintenance of electric supply and communication lines and equipment. The rules contain the basic provisions that are considered necessary for the safety of employees and the public.

In general, adherence to the NESC is voluntary; however, many commissions throughout the United States routinely adopt the latest edition, or specific editions, for application within their jurisdictions. For example, the Florida PSC has adopted the 2002 edition.

Sections 25 and 26 of the NESC provide the required strengths and loadings of utility poles and other structures. Section 25 specifies the type storm loads that Grade B or C utility lines are required to withstand. ("Grades of Construction" are discussed below.) Section 26 specifies the required strengths of the structures, as subject to the storm loadings specified in Section 25. (Most of Section 26 -- *e.g.*, Rule 261 -- applies to Grade B or C construction.) Two types of storms are specified -- (1) Combined Ice and Wind Loading (Rule 250B) and (2) Extreme Wind Loading (Rule 250C).

2.1 Combined Ice and Wind (Rule 250B)

Rule 250B refers to the Loading District map, NESC Figure 250-1, reproduced below. The three loading districts in the United States (Heavy, Medium and Light) specify the amount of radial ice buildup and a concurrent wind pressure. The Heavy and Medium districts in the north and central portions of the United States are subject to ½ and ¼ -

inch radial ice buildup, respectively, on all power and communications wires, cables, and conductors, and a concurrent wind pressure corresponding to 40 m.p.h.. The Light district in the southerly portion of the country, including Florida, is assumed to experience no ice buildup, but a wind pressure corresponding to 60 m.p.h. The latter wind speed, although only 50% greater than that assumed in the rest of the country, corresponds to a wind pressure of more than twice that in the Heavy or Medium districts, due to the strong (non-linear) dependence of the wind force on wind speed.[1] However, the lower pressure in the Heavy or Medium district is applied to a greater "sail area" due to the ice buildup on the wires and conductors. Depending upon the wire or conductor diameters, and the ice buildup levels, the resultant transverse loads in the "Light" district may exceed that in the so-called "Heavy" or "Medium" areas. In addition, the application of Rule 250B requires "overload" factors to be applied to the calculated wind forces to provide a conservative margin of safety when selecting appropriate pole sizes. A factor of 2-to-1 is applied to the common Grade C construction, and a factor of 4-to-1 is applied to Grade B construction, where required.[2] (See Section 2.3.) This procedure results in a fairly robust design that experience has shown to provide reliable, safe service.

PART 2. SAFETY RULES FOR OVERHEAD LINES

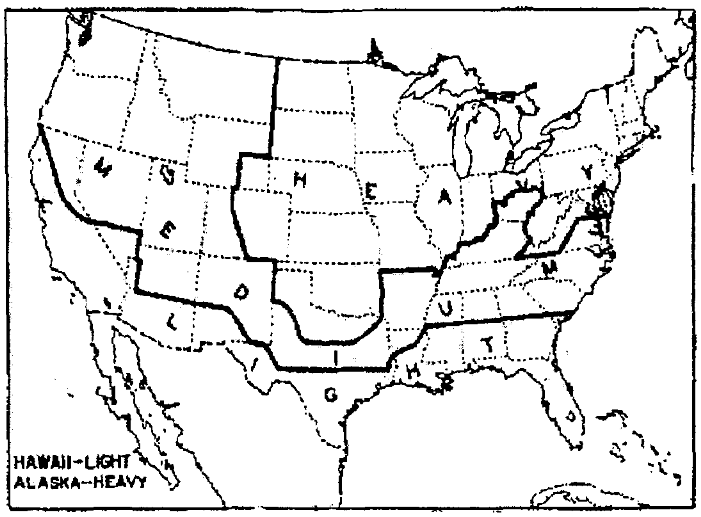

Fig 250-1
General Loading Map of United States
with Respect to Loading of Overhead Lines

[1] The wind pressure, or force, is proportional to the square of the wind speed.
[2] The present discussion assumes "tangent" pole lines, without significant corner angles where guys may be required. For such tangent lines, the transverse wind loads typically represent the critical design condition.

Rule 250B applies to all Grade B or C structures, regardless of height, and is typically used by most utilities to determine the strength requirements for distribution poles.

