Duquesne Light
Our Energy...Your Power

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October 8, 2008

Mr. James J. McNulty, Secretary
Pennsylvania Public Utility Commission
P. O. Box 3265
Harrisburg, Pennsylvania 17105-3265

Re: Request for Comments on Advance Notice of Proposed Rulemaking for Revision of 52 Pa. Code Chapter 57 pertaining to Adding Neutral Connection Inspection and Maintenance Standards
Docket No. L-2008-2044821

Dear Secretary McNulty:

Enclosed for filing are the original and 15 copies of the comments of Duquesne Light Company in the above referenced proceeding. As requested, a copy of these comments has also been electronically mailed to Ms. Elizabeth Barnes.

Please do not hesitate to contact me if you have any questions.

Sincerely,

V. J. Edwards

Vernon J. Edwards
Supervisor, Regulatory Compliance

Enclosures

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Advance Notice of Proposed Rulemaking for Revision of 52 Pa. Code Chapter 57 pertaining to adding Neutral Connection Inspection and Maintenance Standards for the Electric Distribution Companies.

Docket No. L-2008-2044821

COMMENTS OF
DUQUESNE LIGHT COMPANY

Duquesne Light Company hereby submits these comments in response to the Pennsylvania Public Utility Commission's ("Commission's") Advance Notice of Proposed Rulemaking Order and Commissioner Christy's Motion requesting comments regarding proposed revisions to inspection, maintenance, repair and replacement standards for electric distribution companies ("EDCs") at 52 Pa. Code §57.198.

1. **Whether standards should be established by the Commission for inspection, maintenance, repair, and replacement of neutral connections so as to avoid unreasonable appliance and other household or business damage to consumers and to assure reasonably continuous electric service. Comments are requested on what, if any, those standards should be.**

   Duquesne Light Response:

   Based on the limited number of bad service wire neutral connections found on our system on a yearly basis and the high cost to implement an inspection and maintenance program without substantially improving reliability for our customers, Duquesne Light does not believe that the Public Utility Commission should establish standards for the inspection, maintenance, repair and replacement of service wire neutral connections. As an estimate, the percentage of Duquesne Light's customers who experience a service wire neutral connection problem, either on the customers' facilities or utility facilities, is approximately 200 cases per year. The vast majority of the faulty connections found are attributed to the equipment owned and maintained by our customers. With this extremely small number of faulty neutral connections, a cost benefit analysis indicates that this type of program is cost prohibitive and

creates an unnecessary financial burden on the utility without a benefit of increased reliability or safety.

2. **What electric distribution companies internal inspection and maintenance procedures were in 1995, 2000, and 2007 regarding monitoring the failure rates of their neutral connections, inspecting, maintaining, replacing and repairing those neutral connections.**

Duquesne Light Response:

Duquesne Light did not have a program or procedure in place to monitor service wire neutral connection failures in 1995, 2000 or 2007. Problems with neutral connections are typically found through investigations done by company personnel in response to customer-initiated inquiries or reports of trouble.

3. **What were the EDC's internal practices in 1995, 2000, and 2007 regarding the systematic replacement of neutral connections before they failed?**

Duquesne Light Response:

Duquesne Light did not have any internal practice in 1995, 2000 or 2007 for the systematic replacement of service wire neutral connections before they failed. Faulty neutral connections are typically found through investigations done by company personnel in response to customer-initiated inquiries or reports of trouble.

4. **Whether a bad neutral connection is visible to the naked eye from the ground as part of a visual inspection. If not, what steps would the EDC have to take to properly inspect a neutral connection?**

Duquesne Light Response:

It is Duquesne Light's opinion that failing service wire neutral connections can rarely be seen with the naked eye upon a visual inspection. Other than a complete break in the neutral connection or wire, failing connections cannot typically be seen by the naked eye. It is Duquesne Light's experience that customers will begin to have a problem with their service and have contacted the company well in advance of any real visible signs of problems. Duquesne is not aware of any technology that could systematically test service wire neutrals for upcoming failures.

In other words, testing the service wire neutral connections would only provide results that reflect the integrity of the neutral connection or wire at that point in time and would not provide assurances that the connection could fail at some point in the near future.

