Agenda Date: 06/15/11
Agenda Item: 2K

STATE OF NEW JERSEY

Board of Public Utilities
Two Gateway Center, Suite 801
Newark, NJ 07102
www.nj.gov/bpu/

ENERGY
RELIABILITY & SECURITY

IN THE MATTER OF THE ISSUE OF CONTACT VOLTAGE	)))	ORDER DOCKET NO. EO10100760

SERVICE LIST ATTACHED

Stephanie A. Brand, Director, Division of Rate Counsel, Newark, New Jersey

Connie O. Hughes, Power Survey Company, Kearny, NJ

Wayne Smith, Mayor of Irvington, Irvington NJ

Cornel West, Princeton, NJ

William G. Dressel, Jr., NJ League of Municipalities, Trenton, NJ

Anthony W. and Nancy Green, Randallstown, MD

Carlos Lejnieks, Big Brothers Big Sisters, Newark, NJ

William J. Linden, New Community Corporation, Newark, NJ

Alexander Stern, PSEG Services Corporation, Newark, NJ

William Longhi, Orange & Rockland Utilities, Inc., Spring Valley, New York

Rich Blashfield, Jersey Central Power & Light Company, Morristown, New Jersey

Philip J. Passanante, Esq., Atlantic City Electric Company, Wilmington, Delaware

BY THE BOARD:

This matter was opened by the New Jersey Board of Public Utilities ("Board") on its own motion. On August 12, 2010, the Board held a stakeholder meeting on contact voltage and requested stakeholders' comments. Following this stakeholder process, by Order dated December 7, 2010, under this docket ("December Order"), the Board found that the information provided in the stakeholder process was sufficient for the Board to seek additional information and support on the issue of contact voltage. The Board further ordered the electric distribution companies to file a contact voltage mitigation proposal within 30 days from the issuance of the December Order containing certain minimum information.

Public Service Electric and Gas Company ("PSE&G"), Jersey Central Power and Light ("JCP&L"), Rockland Electric Company ("Rockland") and Atlantic City Electric ("ACE") (jointly "EDCs") filed a joint contact voltage mitigation proposal dated February 11, 2011 ("Mitigation Proposal"). In the Mitigation Proposal, the EDCs addressed all the relevant issues as directed by the Board and, in particular, proposed a two year pilot reporting initiative for contact voltage. By letter dated March 7, 2011, the Board's Secretary requested interested stakeholders to submit comments on the EDCs' Mitigation Proposal by March 18, 2011. By letter dated March 10, 2011, the State of New Jersey Division of Rate Counsel ("Rate Counsel") requested an extension of the time to submit comments in order to allow time for the EDCs to respond to Rate Counsel's propounded discovery. By letter dated March 18, 2011, the Secretary of the Board extended the comment period to April 18, 2011, and asked the EDCs to respond to Rate Counsel's discovery by April 1, 2011.

The Board received comments from Rate Counsel, the New Jersey League of Municipalities, the Big Brothers Big Sisters organization, the Mayor of Irvington, New Community Corporation, Mr. Anthony and Ms. Nancy Green, Power Survey Company and Mr. Cornel West.

The Mitigation Proposal

In its December Order, the Board required the EDCs to file a contact voltage mitigation proposal containing at minimum: (i) a report containing the EDCs' contact voltage survey history; (ii) a cost benefit analysis of conducting future contact voltage measurements; (iii) a contact voltage hazard grading system and cost estimates for repairs associated with this system; (iv) a proposal on how to improve incident reporting to the Board; and (v) any other proposal or consideration the EDCs may choose to bring to the Board.

Contact voltage survey history: The EDCs reported they have not performed formal voltage measurement except tests to facilities whenever work is performed in an underground plant. PSE&G, however, conducted a voltage survey of all its 32,043 metallic streets light poles and a random sample of 662 manholes in 2004. PSE&G used manual testing in this survey and did not keep detailed voltage records or an estimate of the number of energized objects per miles surveyed. The most common causes of contact voltage encountered in the 2004 survey include connection failures, deteriorating neutrals and problems with return conductors.

