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Paul E. Russell
Associate General Counsel

PPL
Two North Ninth Street
Allentown, PA 18101-1179
Tel. 610.774.4254 Fax 610.774.6726
perussell@pplweb.com



November 6, 2006

James J. McNulty, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, Pennsylvania 17120

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NOV 06 2006

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

**Re: Proposed Rulemaking for
Revision of 52 Pa. Code Chapter 57
Pertaining to Adding Inspection and Maintenance
Standards for Electric Distribution Companies
Docket No. L-00040167**

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INDEPENDENT REGULATORY
REVENUE COMMISSION

Dear Mr. McNulty:

Enclosed for filing are an original and fifteen (15) copies of PPL Electric Utilities Corporation's ("PPL Electric") comments in the above-captioned proceeding. As requested in the Commission's Order entered on April 21, 2006, a copy of PPL Electric's comments is being mailed electronically to Elizabeth Barnes, Esquire.

Pursuant to 52 Pa. Code § 1.11, the enclosed document is to be deemed filed on November 6, 2006, which is the date it was deposited with an overnight express delivery service as shown on the delivery receipt attached to the mailing envelope.

In addition, please date and time-stamp the enclosed extra copy of this letter and return it to me in the envelope provided.

If you have any questions, regarding these comments, please call.

Very truly yours,

Paul E. Russell

Enclosures

cc: Elizabeth Barnes, Esquire

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Proposed Rulemaking for	:	
Revision of 52 Pa. Code Chapter 57 pertaining	:	Docket No. L-00040167
to adding Inspection and Maintenance Standards	:	
for Electric Distribution Companies	:	

Comments of PPL Electric Utilities Corporation

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TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

I. Introduction

By order entered April 21, 2006, the Public Utility Commission ("PUC" or the "Commission") initiated a Notice of Proposed Rulemaking ("NOPR") adding Inspection and Maintenance ("I&M") Standards to Chapter 57 of the Commission's regulations at 52 Pa. Code §§57.192 et seq. Comments are due 30 days from publication of the NOPR in the Pennsylvania Bulletin, i.e., on November 6, 2006.

PPL Electric Utilities Corporation ("PPL Electric" or the "Company") appreciates the opportunity to submit comments in this proceeding. The NOPR addresses important system reliability issues which have received increased emphasis as a result of the August 14, 2003 black-out.

The Commission indicates that the intent of the proposed rulemaking is to satisfy the requirements of 66 Pa. C.S. §2802(20) and to maintain the service reliability

of each individual Electric Distribution Company ("EDC") at the level that existed prior to enactment of the Electricity Generation Customer Choice and Competition Act ("Act").

There are several approaches that would satisfy these two objectives.

Three of them are:

1. Individual I&M plans prepared by each EDC with no minimum I&M standards applicable to all EDCs. After Commission review and approval, the individual plan sets the minimum I&M standard for that EDC. This approach allows the EDC the most control over its plans while, at the same time, providing the Commission with review and approval authority over every aspect of these plans, and the opportunity to apply more stringent requirements when circumstances warrant. It also provides the most flexibility for both the EDC and the Commission to adjust to changing circumstances over time. This is the approach strongly recommended by PPL Electric.
2. Individual I&M plans prepared by each EDC with any EDC not meeting its performance standard required to include specified I&M standards. After Commission review and approval, the individual plan sets the minimum I&M standard for that EDC. There are no minimum standards applicable to all EDCs, but any EDC not meeting its three-year performance standards is required to include, at a minimum, specified I&M standards in its plan. PPL Electric does not recommend this approach, but, if adopted, the I&M standards applicable to EDCs, which do not meet their three-year performance standards, should

require intervals that are no shorter than those commonly followed by EDCs who are meeting their performance standards. The Commission already has authority to fully investigate the reasons behind any failure to meet performance standards and apply more stringent remedial actions, if warranted.

3. Individual I&M plans prepared by each EDC with all EDCs required to include uniform safety net I&M standards set forth in the regulations. This is the approach described in the NOPR. PPL Electric is strongly opposed to this approach, but, if adopted, the minimum I&M standards should require intervals no shorter than the longest current interval of any EDC that is meeting its performance standards.

The following comments by PPL Electric are divided into three parts. The first part is a general discussion of reliability issues and an explanation of PPL Electric's position on I&M standards. The second part (Appendix A) compares the requirements of the proposed regulations with PPL Electric's current practice. The third part (Appendices B, C, and D) sets forth proposed revisions to the regulations to implement each of the three approaches discussed above.

II. General Comments

The Act, which became effective on January 1, 1997, amended Title 66 of the Pennsylvania Consolidated Statutes by adding Chapter 28. This chapter establishes standards and procedures to create direct access by retail customers to the competitive market for the generation of electricity, while maintaining the safety and reliability of the electric system. The purpose of the Act was to extend to retail

customers the opportunity to lower their costs of electric service without sacrificing the level of reliability that existed prior to the Act. The following portions of the Act are particularly relevant to the current proposal:

66 Pa. C.S. §2802(6): the cost of electricity is an important factor in decisions made by businesses concerning locating, expanding and retaining facilities in this commonwealth.

66 Pa. C.S. §2802(12): the purpose of this chapter is to modify existing legislation and regulations and to establish standards and procedures in order to create direct access by retail customers to the competitive market for the generation of electricity, while maintaining the safety and reliability of the electric system for all parties. Reliable electric service is of the utmost importance to the health, safety and welfare of the citizens of the commonwealth. Electric industry restructuring should ensure the reliability of the interconnected electric system by maintaining the efficiency of the transmission and distribution system.

66 Pa. C.S. §2802(20): since continuing and ensuring the reliability of electric service depends on adequate generation and on conscientious inspection and maintenance of transmission and distribution systems, the independent system operator or its functional equivalent should set, and the commission shall set, through regulations, inspection,

maintenance, repair and replacement standards and enforce those standards.

