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Members of the Assembly Telecommunications and Utilities Committee
State House
P.O. Box 098
Trenton, NJ 08625-0098

RE: Utility Improvements Post Hurricane Sandy

Members of the Assembly Telecommunications and Utilities Committee:

As requested by Vice Chairman Wayne DeAngelo during my testimony before the committee on December 6, 2012, I am submitting additional comments on behalf of the Division of Rate Counsel ("Rate Counsel") regarding potential utility improvements following Hurricane Sandy. I hope these comments will be helpful as you consider what's needed and what's best for the citizens of New Jersey.

As you are aware, Rate Counsel represents and protects the interests of all utility customers—residential customers, small business customers, small and large industrial customers, schools, libraries, and other institutions in our communities. Rate Counsel is a party in cases where New Jersey utilities seek changes in their rates or services. Rate Counsel also gives consumers a voice in setting energy, water, and telecommunications policy that will affect the rendering of utility services well into the future.

When I testified before the committee, I urged you to strike a proper balance as you look for solutions to address utility infrastructure, vulnerabilities to storms and the multitude of issues resulting from Hurricane Sandy. I also asked that you keep in mind that any measures that are implemented come at a cost that will be borne by ratepayers. Two of New Jersey's utilities have already filed for rate increases since Hurricane Sandy, and we must anticipate that all of the utilities will seek recovery from ratepayers for restoration measures as well as any preventative measures we ask them to undertake. It is thus imperative that we focus on the financial impact of any proposed measures and their effectiveness in minimizing outages. These comments address some suggestions for cost-effective measures that I hope this committee and the Board of Public Utilities (the "Board" or "BPU") will take into consideration.

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1. Strengthen the minimum reliability requirements set forth in the BPUs regulations.

The Board uses two reliability indices to measure the reliability performance of electric utilities: SAIFI (System Average Interruption Frequency Index) which represents the average frequency of sustained interruptions per customer during the reporting period, and CAIDI (Customer Average Interruption Duration Index) which represents the average time in minutes required to restore service to those customers that experienced sustained interruptions during the reporting period.[1] See, N.J.A.C. 14:5-1.2 and N.J.A.C. 14:5-8.7. The electric public utilities operating in the state must submit an Annual System Performance Report by May 31 of each year to inform the Board of each electric utility's system performance. N.J.A.C. 14:5-8.7. In its regulations, at N.J.A.C. 14:5-8.9, the Board established a "Minimum Reliability Level" for each public electric utility. The regulations provide that performance worse than the minimum level is unacceptable and may subject the utility to penalties. N.J.A.C. 14:5-1.2. However, the current regulations set the Minimum Reliability Level for each electric utility using its own historical performance between the years 2002 to 2006, allowing a variance of 1.5 standard deviations.[2] N.J.A.C. 14:5-8.9(a)3. As a result, if a particular utility performed poorly during 2002 to 2006, the minimum standard for the poor performing utility will always be more lenient than a utility that performed better during the same period. This has the perverse and perhaps unintended outcome of rewarding poor performing utilities.

Moreover, outages due to major events such as Hurricane Irene and Sandy are not included when calculating Minimum Reliability Levels. N.J.A.C. 14:5-1.2. This makes the task of meeting the Minimum Reliability Levels easier for the utilities from year to year. N.J.A.C. 14:5-1.2 defines "Major Event" to be "[a] substantial interruption of electric service resulting from conditions beyond the control of the [Electric Distribution Company], which may include, but is not limited to, thunderstorms, tornadoes, hurricanes, heat waves or snow and ice storms, which affect at least 10 percent of the customers in an operating area." The section continues; "Interruptions occurring during a major event in one or more operating areas shall not be included in the [Electric Distribution Company's] CAIDI and SAIFI calculations of those affected operating area(s)." Not only are "major events" excluded, the regulation permits the electric utility to determine what will be considered an "operating area." N.J.A.C. 14:5-1.2.

Rate Counsel urges that the method of calculating the reliability standards be re-examined. This does not require new legislation, and can be done under existing law. For example, standards could be set for each of the four electric utilities so that they all aspire to

[1] There is also a third reliability index used in the industry, SAIDI (System Average Interruption Duration Index). SAIDI is defined as the average duration of interruptions for customers served during a specified time period. Although similar to CAIDI, the average number of customers served is used instead of number of customers affected.

