



# PJM Western Sub-Regional RTEP Committee APS Supplemental Upgrades

March 25, 2019

# Needs

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process



## Problem Statement

- FirstEnergy has identified protection schemes using a certain vintage of relays and communication equipment that have a history of misoperation.
- Proper operation of the protection scheme requires all the separate components perform adequately during a fault.
- In many cases the protection equipment cannot be repaired due to a lack of replacement parts and available expertise in the outdated technology.
- Transmission line ratings are limited by terminal equipment.

APS-2019-	Transmission Line / Substation Locations	Existing Line Rating (SN / SE)	Existing Conductor Rating (SN / SE)	Limiting Terminal Equipment
003	Nettie – Grassy Falls 138 kV Line	293 / 306	308 / 376	Line Relaying, Wave Trap, Circuit Breaker, and Substation Conductor
004	Collins Ferry – Lake Lynn 138 kV Line	324 / 395	353 / 406	Substation Conductor, Disconnect Switch

**Need Number:** APS-2019-003  
**Process Stage:** Need Meeting  
**Date:** 03/28/2019

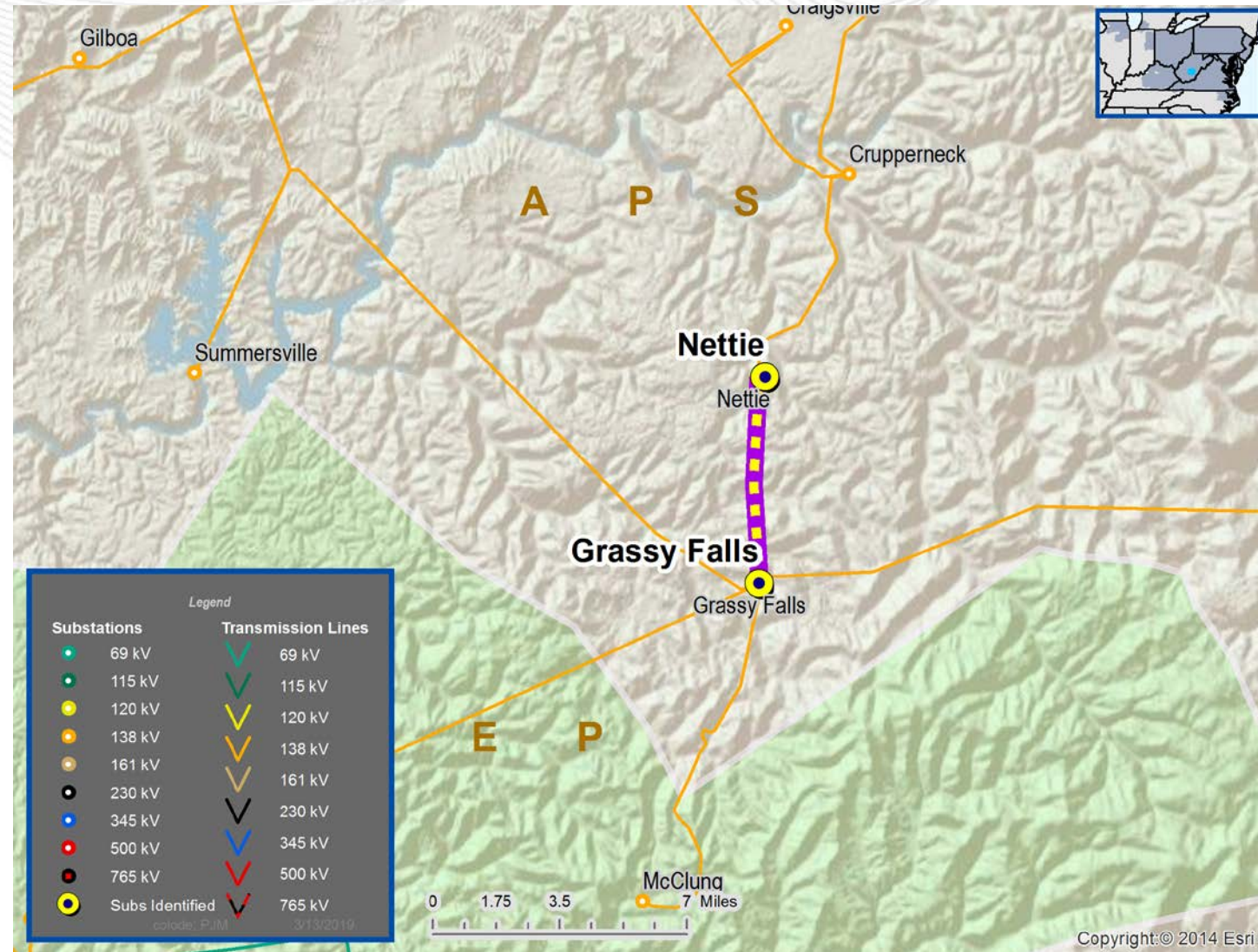
**Project Driver(s):**

*Equipment Material Condition, Performance and Risk  
 Operational Flexibility and Efficiency*

**Specific Assumption Reference(s)**

System Performance Projects Global Factors

- System reliability and performance
  - Substation/line equipment limits
- Upgrade Relay Schemes
- Relay schemes that have a history of misoperation
  - Obsolete and difficult to repair communication equipment (DTT, Blocking, etc.)
  - Communication technology upgrades
  - Bus protection schemes