PPL Electric believes that specific I&M standards, as contemplated in this proceeding, should be no more stringent than necessary to maintain the historical reliability performance of each EDC that existed prior to the effective date of the Act, and should be demonstrably cost-effective. Consistent with the Act's provisions that reliability should not suffer, while extending to ratepayers the opportunity for lower costs, I&M standards should be required only to the extent that they are necessary to meet the Act's mandate to maintain reliability.

Uniform I&M Standards are not required by statute

66 Pa. C.S. §2802(20) does not require that **uniform** I&M standards be applied to all EDCs within the Commonwealth. This is consistent with the Commission's past practices regarding the application of individual reliability benchmarks and performance standards for each EDC and the individual definitions of worst performing circuits by each EDC.

For reasons discussed below, PPL Electric believes that uniform standards would not be cost-effective, would exceed what is necessary to maintain the historical reliability performance of individual EDCs, and would interfere with the ability of an EDC's management to fulfill its responsibility to evaluate alternative investment choices, allocate finite resources to optimize results, and bear responsibility for results achieved. PPL Electric believes that individual plans tailored to each individual EDC, which are reviewed, approved and enforced by the Commission, will continue to insure the reliability of electric service as required by the Act.

Submission, review and acceptance of EDC I&M plans would be sufficient to satisfy the intent of the statute

PPL Electric supports the submission of individual biennial I&M plans by Pennsylvania EDCs. The submission of EDC plans will support the Commission's oversight role and permit the Commission to assure that EDCs have reasonably addressed the need for I&M of their distribution systems.

Review of EDC submissions and comparison to actual performance will significantly expand the Commission's knowledge and information regarding effective I&M plans. The Commission would have an opportunity to review a variety of approaches that successful companies employ to address their own unique situations and the reliability levels that result. The Commission also would have an opportunity to require that an EDC address specific performance deficiencies.

Acceptance of the EDC's plan by the Commission under this regulation would set the inspection, maintenance, repair and replacement standards for that EDC, and would be sufficient to meet the intent of 66 Pa. C.S. §2802(20).

All plan intervals should be treated as nominal rather than absolute. In the absence of empirical evidence that a specific interval is essential to successful outcomes, reasonable variation should be accepted. For example, there generally is no significant difference in outcome if an action with a nominal interval of one year is performed at 10 months or at 14 months. Each EDC should retain flexibility to revise its plan within a calendar year by shifting work in response to resource needs and availability. Work is planned to insure that the workforce is engaged productively throughout the year. However, there are unpredictable variations in some work, e.g.,

peaks in new service connects or storm activity, that require the advancement or deferral of other work, particularly toward the end of the calendar year.

Uniform standards are counterproductive

Uniform I&M standards would be counterproductive. Decisions regarding inspection and maintenance are only part of the judgments required to maintain reliable performance. Other examples include decisions regarding: repairing or replacing facilities; upgrading facilities; the operation of facilities; and investment in research. Mandating I&M standards will affect these other considerations. For example, an upgrade that could reduce the need for inspection and maintenance, and, thereby, reduce operating expenses, may not be undertaken because the economic benefit of reduced inspection and maintenance would not be achieved, if I&M standards precluded such reductions. PPL Electric continuously balances inspection, maintenance, operating procedures, replacements and upgrades to produce consistently high levels of reliability, while minimizing the impact on operating expenses. PPL Electric continually seeks ways to manage its costs, while preserving reliability, and the resulting benefits ultimately are passed on to customers.

If PPL Electric is required to adhere to uniform I&M standards, neither reliability nor costs are likely to improve. If uniform I&M standards are imposed, many EDCs would tend to focus on the process, instead of on the results.

PPL Electric is maintaining customer reliability with its current I&M Standards

PPL Electric's reliability is within Commission-mandated performance standards. Moreover, average reliability for the most recent five-year period (2001-05) is comparable to that for the five-year period (1994-98) which defines PPL Electric's benchmark performance requirement.

	5 Yr. Avg. 1994-98 (Benchmark)	5 Yr. Avg. 2001-05 (Most Recent)
SAIFI	0.98	1.00
CAIDI	145	131
SAIDI	142	133

Therefore, the proposed standards, which mandate shorter I&M intervals than PPL Electric presently uses, are not necessary to maintain the Company's reliability performance at the levels that existed prior to passage of the Act.

In 2004, PPL Electric established a goal of achieving industry 1st quartile SAIDI performance within five years, and incorporated an extremely aggressive 85 minute SAIDI goal in the Company's 2005-2009 business plans. PPL Electric has a number of initiatives underway and under consideration to accomplish this goal. The proposed standards would redirect resources away from this important reliability improvement effort.

Of these initiatives to improve reliability beyond benchmark performance, only two involve inspection and maintenance intervals discussed in the proposed standards, and neither initiative goes as far as the PUC proposes. One already is fully

incorporated in PPL Electric's current 2006 business plan (Appendix A), while the other is partially implemented in 2006 and will be expanded in 2007. The fully implemented initiative is an increase in overhead ("OH") distribution line inspections from 821 miles in 2002 to approximately 4,800 miles (14% of the total number of miles), with continued reliance on the Company's Circuit Performance Index ("CPI") and analyses of actual interruptions to identify target circuits, rather than fixed intervals. The partially implemented initiative is a shortening of vegetation management intervals. Of the initiatives already undertaken to improve reliability, these two are among the most expensive in cost per SAIDI minute saved.

The Act requires the Commission to regulate the EDCs so that their reliability performance would not deteriorate. The Act does not require an improvement of service reliability in some EDC territories from the performance which existed prior to the Act.

EDCs that are meeting their reliability performance standards should be exempt from the proposed prescriptive I&M standards. Applying prescriptive standards only to non-performing EDCs adds further incentive to maintaining reliability performance. There is no specific requirement in 66 Pa. C.S. §2802(20) that identical uniform standards be set for all EDCs.

Determining methods to achieve specified performance standards is a proper role of management. EDC management is responsible for evaluating alternative investment choices, allocating finite resources to optimize results, and bearing responsibility for the results achieved.

