

August 29, 2024

VIA ELECTRONIC FILING

Ms. Debbie-Anne A. Reese
Acting Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Re: **NERC Full Notice of Penalty regarding PPL Electric Utilities,
FERC Docket No. NP24_-000**

Dear Ms. Reese:

The North American Electric Reliability Corporation (NERC) hereby provides this Notice of Penalty¹ regarding PPL Electric Utilities (PPLEU), and referred to herein as the Entity, NERC Registry ID# NCR00884,² in accordance with the Federal Energy Regulatory Commission's (Commission or FERC) rules, regulations, and orders, as well as NERC's Rules of Procedure including Appendix 4C (NERC Compliance Monitoring and Enforcement Program (CMEP)).³

NERC is filing this Notice of Penalty, with information and details regarding the nature and resolution of the violation,⁴ with the Commission because ReliabilityFirst Corporation (ReliabilityFirst) and the Entity have entered into a Settlement Agreement to resolve all outstanding issues arising from ReliabilityFirst's determination and findings of the violation of the O&P Reliability Standards listed below.

According to the Settlement Agreement, the Entity admits the violation, and has agreed to the assessed penalty of four hundred thousand dollars (\$400,000), in addition to other remedies and actions to

¹ *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards, Order No. 672, 114 FERC ¶ 61,104, order on reh'g, Order No. 672-A, 114 FERC ¶ 61,328 (2006); Notice of New Docket Prefix "NP" for Notices of Penalty Filed by the N. Am. Elec. Reliability Corp., Docket No. RM05-30-000 (February 7, 2008); Mandatory Reliability Standards for the Bulk-Power System, Order No. 693, 118 FERC ¶ 61,218, order on reh'g, Order No. 693-A, 120 FERC ¶ 61,053 (2007).*

² The Entity was included on the NERC Compliance Registry as a Distribution Provider (DP) and Transmission Owner (TO) on May 30, 2007.

³ See 18 C.F.R. § 39.7(c)(2) and 18 C.F.R. § 39.7(d).

⁴ For purposes of this document, each violation at issue is described as a "violation," regardless of its procedural posture and whether it was a possible, alleged, or confirmed violation.

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mitigate the instant violation and facilitate future compliance under the terms and conditions of the Settlement Agreement.

Statement of Findings Underlying the Violation

This Notice of Penalty incorporates the findings and justifications set forth in the Settlement Agreement, by and between ReliabilityFirst and the Entity. The details of the findings and basis for the penalty are set forth in the Settlement Agreement and herein.

In accordance with Section 39.7 of the Commission’s regulations, 18 C.F.R. § 39.7 (2024), NERC provides the following summary table identifying each violation of a Reliability Standard resolved by the Settlement Agreement. Further information on the subject violation is set forth in the Settlement Agreement and herein.

Violation(s) Determined and Discovery Method								
<small>*SR = Self-Report / SC = Self-Certification / CA = Compliance Audit / SPC = Spot Check / CI = Compliance Investigation</small>								
NERC Violation ID	Standard	Req.	VRF/VSL	Applicable Function(s)	Discovery Method* & Date	Violation Start-End Date	Risk	Penalty Amount
2023-01177	FAC-003-4	R2	High/ Severe	TO	SR; 9/28/23	8/2/23 to 8/3/23	Serious	\$400k

Information About the Entity

PPL Corporation (PPL) is an energy company based in Allentown, Pennsylvania. Through its subsidiaries, PPL engages in the following: delivering electricity to more than 1.5 million electric customers in Pennsylvania, nearly 800,000 gas and electric customers in Rhode Island, and over 1.3 million gas and electric customers in Kentucky and Virginia and generating 7,500 MW of electricity in Kentucky. PPL Electric Utilities Corporation (PPLEU), a subsidiary of PPL, maintains approximately 2,000 miles of 100 kV and above transmission lines (including approximately 456 miles of 500 kV) in central and eastern Pennsylvania. PPLEU has 66 transmission substations and switchyards. PPLEU has numerous interconnection points with various utilities.

Executive Summary

The Settlement Agreement resolves one self-reported violation involving a failure to manage vegetation located on transmission rights of way (ROW) and minimize encroachments from vegetation located adjacent to the ROW to prevent the risk of those vegetation-related outages that could lead to Cascading.

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FAC-003-4 R2 (2023-01177)

ReliabilityFirst determined that the Entity failed to manage vegetation to prevent encroachments into the Minimum Vegetation Clearance Distance (MVCD) of its applicable line and the encroachment caused a vegetation-related Sustained Outage that lasted approximate 10 hours. Specifically, a tree grew into the MVCD of a conductor loop on a 500 kV line, and it was not identified and remediated. The tree subsequently contacted the line, and the line tripped out accordingly. The Entity took immediate action and notified the Regional Transmission Organization (RTO), PJM. ReliabilityFirst determined that the event did not trigger any abnormal actions in part due to PPL and PJM planning for, coordinating, and operating to N-1 reliability. The entity has completed an extent of condition review on all of its 500 kV and 230 kV lines by aerial visual inspections, noting that no additional MVCD encroachments were identified. Attachment A includes additional facts regarding the violation.

