

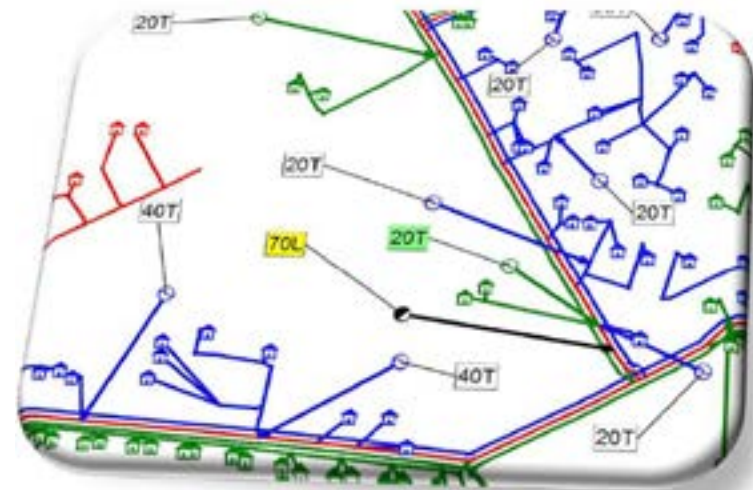
Rockett Substation Sectionalizing Study

Project Description

The Rockett Substation is one of 31 substations operated by Navarro County Electric Cooperative (NCEC). Located in the northwest region of NCEC's service area, the four feeders emanating from Rockett Substation serve a dense residential area. This substation operates at 12.5 kV and has a projected load of 10,381 kW by 2019.

Need

EPE determined that a sectionalizing study for this substation would be necessary based on findings from the previous Construction Work Plan (CWP); most notably, the conversion of several single-phase to three-phase conductors. It is highly advised that a sectionalizing study be performed whenever there are new construction and line changes, system configuration changes, and increased fault current levels resulting from substation, transformer, and transmission line upgrades. EPE utilized WindMil® engineering software to assess the placement and adequacy of existing sectionalizing devices, and to recommend better alternatives where the existing protective scheme was deemed insufficient. The Rural Utilities Service (RUS) guidelines were observed during the sectionalizing study, with the ultimate goal of ensuring that the system was protected from damaging fault currents and that the number of consumers experiencing an outage was minimized.



Results

EPE's sectionalizing study for Rockett Substation indicated several instances where devices were either improperly coordinated or unable to interrupt the fault current. Additionally, per RUS guidelines, re-closers were added on single-phase taps whose steady state current exceeded 20 amperes. EPE left as many existing sectionalizing devices (i.e., re-closers and fuses) where possible, but for the best coordination, it was recommended that certain existing devices be replaced to match EPE's suggested devices. Furthermore, the settings for the re-closers located inside the substation were carefully evaluated, and a request was submitted to NCEC's wholesale power supplier to make changes to the settings.