Cost-Benefit Analysis of Contact Voltage Testing: The EDCs estimated that the state-wide costs of using only mobile testing technologies in eligible areas varies between $579,000 and $637,000 annually depending on the population density threshold used (5,000 persons per square mile or more than 7,000 persons per square mile). The estimated total cost of using only manual testing technologies for surveying 100% of the system varies between $1,105,000 and $1,234,000 annually depending on the population density threshold used. The estimated total cost of using a combination of mobile and manual testing technologies to survey 100% of the system varies between $703,000 and $779,000 annually depending on the population threshold used.

The costs of using only manual testing to survey 100% of the system regardless of the population threshold would be: (i) $19,748,000 in the first year ($18,478,000 annually thereafter); (ii) $36,494,000 semi-annually; and (iii) $72,852,000 quarterly. The estimated

total cost of surveying 100% of the system without a population density threshold during a five year cycle (20% of the system surveyed each year) is $22,097,000.

Contact Voltage Hazard Grading System: The EDCs proposed that, for the purposes of a pilot program, only contact voltage greater than 25 volts need be considered. Specifically, the EDCs proposed that:

- Any substantiated contact voltage incident involving an EDCs' facilities will be rendered safe through temporary mitigation methods as required.
  If a voltage level is found by any of the EDCs that is 25 volts or above, permanent mitigation repairs, as required, will be made within 60 days.
- If a voltage level is found by any of the EDCs to be less than the 25 volt threshold, such conditions will be investigated and mitigated as required, in the interest of safety.

Contact Voltage Reporting: The EDCs proposed undertaking a two-year pilot initiative with annual reports on: (i) the number of contact voltage calls received during the year; (ii) the number of contact voltage calls substantiated as contact voltage incidents during the year; and (iii) whether the facilities in question were EDC-owned or owned by others. Additionally, the EDCs recommended that contact voltage calls where voltages are confirmed to be 25 volts or above should be considered to be substantiated contact voltages incidents subject to quarterly reporting to the Board.

Repair Costs: The total costs of expected repairs vary between $1,515,000 in a five year testing cycle (20% of the system surveyed each year) and $1,481,000 in an annual, semi-annual or quarterly testing cycle (surveying 100% of the system).

Contact Voltage Testing: The EDCs did not recommend that the Board implement a contact voltage testing program at this time because (i) available data suggests that contact voltage incidents presently appear to be rare in New Jersey; (ii) the significant costs associated with implementing a testing initiative cannot empirically be shown to likely decrease the already low-reported incidents of contact voltage, whether testing was performed annually, semi-annually, or quarterly on 100% or 20% of EDC facilities each year; and (iii) the issue of appropriate standards for contact voltage testing levels is currently being studied by the electric industry and the results of those efforts, when they become available, should be considered before creating new standards and programs to implement them.

Comments to the Mitigation Proposal

The Board received comments from Rate Counsel, the Mayor of Irvington, the New Jersey League of Municipalities, Mr. Anthony and Ms. Nancy Green, New Community Corporation, the Big Brothers Big Sisters organization, Power Survey Company and Mr. Cornel West on the EDCs Mitigation Proposal. These comments fell into two major categories – those concerned with the cost to remedy a problem that may not exist and those who believe that a comprehensive solution is now necessary.

Rate Counsel was concerned with the cost and the open question of risk. Accordingly, Rate Counsel recommends that the Board authorize a two year pilot program of testing for contact voltage. The pilot program should include: (i) a cost limit of $1 million; (ii) a selection of the appropriate testing technology; (iii) a testing limited to underground systems; (iv) testing in each

EDC service territory; (v) establishment of voltage level parameters; (vi) use by EDCs of similar technology to enable comparison of results; (vii) establishment of a procedures to select vendors or utilize internal EDC resources; (viii) establishment of response time limits; (ix) reports by each EDC at conclusion of the pilot program that analyze the data to determine appropriate next steps. Rate Counsel claimed that data and information to be gathered from a pilot program can then be used as a foundation for future action, assuming appropriate results.

The New Jersey League of Municipalities submitted comments asking that: (i) the Board's approach to contact voltage should be proactive not reactive; (ii) the costs of testing should be borne by the EDCs; and (iii) any new regulation should not place new burden on local governments.

