BEFORE THE FLORIDA
PUBLIC SERVICE COMMISSION

DOCKET NO. 060038-EI
FLORIDA POWER & LIGHT COMPANY

IN RE: FLORIDA POWER & LIGHT COMPANY'S PETITION FOR ISSUANCE OF A STORM RECOVERY FINANCING ORDER

APRIL 10, 2006

REBUTTAL TESTIMONY & EXHIBITS OF:

RICHARD E. BROWN

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Q. Please state your name and business address.

A. My name is Richard E. Brown. My business address is 3801 Lake Boone Trail, Suite 200, Raleigh, NC, 27607.

Q. Did you previously submit direct testimony in this proceeding?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

A. I will respond to portions of the testimony submitted on behalf of the Office of Public Counsel (OPC) by James S. Byerley.

CONSERVATION-CORBETT 500-KV LINE FAILURE

Q. In his testimony, Mr. Byerley states that the maximum wind speed in Palm Beach County during Hurricane Wilma was 86 mph, citing data provided to the OPC by FPL (Bates 102887). Is this statement accurate?

A. No. There are two problems with the wind speed that Mr. Byerley references. First, the data cited by Mr. Byerley is from a forecast model, not actual wind speed data. Second, Mr. Byerley references a sustained wind speed, whereas the more relevant measurement is the three second gust which corresponds to

the design criteria in the National Electrical Safety Code. The official National Hurricane Center report on Hurricane Wilma (Tropical Cyclone Report, Hurricane Wilma, Jan. 12th 2006) cites 103 knot recorded gusts on West Boynton Beach, which is located in Palm Beach County. This corresponds to gusts of 119 mph.

Q. Do you agree with Mr. Byerley's conclusion that an adequate maintenance policy and procedure would have required that some method of securing the nuts on cross brace bolts be implemented after an inspection in 1998 revealed loose and missing bolts?

A. No. Mr. Byerley is incorrectly implying that the design of the Conservation Corbett transmission structures did not already provide a mechanism to secure the nuts on the cross brace bolts. In fact, for this type of structure, it is standard practice to use the weathering steel effect of the structures themselves to secure the nuts. This is exactly what FPL did. There is no history of nuts loosening on the cross brace bolts of structures such as those used in the Conservation-Corbett line, either at FPL or in the utility industry generally. FPL reasonably understood the unusual problem it was having in 1998 with loose nuts to be the result of an excessive level of conductor vibration. When FPL fixed the conductor vibration problem, it was reasonable to conclude that the nut loosening problem was also fixed.

Q. In his testimony, Mr. Byerley states that KEMA's only basis for knowing that the 1998 bolt problems had been addressed is an FPL employee's recollection. Is this a fair characterization?

A. No. Although FPL employees did inform KEMA that the 1998 bolt problems were addressed, KEMA compared the 2005 pre-Wilma inspection records to the 1998 inspection records, and found that the towers identified with loose and/or missing bolts in 1998 did not have these problems just prior to Wilma. This is described in the KEMA report (page 44), where it states, "There is no record that it was known before the 2005 storms that bolts were loose or missing." The only logical way for structures that had loose/missing bolts in 1998 not to have the same problem at the time of later inspections is if actions had been taken to address the problem in the interim.

Subsequent to the publication of the KEMA report, FPL found evidence of a missing bolt in 2002. This issue is further discussed in Ms. Jaindl's testimony.

FPL's DISTRIBUTION POLE INSPECTION & VEGETATION MANAGEMENT PROGRAMS

Q. With regards to KEMA's estimate that between 80% to 90% of all lateral poles will be inspected over a 15-year period, Mr. Byerley states, "I believe that their [KEMA's] assumptions are so uncertain that their conclusions are suspect." Do you agree with Mr. Byerley on this point?

A. No. KEMA has specifically reflected the uncertainty inherent in the assumptions by presenting a range. Mr. Byerley is implying that his estimate of uncertainty would be larger than KEMA's, but fails to provide a specific

opinion. KEMA and I have extensive experience in probabilistic reliability assessment, and stand by our estimate.

Q. Do you agree with Mr. Byerley when he says that, prior to the 2005 storms, FPL did not have a planned pole inspection program which adequately covered all its wood poles?

A. No. FPL, through its hazard inspections, samples a large number of wood poles for deterioration each year. These samples are large enough to track incipient problems so that more thorough targeted inspections can be initiated as needed. FPL also tracks overall pole performance, which can also be used to track incipient problems and take appropriate action.

Q. Mr. Byerley points out that five of the utilities in the KEMA survey have systematic pole inspection programs. Does this suggest that FPL is deficient in this area?

A. No. First, each of the five utilities with systematic inspection programs only addresses poles greater than a certain age with those programs. This is much the same approach that FPL uses for its Osmose program, which targets older, vulnerable pole populations. Second, each of the five utilities with a systematic inspection program has an average pole population older than FPL's and hence has more of a need for regular inspections. Finally, it is important to keep in mind that, of the utilities that responded to KEMA's survey, two did not have systematic inspection programs. I think it is fair to characterize the results of KEMA's survey on this point to be that (i) there is a range of approaches to inspections taken by different utilities, (ii) none of the

survey respondents reported an across-the-board systematic pole inspection program, and (iii) the utilities reporting the broadest inspection programs tended to be those with the oldest, most vulnerable pole populations. None of these results suggests that FPL's pole inspection policy prior to the 2005 storm season was unreasonable or out of step with the industry.