[2] A standard deviation of a group of numbers measures the total degree of variance between each number and the average of the group. Using a normal distribution curve, 86.6% of all probable outcomes fall within 1.5 standard deviations.

reach 1st quartile performance pursuant to the IEEE index values for SAIFI and CAIDI.[3] Regulations could provide that those utilities that do not perform in the 1st quartile should have their Minimum Reliability Levels set at 10% improvement over the previous year's SAIFI and CAIDI levels until the utility reaches IEEE 1st quartile values for these indices. Failure to reach these reliability levels two years in a row as reported in the utilities' annual performance report should trigger an automatic penalty.

Rate Counsel also urges that changes be considered to the definition of "major event" and that a separate reliability performance standard be established for "major events." "Operating area" should be defined, so the definition cannot be manipulated to excuse poor performance. In addition, even if major events are separated from the utility's normal performance, a minimum standard should be established for major events and some form of penalty should be imposed for failure to meet those standards so that qualifying as a "major event" does not excuse poor performance.

2. Increase the penalties that the Board can impose and provide the resources necessary for the Board to enforce reliability statutes, regulations and orders.

There are statutes and regulations that address the penalties that the Board may impose on utilities for poor performance. However, the penalties currently allowed are not sufficient to provide an adequate deterrent for poor or substandard performance. For example, pursuant to N.J.S.A. 48:2-42 the Board may impose a penalty of $100 per day on utilities for non-compliance with Board orders and $250 per day if the utility fails to resume service. The Board's regulations are consistent with the statute, allowing penalties for poor performance. Those penalties, however, range from a low of $100 per day for violations of vegetation management regulations to a high of $25,000 for failure to implement reliability programs and plans or for willful misrepresentation of fact and/or intentional inaccuracies in any submitted report to the Board, with a penalty up to $50,000 under for subsequent violations. [4] The Board also has authority to decrease the allowed return on equity of any utility for poor performance, although the Board can only exercise this authority during a utility's base rate proceeding. [5]

Recognizing the limitations of the current penalty provisions available to the Board, "The Reliability, Preparedness and Storm Response Act of 2012," (A3255/S2206) was recently introduced which expands the Board's jurisdiction to impose additional penalties. The Bill raises the potential penalties for failure to comply with any law, rule, regulation or Board Order to $25,000 for each violation with a maximum of $2 million. Rate Counsel supports this legislation and efforts to increase the Board's power to penalize violations of reliability

[3] The Institute of Electrical and Electronic Engineers, or IEEE, is a professional association which surveys the reliability performance of electric utilities annually. The reliability indices it surveys typically include SAIFI, SAIDI, and CAIDI, and the survey looks at index values with and without major events. The IEEE index values are a recognized industry standard for gauging reliability performance.

[4] N.J.A.C. 14:5-9.10 (b) (1), N.J.A.C. 14:5-8.12 (a), N.J.A.C. 14:5-8.12 (b) (1).

[5] See I/M/O JCP&L, BPU Dkt. No. ER02080506, et al (Final Order, 5/17/04), p. 39.

statutes, regulations and orders. The potential $25,000 penalty for each violation and $2 million total potential penalty will send an important message to the utilities that reliability is an essential part of their duty to ratepayers.[6]

Along with the power to impose stiffer penalties, however, the Board must be given the resources to investigate and enforce necessary reliability measures. Currently, the Board must rely on self-reporting by the utilities regarding compliance with many of their regulations. There are insufficient resources to ensure compliance. Some limited additional resources should be considered to allow the Board to "spot check" or audit a utilities' reliability performance. Rate Counsel strongly urges that any change in law provide the Board with enough resources to follow through with enforcement of enhanced reliability standards and penalties.

3. Enhance requirements for Vegetation Management

Currently, the Board's regulations require electric utilities to visually inspect their distribution systems at least once every four years. N.J.A.C.14:5-9.4. The regulations provide that the inspection may be performed from the ground "except in cases where the conductor is not visible from the ground." Based on this inspection, and taking into account "the height of the vegetation and distance of the vegetation from the energized conductor" the utility may decide whether to trim the vegetation. The utility is required to trim if the vegetation is, in its estimation, "close enough to pose a threat to its energized conductors. In addition, the regulation provides that if an EDC becomes aware at any time of any vegetation close enough to its energized conductor to affect reliability or safety prior to the next required vegetation management activity, the electric utility "shall ensure that necessary vegetation management is promptly performed."

