

LCRA TSC Bakersfield Dynamic Reactive Substation Upgrade Project

**October 18th, 2023
ERCOT RPG Meeting**



Project Need/Assessment

- **Odessa disturbances**
- **"ERCOT Assessment of Synchronous Condensers to Strengthen the West Texas System"**
 - Bakersfield was one of six recommended locations
 - Well-networked location with five 345-kV feeds and local generation
- **LCRA TSC Steady State, Short Circuit and Stability Analysis**
 - Found no negative impacts due to addition of six synchronous condensers
- **SSR Study to be performed prior to energization**

Bakersfield Project Scope

- **Two synchronous condensers each with a single step-up transformer**
 - 175 MVAR capacity each for a total of 350 MVAR
 - Combined 3,600 A of three phase fault current contribution to the 345-kV point of interconnect
 - Combined total inertia of 2,000 MW-seconds with flywheel
 - Effective damping control to meet the ERCOT damping criteria in the Planning Guide Section 4.1.1.6
- **Two (2) 345-kV transmission bays with four (4) 362-kV, 5000 A, 63 kAIC, circuit breakers connected in a double-bus double-breaker configuration including 362-kV operating bus extensions, 362-kV switches and protective relaying**
- **No property acquisition or significant remote site work anticipated**
- **Estimated project cost: \$144.5 M**



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