The cause of this violation centers on the Entity's inability to capture a specific transmission line configuration into its Transmission Vegetation Management Program (TVMP) because the Entity was not sufficiently modeling conductor loops located at transmission poles.

ReliabilityFirst determined that this violation posed a serious or substantial risk to the reliability of the bulk power system (BPS). Attachment A includes the facts regarding the violation that ReliabilityFirst considered in its risk assessment.

The Entity submitted its mitigation activities to address the referenced violation. Attachment A includes a description of the mitigation activities the Entity took to address this violation.

The Entity certified that it had completed all mitigation activities. ReliabilityFirst verified that the Entity had completed all mitigation activities. Attachment 2 provides specific information on ReliabilityFirst's verification of the Entity's completion of the activities.

Regional Entity's Basis for Penalty

According to the Settlement Agreement, ReliabilityFirst has assessed a penalty of four hundred thousand dollars (\$400,000) for the referenced violations. In reaching this determination, ReliabilityFirst considered the following factors, as discussed in more detail in Attachment A:

1. The violation of 2023-01177 posed a serious and substantial risk to the reliability of the BPS;

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2. The Entity self-reported the violation, which ReliabilityFirst considered a mitigating factor;⁵
3. The Entity was cooperative throughout the compliance enforcement process, which ReliabilityFirst considered a mitigating factor;
4. The Entity agreed to settle and admitted the violation, which ReliabilityFirst considered a mitigating factor; and
5. There were no other mitigating or aggravating factors or extenuating circumstances that would affect the assessed penalty/disposition method.

After consideration of the above factors, ReliabilityFirst determined that, in this instance, the penalty amount of four hundred thousand dollars (\$400,000) is appropriate and bears a reasonable relation to the seriousness and duration of the violation.

Statement Describing the Assessed Penalty, Sanction, or Enforcement Action Imposed⁶

Basis for Determination

Taking into consideration the Commission's direction in Order No. 693, the NERC Sanction Guidelines and the Commission's July 3, 2008, October 26, 2009 and August 27, 2010 Guidance Orders,⁷ NERC Enforcement staff reviewed the applicable requirements of the violation at issue, and considered the factors listed above.

For the foregoing reasons, NERC Enforcement staff approved the resolution between ReliabilityFirst and the Entity and believes that the assessed penalty of four hundred thousand dollars (\$400,000) is appropriate for the violation and circumstances at issue, and is consistent with NERC's goal to promote and ensure reliability of the BPS.

Pursuant to 18 C.F.R. § 39.7(e), the penalty will be effective upon expiration of the 30-day period following the filing of this Notice of Penalty with FERC, or, if FERC decides to review the penalty, upon final determination by FERC.

⁵ ReliabilityFirst and NERC concluded that PPL did not have a separate obligation to report the Sustained Outage under EOP-004-4 Attachment 1. Further, PPL self-reported the noncompliance to ReliabilityFirst in advance of the quarterly FAC-003 periodic data submittal involving Sustained Outages of applicable lines caused by vegetation.

⁶ See 18 C.F.R. § 39.7(d)(4).

⁷ N. Am. Elec. Reliability Corp., "Guidance Order on Reliability Notices of Penalty," 124 FERC ¶ 61,015 (2008); N. Am. Elec. Reliability Corp., "Further Guidance Order on Reliability Notices of Penalty," 129 FERC ¶ 61,069 (2009); N. Am. Elec. Reliability Corp., "Notice of No Further Review and Guidance Order," 132 FERC ¶ 61,182 (2010).

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Attachments to be Included as Part of this Notice of Penalty

The attachments to be included as part of this Notice of Penalty are the following documents:

1. Settlement Agreement by and between ReliabilityFirst and the Entity executed July 9, 2024, included as Attachment A;
 - a. ReliabilityFirst's Verification of mitigating activities dated July 29, 2024, included as Attachment 1 to the Settlement Agreement.
2. The Entity's Self-Report dated September 28, 2023, included as Attachment B.

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Notices and Communications: Notices and communications with respect to this filing may be addressed to the following:

<p>*Persons to be included on the Commission’s service list are indicated with an asterisk. NERC requests waiver of the Commission’s rules and regulations to permit the inclusion of more than two people on the service list.</p>	<p>Teresina Stasko* Assistant General Counsel and Director of Enforcement North American Electric Reliability Corporation 1401 H Street NW, Suite 410 Washington, DC 20005 (202) 400-3000 (202) 644-8099 – facsimile teresina.stasko@nerc.net</p>
<p>Michelle McCartney Longo* PPL Electric Utilities Corporation Two North Ninth Street Allentown, PA 18101 (610) 774-5165 mmlongo@pplweb.com</p>	<p>James McGrane* Senior Counsel North American Electric Reliability Corporation 1401 H Street NW, Suite 410 Washington, DC 20005 (202) 400-3000 (202) 644-8099 – facsimile james.mcgrane@nerc.net</p>
<p>Robert Rinish* PPL Electric Utilities Corporation Two North Ninth Street Allentown, PA 18101 (610) 774-5016 rjrinish@pplweb.com</p>	<p>Amy Engstrom* Associate Counsel North American Electric Reliability Corporation 1401 H Street NW, Suite 410 Washington, DC 20005 (202) 400-3000 (202) 644-8099 – facsimile amy.engstrom@nerc.net</p>
<p>Brian Wynn* PPL Electric Utilities Corporation Two North Ninth Street Allentown, PA 18101 (484) 637-3271 bwynn@pplweb.com</p>	
<p>Niki Schaefer* Vice President & General Counsel ReliabilityFirst Corporation 3 Summit Park Drive, Suite 600 Cleveland, OH 44131 (216) 503-0611 niki.schaefer@rfirst.org</p>	

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Conclusion

NERC respectfully requests that the Commission accept this Notice of Penalty as compliant with its rules, regulations, and orders.