There is a tester commonly called the "beast of burden" that can be installed or attached to the customer's meter base, once the KWH meter is removed, and is used to detect existing service wire neutral problems. By removing the KWH meter, the customer is left without electric service until the test is completed. In addition, the tester can only be used for single-phase 120-volt metered services. The tester produces a current and then measures any voltage variations between each conductor and the neutral. If a voltage variation of between 5 and 7 volts is displayed on the tester, this can indicate a *possible* problem with the neutral connection or wire. If a voltage variation is seen, then further testing is needed to determine if the problem is with the utility equipment or the customer's equipment.

Duquesne Light uses this type of tester in response to service complaints from customers. For safety reasons stemming from the application of load to the conductors during the test, Duquesne Light requires the customer to be present during the test, and secondly, the customer must agree to the necessary interruption of service. Some customers have declined this test due to scheduling conflicts or because of the interruption of service. But, again, there is no test Duquesne is aware of to test its service neutral connection for potential future problems.

5. Are there limitations to the physical inspection of a neutral connection? If so, what are they?

Duquesne Light Response:

Yes. The limitations of a physical inspection of service wire neutral connections include:

1. The inability to accurately assess the condition of the entire length of wire or connections solely by visual inspection.

2. Inability to see inside the outside of a neutral wire for corrosion or loss of integrity.
3. Neutral connections cannot be seen without first unwrapping the tape that protects the connections, which may actually result in a degradation of the connection due to removal of the tape.
4. Some connections are sealed and are difficult to reattach once taken apart.
5. In underground situations, the point of connection can be difficult to find as customers often cover or bury the enclosures with mulch and decorative items.

In short, the test could actually do more harm than good because it can jeopardize the integrity of the neutral connection.

6. How lengthy and complicated is a proper neutral connection inspection?

Duquesne Light Response:

To test service wire neutral connections using the "beast of burden" tester would take approximately one (1) hour to complete for each Single Phase Self Contained 120 Volt Metered Service. However, complications that could arise and extend that time, either for the test or to arrange to have the test conducted, include:

1. Arranging the test with the customer with respect to their availability and acceptance of an outage.
2. Unearthing the service in underground plans where the customers have covered the boxes.
3. Complications related to reattaching sealed underground connections.
4. During an inspection, Duquesne Light may find customer installed and owned property, such as the meter base and service entrance cable, in poor condition or not properly installed resulting in an unsafe condition. If an unsafe condition exists, Duquesne Light would most likely have to shut the customer's service off until the customer can correct any of their equipment problems. Most customers would need to hire an electrician and obtain a wiring approval. Depending on the severity of the problem, and the customer's ability to hire an electrician on short notice, the customer could be without service for an extended period of time.

5. Within the Duquesne Light service territory, some underground services are still owned by our customers, which were buried directly in the ground by the customer over 30-40 years ago. If these services were found to be faulty, the customer would have to hire a contractor to dig a trench and install conduit before we could install a new service wire. In some cases, underground services installed directly in the ground are now under concrete driveways or other immovable objects, which would require the customer to move their entire service entry point (entrance cable, meter base, digging the trench and installing conduit).

7. What incremental costs would the EDC's incur if required to comply with a neutral connection inspection and maintenance program interval of no less than once every five years for every neutral connection in their service territory?

Duquesne Light Response:

Duquesne Light does not currently map or track the installation and/or age, size, or length of any of its service lines for its customers. Duquesne estimates the incremental costs would be approximately $3 million annually, with initial start-up costs of $26 million in the first year, and would include such items as:

Incremental Costs[1]

Estimated Start Expenses

Contractor to survey our territory and map all service lines:	$20 M
IT costs to maintain a database on the service I & M:	$5 M
Vehicles for 20-30 people:	$750,000
Equipment for 20-30 people:	$150,000
Hiring/Training of 20-30 people:	$300,000
Total estimate for Start-up Costs:	$26.2 Million

[1] All costs are based on the best estimate of the number of Single Phase Self Contained Metered Services within our territory and that customers agree to appointment dates and outages required to perform the work.

Annual On-going Expenses

Salaries and Benefits for 20-30 people:	$2.1 M
Vehicle Maintenance:	$150,000
Equipment Maintenance and Upgrades:	$50,000
IT Maintenance Costs	$250,000
Annual Training for 20-30 people	$100,000
Total for On-going estimated Annual Costs:	$2.65 Million

8. What additional costs would be incurred?

Duquesne Light Response:

To properly assess the financial impact of this rulemaking, additional costs incurred should be separated into costs incurred by the utility, and costs incurred by the customers.