# APS Transmission Zone

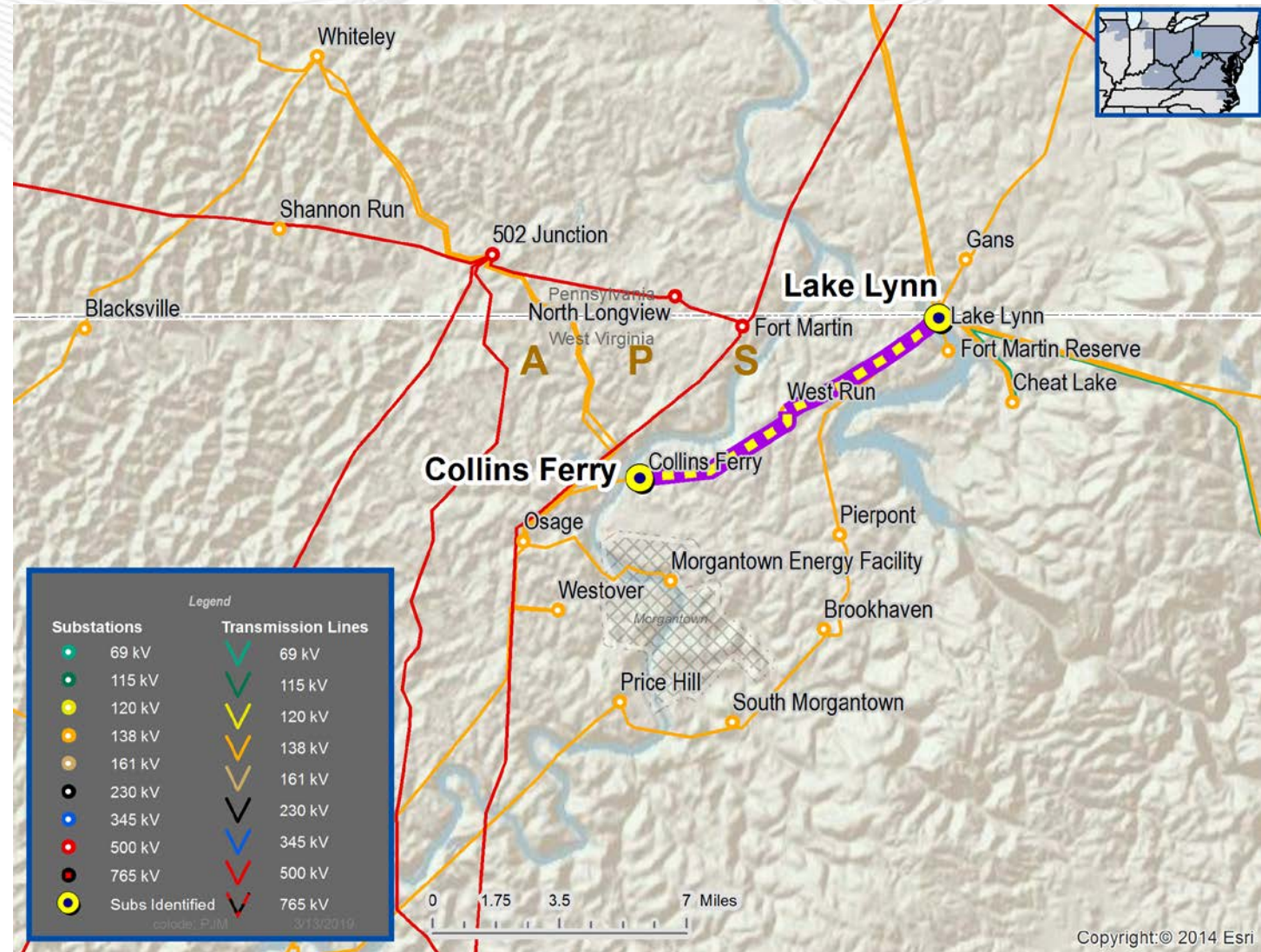
**Need Number:** APS-2019-004  
**Process Stage:** Need Meeting  
**Date:** 03/28/2019

**Project Driver(s):**  
*Equipment Material Condition, Performance and Risk  
 Operational Flexibility and Efficiency*

**Specific Assumption Reference(s)**

System Performance Projects Global Factors

- System reliability and performance
  - Substation/line equipment limits
- Upgrade Relay Schemes
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  - Obsolete and difficult to repair communication equipment (DTT, Blocking, etc.)
  - Communication technology upgrades
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# Appendix



# High level M-3 Meeting Schedule

## Assumptions

Activity	Timing
Posting of TO Assumptions Meeting information	20 days before Assumptions Meeting
Stakeholder comments	10 days after Assumptions Meeting

## Needs

Activity	Timing
TOs and Stakeholders Post Needs Meeting slides	10 days before Needs Meeting
Stakeholder comments	10 days after Needs Meeting

## Solutions

Activity	Timing
TOs and Stakeholders Post Solutions Meeting slides	10 days before Solutions Meeting
Stakeholder comments	10 days after Solutions Meeting

## Submission of Supplemental Projects & Local Plan

Activity	Timing
Do No Harm (DNH) analysis for selected solution	Prior to posting selected solution
Post selected solution(s)	Following completion of DNH analysis
Stakeholder comments	10 days prior to Local Plan Submission for integration into RTEP
Local Plan submitted to PJM for integration into RTEP	Following review and consideration of comments received after posting of selected solutions



# Revision History

3/15/2019 – V1 – Original version posted to [pjm.com](http://pjm.com)