Respectfully submitted,

/s/ Amy Engstrom

James McGrane
Senior Counsel
Amy Engstrom
Associate Counsel
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cc: PPL Electric Utilities
ReliabilityFirst Corporation

Attachments

ATTACHMENT A
Settlement Agreement by and between
RF and the Entity
dated July 9, 2024



RELIABILITY FIRST

<i>In re:</i> PPL ELECTRIC UTILITIES CORPORATION)	Unique ID No.:
)	
NERC Registry ID No. NCR00884)	2023-01177 (FAC-003-4 R2)
)	

**SETTLEMENT AGREEMENT
BETWEEN
RELIABILITYFIRST CORPORATION
AND
PPL ELECTRIC UTILITIES CORPORATION**

I. EXECUTIVE SUMMARY

1. ReliabilityFirst Corporation (“ReliabilityFirst”) and PPL Electric Utilities Corporation (“PPLEU”) (collectively, the “Parties”) enter into this Settlement Agreement (“Agreement”) to resolve a violation by PPLEU of FAC-003-4 R2.
2. The Parties stipulate to the facts in this Agreement for the sole purpose of resolving the violations. PPLEU admits that these facts constitute a violation of FAC-003-4 R2.
3. On September 28, 2023, PPLEU submitted a Self-Report for a potential violation of FAC-003-4 R2. On August 2, 2023, the entity experienced a Sustained Outage of approximately 10 hours caused by vegetation breaching the Minimum Vegetation Clearance Distance (MVCD) for the Susquehanna-Wescosville 500 kV line during normal conditions. The violation occurred because the entity was not sufficiently modeling conductor loops located at transmission poles. Therefore, when a cherry tree grew into the MVCD of a conductor loop on the Susquehanna-Wescosville 500 kV line, it was not identified and remediated. The tree subsequently contacted the line, and the line tripped out accordingly.
4. The single violation disposed of in this Agreement (i.e., a vegetation contact) occurred nearly 20 years following the 2003 Northeast Blackout, which resulted from, among other things, inadequate management of tree growth in transmission

right of ways. FAC-003 was part of the response to the failures in 2003, and was one of the earliest mandatory Standards implemented, dating back to 2007. FAC-003 compliance is a fundamental expectation of industry. This Agreement disposes of a failure to meet that fundamental expectation.

5. Considering the foregoing and below, ReliabilityFirst has determined that the risk posed by the violation is serious and substantial and has levied a \$400,000 monetary penalty.

II. OVERVIEW OF PPLEU

6. PPL Corporation (“PPL”) is an energy company based in Allentown, Pennsylvania. Through its subsidiaries, PPL engages in the following: delivering electricity to more than 1.5 million electric customers in Pennsylvania, nearly 800,000 gas and electric customers in Rhode Island, and over 1.3 million gas and electric customers in Kentucky and Virginia, and generating 7,500 MW of electricity in Kentucky.
7. PPLEU, a subsidiary of PPL, maintains approximately 2,000 miles of 100 kV and above transmission lines (including approximately 456 miles of 500 kV) in central and eastern Pennsylvania. PPLEU has 66 transmission substations and switchyards. PPLEU has numerous interconnection points with various utilities.
8. PPLEU is registered on the NERC Compliance Registry as a Distribution Provider (“DP”) and Transmission Owner (“TO”) in the ReliabilityFirst region. PPLEU, in its capacity as a TO, is subject to compliance with FAC-003-4 R2.

III. VIOLATIONS

A. FAC-003-4 R2 (2023-01177)

9. FAC-003 ensures a Responsible Entity prevents outages from vegetation located on transmission rights-of-way (“ROW”), minimizes outages from vegetation located adjacent to ROW, maintains clearances between transmission lines and vegetation on and along transmission ROW, and reports vegetation related outages of the transmission systems.
10. A violation of FAC-003 R2 has the potential to affect the reliable operation of the Bulk Power System by increasing the likelihood that Registered Entities will not maintain safe clearances between transmission lines and vegetation, thereby leading to outages.
11. FAC-003-4 R2 states:
R2. Each applicable Transmission Owner and applicable Generator Owner shall manage vegetation to prevent encroachments into the MVCD of its applicable line(s) which are not either an element of an IROL, or an element

of a Major WECC Transfer Path; operating within its Rating and all Rated Electrical Operating Conditions of the types shown below:

- 2.4.** An encroachment due to vegetation growth into the line MVCD that caused a vegetation-related Sustained Outage.

