

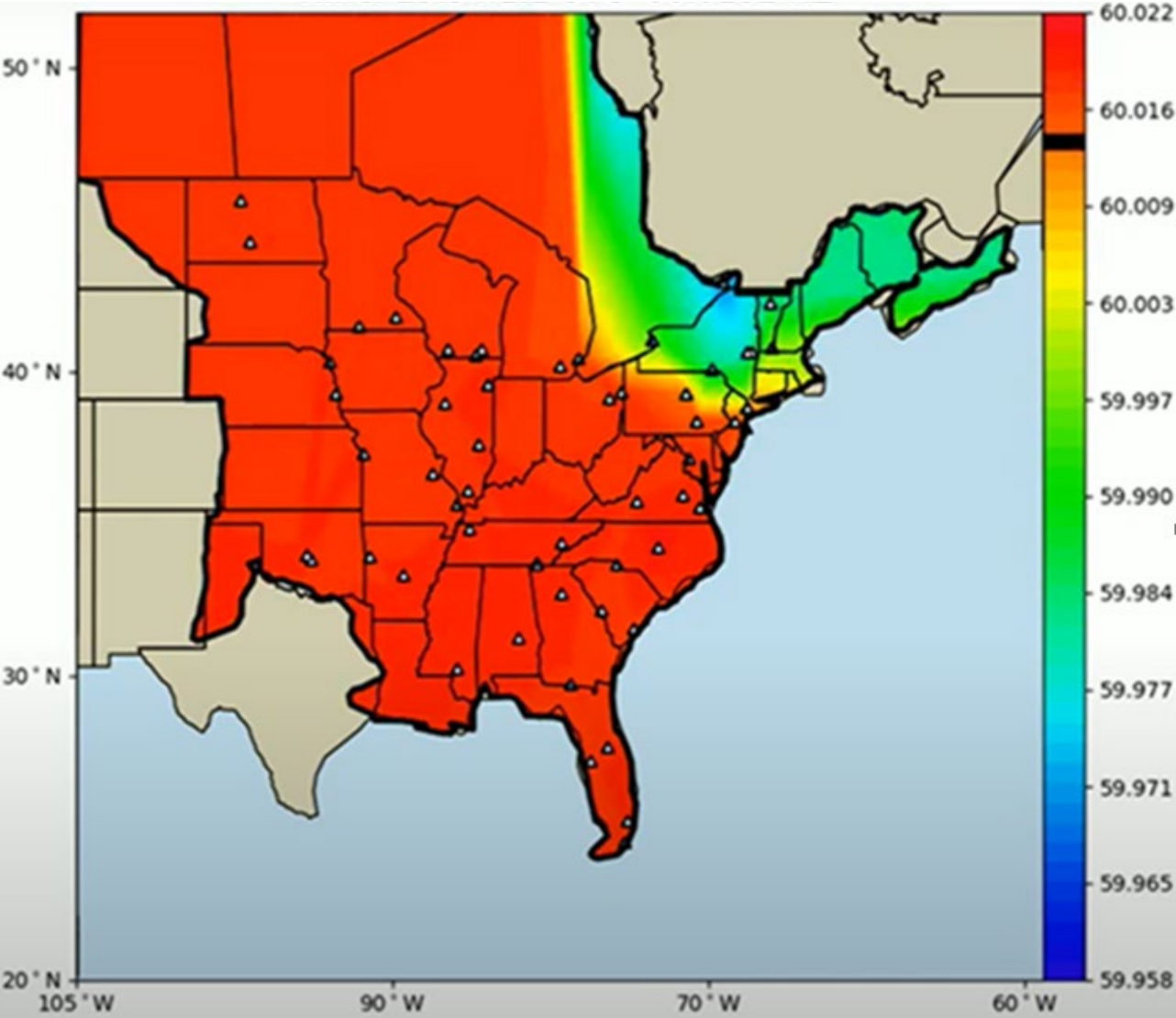
Transmission event caused load to increase



