

# SUBSTATION ENGINEERING & DESIGN

DiGioia Gray's substation engineers and designers have extensive utility experience in planning, project management, design, construction, refurbishment and maintenance of substations ranging in voltage from 4kV to 765kV. We provide full-service substation engineering and design packages for new substations and for modifications to existing substations.

DiGioia Gray's substation designs meet or exceed client standards, are developed with operational experience and, when necessary, offer engineering solutions to complex substation challenges. DiGioia Gray's substation design and engineering group complements our transmission line engineering experts for total power delivery services.



## SERVICES

- Operating as owner's engineer
- Feasibility studies and conceptual designs
- Development of engineering calculations
- Preparation of detailed project construction packages including drawings and bill of materials
- Development of purchase requisitions
- Site development
- Foundation design
- Civil and structural design
- Major equipment, structure and bus layouts
- Protection scheme designs
- Relay standard development
- Development of relay settings
- Systems modeling and studies
- NERC PRC Compliance
- Alternative analysis
- Phased construction prints and settings
- SCADA system design and development of RTU configuration files
- Grounding system analysis and design using state-of-practice software
- Oil containment system design
- Design of underground cable trench and conduit systems
- Development of material and equipment specifications
- 3D substation modeling