Description of Violation and Risk Assessment

12. On September 28, 2023, the entity submitted a Self-Report to ReliabilityFirst stating that, as a TO, it was in violation of FAC-003-4 R2.4.
13. On August 2, 2023, at 2:11 p.m., the entity experienced a Sustained Outage caused by vegetation exceeding the MVCD for the Susquehanna-Wescosville 500 kV line during normal conditions. The Susquehanna-Wescosville 500 kV line was re-energized on August 3, 2023, at 12:28 a.m., a cumulative outage duration of 617 minutes (approximately 10 hours). At the time of the event, the flow on the line as a percentage of its normal rating was 41%. The entity completed a preliminary helicopter patrol and reported that a tree may have grown into a conductor loop approximately 25.5 miles from Wescosville substation. The entity subsequently identified vegetation, a healthy 28'11" Cherry tree, within 43" beneath a conductor loop. As the Susquehanna-Wescosville 500 kV line tripped to lockout because of this vegetation encroachment, the entity immediately started corrective actions. Entity transmission operations notified PJM of the event on August 2, 2023, at 2:14 p.m., and the Susquehanna Steam Electric Station at 2:15 p.m.
14. As of August 31, 2023, the entity completed an extent of condition review on all 500 kV and 230 kV lines by aerial visual inspections noting no MVCD encroachments were identified.
15. The entity executed multiple reviews of this impacted line segment via its vegetation management program prior to the encroachment and contact without identifying an issue. In both 2022 and 2023, the entity completed LiDAR¹ survey flights of the location and did not identify any vegetation to mitigate.
16. The root cause of this violation centers on the entity's inability to capture a specific transmission line configuration into its Transmission Vegetation Management Program (TVMP). Specifically, the entity was not sufficiently modeling conductor loops located at transmission poles. The entity utilizes LiDAR data and foot patrols to identify potential vegetation growth risks. However, the loops were not captured in the entity's 3D model utilized by the vegetation management team, thus the entity had blind spots for vegetation growth where the conductor loops were located.

¹ LiDAR is Light Detection and Ranging, a remote sensing method used to create precise 3D mapping.

17. The violation began on August 2, 2023, the date the entity experienced a transmission loss when the line to tripped to lockout. The violation ended on August 3, 2023, when the entity removed the vegetation that caused the outage and restored the impacted line.
18. This violation posed a serious risk to the reliability of the bulk power system based on the following factors.² The risk posed by a line tripping out of service due to a vegetation growth is the potential for overloading nearby transmission lines, which could result in loss of load and potentially a cascading outage. The risk is serious because the line impacted was a 500 kV line with consistent load, and the duration of approximately 10 hours elevated the probability that should another contingency arise in the period, harm would occur to the Bulk Power System. The operating characteristics of the impacted line and surrounding system are neutral factors in assessing whether the violation would result in instability, uncontrolled separation, or cascading system failures. This is because the Susquehanna-Wescosville 500 kV line is one of three 500 kV outlets from the busses connected to Susquehanna Plant Unit #2 (1247 MW/1350 MVA). Unit #2 is one of two units at a nuclear facility with a cumulative 2494 MW of nameplate generation capacity and average net capacity factors above 90%. Unit #1 is connected at 230 kV, and Unit #2 is connected at 500 kV. The size and operative reliance the Eastern Interconnection places on the Susquehanna Plant elevates the inherent grid risk associated with a connected line tripping due to a vegetation triggered outage.³ However, the additional two outlets are partially in place to reduce that risk. For example, with the loss of the Susquehanna-Wescosville 500 kV line; loading on the Susquehanna to Shickshinny 500 kV line increases by 2-3 times. But the Susquehanna to Shickshinny 500 kV line is often lightly loaded and frequently can handle additional flow. ReliabilityFirst notes this event did not trigger any abnormal actions in part due to PPL and PJM planning for, coordinating, and operating to N-1 reliability.

Mitigating Actions

19. On September 28, 2023, the entity submitted Mitigating Activities to ReliabilityFirst to address the noncompliance with FAC-003-4 R2. For its mitigation, the entity committed to take the following actions by January 31, 2024: First, the entity removed vegetation that caused the outage, and restored the impacted line. Second, the entity had the wire zone patrolled to verify there were no encroachment conditions on the impacted line. Third, the entity completed a gap analysis on the vegetation management program to identify areas of improvement. Fourth, the entity performed lessons learned with its various operating companies. Fifth, the entity patrolled FAC-003 applicable lines of the

² FAC-003-4 R2 has a VRF of “High” pursuant to the VRF Matrix. According to the VSL Matrix, this issue warranted a “Severe” VSL.

³ The entity implemented Dynamic Line Rating (DLR) technology on the associated Susquehanna to Harwood 230 kV line due to the congestion risks associated with the line.

bulk electric system which included all 500 kV and 230 kV lines. Sixth, the entity updated its models to help ensure LiDAR patrols result in effective data. Seventh, the entity performed a FAC-003 and TVMP awareness session with various teams and contractors within the vegetation management team. Eighth, the entity engaged the North American Transmission Forum for compliance review, lessons learned, and benchmarking. Ninth, the entity updated its TVMP with improvement actions identified from the lessons learned session, NATF review and gap analysis review. Tenth, the entity completed an extent of condition plan to identify and mitigate any additional issues identified. Eleventh, the entity completed flying LiDAR in 2023 and compare results to 2022's LiDAR in order to test the effectiveness of modelling the conductor loops.