Pennsylvania legislative and regulatory bodies repeatedly have recognized the wisdom of allowing well-managed utilities to design their own operation and maintenance programs:

- On April 23, 1998, in its final rulemaking order at Docket No. L-00970120, the Commission declined to require specific inspection and maintenance standards for EDCs “because of the new methods and technologies that utilities are developing to improve the inspection and testing process. The Commission also did not want to impose excessive requirements upon the EDCs and to engage in what may be considered micromanagement.”
- In June 2002, the Legislative Budget and Finance Committee issued a report, entitled “Assessing the Reliability of Pennsylvania’s Electric Transmission and Distribution Systems,” which stated, “We do not recommend that the PUC adopt detailed and specific standards because all systems are not the same. The programs that the companies have in place must be tailored to the design and age of their systems. Companies with newer systems, for example, might not have to conduct inspections as frequently as companies with older systems, unless flaws are identified in the manufacturer’s product.”
- The August 27, 2002 Inspection and Maintenance Study, which was prepared by the Bureau of Conservation Economics and Energy Planning (CEEP), in consultation with the Staff Internal Working Group on Electric Service Reliability (SIWG), had as its purpose the determination of whether there is a need for prescriptive inspection and maintenance standards. That report states that “No prescriptive inspection and maintenance standards should be adopted at this time.”

The proposed standards are unrelated to maintaining reliability

PPL Electric is opposed to mandatory uniform standards. In the event that any uniform standards are implemented, a clear linkage should be shown between such standards and a specified reliability level. The current proposal states that an EDC has an overriding responsibility to meet its reliability benchmarks and standards, and may not use its compliance with the proposed I&M standards as a defense for failure to achieve performance standards. It is not appropriate to impose standards that have a known cost, but an unknown relationship to desired outcomes. Thorough cost/benefit studies should be performed, as required by Executive Order 1996-1, before uniform prescriptive standards are imposed upon EDCs.

The proposed standards mandate pole inspections, but only about 1.2% of PPL Electric's service interruptions are due to the failure of poles, arms or attachments (no data is available on pole failures alone). Many of the pole failures that do occur are the result of abnormal stress due to weather which causes downed lines or trees to fall on lines. There is no evidence that more frequent pole inspections would significantly impact this failure rate.

The proposed standards also mandate annual OH transformer inspections, but a 2004 PPL Electric study of service interruption causes during non-storm conditions found that only 0.3% of the OH transformer population of 319,000 had failed due to causes other than lightning. There is no evidence that more frequent inspections would have detected problems and avoided these failures.

Data from that same 2004 study showed that only 0.2% of the population of more than 15,900 OH manual switches had failed in 12 months, and that only 0.2% of

the population of 65,689 tap fuses had failed. There is no evidence that more frequent inspections would have detected and avoided these failures.

EDCs have an economic incentive to perform necessary I&M tasks

Inspection and maintenance programs have three basic purposes: (1) to assure public and employee safety, (2) to reduce overall costs and (3) to maintain reliability. Necessary maintenance is economically sound because it is based upon the premise that spending smaller amounts today will avoid the larger costs of failure tomorrow (after a failure, major repairs must be done at inconvenient times with higher cost resources). If an EDC avoids necessary maintenance, it raises long-term costs. Conversely, unnecessary maintenance does not result in the avoidance of future failures, but does result in an immediate increase in costs to fund the incremental maintenance.

Well-managed EDCs periodically evaluate the cost/benefit profile of existing and new approaches to inspection and maintenance, and adjust their portfolio of programs to obtain the optimum results from finite resources. The tradeoffs between alternatives, costs and results change over time, are driven by advancements in technology and work methods, and changes to the specific makeup and age distribution of the EDC's assets. Regulation should not interfere with this constant reassessment of alternatives.

PPL Electric has performed cost/benefit analyses of most components of its I&M program. Specifically, PPL Electric's I&M programs for the following facilities are supported by formal cost/benefit analyses:

- Circuit breakers

- Distribution capacitors
- Distribution line inspections
- Distribution wood pole inspections
- Low tension networks
- Oil circuit reclosers
- Outdoor lighting
- Power transformers
- Substation batteries
- Substation inspections
- Transmission air break switch inspection and replacement
- Transmission lines inspections
- Transmission wood arm replacements
- Transmission wood poles
- Underground cables
- Distribution line vegetation management

Based upon these cost/benefit analyses, PPL Electric does not perform OH distribution line inspection foot patrols on a fixed interval. Rather, inspections are scheduled when indicated by circuit performance, as measured by PPL Electric's CPI and confirmed by an analysis of actual service interruptions that identifies failures addressable by visual inspection. In 2002, the Company inspected 821 miles of OH distribution line (2.4% of the total number of miles) with the highest CPIs. As a result, 232 repairs were identified and completed. In the highly unlikely worst case that the repairs were not performed and all of the identified repairs would have become a case of trouble within the next twelve months, the maximum contribution of the inspection and repairs to 2003 SAIFI was a reduction of 2% (0.0157) and the maximum contribution to 2003 CAIDI was a reduction of 1% (1.7 min.). Extending the inspections to well-performing circuits on a fixed interval has a significantly lower potential benefit, but a significantly higher cost.

In order to refine and update cost/benefit analyses, EDCs need to be able to test assumptions and gather data about the effect of different intervals. From time-to-time, it is prudent to extend intervals until there is empirical evidence supporting a shorter interval.

Regulation should encourage the development of more cost-effective reliability strategies.

Many of the Commission's proposals are very labor intensive. Labor costs rise over time and increase as demand for limited resources intensifies. The proposed standards will dramatically increase demand for specialty resources, such as tree trimmers, that already are in short supply. For example, PPL Electric estimates that, under the proposed standards, an additional 75-80 tree crews, or 225-240 more people, would be required in its territory, and the Company already has had difficulty securing enough crews to perform its current workload. Because the cost of providing service is a significant concern, EDC management is obligated to seek out cost-effective alternatives to maintain reliability, while mitigating rising labor costs. The Commission should encourage, not discourage, this effort.

