



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
400 NORTH STREET, HARRISBURG, PA 17120

IN REPLY PLEASE
REFER TO OUR FILE

December 16, 2022

M-2009-2094773

KIMBERLY A KLOCK
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**Re: Biennial Inspection, Maintenance, Repair and Replacement Plan (2024 through 2025)
Docket No. M-2009-2094773**

Dear Ms. Klock:

On October 3, 2022, PPL Electric Utilities Corporation (PPL Electric) filed its Biennial Inspection, Maintenance, Repair and Replacement Plan (Plan), pursuant to 52 Pa. Code § 57.198(a), to be made effective on January 1, 2024.

The Commission’s regulations require EDCs to file, every two years by October 1, a biennial plan for the periodic inspection, maintenance, repair and replacement of facilities that is designed to meet reliability performance benchmarks and standards set forth in 52 Pa. Code §§ 57.191-57.197. The Commission’s Implementation Order, entered August 13, 2009, identified PPL as one of six (6) EDCs in Compliance Group 2 to initially file their Plan by October 1, 2010, and then every two years thereafter. The Plan must cover the two calendar years beginning 15 months after filing and remain in effect for two calendar years thereafter (January 1, 2024, through December 31, 2025).

PPL Electric has proposed changes to its original plan, which will be discussed herein.

Plan Consistency

52 Pa. Code § 57.198(b) Plan consistency. The plan must be consistent with the National Electrical Safety Code, Codes and Practices of the Institute of Electrical and Electronic Engineers, Federal Energy Regulatory Commission Regulations, and provisions of the American National Standards Institute, Inc.

PPL Electric’s Plan generally complies with Section 57.198(b).

Time Frames

52 Pa. Code § 57.198(c) Time frames. The plan must comply with the inspection and maintenance standards in subsection (n). A justification for the inspection and maintenance time frames selected shall be provided, even if the time frame falls within the intervals prescribed in

subsection (n). However, an EDC may propose a plan that, for a given standard, uses intervals outside the Commission standard, provided the deviation can be justified by the EDC's unique circumstances or a cost/benefit analysis to support an alternative approach that will still support the level of reliability required by law.

PPL Electric has proposed modifications, discussed *infra*, for the following programs, or parts of programs:

- Pole loading calculations
- Distribution Overhead Line Inspection Interval
- Recloser Inspection Interval
- Distribution Overhead Transformer Inspection Interval
- Distribution Pad Mounted Transformer Inspection Interval
- Substation Inspection Interval

Record Keeping

52 Pa. Code § 57.198(m) Recordkeeping. An EDC shall maintain records of its inspection and maintenance activities sufficient to demonstrate compliance with its distribution facilities inspection, maintenance, repair and replacement programs as required by sub52 Pa. Code § (n). The records shall be made available to the Commission upon request within 30 days. Examples of sufficient records include:

(1) Date-stamped records signed by EDC staff who performed the tasks related to inspection.

(2) Maintenance, repair and replacement receipts from independent contractors showing when and what type of inspection, maintenance, repair or replacement work was done.

PPL Electric's Plan generally complies with Section 57.198(m).

Vegetation Management

52 Pa. Code § 57.198(n)(1) Vegetation management. The Statewide minimum inspection and treatment cycle for vegetation management is between 4-8 years for distribution facilities. An EDC shall submit a condition-based plan for vegetation management for its distribution system facilities explaining its treatment cycle.

PPL Electric's Plan generally complies with Section 57.198(n)(1).

Pole Inspections

52 Pa. Code § 57.198(n)(2) Pole inspections. Distribution poles shall be inspected at least as often as every 10-12 years except for the new southern yellow pine creosoted utility poles which shall be initially inspected within 25 years, then within 12 years annually after the initial inspection. Pole inspections must include:

- (i) Drill tests at and below ground level,*

- (ii) *A shell test.*
- (iii) *Visual inspection for holes or evidence of insect infestation.*
- (iv) *Visual inspection for evidence of unauthorized backfilling or excavation near the pole.*
- (v) *Visual inspection for signs of lightning strikes.*
- (vi) *A load calculation.*

The Plan states that PPL Electric will visually inspect distribution wood poles on a 12-year cycle.