20. On January 22, 2024, the entity certified to ReliabilityFirst that it completed these Mitigating Activities as of January 5, 2024. ReliabilityFirst will verify the entity's completion of these Mitigating Activities.

IV. ADJUSTMENT FACTORS

21. In addition to the facts and circumstances stated above, ReliabilityFirst considered the following factors in its penalty determination.
22. Effective oversight of the reliability of the BES depends on robust and timely self-reporting by Registered Entities. PPLEU promptly identified and reported the violation at issue in this Agreement. As a result, ReliabilityFirst seeks to encourage this type of self-reporting, characterized by timely detection and correction unconnected to a pending regional compliance monitoring action, by reducing the monetary penalty assessed for this violation.
23. PPLEU has been highly cooperative throughout the entire enforcement process. Throughout the enforcement process, PPLEU has voluntarily provided ReliabilityFirst with an abundance of information regarding the violations in a manner that was detailed, thorough, organized, and prompt. This includes completing an extensive and detailed extent of condition review just 29 days after the violation occurred. The review included aerial visual inspections of all PPLEU 500 kV and 230 kV lines, where no encroachments were identified. ReliabilityFirst is awarding cooperation credit to encourage this sort of behavior by PPLEU and other Registered Entities in the future.
24. When assessing the penalty for the violations at issue in this Agreement, ReliabilityFirst considered whether the facts of these violations constitute repetitive infractions. ReliabilityFirst considered the entity's compliance history and determined there were no relevant instances of noncompliance.

V. PENALTY

25. Based upon the foregoing, PPLEU shall pay a monetary penalty of \$400,000 to ReliabilityFirst.

26. ReliabilityFirst shall present an invoice to PPLEU within 20 days after the Agreement is approved by the Commission or affirmed by operation of law. Upon receipt, PPLEU shall have 30 days to remit payment. PPLEU shall remit payment to ReliabilityFirst by wire transfer or Automated Clearing House. ReliabilityFirst will notify NERC if it does not timely receive the payment from PPLEU.
27. If PPLEU fails to timely remit the monetary penalty payment to ReliabilityFirst, interest will commence to accrue on the outstanding balance, pursuant to 18 C.F.R. § 35.19a (a)(2)(iii), on the 31st day after the date on the invoice issued by ReliabilityFirst to PPLEU for the monetary penalty payment.

VI. ADDITIONAL TERMS

28. The Parties agree that this Agreement is in the best interest of BES reliability. The terms and conditions of the Agreement are consistent with the regulations and orders of the Commission and the NERC Rules of Procedure.
29. ReliabilityFirst shall report the terms of all settlements of compliance matters to NERC. NERC will review the Agreement for the purpose of evaluating its consistency with other settlements entered into for similar violations or under similar circumstances. Based on this review, NERC will either approve or reject this Agreement. If NERC rejects the Agreement, NERC will provide specific written reasons for such rejection and ReliabilityFirst will attempt to negotiate with PPLEU a revised settlement agreement that addresses NERC's concerns. If a settlement cannot be reached, the enforcement process will continue to conclusion. If NERC approves the Agreement, NERC will (a) report the approved settlement to the Commission for review and approval by order or operation of law and (b) publicly post the violations and the terms provided for in this Agreement.
30. This Agreement binds the Parties upon execution and may only be altered or amended by written agreement executed by the Parties. PPLEU expressly waives its right to any hearing or appeal concerning any matter set forth herein, unless and only to the extent that PPLEU contends that any NERC or Commission action constitutes a material modification to this Agreement.
31. ReliabilityFirst reserves all rights to initiate enforcement action against PPLEU in accordance with the NERC Rules of Procedure in the event that PPLEU fails to comply with any of the terms or conditions of this Agreement. PPLEU retains all rights to defend against such action in accordance with the NERC Rules of Procedure.

32. PPLEU consents to ReliabilityFirst's future use of this Agreement for the purpose of assessing the factors within the NERC Sanction Guidelines and applicable Commission orders and policy statements, including, but not limited to, the factor evaluating PPLEU's history of violations. Such use may be in any enforcement action or compliance proceeding undertaken by NERC or any Regional Entity or both, provided however that PPLEU does not consent to the use of the conclusions, determinations, and findings set forth in this Agreement as the sole basis for any other action or proceeding brought by NERC or any Regional Entity or both, nor does PPLEU consent to the use of this Agreement by any other party in any other action or proceeding.
33. PPLEU affirms that all of the matters set forth in this Agreement are true and correct to the best of its knowledge, information, and belief, and that it understands that ReliabilityFirst enters into this Agreement in express reliance on the representations contained herein, as well as any other representations or information provided by PPLEU to ReliabilityFirst during any PPLEU interaction with ReliabilityFirst relating to the subject matter of this Agreement.
34. Upon execution of this Agreement, the Parties stipulate that the alleged violations resolved through this Agreement will be considered violations. The parties further stipulate that all required, applicable information listed in Section 5.3 of the CMEP is included within this Agreement.
35. Each of the undersigned agreeing to and accepting this Agreement warrants that he or she is an authorized representative of the party designated below, is authorized to bind such party, and accepts the Agreement on the party's behalf.
36. The undersigned agreeing to and accepting this Agreement warrant that they enter into this Agreement voluntarily and that, other than the recitations set forth herein, no tender, offer, or promise of any kind by any member, employee, officer, director, agent, or representative of the Parties has been made to induce the signatories or any other party to enter into this Agreement.
37. The Agreement may be signed in counterparts.
38. This Agreement is executed in duplicate, each of which so executed shall be deemed to be an original.