2.2 Extreme Wind (Rule 250C)

NESC Rule 250C refers to various wind maps, of which Figure 250-2(d), including the state of Florida, is reproduced below. The wind speeds[3] vary from approximately 95 m.p.h. (interpolated) in the north of the state to as much as 150 m.p.h. at the southern tip. The minimum 95 m.p.h. speed corresponds to a wind pressure of 2½ times that of the 60 m.p.h. wind assumed in the Light loading district. The maximum 150 m.p.h. speed corresponds to a wind pressure of more than six times that due to the 60 m.p.h. wind. However, the corresponding overload factors for Rule 250C are lower than that of Rule 250B, somewhat reducing the wide divergence in pole strength requirements. Nonetheless, if applicable, the impact on pole strength and sizes in Florida, and on utility construction practices and costs, would be major, as discussed in detail in Section 4. For various reasons, as discussed in Section 3.1, the NESC only applies Rule 250C to structures exceeding 60 feet in height above ground. This effectively exempts the vast majority of distribution poles. For cases where both Rule 250B and 250C apply, the larger effective loads would determine the required pole strength.

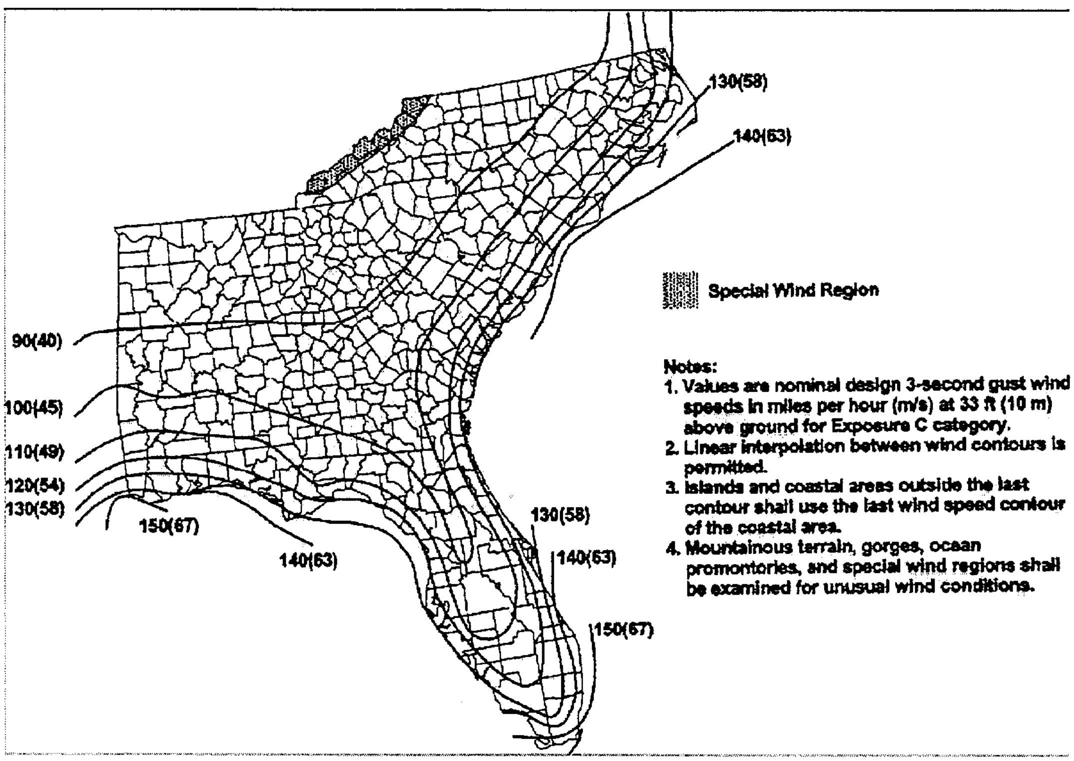

Fig 250-2(d)
Eastern Gulf of Mexico and Southeastern US Hurricane Coastline

[3] Figure 250-2(d) refers to "3-second gust wind speeds", which is approximately 20% greater than the 1-minute average wind speed used as the basis for categorizing hurricane levels by the Saffir-Simpson Hurricane Scale.