Q. Mr. Byerley points out that the RUS Bulletin 1730B-121 calls for an eight year inspection cycle for all wood poles in Florida. Do you believe that FPL should have implemented a comprehensive eight year pole inspection cycle prior to the 2005 storm season?

A. No. First, Mr. Byerley concedes in his testimony that the RUS Bulletin is not applicable. Moreover, a systematic eight year inspection program for all wood poles is, in my personal opinion, hard to justify as cost-effective for a utility such as FPL that has a history of good pole performance. Most U.S. utilities with young pole populations do not spend money on widespread inspection programs. Best practice is to monitor for problems and address the problems as they arise. More widespread programs are typically pursued when there is a significant portion of older poles that are beginning to show signs of deterioration. While I understand that the State of Florida is moving towards an eight year cycle for pole inspection, FPL would have had no reason to implement that cycle prior to the Commission's recent change in policy.

Q. In his testimony, Mr. Byerley states that, "The wind velocity that the poles are designed to withstand, according to FPL's Distribution Engineering Reference Manual (DERM), is 118.6 mph for Grade B and

96.9 for Grade C. It has been stated that the maximum wind speed during Wilma was 92 mph in Collier and Lee counties, diminishing as the storm moved eastward (Bates 102887). In light of this, there should have been very few failures of poles which were properly installed and in good condition due solely to wind pressure." Do you agree with this statement?

A. No. First, I would like to point out that Mr. Byerley is again referencing forecasted wind speed data not actual wind speed data, or the more applicable three second gust measurement. The official National Hurricane Center report on Hurricane Wilma (Tropical Cyclone Report, Hurricane Wilma, Jan. 12th 2006) cites 117 knot recorded gusts on Marco Island, which is located in Collier County. This corresponds to gusts of 135 mph.

Second, by making this statement, Mr. Byerley shows a lack of understanding of extreme wind ratings. The 92 mph "maximum wind speed" cited by Mr. Byerley refers to sustained wind speeds, not gusts. Furthermore, the extreme wind rating of Grade B construction is 104 mph gusts, not the 118.8 mph value stated in the DERM (these values are described in detail in the KEMA report). Since gust speeds can be expected to be about 25% higher than one-minute sustained speeds, the 92 mph maximum sustained wind speed cited by Mr. Byerley corresponds to approximately 115 mph gusts, which exceeds the rating of Grade B, but is still below the actual gust speeds experienced during Wilma.

Since the gusts speeds during Wilma far exceeded the gust ratings of Grade B construction, it is not surprising that a certain percentage of poles in good condition with Grade B construction broke due to wind only. Also, it is important to note that Grade C corresponds to 85 mph gusts. If FPL had designed its system to Grade C, damage during Wilma would have been much more extensive. This is most likely why FPL failure rates during hurricanes are lower when compared to other utilities.

Q. Can you explain why the DERM states that Grade B construction corresponds to 118.6 mph but you state that Grade B corresponds to 104 mph?

A. Yes. The NESC defines the wind design criteria for light loading areas (which are applicable to Florida) to be 60 mph. The DERM computes the ability of Grade B and Grade C poles to withstand high winds assuming that the overload factor is reduced to 1.0 instead of 4.0 for Grade B. This approach must be modified to derive an effective extreme wind rating according to the NESC, since new wood structures designed for extreme wind speeds require an overload factor under the NESC of 1.33. Using an overload factor of 1.33 instead of 1.0 results in a Grade B effective extreme wind rating of 104 mph.

Q. Is Mr. Byerley properly representing the KEMA report when he states that, "I concur with KEMA's observation that CCA poles tend to be brittle."

A. No. The KEMA report states, "... both CCA and creosote feeder poles correlated positively and with similar coefficients. This tells us that a different

pole type as an alternative engineering solution is not to be recommended and that brittleness of CCA poles, if any, is not a decisive factor." Thus, KEMA was not endorsing brittleness as a factor that could lead to the breakage of CCA poles; quite the opposite, we concluded that any brittleness that might exist in CCA poles did not affect their susceptibility to breakage.

Q. With respect to wood pole failure rates during hurricanes, Mr. Byerley states that, "It is surprising to me that FPL or KEMA would find the continuing lack of improvement in failure rate to be acceptable." Is it reasonable to expect that hurricane failure rates for FPL poles have improved over time?

A. No. FPL's pole performance in hurricanes has been and remains very good, with failure rates during hurricanes that are low relative to other utilities. When performance with respect to any parameter has been consistently good, one may strive for, but certainly cannot realistically expect, significant improvements in that performance. FPL has absolutely no reason to be dissatisfied with its record of consistent, strong pole performance during hurricanes.

Q. Does this conclude your rebuttal testimony?

A. Yes.