PPL Electric included a previously approved exemption from performing pole load calculations as part of pole inspections. PPL Electric noted that pole failures are a very small impact on reliability and that the failures that occurred were aggravated by weather conditions and vegetation being blown into lines. PPL Electric stipulated that the risk reduction through a load calculation would be insignificant.

Therefore, PPL Electric is granted exemption from performing load calculations as part of its pole inspection program. However, PPL Electric shall conduct subsequent assessments of pole strength prior to attachment of non-company facilities. The Plan is consistent with the previously approved Plan and generally complies with Section 57.198(n)(2).

Pole Inspection Failure

52 Pa. Code § 57.198(n)(3) Pole inspection failure. If a pole fails the groundline inspection and shows dangerous conditions that are an immediate risk to public or employee safety or conditions affecting the integrity of the circuit, the pole shall be replaced within 30 days of the date of inspection.

The Plan states that wood poles and supporting structures with recorded defects that PPL Electric could reasonably expect to endanger life or property will be repaired or replaced within 30 days. All remaining deficiencies will be evaluated and prioritized on a case-by-case basis.

The Plan generally complies with Section 57.198(n)(3).

Distribution Overhead Line Inspections

52 Pa. Code § 57.198(n)(4) Distribution overhead line inspections. Distribution lines shall be inspected by ground patrol a minimum of once every 1-2 years. A visual inspection must include checking for:

- (i) *Broken insulators.*
- (ii) *Conditions that may adversely affect operation of the overhead transformer.*
- (iii) *Other conditions that may adversely affect operation of the overhead distribution line.*

PPL Electric included a previously approved exemption from performing distribution overhead line inspections every 2 years. PPL Electric's inspection process includes a vehicle-

borne infrared inspection of multi-phase overhead lines adjacent to roadways every two years. All other overhead line inspections are condition-based. Inspections are scheduled under various conditions to include CEMI (customers experiencing multiple interruptions) and WPC (worst-performing circuits) circuits, or if warranted based on Proactive Circuit Reviews, and/or if power quality issues are experienced. PPL Electric noted this process is the most cost-effective method to address reliability issues through overhead line inspections.

Therefore, PPL Electric is granted exemption from performing distribution overhead line inspections every 2 years. However, PPL Electric shall perform a 100% infrared visual inspection of drivable multi-phase overhead lines and components on a 2-year cycle and visual inspection using condition based selected line segments. The Plan is consistent with the previously approved Plan and generally complies with Section 57.198(n)(4).

Inspection Failure

52 Pa. Code § 57.198(n)(5) Inspection failure. If critical maintenance problems are found that affect the integrity of the circuits, they shall be repaired or replaced no later than 30 days from discovery.

The Plan generally complies with Section 57.198(n)(5).

Distribution Transformer Inspections

52 Pa. Code § 57.198(n)(6) Distribution transformer inspection. Overhead distribution transformers shall be visually inspected as part of the distribution line inspection every 1-2 years. Above-ground pad-mounted transformers shall be inspected at least as often as every 5 years and below-ground transformers shall be inspected at least as often as every 8 years. An inspection must include checking for:

- (i) Rust, dents or other evidence of contact.*
- (ii) Leaking oil.*
- (iii) Installation of fences or shrubbery that could adversely affect access to and operation of the transformer.*
- (iv) Unauthorized excavation or changes in grade near the transformer.*

PPL Electric included a previously approved exemption from performing overhead distribution transformer, above-ground pad-mounted transformer, and below-ground transformer inspections on a fixed timeframe inspection cycle and instead utilizing a condition-based inspection program.

PPL Electric inspects overhead transformers as part of the overhead line inspections and pole inspections, or when conditions warrant. PPL Electric inspects pad-mounted and below-ground transformers when indicated by circuit performance and analysis of actual service interruptions, and when performing Underground Residential Development Cable Testing. PPL Electric avers that the condition-based inspection program is the most cost-effective method to address reliability issues related to distribution transformers.