2.3 *Grades of Construction*

Section 24 of the NESC defines three Grades of Construction intended to distinguish between various situations, requiring varying levels of reliability, as implemented by the overload factors described above. In general, these grades depend upon the combination of voltage levels present in the power and communications conductors supported on the same poles, as well as various details, as specified. Most distribution poles carrying "primary power" (> 750 volts) at the upper portion of the pole, and communications cables below, are in the Grade C category. If the adjacent lines cross railroads tracks or limited access highways, a greater reliability level is required, corresponding to Grade B. Most power utility-owned poles are in the Grade C category.

The third grade of construction is Grade N, and applies if the voltages do not exceed 750 volts, corresponding to the lowest level of reliability.[4] This includes joint-usage poles supporting only "secondary power" (< 750 volts) or poles supporting only telecommunications cables.

The NESC does not provide specific storm loading or strength requirements for Grade N structures. NESC Section 25 (Loadings for Grades B and C) is not applicable to Grade N, and Section 26 (Rule 263) only states that "[t]he strength of Grade N construction need not be equal to or greater than Grade C" and that "[p]oles used for lines for which neither Grade B nor C is required shall be of initial size or guyed or braced to withstand expected loads, including line personnel working on them." This lack of specificity for Class N poles allows wide variability in application with respect to selecting appropriate pole strengths to withstand storms.

2.4 *Required Strength & Pole Class*

Based upon the wind pressures corresponding to the storm loads, as applicable, an appropriate strength pole may be selected. Wood pole sizes and strengths are specified in *ANSI O5.1, Wood Poles, Specifications and Dimensions*. ANSI-O5.1 provides a pole classification system based upon the ability of a pole to withstand lateral loads placed near the top of the pole, in a cantilever situation, such as may correspond to transverse wind loads on a pole with attachments. For example, a popular size Class 4 pole would typically (on the average) withstand a lateral load of 2,400 lbs applied 2 feet from the tip of the pole. A Class 3 pole is stronger, and would withstand 3,000 lbs. Within poles of Class 1 - 10, lower class number poles correspond to stronger (*i.e.*, larger diameter) poles. (Poles of strength greater than Class 1, are classified as H1, H2, and so on) with strength increasing with the H-number.)

Thus, a pole may be described as that supporting a specific "grade" of construction, corresponding to a level of required reliability (Grade B or C), or by a "class" size which is selected to match the strength needed to achieve the required reliability level. The strength is determined and calculated based upon the specified loading details (ice buildup and/or wind speed), the number and size (diameter) of the attachments to the pole, the span length between adjacent poles, and the grade of construction (via the overload factors discussed above).

---

[4] Grade B applies if the adjacent lines cross railroads tracks or limited access highways.

3. Upcoming and Future Editions of NESC

The 2007 edition of the NESC has recently been issued (August 2006) and is effective as of February 2007. Regarding storm loadings, several significant changes were introduced. Although Rule 250B was left unchanged, a new Rule 250D was added: "Extreme Ice with Concurrent Wind Loading." Similar to Rule 250C, Extreme Wind Loading, Rule 250D would only apply to structures exceeding 60 feet in height, exempting most distribution poles. In any case, this storm load would not have an impact in Florida due to the low associated ice (0-in.) and concurrent wind (30 m.p.h.) loads.

It is particularly interesting that Rule 250C has been modified for the common Grade C construction applications. In previous editions, the overload (design) factors for Grade B and C construction were the same, in spite of the greater implied reliability for the Grade B situations. This inequity was corrected in the 2007 edition by a *reduction* of as much as 25% in the effective design loads for Grade C construction. Thus, in contrast to possibly extending the Extreme Wind Loading to a larger category of structures and applications (*e.g.*, poles ≤ 60 feet height) the NESC requirements, where applicable, have been reduced. Nonetheless, there had been extensive effort and discussions regarding the possible extension of Rule 250C to structures of all heights, as described below.