All organizations have finite resources. Customers benefit when management makes rational economic choices between alternatives by realizing lower costs for given reliability levels. Regulation should not interfere with rational economic choices.

Dedicating resources to fixed programs restricts an EDC's ability to choose more effective alternatives. If an investment in one alternative, e.g., intelligent switching, is estimated to reduce CAIDI by 20% and a portion of the funding for this alternative is obtained by extending inspection schedules that are estimated to increase

SAIFI by 4%, and which produces a net change in SAIDI of -17%, all customers will benefit. Regulation should not interfere with these economic choices between alternatives.

PPL Electric's operating expenses will increase under the proposed standards.

PPL Electric's annual expenses for I&M under the proposed standards would double from about \$28 million in 2006 to about \$56 million, plus a one-time cost of \$3 million to bring initial inspections of SYP-creosoted poles into compliance. Because PPL Electric already is maintaining reliability at the same levels that existed prior to the Act, this additional expenditure does not serve the purpose of this proposed rulemaking or the public interest.

Regulation should not favor the choice of one category of reliability strategy over another.

Alternatives to maintain or improve reliability include: those that reduce the risk of service interruptions, those that reduce the number of customers affected by the average interruption, and those that reduce the duration of the average interruption. The proposed Inspection and Maintenance standards are directed only to the risk of interruption and limit the application of finite resources to other strategies.

Whenever PPL Electric evaluates circuit performance, the first step is to analyze the actual service interruptions that occurred to determine if there is a pattern of causes or a geographic pattern for which corrective actions are feasible and which would improve circuit performance. A pattern of vegetation-caused interruptions would lead to vegetation management solutions, while a pattern of equipment failures would not. If a geographic, rather than a causal, pattern is evident, new switching or fusing

alternatives produce better reliability results by expanding alternatives for faster customer restoration before repair or reducing the number of customers affected by a given interruption. Applying a uniform prescriptive response is not an effective use of finite resources.

PPL Electric also evaluates the costs and benefits of opportunities to reduce interruption duration through changes in work methods and processes that shorten response time. For example, PPL Electric's recent implementation of staggered work shift start times during daylight savings time expands the hours of crew presence.

If uniform standards are promulgated, they should be established as a safety net

If uniform minimum standards are promulgated, they should be treated as a safety net below which no well-managed EDC would choose to go, now or in the foreseeable future. Otherwise, the standards as proposed will serve as an impediment to rational choices between alternatives, stifle innovation, reduce reliability and raise costs to customers. As a safety net, the standards should establish intervals no shorter than the longest current interval of any EDC that is meeting its performance standards.

Any minimum standards should be utilized as recommendations rather than requirements. EDCs should be able to submit biennial plans that differ from the recommendations, with explanations for the deviation, and without going through a separate review process. If the EDC's biennial plan is approved by the Commission, it would supersede the minimum standards.

Transmission assets are regulated by the FERC and should be exempt from PUC regulation

Transmission assets, which are regulated by the FERC, should be explicitly excluded from the proposed standards. Jurisdictional issues, as well as inconsistencies between regulations at state and federal levels, may compromise reliability.

Mandating common definitions of urban and rural will not produce a reliability benefit

PPL Electric believes that the terms "rural" and "urban" do not have commonly accepted definitions when they are applied to vegetation management. Similarly, EDCs segment other I&M programs based upon environmental and other considerations using definitions that are specific to the EDC. Forcing conformity to a single definition would require some EDCs to make changes in the application of existing programs that have no reliability purpose whatsoever. Accordingly, PPL Electric recommends that EDCs which segment I&M programs be requested to provide brief definitions of the segments, and brief explanations of the reasons for the segmentation in their I&M reports.

The proposed definitions would require that individual circuits be divided, for vegetation management purposes, into multiple sections as they pass through areas of different population density. That may be a desirable approach for some EDCs, but PPL Electric has determined that it generally is preferable for both work management and cost management purposes to work an entire circuit at one time and on one interval. PPL Electric defines rural circuits as those having average customer density of less than 35 customers per mile, and urban circuits as those having average customer

density equal to or more than 35 customers per mile, regardless of variations in population density along the way. However, that is only a general rule. There are specific circuits that have been segmented into two sections, one urban and one rural. For example, when the beginning of the circuit is in a city and the remaining sizeable portion is in the country. Another EDC might follow the same general customer density per mile approach, but may have determined a different cutoff point to be more appropriate for its territory.

PPL Electric submits that there is no reliability benefit in requiring PPL Electric to adopt another EDC's definition, or to require other EDCs to adopt PPL Electric's definition. There would be one-time costs for all EDCs whose programs would have to be modified to accommodate a definition change that would produce no material benefit.

EDCs should determine the urgency of repair and schedule resources accordingly.

The phrase "If problems are found that affect the integrity of the circuits ..." is ambiguous. EDCs have established priority systems to determine how quickly repairs are to be performed, and a brief description and explanation of those systems can be included with the EDC's biennial I&M plan.

For example, PPL Electric's standard for setting priorities for substation and transmission work is described in the following table:

For Unplanned and Emergency Repair Work at Substations

Priority 0

Safety:

- Recognized Hazards that will cause immediate harm
- Avoid Immediate Personal Injury to Public or Employees, OSHA Activities, VPP items with direct OSHA related guidelines

SSES:

- NRC Requirements on Associated Transmission, Substation and Distribution Facilities
- Related Work - Transmission, Substations & Distribution Continuous Safe Operation of the SSES B.P.F.