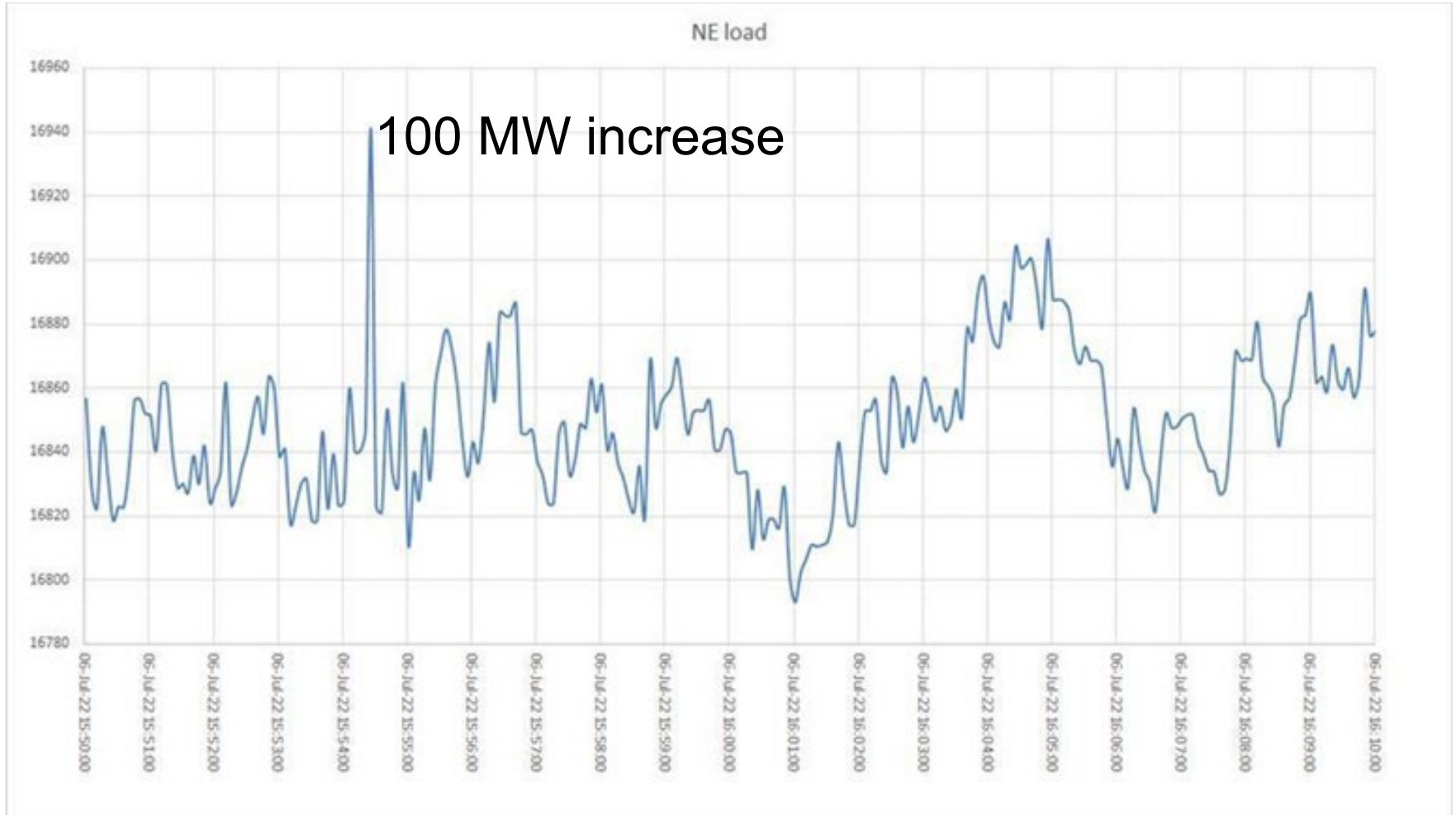
Vermont System Planning
Committee meeting