3.1 Extreme Wind Loading -- Discussions

There is a seemingly eternal debate within the NESC Committee to consider eliminating the 60-foot exemption -- so that poles of all heights would then be subject to extreme wind loading. Such a revision was discussed within the NESC Committee with regard to the 2007 edition but, once again, was rejected. In fact, as described above, where applicable -- *i.e.*, poles taller than 60 feet -- the design requirement for Extreme Wind was actually reduced in severity for Grade C construction.

The rationale for rejecting consideration of extreme winds for "distribution" poles (*i.e.*, poles < 60 feet tall) is that the vast majority of industry experiences indicate that almost all damage to such lines is caused by wind-blown debris such as falling branches, and not by the wind forces acting directly on the wires and poles. In that case, little would be gained by attempting to design such poles to withstand the direct hurricane wind forces. The NESC Loading Section (NESC Section 25) does not explicitly use the term "distribution" when referring to these applications, but the 60-foot height threshold was chosen intentionally to exclude the vast majority of such poles. (In contrast, taller structures, such as critical transmission towers, would benefit from such a requirement.) In addition, to the best of my knowledge, the NESC Committee has never discussed extending any of the storm loads of Section 25 of the NESC (*i.e.*, Combined Ice and Wind or Extreme Wind) to Grade N applications, including telecommunications-only poles or joint-use poles with only secondary power (< 750 volts). Thus, the proposal of the PSC to extend Rule 250C to all distribution poles, regardless of height or grade of construction, would appear to be a major departure from present considerations in the NESC Committee, or industry in general. Thus, it would not appear to be "reasonably practical, feasible, and cost-effective" (to quote from proposed Rule 25-6.034(5)) to attempt to apply Rule 250C to Grade N joint-use distribution poles.

Related discussions within the NESC Committee to extend the Extreme Wind loading to structures of all heights (including distribution poles), focused on a particular change proposal, developed within Working Group 5.8, that would limit the impact of such an otherwise potentially dramatic change. In particular, for the Light Loading District portion of the country, which includes Florida, there would be no impact for distribution structures. However, based upon a multitude of industry comments objecting to even this diluted version of an Extreme Wind requirement for distribution poles throughout the country, this proposed change was not incorporated into the 2007 edition. It may be expected that this (rejected) change proposal will serve as a starting point for similar considerations for the 2012 edition of the NESC.

3.2 Future NESC Meetings (2012 Edition)

Although the 2007 edition of NESC is being issued essentially as this report is being written, efforts on the development of the subsequent 2012 edition are already being anticipated by Subcommittee 5. Due to the general interest in the effects of storm loads, such as hurricanes, and the effort required to properly consider the various aspects, Subcommittee 5 typically begins its meetings considerably earlier in the code cycle than most other subcommittees. Thus, initial meetings for development of the 2012 edition probably will begin in 2007. As a precursor, Working Group 5.7 of Subcommittee 5 (chaired by myself) will hold a panel session in January 2007 for the benefit of interested members of the power industry (IEEE Power Engineering Society, TP&C Subcommittee). The panel session will address the changes adopted in the 2007 edition, but will also discuss some of the proposals that were not accepted. The proposed (rejected) changes to Rule 250C, including the proposed extension to distribution structures, will be of particular interest, and will likely generate comments to be considered in the development of the 2012 edition.

4. Impact of Extending Rule 250C

The unlimited application of Rule 250C to all poles would have a major impact on the cost and operations of the utilities and the third party attachers, and would likely significantly affect the system reliability and restoration efforts, as well as public safety -- albeit not necessarily in the manner expected by the PSC.

4.1 System Cost

For electric utility-owned joint-use Grade N, Grade B or Grade C pole applications, the additional pole costs will depend upon the extent to which the proposed Extreme Wind load would exceed "reasonable" (albeit non-mandated) Grade N loads, and the already required Combined Ice and Wind load for Grade B or C applications for poles not exceeding 60 feet in height. Any increased strength requirement leads to stronger (larger diameter) poles, or a correspondingly greater number of poles (resulting in shorter span lengths), both of which would obviously be more expensive.