Substation & Transmission Equipment:

- Customers Interrupted Due To Equipment That Has Failed In Service Or Is Required to Restore Customers.
- Emergency Repair of Equipment Failed in Service Requiring Immediate Repair to Restore Functionality

Priority 1

Safety:

- VPP Items
- Avoid Personal Injury to Public or Employees

Substation & Transmission Equipment:

- Equipment Repairs or Unplanned Maintenance Requiring Correction within Estimated Time to Failure of ≤ 1 Days

Priority 2

Substation & Transmission Equipment:

- Equipment Repairs or Unplanned Maintenance Requiring Correction within Estimated Time to Failure of ≤ 15 Days

Priority 3

Substation & Transmission Equipment:

- Equipment Repairs or Unplanned Maintenance Requiring Correction within Estimated Time to Failure of ≤ 30 Days

Priority 4

Substation & Transmission Equipment:

- Equipment Repairs or Unplanned Maintenance Requiring Correction within Estimated Time to Failure of ≤ 6 Months

PPL Electric's standard for setting priorities for distribution work is described in the following table:

<p>Emergency</p> <p>Defects which: (1) threaten the safety of the public or employees; or (2) will cause an interruption at any moment.</p> <p>Examples: dislodged energized wire which public could contact; phase wire lying on crossarm, oil leaks.</p>	<p>Corrective action must be taken immediately (same day).</p>
<p>Critical</p> <p>Defects with a high probability of causing an interruption if not corrected promptly.</p> <p>Examples: cracked insulator or cutout.</p>	<p>Corrective action must be taken within 10 working days.</p>
<p>Unsatisfactory</p> <p>Defects with a lower probability of causing an interruption if not corrected promptly.</p> <p>Examples: lightning arrester with isolator blown; guy rod slipped; terminator showing signs of tracking.</p>	<p>Corrective action must be taken within 3 months.</p>

Summary

- 66 Pa. C.S. §2802(20) does not require that I&M standards be uniform for all EDCs.
- Uniform standards are not in the public interest.
- The submission to, and approval by, the Commission of EDC specific I&M programs is sufficient to satisfy the intent of 66 Pa. C.S. §2802(20).
- Uniform standards are counterproductive because they would restrict the ability of an EDC to apply its portfolio of inspection programs, maintenance programs, asset replacement/upgrade programs, operation rules and research programs that would result in the optimum application of resources to the EDC's unique circumstances, and restrict the EDC's ability to adapt to changing circumstances over time.

- EDCs that have maintained reliability within mandated performance standards should be allowed to continue their successful management practices.
- The proposed standards have not been shown to have benefits that exceed the costs as required by Executive Order 1996-1.
- EDCs have a strong economic incentive to perform effective inspection and maintenance.
- Uniform standards discourage the development of more cost-effective reliability strategies.
- Customers of well-managed EDCs could experience higher rates, or lower reliability, or both, if uniform standards are imposed.
- PPL Electric's operating expenses would increase under the proposed standards.
- Regulation should not favor the choice of one reliability strategy over another.
- Transmission assets regulated by the FERC should be exempt from state regulation.
- Mandating common definitions of urban and rural will not produce a reliability benefit.
- EDCs should determine the urgency of repairs, and schedule resources accordingly.

III. PPL Electric's 2006 Practice

Appendix A compares the proposed regulations, on a section-by-section basis, with PPL Electric's 2006 practice. The comparison sets forth the projected impact and estimated cost and/or resource impact of the proposed regulations. In most instances, the impacts are significant. As discussed above and as shown on Appendix A, compliance with the proposed regulations would double the Company's annual I&M expenses from \$28 million in 2006 to about \$56 million, plus a one-time expense of \$3 million. These costs could increase even more if PPL Electric's contractors experience resource constraints.

IV. Proposed language for revision

Appendix B contains PPL Electric's proposed revisions to Annex A consistent with the first approach described in the Introduction. This approach and wording changes are strongly recommended by PPL Electric.

Appendix C contains alternative language for Annex A consistent with the second approach described in the Introduction. PPL Electric does not recommend this approach, but it is preferred over uniform standards applied to all EDCs. If adopted, the minimum I&M standards for those EDCs which did not meet their performance standards should require intervals that are no shorter than those commonly followed by EDCs who are meeting their performance standards. For purposes of Appendix C, PPL Electric has included its current practice.

Appendix D contains alternative language for Annex A consistent with the third approach described in the Introduction. PPL Electric is strongly opposed to

uniform standards to be applied to all EDCs. If adopted, the minimum I&M standards should require intervals no shorter than the longest current interval of any EDC that is meeting its performance standards.

V. Conclusion

PPL Electric respectfully requests that the Commission modify the inspection and maintenance standards proposed in this rulemaking in a manner consistent with the Company's foregoing comments. Specifically, PPL Electric recommends that the Commission establish minimum I&M standards for each EDC based on that EDC's unique circumstances. PPL Electric recommends that the Commission not promulgate uniform I&M standards applicable to all EDCs. The Company's suggested revisions to the Commission's proposed regulations necessary to achieve this result are set forth in Appendix B to these comments.

Appendix A

Comparison of Proposed Regulations and PPL Electric's 2006 Practice

PUC Proposed Rulemaking	2006 PPL Electric Practice	Potential Impact	Estimated Cost and/or Resource Impact
<p>§57-198 (b) Plan Submission EDC's submit a proposed comprehensive plan every 2 years; PUC must approve or reject plan; EDC must rewrite plan if rejected.</p>	<p>PPL Electric reports to Commission on progress on completing work but Commission does not approve or reject work plan.</p>	<p>Unknown. There are modest costs involved in preparing a formal submission to the Commission of the Company's I&M plan. If the Commission disagrees, the cost of subsequent iterations and negotiations may be significant.</p>	
<p>§57-198 (a) Vegetation Management Transmission Cycle of 5 Years</p>	<p>Inspect every 3 to 5 years; treat as needed based upon inspection. Annual cost of approx. \$3 million.</p>	<p>No significant impact.</p>	
<p>Distribution Cycle of 4 Years</p>	<p>Rural: 8 year cycle. Urban: 5 year cycle. Annual cost of approx. \$16 million.</p>	<p>Distribution miles will increase about 3,500 miles per year.</p>	<p>Annual cost increase of about \$14.3 million. 3 additional Line Clearance Inspectors, 75-80 more crews (225-240 people) needed. Risks include constrained contractor resource availability due to all PA utilities needing increased tree clearing.</p>
<p>§57-198 (e) Pole Inspections Distribution poles inspected every 10 years</p>	<p>Initial inspection of SYP creosoted poles at 25 yr.; initial inspection of all other types at 10 yr. Subsequent inspections vary from 1-9 years based upon result of last inspection. Annual cost of approx. \$1.0 million</p>	<p>Remaining SYP creosoted poles would have to be initially inspected earlier than planned. Compressing the initial inspection will produce a workload peak every nine years thereafter. PPL Electric switched to Pentachlorophenol (Penta) preserved poles in 1999 and set 10 yr. for initial inspection to gather data. Experience may allow extending the initial inspection.</p>	<p>One time cost of \$3 million. No opportunity to extend initial Penta pole inspection beyond 10 yr. based upon experience.</p>