[SIGNATURE PAGE TO FOLLOW]⁴

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

⁴ An electronic version of this executed document shall have the same force and effect as the original.

ENDORSED BY:

/s/ Niki Schaefer
Niki Schaefer
Vice President & General Counsel
ReliabilityFirst Corporation

June 25, 2024
Date

AGREED TO AND ACCEPTED BY:

PPL Electric Utilities Corporation


David Quier (Jul 9, 2024 14:23 EDT)
David Quier
Vice President and Chief Operating Officer
PPL Electric Utilities Corporation

07/09/2024
Date

ReliabilityFirst Corporation

/s/ Timothy R. Gallagher
Timothy R. Gallagher
President & Chief Executive Officer
ReliabilityFirst Corporation

June 25, 2024
Date



Mitigating Activities Verification for 2023-01177

PPL Electric Utilities Corporation

NERC Registry ID: NCR00884

Standard/Requirement: FAC-003-4 R2.

Date of Completion of Mitigation: January 5, 2024

Description of Issue: [CF2023-01177](#)

Evidence Reviewed		
File Name	Location	Description
File 1	SEL: RF NCR00884 VI2023-01177	PPL 2023-01177 Mitigation Status 20231005 Final.pdf
File 2	SEL: RF NCR00884 VI2023-01177	PPL 2023-01177 Mitigation Status 20231214 Final.pdf
File 3	SEL: RF NCR00884 VI2023-01177	PPL 2023-01177 Mitigation Status 20240111 Final.pdf
File 4	SEL: RF NCR00884 VI2023-01177	PPL 2023-01177 Mitigation Status 20231214 Final.pdf
File 5	SEL: RF NCR00884 VI2023-01177	2023-01177 FAC 003 4 Overview PPLEU 20230803 Final.pdf
File 6	SEL: RF NCR00884 VI2023-01177	2023-01177 FAC 003 4 Data Submittal PPLEU 20230803 Final.xlsx

Note to reader:

Each of the files attached are bookmarked evidence files. There are multiple copies of the same file. If they have the same name, they are essentially the same. The file ending in “20231005” has a large initial mitigation submittal file. The other two, ending in “20231214” and “20240111” are updates in 2023 and 2024. As you read through the mitigation verification notes below, it is important to note the referenced file name (e.g. ending in 20231005 vs 20240111). While navigating within the files, the bookmark on the left is key, and is cross referenced to each mitigating activity. Note the overview is near the front of the large PDF files, while the supporting evidence is further back in the PDF file. Clicking on the underlying evidence bookmark should go the supporting evidence pages.

Verification of Mitigating Activity Completion

Mitigating Activity 1 (MS23-20546): The entity restored the impacted line.

Completion Date: 8/3/2023

PPL 2023-01177 Mitigation Status 20231005 Final.pdf

PDF pages 15 and 16 contain an email summary of the event, explaining the issue was corrected (by removing the vegetation) and the line was restored back to service.

Mitigating Activity #1: Completion verified.

Mitigating Activity 2 (MS23-20547): The entity patrolled the wire zone.

Completion Date: 8/3/2023

PPL 2023-01177 Mitigation Status 20231005 Final.pdf

PDF pages 15 and 16 contain an email summary of the event, explaining the issue was corrected (by removing the vegetation) and the line was restored back to service. PDF page 16 documents the patrol.

Mitigating Activity #2: Completion verified.

Mitigating Activity 3 (MS23-20548): The entity performed TVMP Gap Analysis.

Completion Date: 8/14/2023

PPL 2023-01177 Mitigation Status 20231005 Final.pdf

PDF pages 28 through 59 include the calendar invitations, the outcome of risk brainstorming, and the completed event analysis.

Mitigating Activity #3: Completion verified.

Mitigating Activity 4 (MS23-20549): The entity conducted lessons learned with PPL operating companies.

Completion Date: 8/23/2023

PPL 2023-01177 Mitigation Status 20231005 Final.pdf

PDF page 61 is the calendar invitation for the lessons learned.

Mitigating Activity #4: Completion verified.

Mitigating Activity 5 (MS23-20550): The entity patrolled its lines

Completion Date: 8/31/2023

PPL 2023-01177 Mitigation Status 20231005 Final.pdf

PDF pages 64 through 121 document the line patrols. PDF page 122 – 124 are the email documenting completion of patrols.