Figure 1 illustrates the relative pole strength in comparison to that currently required for the common Grade C joint-usage distribution application; *e.g.*, including primary power

(> 750 volts) with telecommunications cables mounted below the power cables.[5] Assuming the pole does not exceed 60 feet in height (65 feet in length[6]), such a pole must be designed to the present Combined Ice and Wind Loading (NESC Rule 250B, Figure 250-1, Tables 250-1, 253-1 and 261-1A). For present purposes, a tangent line (no corner angles) is assumed, for which the design is based upon the ability to withstand the transverse wind loading. For Florida, located in the NESC Light Loading District (Figure 250-1), this corresponds to a wind speed of approximately 60 m.p.h., but with an additional overload/design factor of approximately 2-to-1 for Grade C, and 4-to-1 for Grade B. For Grade N, a 1-to-1 design factor is conveniently ("reasonably") assumed. For the proposed application of Extreme Wind requirements (NESC Rule 250C), the wind-speed for Florida ranges from less than 100 m.p.h. (assumed to be 95 m.p.h.) in north-central area, to as much as 150 m.p.h. at the southern tip.[7]

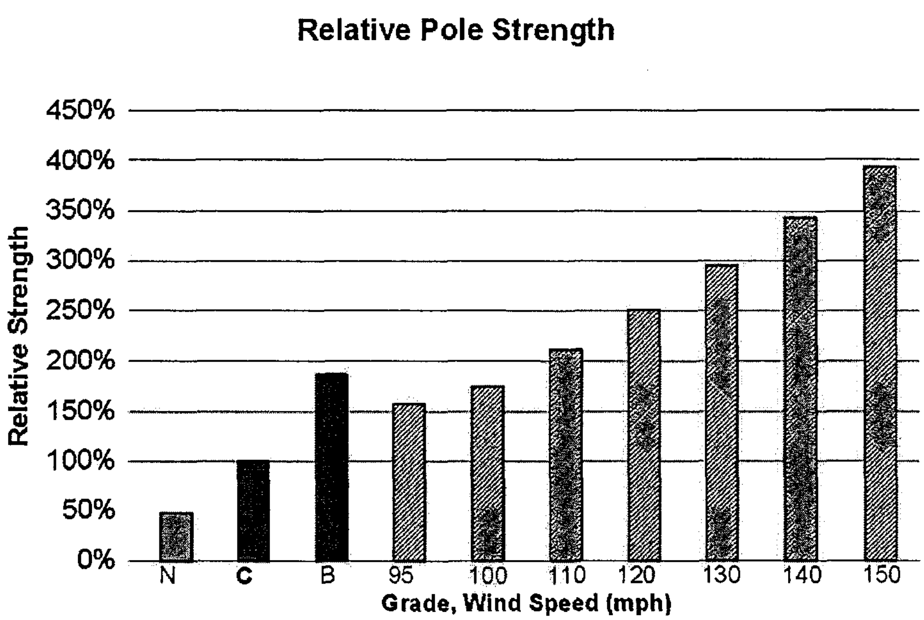

Figure 1
Relative Distribution Pole Strength vs. Typical Grade C Strength Requirements (NESC-2002)

The three solid bars to the left side of Figure 1, labeled "N", "C" and "B", depict the relative magnitude of the present required pole strength for a Grade N, Grade C, or

[5] Grade B construction would typically be limited to special situations (such as railroad crossings and limited access highways).

[6] Wood poles are available in 5 foot increments, and are buried at a depth of 10% the length plus 2 feet, with a slightly greater depth for poles shorter than 40 feet; *e.g.*, a 40-foot pole is buried at a depth of 6 feet, resulting in a 32 feet height above ground. (See ANSI-O5.1 wood pole standard.)

[7] A pole length of 40 feet is assumed. This parameter has only a minor effect on the results.