Mr. Anthony and Ms. Nancy Green, Power Survey Company, the Mayor of Irvington, the Big Brothers Big Sisters organization, the New Community Corporation and Mr. Cornel West recommend that the Board adopt the "Deanna Camille Green Rule," a version of which is currently under consideration by the Maryland Public Service Commission. These stakeholders propose a comprehensive set of regulations that would define contact voltage, set standards, require extensive reporting and record-keeping requirements, and, most notably, set a minimum threshold for allowable contact voltage at 1 volt and apply a 75 basis point penalty to any EDC that fails to test 100% of publicly accessible roadways with underground electric distribution.

Discussions and Findings

The Board has carefully reviewed the Mitigation Proposal of the EDCs and the comments submitted in this process. The Board is aware of the standards adopted by the New York Public Service Commission, as well as the existence of ongoing processes in other states to address safety issues connected with contact voltage. The Board is also aware of the work that the Institute of Electrical and Electronics Engineers ("IEEE") is conducting to develop guidelines for assessing voltages at publicly and privately accessible locations and that currently there is no single internationally or state-wide safety code or uniformly accepted safety levels below which hazards from contact voltage will not occur.

Based on the review of the record, the Board **FINDS** that there is not sufficient data available to determine the risks arising from contact voltage in our State or the best practices to approach those possible risks in a cost effective manner. The Board therefore has determined that, at the present time, a pilot program for contact voltage is appropriate. The pilot should involve all four EDCs as recommended by Rate Counsel. The Board further believes that the scope of this pilot should comprise testing, reporting, recordkeeping, maintenance and repair requirements and should not be limited to data gathering and reporting requirements. In consideration of all these factors the Board **HEREBY ADOPTS** the following Contact Voltage Pilot Program ("Contact Voltage Pilot Program"):

- Definition of Contact Voltage: "Contact Voltage" shall be an elevated potential found between normally non-energized surfaces and ground due to faults in electrical wiring.

- Definition of Actionable Contact Voltage: "Actionable Contact Voltage" shall be a 60Hz AC voltage with source impedance low enough to indicate at least 5V using a 500ohm shunt resistor wired in parallel with the voltmeter.

- Location: The Contact Voltage Pilot Program shall take place in Atlantic City in ACE's territory, Irvington in PSE&G's territory, Mahwah in Rockland's territory, and Morristown in JCP&L's territory.

- Contact Voltage Testing:

  Scope of Testing. Contact voltage testing shall be conducted on all EDC-owned facilities that are capable of conducting electricity and are publicly accessible. Contact voltage manual testing shall not be required on customer-owned facilities, except for municipally-owned streetlights, traffic signal poles, and ancillary devices. If the EDC finds Actionable Contact Voltage, the EDC shall test for Actionable Contact Voltage in all publicly accessible structures, including customer owned structures, and sidewalks within a minimum 30 foot radius of the electric facility or streetlight.

  Frequency and Time of Testing. The EDCs shall test contact voltage for 100% of the electric facilities, streetlights, traffic signal poles, and ancillary devices each year. Contact voltage testing of municipally-owned streetlights, traffic signal poles, and ancillary devices shall be conducted when the lights are activated.

  Testing Technology. The EDCs shall use a combination of manual and , where applicable, mobile testing technologies in a manner that maximizes the economic and technical efficiency of contact voltage testing. Manual testing shall commence immediately after this Order becomes effective; additionally, the EDCs shall submit to the Board a plan to implement mobile testing, where applicable, within 60 days after this Order becomes effective. Mobile testing should commence no later than October 3, 2011.

  Testing Analysis. The EDCs shall analyze the contact voltage conditions they encounter in order to determine common causes or conditions. To the extent common causes are identified, the utilities should ascertain the measures they could take to prevent future recurring contact voltage conditions. Deficiencies identified shall be categorized based on the severity of the condition as well as safety and operational risks present should the electric facility fail prior to repair.