Customer related additional costs would include costs incurred by our customers for problems found with customer equipment, primarily related to customers being required to hire qualified electricians and obtain wiring approvals, and in some cases within hours or days, before we could restore service safely. In each of these cases, the customer is at risk of being subjected to contractors willing to take advantage by overcharging for their services.

The costs for each item listed below may range from $500 to $5,000 per customer.

1. Meter Base Replacement.
2. Service Entrance Cable Replacement.
3. Service Panel Replacement.
4. Rerouting of service line due to the service being under immovable objects such as concrete driveways.

5. Relocate entire point of connection of electric service due to immovable objects such as concrete driveways (as an example – from one side of the house to another).
6. Customers would have to pay contractors to trench and install conduit to receive new underground service wire from the company and also have their meter base and service panel approved by an electrical inspector.

Knowing precisely how many of the above situations would occur is unknown at this time.

Additionally, company related costs likely to be incurred, and not provided in the cost estimates provided earlier, include the administrative and back office expenses caused by this additional work, including Call Center staff necessary to interact with the customers throughout this process and all back office functions and inventory expenses necessary to support the efficient handling of these inspections.

9. What costs would the EDC's incur if required to systematically replace a portion of their neutral connections every year, such that all neutral connections would be replaced on a rolling basis (perhaps every 20 years)?

Duquesne Light Response:

All costs are based on best estimates.

The start-up costs for Duquesne Light are estimated to be approximately $25.6 Million, assuming there is no inspection requirement, just a requirement to track and replace service wire neutral connections. In some cases, the entire service would be changed instead of just changing the connections, therefore lengthening the time to do such work.

Estimated Annual costs after start-up costs would be in excess of $1.5 Million.

10. If a systematic replacement program were required, what would be the optimal replacement schedule and why?

Duquesne Light Response:

The optimal replacement schedule for neutral connections is to replace at failure, which is based on Section 21-214 of the National Electrical Safety Code "Inspection of lines and equipment" that states the following:

> "Lines and equipment shall be inspected at such intervals as experience has shown to be necessary."

Our experience has shown that service wire neutral connection failures occur so infrequently that a special replacement schedule or testing schedule is not warranted based on the definition provided by the National Electrical Safety Code.

11. How many neutral connection failures have the EDC's had per year in their service territories since 1995? What percent of their overall customer base does this represent?

Duquesne Light Response:

Duquesne Light does not monitor or track the number of failures for this type of connection. Based on consultations with field personnel, we estimate that we find approximately 200 annually in response to customer voltage complaints, which represents .03% of our total customer base (based on 580,000 customers). The vast majority of the 200 failing or faulty service wire connections found each year are due to customer equipment, not the company's equipment. The Company cannot or should not repair the customers' neutral wires or connections.

12. What have the EDC's paid over the past five years annually in compensatory and/or punitive damages to customers who have had property damage and/or personal injury due to failed neutral connections?

Duquesne Light Response:

Duquesne Light receives approximately 12 claims for property damage annually out of the 200 failing or faulty neutral connections found each year. It is Duquesne's policy to pay customer damages through the claims process when it is determined during the claim investigation that the damage was a result of failure of our system.

Each instance is evaluated on a factual case-by-case basis. After individual investigation to determine if Duquesne's neutral failed and that it did in fact cause customer damage, Duquesne Light pays approximately 6-9 out of the 12 claims filed each year. Many times the damages were related to storms or other acts of nature, or the problem is found to be with the customer's own equipment outside of Duquesne Light's control. In those cases, Duquesne Light would deny the claim for damage. Duquesne is unaware of any personal injury claims ever filed relating to bad neutrals, on either Duquesne's system or the customers' system, since neutrals generally do not pose a safety hazard.

13. Whether standards should be placed in the regulations which are specific to each individual EDC, or whether all EDC's should be held to the same standard, and how this would be monitored and regulated.

Duquesne Light Response:

If the Public Utility Commission implemented standards, Duquesne Light believes that all companies should be held to the same standard. It is Duquesne Light's opinion that these standards should be monitored through the numbers reported in each company's existing quarterly Inspection and Maintenance filings.