October 26, 2022

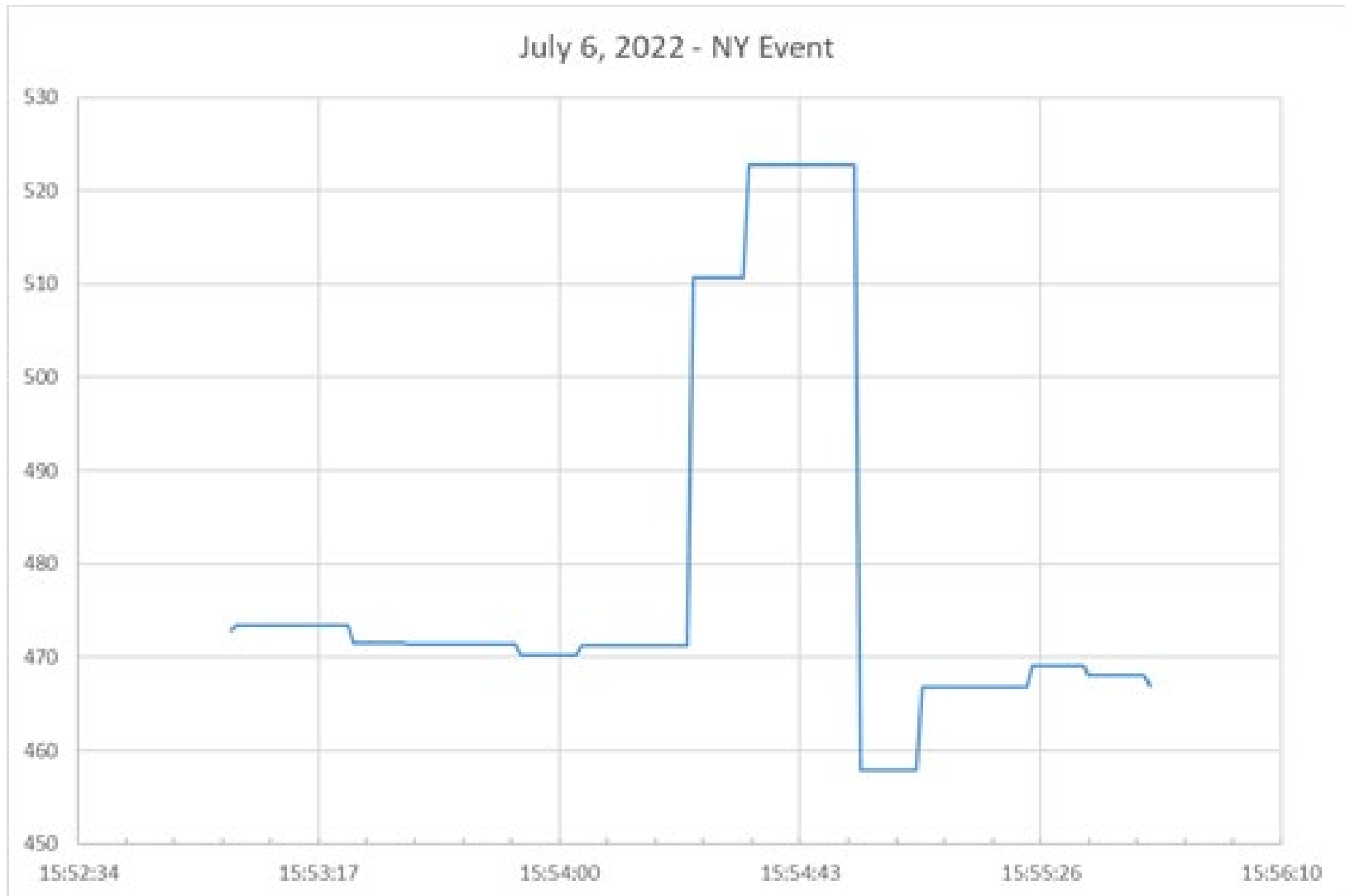
NY outage event reduced frequency quickly



Also caused load to increase in New England



Half of that load increase was in Vermont



Inverter settings the likely cause

- Distributed generation (DG) tripping due to rate of change of frequency (ROCOF) protection setting
 - And/or DG tripping due to angle shift protection setting
 - Known exposure – happened before
 - DG tripping for a 0.125Hz/s ROCOF and/or 6-degree angle shift in Hornsea event
- https://www.nerc.com/pa/rrm/ea/Lessons%20Learned%20Document%20Library/LL20201001_Single_Phase_Fault_Precipitates_Loss_of_Generation_and_Load.pdf
- This NY event caused 12-deg change in 2 seconds
 - IEEE-1547-2018 recommends a 20-deg setting

Key Takeaways

- Inverter settings that ride through ROCOF and angle shift events reduce exposures
- Accurate network models are needed by planners and operators to anticipate exposures