  Action The EDCs are required to respond to and investigate all reports of contact voltage incidents received, regardless of whether there are injuries involved. In all cases where Actionable Contact Voltage is found, the EDC shall determine if the voltage presents a safety threat to people or animals and, if so, the EDC shall take immediate appropriate action to make the energized area safe. In instances where Actionable Contact Voltage is determined to be caused by an EDC-owned facility, the EDC shall repair the facility as soon as practical. In instances where Actionable Contact Voltage is determined to be caused by customer-owned equipment, the EDC shall make a good faith effort to notify the owner or a responsible person associated with the premises or the customer-owned facility of the unsafe condition and need for the owner to arrange for permanent repair of the equipment causing the contact voltage condition. If the EDC cannot make contact with the owner or person responsible for the equipment at issue, the EDC may make the equipment safe by disconnecting or removing the energy source as allowed under N.J.A.C. 14:3-3A.1.5 (ix).

Contact Voltage Recordkeeping. The EDCs shall keep records of: (i) contact voltage testing, inspection and incident reporting dates and results; (ii) temporary and permanent repairs made; and (iii) costs of implementing the Contact Voltage Pilot Program. These records shall be easily accessible and subject to review and audit by Staff.

Contact Voltage Reporting. Under N.J.A.C. 14:5-8.7, the EDCs have an obligation to submit to the Board an "Annual System Performance Report", which includes a summary of the EDC stray voltage program. In addition to those requirements, the EDCs shall provide reports to the Board as follows:

Contact Voltage Testing Report. The EDCs shall report to the Board semiannually: (i) the location of the energized objects; (ii) the type of testing technology used to find those objects; (iii) the time and date of the contact voltage finding; (iv) the type of energized object (manhole cover, sidewalk, streetlights, etc.); (v) the level of contact voltage found; (vi) measures taken to ensure immediate safety; (vii) the repairs made; (viii) whether the repair is temporary or permanent; (ix) any exceptional circumstances requiring extension of temporary repairs; (x) the time and date of the repair; and (xi) actual costs of repairs and actual costs of contact voltage testing.

- **Contact Voltage Incident Report**. The EDCs shall report to the Board semiannually: (i) the number of contact voltage reporting calls received during the year; (ii) the number of contact voltage calls that report injuries to people or pets regardless of the severity of those injuries; (iii) date when the incident reports were received; (iv) whether a contact voltage condition was found and the contact voltage measurements; (v) the type of energized object (manhole cover, sidewalk, streetlights, etc.); (vi) measures taken to ensure immediate safety; (vii) the repairs made; (viii) whether the repair is temporal or permanent; (ix) any exceptional circumstances requiring extension of temporary repairs; (x) the time and date of the repair; and (xi) actual costs of repairs.

- **Certifications**. The utilities shall submit to the Board, together with the contact voltage reports, a certification by responsible employee that the EDC has tested all publicly accessible electric facilities and all streetlights and that unsafe contact voltage conditions have been remediated as required herein.

Cost Recovery. A cap on total expenditures related to contact voltage testing by the four EDCs is set at $1 million over the two-year Contact Voltage Pilot Program. The Contact Voltage Pilot Program should be implemented to minimize redundant expenses within and among the EDCs. Expenditures up to $1 million can be eligible for deferred cost accounting treatment and, subject to prudency, will be eligible for recovery in the EDCs subsequent rate case. Only prudent incremental costs of implementing the Contact Voltage Pilot Program shall be eligible for such recovery.

Upon conclusion of the Contact Voltage Pilot Program, the Board will re-examine the need for establishing state-wide contact voltage standards.

This Order shall become effective on the 10th day after the Order is signed by the Board. The Contact Voltage Pilot Program shall commence on the date this Order becomes effective. This Contact Voltage Pilot Program shall conclude two years thereafter and shall not continue beyond that time without further action of the Board.

DATED: 6/15/11

BOARD OF PUBLIC UTILITIES
BY:

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PRESIDENT

JEANNE M. FOX
COMMISSIONER

JOSEPH L. FIORDALISO
COMMISSIONER

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ATTEST:

KRISTI IZZO
SECRETARY

I HEREBY CERTIFY that the within document is a true copy of the original in the files of the Board of Public Utilities

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Docket. No. EO10100760

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