



PPL Electric Utilities

# **PPL 2019 RTEP Planning Assumptions**

**PJM Sub-Regional RTEP Committee  
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# 2019 RTEP assumptions

## Topology and contingency

- PPL works closely with the PJM modeling group to update the 2024 RTEP case which includes 69 kV and above system topology
- All RTEP projects expected to be in-service by 2024 are modeled as in-service
- Contingencies are updated as per NERC TPL 001-4 standard



# 2019 RTEP assumptions

## Load and Generation Assumptions

- Loads will be scaled in the model as per the latest PJM Load Forecast Report
- PPL considers a 50/50 weather normalized peak summer, winter and light load for analysis consistent with PJM methodology
- PJM provides generation dispatch as per Capacity and/or Energy Injection Rights.



# Baseline Reliability Assessment Approach

- PJM performs baseline analysis to identify Thermal, Voltage, Stability and Short circuit issue as per the following criteria:
  - ✓ NERC Reliability Standards
  - ✓ PJM Transmission Planning Criteria as specified in Manual 14B
  - ✓ PPL EU Transmission Planning Criteria filed with PJM and FERC under FERC Form 715. The form 715 can be accessed at:  
<http://www.pjm.com/library/request-access/ferc-form-715.aspx>
- PPL performs analysis by applying FERC Form 715 criteria on non-BES System and verifies PJM analysis on the BES system
- PJM and PPL planning departments work closely to validate violations and required upgrades
- Reliability violations identified through above analysis are addressed by baseline projects



# Supplemental Project Drivers

- 1) Equipment Material Condition, Performance and Risk
- 2) Operational Flexibility and Efficiency
- 3) Infrastructure Resilience
- 4) Customer Service
- 5) Other



# Supplemental Project Drivers

## 1) Equipment Material Condition, Performance and Risk

### Examples of Project Drivers:

- Degraded Equipment Performance
- Operational Performance/Metrics
- Asset Condition/Health
- Maintainability/Serviceability
- Obsolescence
- Asset Modernization and standardization
- Equipment Failure
- Asset Analytics
- Employee and Public Safety
- Environmental Impact



# Supplemental Project Drivers

## 2) Operational Flexibility and Efficiency

### Examples of Project Drivers:

- Optimizing System Configuration
- Asset Criticality
- Asset Availability
- Equipment Duty Cycles
- Restoration Capability
- Minimize Outages
- Stranded Load Customers
- Enhancing system functionality





# Supplemental Project Drivers

## 3) Infrastructure Resilience

**Resilience** – *the system's ability to anticipate, absorb, adapt to, and/or rapidly recover from a potentially disruptive event.*

Examples of Project Drivers:

- Reduction in customer outage exposure by reducing circuit length
- Severe Weather Events
- Reducing Asset/System Criticality





# Supplemental Project Drivers

## 4) Customer Service

### Examples of Project Drivers:

- Service to New and Existing Customers
- Interconnect New Customer Load
- Distribution Load Growth
- Customer Outage Exposure
- Equipment Loading



# Supplemental Project Drivers

5) Other - Meet objectives not included in other definitions

Examples of Project Drivers:

- New Technology
- Telemetry/Data Availability
- Industry Recommendations



# Retirement of Existing Facilities

The purpose of transmission planning is to ensure that the capacity of the existing transmission system is maintained or expanded as needed to ensure the reliability, efficiency, safety, resilience and security of the transmission system for the benefit of customers. There are no national, regional or local standards or criteria driving the retirement and not replacement of existing facilities. Although in specific situations, facilities may be removed and not replaced as dictated by system and/or customer needs, and the design and construction of new or replacement transmission projects, decisions to not replace individual facilities may have the cumulative effect of negatively impacting the reliability, efficiency, safety, resilience and security of the transmission system. That cumulative negative impact could also drive the need for additional facilities to be constructed to compensate for those removed, including greenfield installations. Accordingly, existing facilities are maintained in service or retired based on Good Utility Practice.



Questions?



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