Comparison of Proposed Regulations and PPL Electric's 2006 Practice

PUC Proposed Rulemaking	2006 PPL Electric Practice	Potential Impact	Estimated Cost and/or Resource Impact
<p>\$57,198,161/3 Overhead Line Inspection</p> <p>Transmission Lines inspected aerially twice per year (spring and fall)</p>	<p>Annual "quick fly-over" patrol of all transmission circuits. Annual cost \$0.25 million</p> <p>Annual comprehensive aerial inspection of Susquehanna SES (nuclear) circuits. 4 year comprehensive aerial inspection of all other circuits. Annual cost approx. \$0.8 million</p>	<p>Double routine aerial patrols.</p>	<p>Annual cost increase of about \$0.25 million.</p>
<p>Transmission Lines inspected on foot every 2 years</p>	<p>Transmission Lines inspected on foot every 4 years. Annual cost approx. \$1.2 million</p>	<p>Double foot patrols.</p>	<p>Annual cost increase of about \$1.2 million.</p>
<p>Distribution Lines inspected on foot every year</p>	<p>No fixed interval; based upon Circuit Performance Index (CPI) and analysis of actual service interruptions. Approx. 4,800 miles per year, \$0.7 million per year.</p>	<p>700% increase in distribution circuit inspection costs (primarily manpower).</p>	<p>Annual cost increase of about \$4.0 million.</p>
<p>Distribution problems found during inspections that affect the integrity of the circuit to be fixed within 30 days.</p>	<p>Critical problems are immediately addressed. Others are addressed with other maintenance/repair work orders.</p>	<p>Increased maintenance cost/decreased flexibility for line crews.</p>	<p>Unknown.</p>
<p>Transmission problems found during inspections that affect the integrity of the circuit to be fixed within 30 days.</p>	<p>Schedule based on severity.</p>		<p>Unknown.</p>
<p>Overhead transformers visually inspected annually</p>	<p>No fixed interval.</p>		<p>Annual cost increase of about \$2.6 million.</p>
<p>Pad-mount transformers inspected every 2 years.</p>	<p>No fixed interval.</p>		<p>Annual cost increase of about \$0.8 million.</p>
<p>Below ground transformers inspected every 2 years</p>	<p>LTN vaults inspected every 6 months. Annual cost of approx. \$0.5 million.</p>		
<p>Reclosers inspected and tested every year</p>	<p>No fixed interval for submersible transformers.</p> <p>10 year replacement cycle.</p>	<p>There are 5,000 OCRs on the system. Each test would require a 2-man crew + bucket to inspect, bypass, obtain switching permit, do the test, and clear the unit and permit.</p>	<p>Annual cost increase of about \$0.1 million.</p> <p>Annual cost increase of about \$3.0 million.</p>

Comparison of Proposed Regulations and PPL Electric's 2006 Practice

PUC Proposed Rulemaking	2006 PPL Electric Practice	Potential Impact	Estimated Cost and/or Resource Impact
<p>§7198(e)(2) Substation Inspections Substation equipment, structures, hardware inspected monthly</p>	<p>Transmission Yards: Critical Bulk Power - Weekly. Annual cost of approx. \$1.7 million. Transmission Yards: Non-Critical - Monthly. Annual cost of approx. \$0.6 million. Distribution Yards: Non-SCADA - Monthly. Annual cost of approx. \$0.5 million. Distribution Yards: SCADA - Quarterly. Annual cost of approx. \$1.1 million. Special Inspections. Annual cost of approx. \$0.3 million.</p>		
		<p>Triple distribution SCADA substation inspections.</p>	<p>Annual cost increase of about \$2.2 million.</p>

Appendix B

Annex A
TITLE 52. PUBLIC UTILITIES
PART I. PUBLIC UTILITY COMMISSION
Subpart C. FIXED SERVICE UTILITIES
CHAPTER 57. ELECTRIC SERVICE
Subchapter N. ELECTRIC RELIABILITY STANDARDS
§ 57.192. Definitions.

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise:

* * * * *

* * * * *

§ 57.198. Inspection and maintenance standards.

(a) An EDC shall have a plan for the periodic inspection and maintenance of poles, overhead conductors and cables, wires, transformers, switching devices, protective devices, regulators, capacitors, substations and other facilities critical to maintaining an acceptable level of reliability, in a format the Commission prescribes. The Commission will review each plan and may issue orders to ensure compliance with this section. The Commission may require an EDC to submit an updated plan at any time containing information the Commission may prescribe.

(1) The plan shall be based on industry codes, National electric industry practices, manufacturers' recommendations, sound engineering judgment and past experience. If an EDC segments an inspection and maintenance program, the plan shall include a definition of the segments and a brief explanation of the reasons underlying the segmentation.

(2) An EDC shall reduce the risk of future service interruptions by accounting for the age, condition, design and performance of system components and by providing adequate resources to maintain, repair, replace and upgrade the system.

(3) The plan shall include a program for the maintenance of minimum clearances of vegetation from the EDC's overhead transmission and distribution facilities. The plan shall include a program for the trimming of tree branches and limbs located in close proximity to overhead electric wires when the branches and limbs may cause damage to the electric wires.