Grade B application. The seven cross-hatched bars to the right depict the relative magnitude of the required pole strength (which under the proposed rule would be the same for Grade N, C and B poles) due to Extreme Wind loads, at the wind speed indicated, should Rule 250C be directly extended to such applications. The results in Figure 1 thus show that the increased loading for an otherwise Grade C pole may be *increased* by a minimum of 50% (95 m.p.h.) or possibly as much as 300% (150 m.p.h.). In other words, the required strength, or number of poles, would be at least 1½ times -- and possibly as much as four times -- that currently required. For a Grade N pole application, the required strength would be at least three times -- and possibly as much as eight times -- a present reasonable design requirement. For the less common Grade B applications, the impact would not be realized for wind speeds less than 110 m.p.h.. Nonetheless, significant strength increases would be required for wind speeds exceeding 110 m.p.h., which are characteristic of significant portions of Florida, as shown in Figure 250-2(d).

Figure 2 illustrates the corresponding pole class that would be required, assuming a Class 4 pole is necessary for the reference Grade C application, and the same number of poles (or span length) is maintained. Similar to Figure 1, the three solid bars to the left side of Figure 2 depict the representative pole class for a Grade N, Grade C, or Grade B application. The seven cross-hatched bars to the right depict the required class pole corresponding to the PSC proposed application of the Extreme Wind loads (which would be the same for Grade N, C and B poles). A minimum increase of three class sizes (to Class 1) for Grade C would be required for the minimum 95 m.p.h. wind, and as much as eight class sizes (to Class H5) for the 150 m.p.h. case. A Class 7 pole would otherwise suffice for the Grade N construction. As above, the Grade B applications would be affected to a lesser degree, but the increased size would still be significant for wind speeds above 110 m.p.h.

The increased pole material costs, including shipping and storage, are directly related to the number of poles or pole size (class). For larger, stronger poles, increased installation costs for the heavier poles may also be anticipated. Furthermore, the availability of such larger size (diameter) poles may be an issue.

Required Pole Class

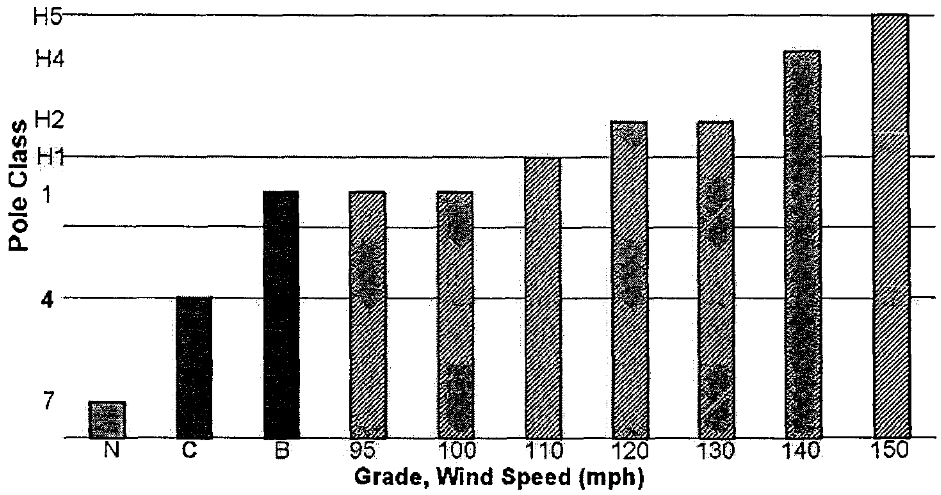

Figure 2
Required Distribution Pole Class vs. Typical Grade C Strength Requirements (NESC-2002)

4.2 Unintended Consequences

The imposition of the Extreme Wind requirement may result in unfortunate "unintended consequences," as sometimes occurs when changing long-standing practices that have generally been deemed successful. For example, as discussed above, the increased pole strength requirement would result in significantly stronger (stouter) poles or a larger number of more conventional size poles, corresponding to shorter spans. Such a practice would have a direct and negative impact on vehicular safety, and conflict with the objectives of the U.S. Department of Transportation, and presumably that of the DOTs of many states. The U.S. DOT is attempting to minimize the number of utility poles in order to reduce the incidence and severity of vehicular accidents. A greater number of poles, or stouter poles, would be contrary to such objectives. Thus, an attempt to modify a national safety code (*i.e.*, the NESC) to accomplish one objective may actually compromise public safety.

