New Central 138 kV Load Addition

Central Technical Study Task Force (CTSTF)

April 7, 2025

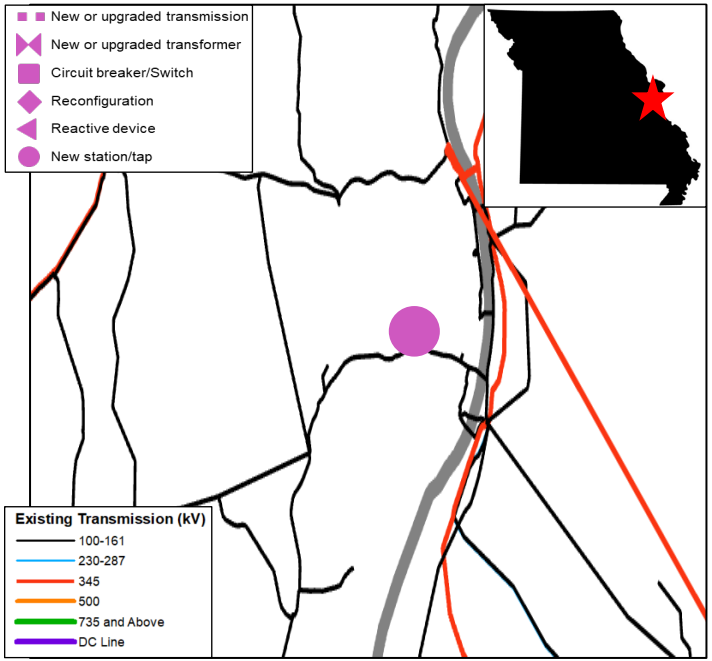
Purpose and Key Takeaways

Purpose: Review the results of AmerenMO's EPR for New Central 138 kV load addition (P50615)

Key Takeaways:

- New 130 MW load at Central 138 kV substation in St. Louis, Missouri.
- No reliability issues were identified nor any new TPL violations discovered from the implementation of the EPR
- MISO will report this EPR as a part of MTEP25 cycle

AMMO: New Central load addition



Project Description: #50615

New 130MW datacenter load at the Ameren Missouri Central 138 kV substation. Ameren will add a 138 kV position at Central substation for this new load.

System Need: Ameren Missouri expected ISD requires 1 year for Engineering, Procurement, and Legislature approval prior to normal MTEP25 timeline.

Estimated Cost: $2M

Expected ISD: 12/01/2026

Project Type: Other – Load Growth

Target Appendix: A in MTEP25

Models and Results for the Reliability Analysis

One (1) modeling/topology change is required to complete updates to our MTEP25 models for this project. As a result, a no-harm steady state analysis is required.

MISO performed a complete TPL-001-5.1 analysis along with a select few buses chosen for P3 and P6…

- MTEP25 years 2027 (SLL0 & SUM), 2030 (SHAW, SHHW, SLLHW, SUM, WINNF), and 2035 (SUM) for (P1, P2, P3, P4, P6, P7)
  - *MISO utilized a no-harm reliability analysis*

Results of Reliability Analysis

- No new reliability issues, thermal or voltage, were observed.

Contact Information

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Questions

MTEP25 reliability analysis scope is consistent with previous cycle to ensure compliance with NERC standards

Steady State Analysis	Transient Stability Analysis	Voltage Stability Analysis	Transfer Capability Assessment	Nuclear Plant Assessment	Generator Deliverability Analysis
Contingency analysis for both planning and extreme events	Disturbance analysis for both planning and extreme events	Identify voltage stability limits under a set of transfer scenarios	Evaluate transfer capability of the system under various transfer scenarios	Monitor and identify potential NPIR violations	Determine deliverability of existing network resources
Near and Long term horizons (year 2, 5, 10)	Near and Long term horizons (year 5, 10*)	Near term horizon (year 5)	Near term horizon (year 5)	Near and Long term horizons (year 2, 5,10)	Near and Long term horizons (year 5, 10)
TPL-001-5.1 FAC-014 PRC-023	TPL-001-4 FAC-014 PRC-023	FAC-014 PRC-023	FAC-013 FAC-014 PRC-023	NUC-001 PRC-023	

NERC TPL-001-5.1 establishes contingencies and acceptable mitigation requirements

TPL Category	Description	Acceptable Mitigation		
		BES Level	Physical Upgrade Required?	Load Shed or Redispatch Allowed?
P0	System intact	EHV, HV	Yes	No
P1	Single contingency (Fault of a shunt device- fixed, switched or SVC/STATCOM is new)	EHV, HV	Yes	No
P2	Single event which may result in multiple element outage. Open line w/o fault, bus section fault, internal breaker fault	EHV HV	Yes No	No Yes
P3	Loss of generator unit followed by system adjustments + P1. No load shed is allowed	EHV, HV	Yes	Yes
P4	Fault + stuck breaker events	EHV HV	Yes No	No Yes
P5	Fault + relay failure to operate (new)	EHV HV	Yes No	No Yes
P6	Two overlapping singles (not generator)	EHV, HV	No	Yes
P7	Common tower outages; loss of bipolar DC	EHV, HV	No	Yes