While Rate Counsel has no reason to believe that the utilities have been violating these regulations, we note that compliance is based solely on self-reporting and that the decision whether to trim is based solely on the discretion of the utility and the person performing the visual inspection. Even if they have been visually inspected, distribution circuits left untrimmed after four years of growth are more vulnerable to tree damage during major storms. Rate Counsel suggests that revisions to the regulations be considered to limit or provide greater guidance in the exercise of this discretion. For example, the utilities could be required to actually trim on every circuit once every four years. Under a four-year cycle, trees should be trimmed to provide clearance given four years of growth. Alternatively, standards could be added to the regulations that guide the exercise of discretion based on the results of the visual inspections, *e.g.*, requiring trimming if the vegetation is within a certain distance from the

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[6] Note that the Maryland Public Service Commission recently fined Potomac Electric Power Company one million dollars for reliability failures in 2011 finding that $1 to $2 million fines for such failure are within the zone of reasonableness. I/M/O of an Investigation Into the Reliability and Quality of the Electric Distribution Service of Potomac Electric Power Company, Case No. 9240 (December 21, 2011) ("Maryland Order").

wires. These changes do not necessarily require legislation, but may be accomplished through amendments to the regulations.

4. **The Board should review whether the current electric utility infrastructure needs hardening and whether redundancy should be created to improve service quality.**

There may be cost-effective measures that we can take to "harden" our infrastructure or create redundancies in order to make the impact of storms on our infrastructure less severe. Before undertaking any improvements, they should be carefully analyzed to determine their cost and their likely effectiveness in minimizing or shortening the duration of outages. We understand that the BPU has already asked the Rutgers Center for Energy Economic and Environmental Policy (CEEEP) to analyze the cost-effectiveness of certain possible measures. We think this will be a useful exercise and that the cost and benefit of all measures should be reviewed. Some measures that should be analyzed are:

Protection of Substations in Coastal Flooding Areas - Assuming that coastal areas are typically too heavily developed to feasibly permit substations to be moved to higher elevations and still be within distribution circuit distance of coastal loads, substations that are located in areas vulnerable to flooding should be protected against storm surge. This protection can include flood walls to keep water out and/or elevating transformers, breakers, busses, communications and control equipment, and other facilities to keep them above flood waters. The goal is not to make the substation impervious to any flooding condition but, rather, to allow the substation equipment to survive to the extent that any of its customer loads, or the overhead distribution feeders, are likely to survive the flooding.

Protection of Distribution Circuits in Coastal Flooding Areas - In areas vulnerable to flooding, overhead distribution circuits, also called feeders, with reinforced poles will increase survivability of the facilities.

Redundancy for Distribution Substations - Distribution substations should typically have more than one supply circuit, ideally from different sources and following different routes. This prevents a single supply circuit outage from blacking out an entire substation's customers, and it would limit the instances where a single tree falling down could do the same.

Selective undergrounding – While undergrounding of distribution wires generally is expensive and not likely to be cost-effective, some limited undergrounding may be worthwhile. For example, undergrounding distribution feeders greatly increases the survivability of such facilities during major storms. Distribution feeders typically have a main three-phase backbone, with numerous laterals, both three phase and single phase, branching out from the backbone. Under selective undergrounding, the primary voltage wires of the backbone could be put underground from the substation out to some point on the circuit, while the rest of the feeder would remain overhead. While

undergrounding substantially increases the cost of installing the feeders, by selectively applying undergrounding, these cost increases can be limited while still producing substantial reliability benefits.

These are a few of the issues that Rate Counsel believes are worth discussing as we analyze the appropriate measures to take to improve our system's response to major storms. We very much appreciate the opportunity to share our suggestions and be part of the dialogue on behalf of the state's ratepayers. Please feel free to contact our office if you have any questions. Thank you for your attention to these important matters.

Sincerely,

Stefanie A. Brand

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Director, Division of Rate Counsel

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