



## **NPRR1100 Discussion of Operational Requirements for Transmission Connected Resources**

Refer to Tesla NPRR1100 Workshop

<https://www.ercot.com/calendar/event?id=1634567146387>

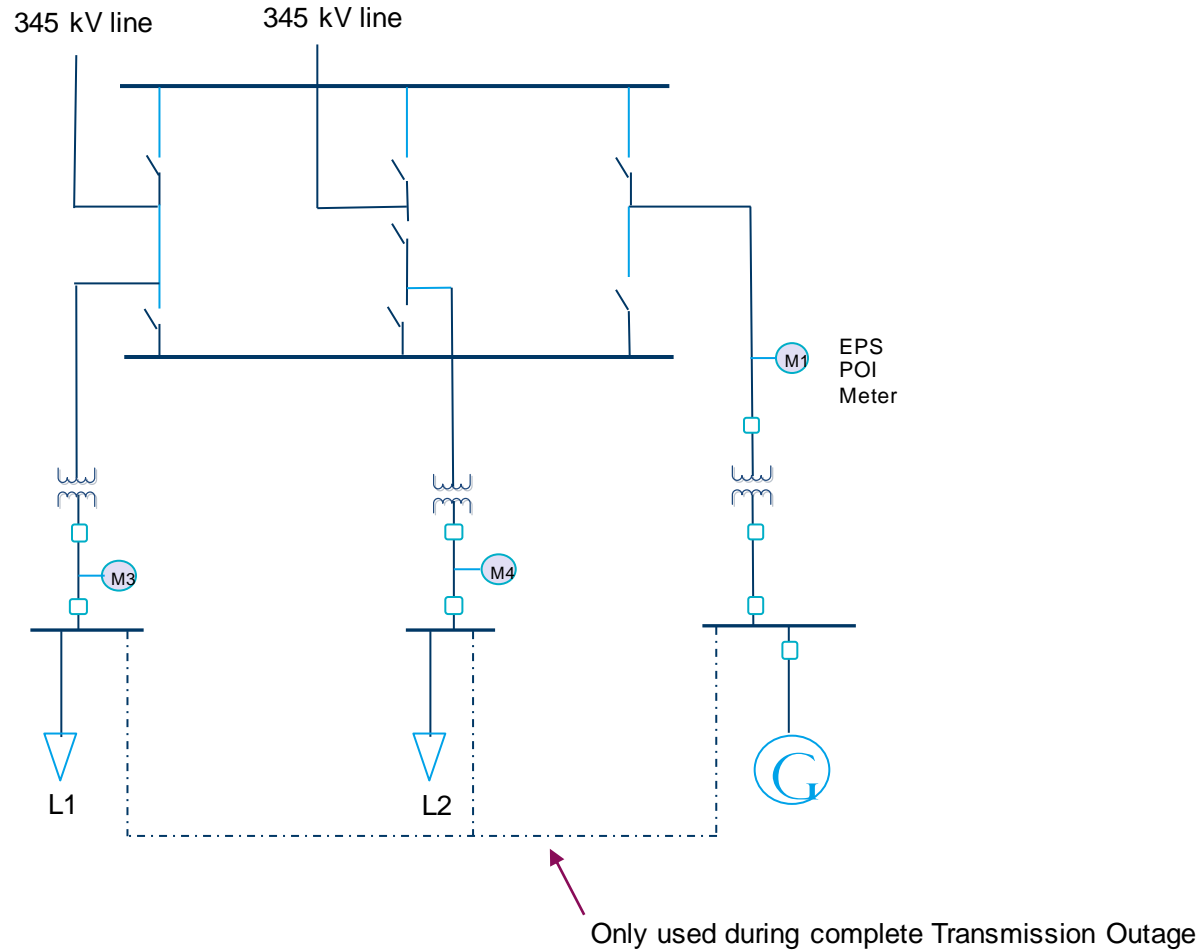
*Operations Working Group*

*Jan. 20, 2022*

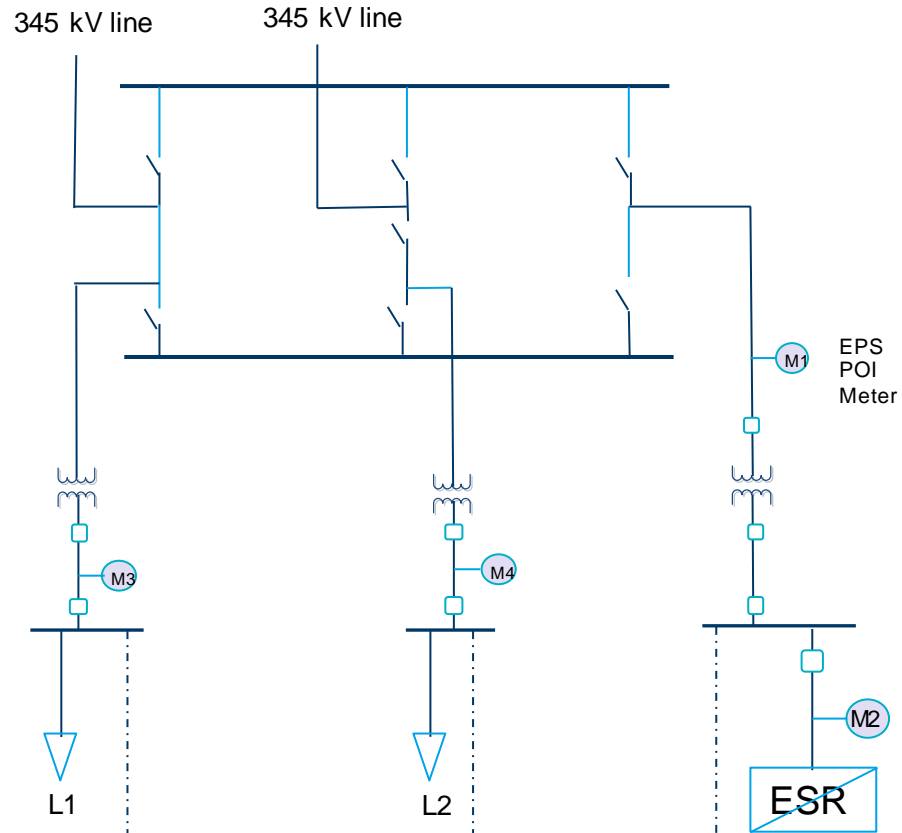
## Possible site configurations: (Transmission Connected Loads and Generators only)

- Scenario A – Generation Resource (GR) that can serve load behind the EPS POI meter when both are disconnected from the ERCOT system during an ERCOT Transmission System Outage
- Scenario B – Energy Storage Resource (ESR) that can serve load behind the EPS POI meter when both are disconnected from the ERCOT system during an ERCOT Transmission System Outage
- Scenario C – GR and an ESR that can serve load behind the EPS POI meter when both are disconnected from the ERCOT system during an ERCOT Transmission System Outage