Therefore, PPL Electric is granted exemption from performing overhead distribution transformer, above-ground pad-mounted transformer, and below-ground transformer inspections on a fixed timeframe inspection cycle. However, PPL Electric shall continue to perform a 100% infrared visual inspection for drivable distribution transformers in conjunction with its overhead line inspections on a 2-year cycle, and visual inspection using condition based selected line segments. The Plan is consistent with the previously approved Plan and generally complies with Section 57.198(n)(6).

Recloser Inspections

52 Pa. Code § 57.198(n)(7) Recloser inspections. Three-phase reclosers shall be inspected on a cycle of 8 years or less. Single-phase reclosers shall be inspected as part of the EDC's individual distribution line inspection plan.

PPL Electric included a previously approved exemption from inspecting 3-phase reclosers on a cycle of 8 years or less. PPL Electric notes that it is engaging in the replacement of oil circuit reclosers (OCRs) with vacuum circuit reclosers (VCRs) on a condition-based proactive cycle. Previously, the Company planned to replace all OCRs with VCRs by 2024. However, PPL Electric proposes to change the planned end date of the replacements to account for the age and condition of the OCRs, so that available funds are used in the most optimal fashion for the continued reliable delivery of electric service. PPL Electric notes that when it began the process of replacing OCRs, there were approximately 5,000 multiphase OCRs on system. PPL Electric notes that in late 2022, there are 335 remaining, with an average age of 10 years and an expected lifespan of 30 years. PPL Electric believes that it would be imprudent to replace these remaining OCRs with VCRs before the condition of such OCRs warrants such replacement. PPL Electric notes that improved communication capabilities of the VCRs allow PPL Electric to assess the material condition of the recloser and will allow PPL Electric to perform condition-based-maintenance on these devices rather than an arbitrary maintenance inspection cycle. PPL Electric also notes that 3-phase reclosers are included in the 2-year infrared line inspection program.

Therefore, PPL Electric is granted exemption from performing 3-phase recloser inspections on an 8-year inspection cycle or less because the new recloser technology appears to allow continual monitoring of the operational functionality of reclosers. The Plan is consistent with the previously approved Plan and generally complies with Section 57.198(n)(7).

Substation Inspections

52 Pa. Code § 57.198(n)(8) Substation inspections. Substation equipment, structures and hardware shall be inspected on a cycle of 5 weeks or less.

PPL Electric included a previously contingently approved exemption to reduce the inspection frequency from every 5 weeks or less to quarterly. PPL Electric averred the basis for this change request is that it has upgraded all substations with equipment that will continually monitor critical equipment parameters more cost effectively than manual monthly reading. PPL Electric believes manual quarterly readings would be sufficient to ensure substation reliability

performance.

Therefore, PPL Electric is granted exemption from performing substation inspections on a cycle of 5 weeks or less. However, PPL Electric shall continue to perform quarterly in-person substation inspections. The Plan is consistent with the previously approved Plan and complies with Section 57.198(n)(8).

Conclusion

Upon review of PPL Electric's Biennial Inspection, Maintenance, Repair and Replacement Plan filed on October 3, 2022, it appears the filing generally complies to the requirements of 52 Pa. Code § 57.198 and is accepted. Furthermore, as discussed *supra*, the exemptions requested by PPL Electric are approved. This approval is contingent upon the possibility that subsequent audits, reviews, and inquiries, in any Commission proceeding, may be conducted pursuant to 52 Pa. Code § 57.197(a).

This plan must remain in effect for 2 calendar years, beginning January 1, 2024. PPL Electric may, however, request Commission approval of subsequent revisions to its approved Plan, in accordance with 52 Pa. Code § 57.198(l). Revisions must be submitted to the Commission as an addendum to PPL Electric quarterly reliability report filed pursuant to § 57.195, including prospective and past revisions to its Plan and a justification for the revisions.

If you are dissatisfied with the resolution of this matter, you may, as set forth in 52 Pa. Code § 5.44, file a petition with the Commission within twenty (20) days after the date of this letter. Please direct any questions regarding this filing to Harry R. Bidelspach, Electrical Reliability Engineer, Bureau of Technical Utility Services at (717) 425-7401, or hbidelspac@pa.gov.

Sincerely,



Rosemary Chiavetta
Secretary

cc: Kriss Brown, LAW
Dan Searfoorce, TUS
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