Other unintended consequences may also result from the introduction of the proposed Extreme Wind loading, due to a possible significant increase in the number of installed distribution poles along a given route. The June 8, 2006 Florida PSC Memorandum (page 5, Rollins) describes the likelihood that the supposedly less loaded individual poles would nonetheless be damaged in a hurricane, caused by the wind-blown debris and branches, resulting in the much more difficult, and time-consuming, recovery process to repair or reinstall many more poles.

Still another negative consequence relates to the engineering support associated with the implementation of the proposed Extreme Wind loads. The determination of the corresponding wind force is considerably more complicated than that of the existing transverse wind force based upon the present required Combined Ice and Wind loading. While such calculations are generally within the capability of experienced transmission engineers, with civil engineering training, they are beyond that of most distribution engineers. Indeed, one of the change proposals submitted for the 2007 edition was an attempt to simplify the engineering implementation of the Extreme Wind loads for even the applicable transmission applications. Although new or available software packages may alleviate the burden, there will be inevitable confusion and delays -- as well as possible errors in implementation -- in the design and installation of new facilities (including Verizon's fiber-optic networks), to the detriment of the consumers.

5. <u>Recommendations</u>

My primary recommendation is that the Commission not alter the manner in which the NESC's extreme wind loading standards are applied. The NESC is a well-respected document that is generally recognized as having served the industry and public well. For this reason, the NESC Committee (*e.g.*, Subcommittee 5, Strength & Loading) generally attempts to introduce significant changes in a gradual, evolutionary manner, in order to avoid or minimize the potential impact, including unintended negative consequences such as described above (Section 4.2). Thus, previous discussions within the NESC Committee (see Section 3.1 above) to extend the Extreme Wind loading to structures less than 60 feet tall (distribution poles), focused on a particular change proposal, developed within Subcommittee 5, that would limit the impact of such an otherwise potentially dramatic change. In particular, for the Light Loading District portion of the country, which includes Florida, the impact would have been insignificant. Nonetheless, based upon a multitude of industry comments objecting to even this diluted version of an Extreme Wind requirement for distribution poles throughout the country, this proposed change was not incorporated into the 2007 edition of the NESC.

Ideally, the Florida PSC should wait until the next code cycle of the NESC (2012 edition) before encouraging or requiring consideration of the NESC Extreme Wind loading. The related discussions within the NESC Committee during the development process would take into account the experiences during Hurricane Wilma, as well as other recent serious storms. Florida Power & Light, in particular, is well-represented on NESC Subcommittee 5. If the Florida PSC decides to change how the NESC's Extreme Wind loading standards are applied, it should be very cautious in the manner in which such a dramatic, controversial change is introduced. At the least, the Commission should attempt to limit the otherwise dramatic impact to as small a category of facilities as possible, or to reduce the magnitude of the impact. Thus, my alternative recommendation, in the event the Commission moves in this direction, is as follows:

- The proposed PSC rule should limit its scope to Grade B or Grade C applications of electric-only or joint-use poles owned by the electric utilities. Thus, Grade N applications -- which include joint-use poles with only secondary power (< 750 volts), as well as several categories of electric-only poles -- should be explicitly excluded from the proposed application of Rule 250C.

- The application of the NESC Extreme Wind load, as presently specified in NESC-2002, Rule 250C, should be modified to limit the quantitative impact to the affected distribution poles. For example, the reduced loads for Grade C construction incorporated into the latest (2007) edition of the NESC should be explicitly cited as consistent with the intent of PSC Rule 25-6034. For Grade C construction, the corresponding wind forces are reduced by as much as 25% compared to NESC-2002. NESC-2007 is being issued in August 2006, and is effective within six months (February 2007).
- The proposed PSC rule, preferably as modified above, should be applied on a trial basis, initially limited to a specified geographic area and a defined period (*e.g.*, 1-2 years), in order to better understand the potential benefits and consequences of such a rule.