(4) The plan, or updates to the plan, shall form the basis of, and be consistent with, the EDC's inspection and maintenance goals and objectives included in subsequent annual and quarterly reliability reports filed with the Commission.

(b) On or before October 1, 2007, and every 2 years thereafter, an EDC shall submit its whole plan for the following calendar year to the Commission for review.

(1) Within 90 days, the Commission will accept or reject the plan.

Deleted: *Rural area*—A rural place designated by the United States Bureau of Census as having a population of less than 5,000 and whose boundaries have been approved by the Secretary of the United States Department of Transportation.

Deleted: *Urban area*—An urbanized area or an urban place designated by the United States Bureau of Census as having a population of 5,000 or more and whose boundaries have been approved by the Secretary of the United States Department of Transportation.

Deleted: must

Deleted: The plan must be divided into rural and urban areas. The plan must take into account the broad minimum inspection and maintenance intervals provided for in subsection (e).

Deleted: must

Deleted: sufficient to avoid contact under design-based conditions

Deleted: must

Deleted: regardless of whether the trees in question are on or off of a right-of-way

Deleted: must

Deleted: or its designee

(2) Absent action by the Commission to reject the plan within 90 days of the plan's submission to the Commission, or by January 1, whichever is later, the plan will be deemed accepted. The acceptance will be conditioned upon the EDC meeting Commission-established reliability performance standards.

Deleted: or its designee

(3) If the plan is rejected, in whole or in part, by the Commission, the EDC shall be notified of the plan's deficiencies and directed to resubmit a revised plan, or pertinent parts of the plan, addressing the identified deficiencies, or submit an explanation why the EDC believes its plan is not deficient.

Deleted: or its designee

(c) An EDC may request approval from the Commission for revising an approved plan. An EDC shall submit to the Commission, as an addendum to its quarterly reliability report, prospective and past revisions to its plan and a discussion of the reasons for the revisions. Within 90 days, the Commission will accept or reject the revisions to the plan.

Deleted: or its designee

(d) An EDC shall maintain records of its inspection and maintenance activities sufficient to demonstrate compliance with its transmission and distribution facilities inspection, maintenance, repair and replacement programs as required by subsection (e). The records shall be made available to the Commission upon request within 30 days.

Deleted: (e) An EDC shall maintain the following minimum inspection and maintenance intervals:¶
(1) *Vegetation management.* The Statewide minimum inspection and treatment cycles for vegetation management are 4 years for distribution facilities and 5 years for transmission facilities.¶
(2) *Pole inspections.* Distribution poles shall be visually inspected every 10 years.¶
(3) *Overhead line inspections.* Transmission lines shall be inspected aerially twice per year in the spring and fall. Transmission lines shall be inspected on foot every 2 years. Distribution lines shall be inspected by foot patrol a minimum of once per year. If problems are found that affect the integrity of the circuits, they shall be repaired or replaced no later than 30 days from discovery. Overhead distribution transformers shall be visually inspected annually as part of the distribution line inspection. Aboveground pad-mounted transformers and below-ground transformers shall be inspected on a 2-year cycle. Reclosers shall be inspected and tested at least once per year.¶
(4) *Substation inspections.* Substation equipment, structures and hardware shall be inspected monthly.

Appendix C

Annex A

TITLE 52. PUBLIC UTILITIES

PART I. PUBLIC UTILITY COMMISSION

Subpart C. FIXED SERVICE UTILITIES

CHAPTER 57. ELECTRIC SERVICE

Subchapter N. ELECTRIC RELIABILITY STANDARDS

§ 57.192. Definitions.

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise:

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* * * * *

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§ 57.198. Inspection and maintenance standards.

(a) An EDC shall have a plan for the periodic inspection and maintenance of poles, overhead conductors and cables, wires, transformers, switching devices, protective devices, regulators, capacitors, substations and other facilities critical to maintaining an acceptable level of reliability, in a format the Commission prescribes. The Commission will review each plan and may issue orders to ensure compliance with this section. The Commission may require an EDC to submit an updated plan at any time containing information the Commission may prescribe.

Deleted: *Urban area*—An urbanized area or an urban place designated by the United States Bureau of Census as having a population of 5,000 or more and whose boundaries have been approved by the Secretary of the United States Department of Transportation.

(1) The plan shall be based on industry codes, National electric industry practices, manufacturers' recommendations, sound engineering judgment and past experience. If an EDC segments an inspection and maintenance program, the plan shall include a definition of the segments and a brief explanation of the reasons underlying the segmentation. For EDCs that the Commission has determined to have exceeded their Rolling 3-Yr. Avg. Reliability Performance Standard, the plan shall take into account the nominal minimum inspection and maintenance intervals provided for in subsection (e).

Deleted: must

(2) An EDC shall reduce the risk of future service interruptions by accounting for the age, condition, design and performance of system components and by providing adequate resources to maintain, repair, replace and upgrade the system.

Deleted: The plan must be divided into rural and urban areas. T

Deleted: must

Deleted: broad

(3) The plan shall include a program for the maintenance of minimum clearances of vegetation from the EDC's overhead transmission and distribution facilities. The plan shall include a program for the trimming of tree branches and limbs located in close proximity to overhead electric wires when the branches and limbs may cause damage to the electric wires regardless of whether the trees in question are on or off of a right-of-way.

Deleted: must

Deleted: sufficient to avoid contact under design-based conditions

Deleted: must

(4) The plan, or updates to the plan, shall form the basis of, and be consistent with, the EDC's inspection and maintenance goals and objectives included in subsequent annual and quarterly reliability reports filed with the Commission.

Deleted: must

(b) On or before October 1, 2007, and every 2 years thereafter, an EDC shall submit its whole plan for the following calendar year to the Commission for review.

(1) Within 90 days, the Commission will accept or reject the plan.

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(2) Absent action by the Commission to reject the plan within 90 days of the plan's submission to the Commission, or by January 1, whichever is later, the plan will be deemed accepted. The acceptance will be conditioned upon the EDC meeting Commission-established reliability performance standards.