Mitigating Activity #5: Completion verified.

Mitigating Activity 6 (MS23-20551): The entity updated its PLS CADD models.

Completion Date: 11/9/2023

PPL 2023-01177 Mitigation Status 20231005 Final.pdf

PDF pages 126 through 142 is a “Statement of Work” (essentially a work scope) by the vendor, GeoDigital, to “incorporate jumpers to the existing PLS-CADD models and process Data”...for the PPL transmission system. (see PDF page 127).

Also, PDF page 16 “Software vendor GeoDigital (GDI) is performing work searches to allow for the identification of vegetation exceeding 15’ in height around structures to ensure no similar conditions exist.”

PPL 2023-01177 Mitigation Status 20231214 Final.pdf

PDF page 20 in this mitigation update shows “100% of 500-230kV models delivered.” (With 51% of 69kV complete.)

Mitigating Activity #6: Completion verified.

Mitigating Activity 7 (MS23-20552): The entity conducted awareness sessions with TVMP stakeholders.

Completion Date: 8/22/2023

PPL 2023-01177 Mitigation Status 20231005 Final.pdf

PDF pages 144 through 179 includes the FAC-003-4 Awareness Program for Contractors with training sign-in sheets. PDF page 181 is an email invitation for awareness training, including “good catch, near miss, or incident/safety topic”.

Mitigating Activity #7: Completion verified.

Mitigating Activity 8 (MS23-20553): The entity engaged NATF for compliance review.

Completion Date: 12/21/2023

PPL 2023-01177 Mitigation Status 20231005 Final.pdf

PDF pages 184 – 197 documents the compliance review with NATF.

Mitigating Activity #8: Completion verified.

Mitigating Activity 9 (MS23-20554): The entity updated the PPL EU TVMP.

Completion Date: 12/21/2023

PPL 2023-01177 Mitigation Status 20240111 Final.pdf

PDF pages 22 – 34 are the updated transmission vegetation management plan with revision history on PDF page 34.

Mitigating Activity #9: Completion verified.

Mitigating Activity 10 (MS23-20555): The entity completed an extent of condition and mitigated any additional issues identified.

Completion Date: 1/5/2024

PPL 2023-01177 Mitigation Status 20240111 Final.pdf

PDF page 13 summarizes the activities and completion of the extent of condition review. PDF pages 18 through 95 contain the supporting evidence and documentation.

Mitigating Activity #10: Completion verified.

Mitigating Activity 11 (MS23-20556): The entity tested effectiveness of loop modeling.

Completion Date: 11/13/2023

PPL 2023-01177 Mitigation Status 20231214 Final.pdf

PDF page 36 through 38 documents testing the effectiveness of loop modeling.

PPL 2023-01177 Mitigation Status 20240111 Final.pdf

PDF page 16 summarizes the mitigating activity.

Mitigating Activity #11: Completion verified.

The Mitigating Activities are hereby verified complete.

Date: July 29, 2024



Anthony Jablonski
Senior Manager, Risk Analysis & Mitigation
ReliabilityFirst Corporation

ATTACHMENT B
Self-Report for FAC-003-4 R2
dated September 28, 2023

Finding Record - Violation ID: 2023-01177

General information

Compliance Enforcement Authority:	RF
Registration:	NCR00884 - PPL Electric Utilities Corporation
Applicable Requirement:	FAC-003-4 R2.
Applicable Part(s):	FAC-003-4 R2.4.
Applicable Reliability Function(s):	TO
Region - Jurisdiction in which the Potential Noncompliance Occurred:	RF-US
Other Region - Jurisdiction(s) where you are reporting this Potential Noncompliance:	
Entity in Coordinated Oversight:	No
Associated Registrations Impacted:	
If Finding from Audit, related Audit Finding ID:	
Finding Created by CEA:	No

Discovery and Description

Monitoring Method:	Self-Report
When was the Potential Noncompliance discovered?:	August 2, 2023
When did the Potential Noncompliance start?:	August 2, 2023
Is the Potential Noncompliance still occurring?:	No
When did you return to compliance?:	August 3, 2023
What is the basis for selecting the start date?:	On 8/2/2023 at 1411 EDT, PPL EU experienced a FAC-003 Category 1B inside the ROW related transmission loss on the Susquehanna-Wescosville 5043 500 kV line during blue sky conditions which caused the line to trip to lockout.
How was the Potential Noncompliance Discovered?:	On 8/2/2023 at 1411 EDT, PPL EU experienced a FAC-003 Category 1B inside the ROW related transmission loss on the Susquehanna-Wescosville 5043 500 kV line during blue sky conditions which caused the line to trip to lockout alerting PPL EU's Transmission Control Center to the event.
Please describe the Potential Noncompliance in detail:	On 8/2/2023 at 1411 EDT, PPL EU experienced a FAC-003 Category 1B inside the ROW related transmission loss on the Susquehanna-Wescosville 5043 500 kV line during blue sky conditions. The Susquehanna-Wescosville 5043 500 kV line was re-energized on 8/3/2023 at 0028 EDT resulting in an outage duration of 617 minutes. At the time of the event, the flow on the line as a % of normal rating was 41%. PPL EU System Engineering completed a preliminary helicopter patrol and reported that a tree may have grown into a conductor loop at grid location 59659N26260 which is approximately 25.5 miles from Wescosville substation. PPL EU subsequently identified vegetation, a healthy 28'11" Cherry tree, within 43" beneath a conductor loop. As the Susquehanna-Wescosville 5043 500 kV line tripped to lockout because of this vegetation encroachment, PPL EU immediately started corrective actions. PPL EU Transmission Operations notified PJM of the event on 8/2/2023 at 1414 EDT. PPL EU Transmission Operations notified the Susquehanna Steam Electric Station (SSES) of the event on the Susquehanna-Wescosville 5043 500 kV line at 1415 EDT.