Dr. Lawrence M. Slavin
Outside Plant Consulting Services, Inc.
15 Lenape Avenue
Rockaway , NJ 07866
Phone: 1-973-983-0813
fax: 1-973-983-0813
email: lslavin@ieee.org
www.outsideplantconsulting.com

APPENDIX 2

About Outside Plant Consulting Services, Inc. (OPCS)

(Dr. Lawrence M. Slavin)

Outside Plant Consulting Services, Inc. (OPCS) was established in the year 2002 to help meet the needs of the telecommunications and power industries in establishing standards, guidelines and practices for outside plant facilities and products. The OPCS Group provides related support services for field deployment, and product evaluation and analysis. Dr. Lawrence (Larry) M. Slavin, Principal of OPCS, has extensive experience and expertise in such activities, based upon his many years of service at AT&T/Lucent Bell Telephone Laboratories (Distinguished Member of Technical Staff) in telecommunications product design and development, followed by a career at Telcordia Technologies (Bellcore) in its research and professional service organizations.

As Principal Consultant and Manager/Director of the Network Facilities, Components, and Energy Group at Telcordia, Dr. Slavin was responsible for professional services related to the telecommunications industry. These activities included technical leadership in developing installation and construction practices and "generic requirements" documents, introducing new construction methods, and performing analyses on a wide variety of technologies and products (such as poles, duct, wire and cable, electronic equipment cabinets, flywheel energy storage systems and turbine-generators). Throughout his long career, he has had a leading role in the evolution of many telecommunications related fields and disciplines – including aerial and buried plant design and reliability; advanced construction and cable and duct placement techniques; copper pair, coaxial, and fiber-optic technology; flywheel energy storage systems; physical design and development of hardware and electronic and electro-optic systems (such as the "SLC 96" digital loop carrier); cable media and equipment reliability studies; exploratory fiber-optic hardware development; and systems engineering.

Dr. Slavin is a member of several subcommittees of the National Electrical Safety Code Committee, responsible for specifying safety standards for aerial and buried telecommunications and power facilities in the United States. He is also an active member and participant on the Accredited Standards Committee ASC-O5 ("ANSI-O5") for wood poles and products, as well as on several related committees of the American Society of Civil Engineers. In addition, Dr. Slavin is a Charter Member of the North American Society for Trenchless Technology, has been instrumental in the development of directional drilling standards, and directly supports training activities for the directional drilling industry at the Center for Underground Infrastructure and Research and Education (CUIRE) at Michigan State University. Specific present and recent industry activities are listed below.

<u>Industry Activities</u>

- **National Electrical Safety Code Committee**
  - Represents the national telephone industry, via Alliance for Telecommunications Industry Solutions, ATIS
  - Executive Subcommittee
  - Main Committee
  - Subcommittee 4 (Overhead Lines – Clearances)
  - **Subcommittee 5 (Overhead Lines – Strength & Loading)**
  - Subcommittee 7 (Buried Lines)
- **Accredited Standards Committee ASC-O5**
  - ***ANSI O5.1, Wood Poles, Specifications and Dimensions***
  - *ANSI O5.2, Wood Products, Structural Glued Laminated Timber for Utility Structures*
  - *ANSI O5.3, Wood Products, Solid Sawn-Wood Products and Braces*
- **Pole Reliability Based Design (RBD) Committee, ASCE**
  - ***Reliability-Based Design of Utility Pole Structures***
- **Distribution Pole Standard Committee, ASCE**
- Committee F17 on Plastic Piping Systems, ASTM
  - Subcommittee F17.67 on Trenchless Plastic Pipeline Technology
  - Task Group Leader for development of HDD Standard ASTM F1962
  - *ASTM F1962, Standard Guide for Use of Maxi-Horizontal Directional Drilling for Placement of Polyethylene Pipe or Conduit Under Obstacles, Including River Crossings*
- Trenchless Installation of Pipelines (TIPS) Committee, ASCE
  - *ASCE Manual of Practice for Pipe Bursting Projects*
- Center for Underground Infrastructure and Research and Education (CUIRE) at Michigan State University
  - Industry Advisory Board
- Trenchless Technology Center, Louisiana Tech University
  - Industry Advisory Board
- North American Society for Trenchless Technology (NASTT)
  - Charter Member
  - Chair of Directional Drilling Subcommittee
- Missouri Western State College
  - HDD Steering Committee