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(3) If the plan is rejected, in whole or in part, by the Commission, the EDC shall be notified of the plan's deficiencies and directed to resubmit a revised plan, or pertinent parts of the plan, addressing the identified deficiencies, or submit an explanation why the EDC believes its plan is not deficient.

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(c) An EDC may request approval from the Commission for revising an approved plan. An EDC shall submit to the Commission, as an addendum to its quarterly reliability report, prospective and past revisions to its plan and a discussion of the reasons for the revisions. Within 90 days, the Commission will accept or reject the revisions to the plan.

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(d) An EDC shall maintain records of its inspection and maintenance activities sufficient to demonstrate compliance with its transmission and distribution facilities inspection, maintenance, repair and replacement programs as required by subsection (e). The records shall be made available to the Commission upon request within 30 days.

(e) For EDCs that the Commission has determined to have exceeded their Rolling 3-Yr. Avg. Reliability Performance Standard, the following nominal minimum inspection and maintenance intervals shall be maintained unless the EDC includes evidence, acceptable to the Commission, in the submitted plan supporting modification of these intervals:

Deleted: An EDC shall maintain

(1) Vegetation management. The Statewide minimum inspection and treatment cycles for vegetation management are 6 years for distribution facilities and for transmission facilities not already subject to FERC regulation.

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Deleted: 5 years

(2) Pole inspections. Distribution poles shall be visually inspected initially at 25 years and subsequently every 10 years.

(3) Overhead line inspections. A minimum of 14% of distribution lines shall be inspected by foot patrol each year. The EDC shall describe in its submitted inspection and maintenance plan, how lines are selected for inspection. The inspection and maintenance plan shall describe how discovered problems are prioritized for repair or replacement. Overhead distribution transformers, aboveground pad-mounted transformers and below-ground transformers shall be visually inspected as part of the distribution line inspection. Reclosers shall be inspected and tested every 10 years.

Deleted: Transmission lines shall be inspected aurally twice per year in the spring and fall. Transmission lines shall be inspected on foot every 2 years. D

Deleted: a minimum of once per

Deleted: If problems are found that affect the integrity of the circuits, they shall be repaired or replaced no later than 30 days from discovery.

Deleted: annually

Deleted: Aboveground pad-mounted transformers and below-ground transformers shall be inspected on a 2-year cycle

Deleted: at least once per year

Deleted: monthly

(4) Substation inspections. Substation equipment, structures and hardware shall be inspected quarterly.

Appendix D

Annex A

TITLE 52. PUBLIC UTILITIES

PART I. PUBLIC UTILITY COMMISSION

Subpart C. FIXED SERVICE UTILITIES

CHAPTER 57. ELECTRIC SERVICE

Subchapter N. ELECTRIC RELIABILITY STANDARDS

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(1) The plan shall be based on industry codes, National electric industry practices, manufacturers' recommendations, sound engineering judgment and past experience. If an EDC segments an inspection and maintenance program, the plan shall include a definition of the segments and a brief explanation of the reasons underlying the segmentation. The plan shall take into account the nominal minimum inspection and maintenance intervals provided for in subsection (e).

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(2) An EDC shall reduce the risk of future service interruptions by accounting for the age, condition, design and performance of system components and by providing adequate resources to maintain, repair, replace and upgrade the system.

(3) The plan shall include a program for the maintenance of minimum clearances of vegetation from the EDC's overhead transmission and distribution facilities. The plan shall include a program for the trimming of tree branches and limbs located in close proximity to overhead electric wires when the branches and limbs may cause damage to the electric wires regardless of whether the trees in question are on or off of a right-of-way.

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Deleted: sufficient to avoid contact under design-based conditions

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(4) The plan, or updates to the plan, shall form the basis of, and be consistent with, the EDC's inspection and maintenance goals and objectives included in subsequent annual and quarterly reliability reports filed with the Commission.

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(b) On or before October 1, 2007, and every 2 years thereafter, an EDC shall submit its whole plan for the following calendar year to the Commission for review.

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(3) If the plan is rejected, in whole or in part, by the Commission, the EDC shall be notified of the plan's deficiencies and directed to resubmit a revised plan, or pertinent parts of the plan, addressing the identified deficiencies, or submit an explanation why the EDC believes its plan is not deficient.

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(d) An EDC shall maintain records of its inspection and maintenance activities sufficient to demonstrate compliance with its transmission and distribution facilities inspection, maintenance, repair and replacement programs as required by subsection (e). The records shall be made available to the Commission upon request within 30 days.

(e) An EDC shall maintain the following nominal minimum inspection and maintenance intervals unless the EDC includes evidence, acceptable to the Commission, in the submitted plan supporting modification of these intervals:

(1) Vegetation management. The minimum inspection cycles for vegetation management are 8 years for distribution facilities and for transmission facilities not already subject to FERC regulation.

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Deleted: and treatment

Deleted: 4

Deleted: 5 years

(2) Pole inspections. Distribution poles shall be visually inspected initially at 25 years and subsequently every 10 years.

(3) Overhead line inspections. A minimum of 10% of distribution lines shall be inspected by foot patrol each year. The EDC shall describe in its submitted inspection and maintenance plan, how lines are selected for inspection. The inspection and maintenance plan shall describe how discovered problems are prioritized for repair or replacement. Overhead distribution transformers, aboveground pad-mounted transformers and below-ground transformers shall be visually inspected as part of the distribution line inspection. Reclosers shall be inspected and tested every 10 years.

Deleted: Transmission lines shall be inspected serially twice per year in the spring and fall. Transmission lines shall be inspected on foot every 2 years. D

Deleted: a minimum of once per

Deleted: If problems are found that affect the integrity of the circuits, they shall be repaired or replaced no later than 30 days from discovery.

Deleted: annually

(4) Substation inspections. Substation equipment, structures and hardware shall be inspected every six months.

Deleted: Aboveground pad-mounted transformers and below-ground transformers shall be inspected on a 2-year cycle.

Deleted: at least once per year

Deleted: monthly