Extent of Condition and Root Cause

Has an Extent of Condition Review been performed?:	Yes
If yes, what was/is the Extent of Condition?:	As of 8/31/2023, the PPL EU Vegetation Management team with Transmission System Engineering conducted an extent of condition on all 500 kV and 230 kV lines by aerial visual inspections noting no MVCD encroachments were identified.
What cause(s) led to the Potential Noncompliance?:	<ol style="list-style-type: none"> 1. PPL EU's Transmission Vegetation Management Program (TVMP) lacked effectively designed controls to achieve the desired outcome, e.g., the vegetation (cherry tree) growing within the MVCD was not identified through LiDAR data or foot patrols conducted for planning work or field verification of work at the location. 2. The Vegetation Management team lacked awareness that the loops were not modeled which rendered their work searches and action thresholds ineffective. 3. The vegetation was growing under loops which are not modeled in Method 1 model in PLS CADD; the model utilized by Vegetation Management creating unrealized blind spots in the program for PPL EU's designated action thresholds.

Risk and Impact

<p>What do you think the Potential Impact to the BPS was/is from this Potential Noncompliance?:</p>	<p>Moderate</p>
<p>Why do you believe that to be the correct Potential Impact?:</p>	<p>It is determined that this issue posed Greater than Minimal Risk to the reliability of the Bulk Electric System based on the following factors:</p> <ol style="list-style-type: none"> 1. The vegetation was observed in MVCD and caused the line to trip to lockout. 2. The Vegetation Management team lacked awareness that the loops were not modeled which rendered their work searches and action thresholds ineffective.
<p>How likely is it that Impact could have occurred?:</p>	<p>Very likely as PPL EU experienced a FAC-003 Category 1B inside the ROW related transmission loss on the Susquehanna-Wescosville 5043 500 kV line during blue sky conditions which caused the line to trip to lockout.</p> <p>While the current controls did not prevent the issue at the time of the occurrence, PPL EU has successfully identified thousands of canopies requiring remediation prior to encroaching the MVCD over a 7-year period with LiDAR clearance searches and foot patrols. PPL EU conducted a successful peer review of PPL EU's Transmission Vegetation Management Program (TVMP) with the North American Transmission Forum (NATF) in 2021.</p> <p>Additionally, PPL leadership promotes a culture of questioning attitudes and a "See Something, Say Something" environment. PPL personnel are encouraged to raise potential issues in support of continuous improvement. Although controls are not perfect, the questioning attitude culture at PPL mitigates the risk of tasks such as this that are prone to Latent System Weaknesses and Human Performance Errors.</p>
<p>Was there any actual impact to the BPS?:</p>	<p>Yes</p>
<p>If yes, what was the Actual Impact to the BPS?</p>	<p>On 8/2/2023 at 1411 EDT, PPL EU experienced a FAC-003 Category 1B inside the ROW related transmission loss on the Susquehanna-Wescosville 5043 500 kV line during blue sky conditions which caused the line to trip to lockout.</p> <p>PPL EU Transmission Operations notified PJM of the event on 8/2/2023 at 1414 EDT. PPL EU Transmission Operations notified the Susquehanna Steam Electric Station (SSES) of the event on the Susquehanna-Wescosville 5043 500 kV line at 1415 EDT.</p> <p>Following the event, PPL EU Transmission Operations implemented switching actions in coordination with PJM as the TOP to mitigate further contingencies. PJM also instructed SSES to implement an action to maintain a minimum output of 300 MVAR for system stability. PPL EU applied a permit and placed grounds to remove and/or trim all vegetation in this location and the immediate surrounding area. During the outage duration there were no impacts to customer service as PPL EU does not source customers from 500 kV lines. This event did not trigger any abnormal actions due to PPL EU and PJM planning for and operating to N-1 reliability. The Susquehanna-Wescosville 5043 500 kV line has not tripped out since the re-energization. No additional vegetation was identified within the Minimum Vegetation Clearance Distance (MVCD) for the surrounding area via full helicopter patrol of the line. 8/2/2023 marks the start of the condition. The end of condition is 8/3/2023 when PPL EU removed the vegetation and restored the line to service.</p>

Additional Comments

<p>Please provide any additional comments</p>	<p>PPL EU submitted a detailed event overview and pictures to Bob Folt, 'Bob.Folt@rfirst.org', via email on 8/4/2023. Additionally, PPL submitted these documents to the SEL on 9/28/2023.</p>
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