

# SAGUARO 500 kV SWITCHYARD

ARIZONA PUBLIC SERVICE  
PHOENIX, ARIZONA  
MR. LONNIE WILBANKS, P.E., SENIOR ENGINEER

COMPLETION DATE: SCHEDULED - MARCH 2003  
PHONE: (602) 371-7896

## PROJECT DESCRIPTION

ECI was selected by Arizona Public Service (APS) to perform transmission line and switchyard design at Saguaro associated with Tucson Electric Power Company's (TEP) new 500 kV Tie Line. The new transmission circuit extends from TEP's Tortolita Substation to the Saguaro Switchyard and parallels an existing 500 kV line. ECI performed complete physical and electrical design at Saguaro for the new 500 kV line termination in a breaker-and-one-half configuration. Design for relaying, metering and telemetry for the new line, as well as the existing line was provided. New RTU, DFR and communications equipment design was provided by ECI, including interface with existing equipment. ECI reviewed TEP's typical designs and incorporated them into APS standards.



**SAGUARO YARD PRIOR TO CONSTRUCTION  
08/2002**

## KEY FACTS & HIGHLIGHTS

- ▲ **500 kV LINE TERMINAL RELOCATIONS**
- ▲ **NEW BREAKER-AND-ONE-HALF POSITION**
- ▲ **500 kV STEEL LATTICE TIE LINE**
- ▲ **NEW RELAYING & CONTROLS FOR BOTH 500 kV LINES**
- ▲ **NEW RTU, DRF AND COMMUNICATIONS**
- ▲ **MERGED APS & TEP ELECTRICAL STANDARDS**

◆ *Engineering With Distinction* ◆