

## SUBSTATION DESIGN

- Substation Rebuilds (Brownfield)
- New Substations (Greenfield)
- Generator (Small/Large) Facility Studies
- Other Studies (Grounding, Load Flow, Short Circuit, Insulation Coordination, Direct Stroke Protection, Site/Building Lighting, AC Station Loading, DC Station Loading)
- Estimating
- Equipment Specification
- Construction Support (Management/Inspections)
- Testing and Commissioning Plans

## TRANSMISSION/DISTRIBUTION LINE DESIGN

- Line Upgrades
- Line Replacements (Includes Routing and Right of Way Width Evaluations)
- Underground Transmission Systems Development
- PLS-CAD Modeling (New/Existing Systems)
- OH Line Rerates
- EPRI Structure Analysis for Preventative Maintenance Programs
- Vendor/Fabricator Coordination
- Construction Support (Management/Inspections)

## PROTECTION AND CONTROL SYSTEMS DESIGN

- Relay Replacements
- Control System Design (Transmission/Distribution)
- Settings (Protection & A&I)
- Area Study/Coordination
- SCADA
- Communications Networks
- Standards Development
- 61850 Systems
- PRC Studies
- Owner's Engineering Support
- Maintenance/Operations Support
  - Post Event Analysis for System Disturbances
  - Hardware/Firmware/Software Updates
- Construction Support (Management/Inspection)
- Testing and Commissioning Support

## CIVIL & STRUCTURAL DESIGN

- Site Development and Stormwater Management
- Access Road Design
- Secondary Oil Containment Design
- Steel and Aluminum Structure Design, Evaluations and Retrofits
- Structure Condition Assessments, Evaluations, and Retrofits
- Rigid Bus Design and Finite Element Modeling
- Shallow and Deep Foundation Design
- Construction Phase Services



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