

EQUESTRIAN 230/69 kV TRANSMISSION LINE

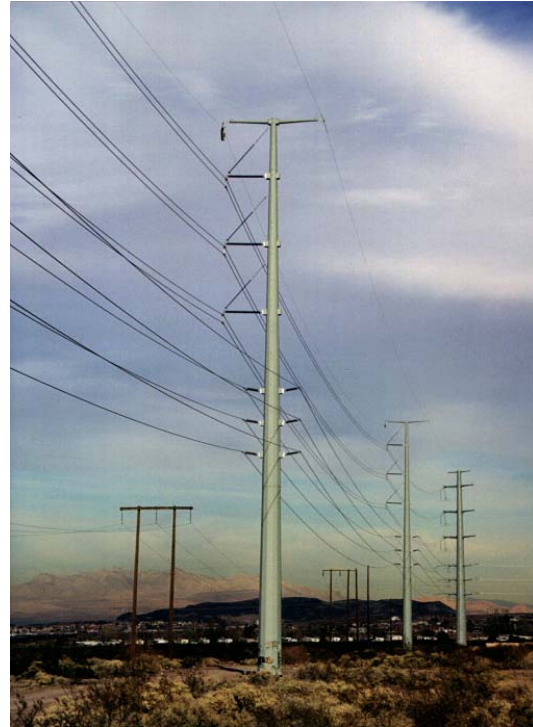
NEVADA POWER COMPANY
LAS VEGAS, NEVADA
MR. MIKE DELLA VECCHIA

COMPLETION DATE: 2000
PHONE: (702) 227-2470

PROJECT DESCRIPTION

This project was designed and built in two sections. The first was the 1.6 mile Clark to Water Street 230/69kV section. The second was the 7.7 mile Equestrian – Faulkner 230/69kV Line. Both segments were designed using “quad” single steel pole structures. The upper circuits are double circuit 230kV and the lower circuits are double circuit 69kV.

The alignment traverses urban terrain requiring significant field review to locate structures clear of underground utilities and with respect to right-of-way. Given the rapid growth of the Las Vegas area, much of the alignment will soon be surrounded by development. ECI’s responsibilities included final routing, detailed line design, steel pole design/specification/ coordination, material specification, construction specification and engineering support during construction. As part of this project, ECI provided NPC with a new design for 230kV deadend arms to be used on large angle structures. The new “box” type design allows the use of shorter arms while maintaining adequate clearance between phase conductors and the surface of the structure. The new design assured excessive arm deflection will not occur, a problem NPC had encountered on previous 230kV deadend structure designs.



KEY FACTS & HIGHLIGHTS

- ◆ STEEL POLE “QUAD” STRUCTURES
- ◆ TWO SECTIONS – 1.6 AND 7.7 MILES
- ◆ BUNDLED 954 ACSR “CARDINAL” (230 kV)
- ◆ 954 AAC “MAGNOLIA” (69 kV)
- ◆ FIBER OPTIC MESSENGER
- ◆ DEADENDS – DRILLED PIER FOUNDATIONS
- ◆ TANGENTS – DIRECT BURY
- ◆ HORIZONTAL VEE 230 kV INSULATORS
- ◆ HORIZONTAL POST 69 kV INSULATORS
- ◆ NPC STANDARD UPDATED FOR 230 kV DE ARMS
- ◆ PLS-CADD DESIGN

◆ *Engineering With Distinction* ◆