14. Whether there should be automatic civil penalties written into the regulations for failure to meet standards.

Duquesne Light Response:

If the Public Utility Commission implemented standards, Duquesne Light does not believe automatic civil penalties should be written into the standards as finding bad service wire neutral connections before they fail is difficult, if not impossible, even with testing equipment described earlier. Moreover, a neutral and its connections is like any other piece of equipment --- it is subject to failure at unknown and unexpected times despite maintenance and preventative measures. Failures cannot be predicted.

Automatic civil penalties would assume that Duquesne Light was responsible for the failure, which may not be true. It is Duquesne's experience that the majority of the

cases related to failing or faulty neutral connections results from customer's own equipment. If, in the alternative, Duquesne Light is responsible for the failure, customers have today a route to recover damages through filing a claim. Also a complaint on service levels can be filed with the PUC. These filings trigger an investigation, which can then lead to a hearing before an administrative law judge. Public utilities are already obligated to make full and prompt investigations of complaints and disputes filed by its customers as required by Sections 57.12 and 57.177 of the PA Code. Until the service wire neutral connection issue is investigated, however, it would be unreasonable to automatically fine any party involved. If an automatic civil penalty is written into the regulations, an EDC could be unjustly forced to pay for an event out of its control/that the customer had complete control (i.e. shoddy equipment).

The Commission does have several avenues to penalize public utilities through civil penalties by case law and statute currently. That is ample authority. Automatic penalties should not be added for this one issue. Through case law, the Commission previously established the criteria for consideration when determining the amount of a civil penalty, known as the ten Rosi standards[2]. If a civil penalty is ordered against a public utility in a case, the order explicitly requires the public utility to send the penalized amount to the Commission. Additionally, Section 3301 of the Pennsylvania Statutes governs civil penalties for violations, and specifically requires payment to be remitted to the Commonwealth, not a customer.[3] Clearly the issue of civil penalties for violations of the Public Utility Code is addressed not only by case law, but also by statute.

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[2] *Joseph A. Rosi v. Bell Atlantic – Pennsylvania, Inc. and Sprint Communications Company, L.P.*, Docket No. C-00992409 (March 16, 2000). The ten standards are: (1) Whether the violation was intentional or negligent, (2) Whether the regulated entity promptly and voluntarily took steps to return the customer to the appropriate carrier and credited the customer's account, (3) Whether the regulated entity initiated procedures to prevent future slamming, (4) The number of customers affected and the duration of the violation, (5) Whether the penalty arises from a settlement or a litigated proceeding, (6) The compliance history of the regulated entity, which committed the violation, (7) Whether the regulated entity cooperated with the Commission, (8) The amount necessary to deter future violations, (9) Past Commission decisions in similar situations, and (10) Other relevant factors.

[3] 66 Pa.C.S. § 3301 (a)

In sum, the Commission should not write into any new regulations civil penalties that apply to just neutral connections.

15. Can smart metering/AMI systems provide a means of identifying potential bad or failing neutrals connections? If so, what capabilities, specifications and communication channels would be needed to incorporate such diagnostic systems and what incremental costs, if available.

Duquesne Light Response:

Duquesne Light is not aware of any smart metering/AMI technology that exists today that could predict a failing service wire neutral connection.

Conclusion

Duquesne Light Company does not believe it is necessary to create additional regulatory requirements regarding its service wire neutral connections and inspections based on the low number of problems we have experienced within our service territory. Duquesne Light believes the additional costs incurred to fulfill any service wire neutral inspection requirements by the Commission are substantial and not necessary as they will not improve service reliability or provide other similar benefit to our customers. Further, they will create an undue financial burden to both the company and our customers. The damages caused by utility faulty neutrals are 6-9 instances per year for Duquesne, at an average cost of repair of $1000 per instance. The $9000 in damages per year caused by faulty utility neutral connections does not warrant an inspection program costing over $20 million in set-up costs alone.

Duquesne requests that the Commission consider its comments filed herein and the Energy Association's comments, which we fully support.

Duquesne Light Company thanks the Commission for their time and attention to this issue and respectfully requests that the Commission consider and adopt as appropriate the above comments.

Respectfully Submitted,

DUQUESNE LIGHT COMPANY

October 8, 2008