# Scenario A – Generation Resource

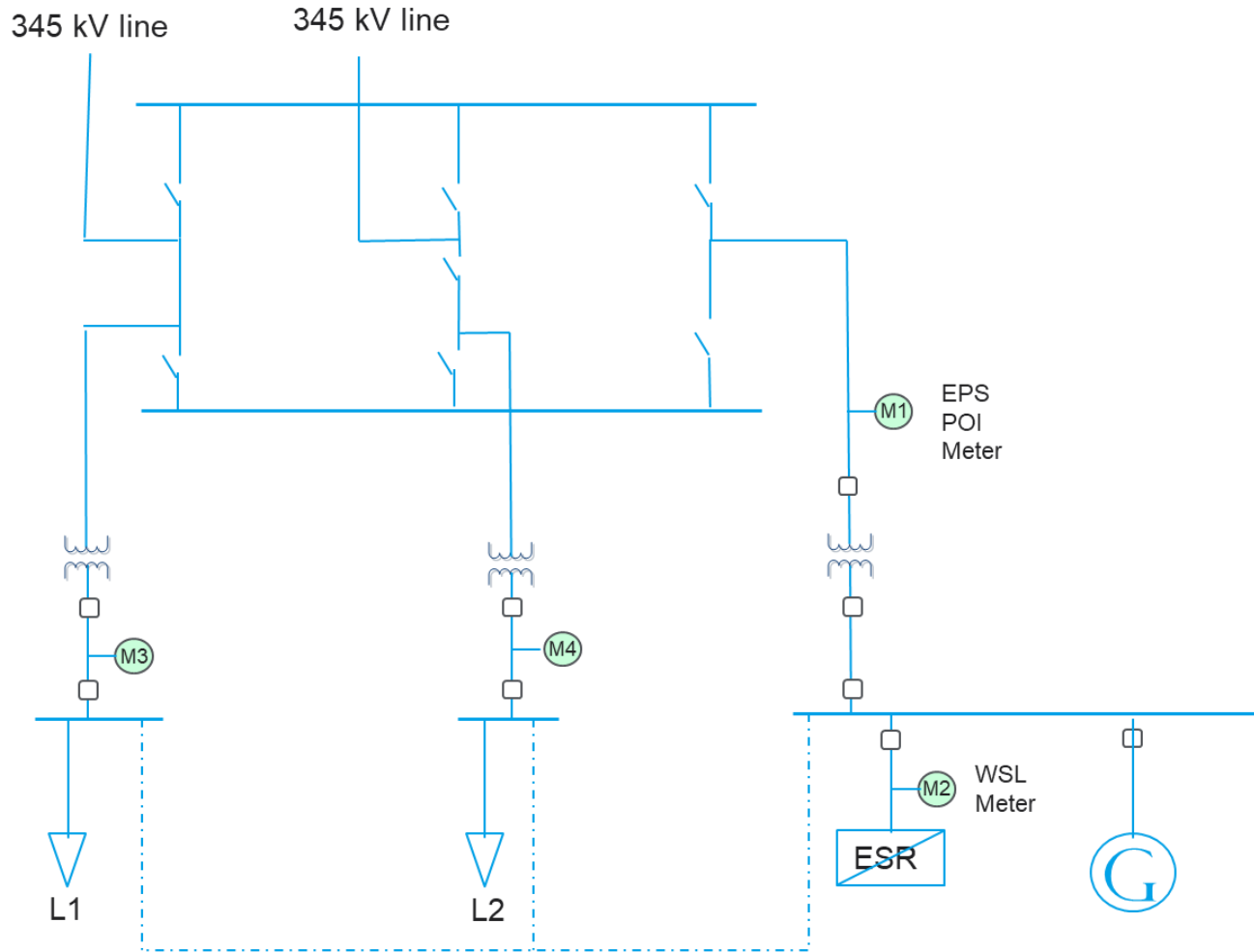


# Scenario B – Energy Storage Resource



Only used during complete Transmission Outage

# Scenario C – GR + ESR



Only used during complete Transmission Outage

# Discussion of Operations Requirements for Transmission Connected Resources

- A. Limited GR/ESR may serve the load BTM ONLY when transmission system is out. (Not directly related to an ERCOT emergency.)
  
- B. Pre-approval of procedures, settings and expected behavior by TDSP/ERCOT/QSE/RE:
  - Existing procedures only apply to generation, not picking up energized loads
    - Relay settings including synchronization
    - Switching procedures and timing
    - Consider limiting to open transition switching instead. (Refer to Tesla's proposed sequencing presented at their workshop.)
  - Modeling simulations validating that GR/ESR will not trip during transition to and from Microgrid Island mode.

# Discussion of Operations Requirements for Transmission Connected Resources (cont.)

- C. Awareness of the island during an event
  - Telemetry status of “Out” is not adequate – need an entirely new COPS status with a new Telemetry point to identify “Microgrid” operation for Loads and Generators for Operators.
  - Operators will need visual changes to Ops model to highlight islands (new symbol or color).
  - Limit GR/ESR Island support to single transmission POI, otherwise too many combinations.
  
- D. Reconnecting with the transmission system after an event
  - Restoration after outage proposes closed transition switching with duration less than 2 seconds.
    - Full synchronization capability for Load must be demonstrated and approved in advance.
  
- E. Reporting after the event
  - TDSP and ERCOT required to provide full report on island > 100 MW within 24 hours of event.
    - NERC EOP-004
    - DOE OE-417