TRI-STATE G&T
A Touchstone Energy® Cooperative

Colorado Coordinated Planning Group
Western Slope Subcommittee

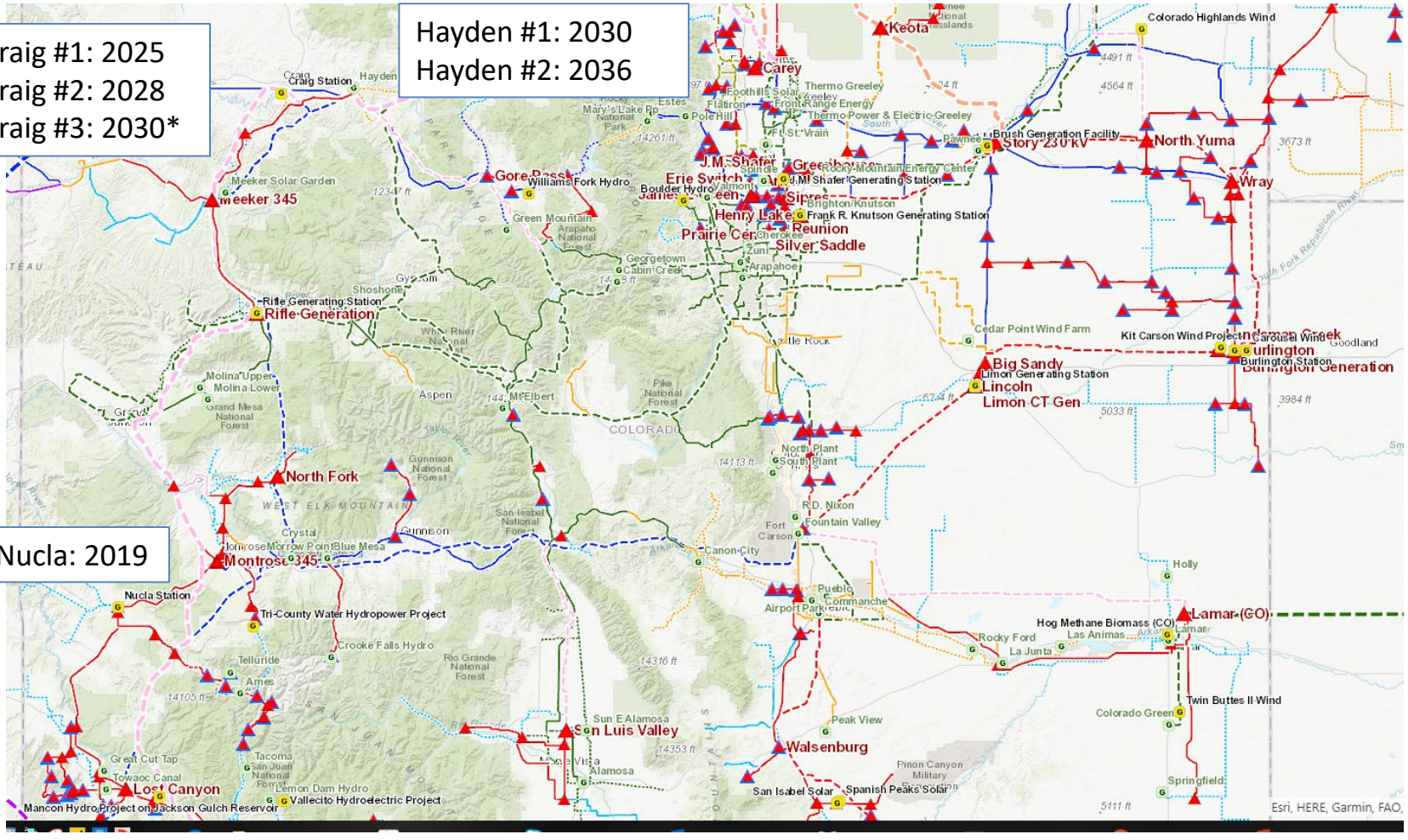
CCPG Meeting
December 17, 2020

Purpose: Effects of Coal Retirements

Craig #1: 2025
Craig #2: 2028
Craig #3: 2030*

Hayden #1: 2030
Hayden #2: 2036

Nucla: 2019



Background

- In the next 5-16 years all of the coal units in the Western Slope are planned to be retired
  - Craig 1 – 2025 (470 MW)
  - Craig 2 – 2028 (470 MW)
  - Craig 3 – 2030* (478 MW)
  - Hayden 1 – 2030 (202 MW)
  - Hayden 2 – 2036 (285 MW)
    - Total to be retired is 1905 MW

*the Colorado Air Quality Control Commission has a preliminary final action requiring Craig 3 to close by 2028

Subcommittee Scope

- To analyze the impacts of the western slope coal generation retirements in a phased approach:
  - Phase 1 includes power flow, short circuit, and stability analysis on the re-dispatched cases
  - Phase 2 will look at the impacts of replacing the synchronous generation with inverter based generation
  - Phase 3 will investigate the impacts to transfer capabilities in and out of western Colorado

Study Methodology

- Base Cases
  - Benchmark cases – some or all western slope coal units are dispatched in these cases
    - 2030 Heavy Summer
    - 2030 Light Spring
    - 2026 Heavy Winter
  - Study Cases
    - 2030 Heavy Summer – all Western Slope coal off
    - 2030 Light Spring – all Western Slope coal off
    - 2026 Heavy Winter – Craig 1 off
    - 2026 Heavy Winter – all Western Slope coal off
- TSGT and PSCO coordinated on the updated dispatch assumptions for the study cases
- The coal units were re-dispatched to all the available renewable capacity before synchronous generation was used for the re-dispatch

Preliminary Results

- Steady state P1-P7 contingencies that have been provided by TSGT, WAPA, and PSCO have all been studied using the four study cases
  - There are no steady state performance decreases relative to the benchmark cases
- Dynamic contingencies have been provided by TSGT and WAPA and are currently being studied
  - The dynamic contingencies that have been studied show no performance decreases relative to the benchmark cases
  - Known overvoltage issues in the Craig area will be investigated

Next Steps

- Last meeting – October 8, 2020
  - Agreed on study scope & methodology for phase 1

- Next meeting – January, 2020
  - Review results from phase 1
  - Review draft study scope & methodology for phase 2

Questions?

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