



ELECTRICAL ENGINEERING

WHY ATWELL?

- Local expertise, national reach
- Industry knowledge
- Dedicated experts and teams
- Full-service resources
- Aggressive, passionate professionals
- Nimble, flexible structure

SOLUTIONS THAT SURPASS

Substation Engineering Success

Atwell's power engineering team contributed to the development of a 200MW wind energy facility by successfully executing the design and delivery of a 345kV – 34.5kV substation. Services included: equipment layout, bus system design, structure steel design, foundational design, raceway system design, grounding system design, metalclad switchgear specification, structural and electrical design, capacitor bank design, relaying, SCADA design and wiring design.

DRIVING POWER DELIVERY

Atwell's power engineering teams offer clients in the generation, transmission and distribution markets the information they need to make decisions, and the design solutions to successfully execute them. With decades of experience and thousands of projects completed, our specialized electrical and civil engineers collaborate to deliver substation, transmission, distribution and power system projects to power generation developers, electric cooperatives, investor-owned utilities, large industrial customers and municipalities.

CAPABILITIES

Substation/Switchyard Engineering: Front-End Engineering Development | One Line & Three Lines | General Layout | Cost Estimating | Schematics & Wiring | Protective Relaying | Control Buildings | SCADA & Controls | Structures & Foundations | Grounding & Lightning Protection | Procurement | Construction Management & Inspection

Transmission Line Engineering: Front-End Engineering Development | LGIP, Power & Quality Studies | Cost Estimating | Routing & Siting | Structures | Foundations | Grounding & Lightning Protection | Sag & Tension | Plan & Profile | Conductor Analysis | Procurement | Construction Management & Inspection

Distribution System Engineering: Long-Range, Construction & Sectionalizing Studies | Route Selection | Cost Estimating | Voltage Conversion | Sag & Tension | Guying & Anchoring | Staking Sheets | Duct Bank | Material Procurement | Construction Management & Inspection

Renewable Energy Design & Engineering: LGIP, Interconnect, Load Flow/Contingency & Stability Studies | Reactive Compensation System | Collector System | Substations | Switchyards | Interconnects | Transmission Lines | SCADA | Communications | Controls | Engineer/Procure/Construct | Commissioning | Construction Management & Inspection

Power System/Quality Studies: Transmission Interconnect | Load Flow/Voltage Drop | Short Circuit | Relay Setting | Power Quality | Power Factor Correction | Long-Range Plans | Construction Work Plans | Sectionalizing | Motor Starting | Harmonic Filters | AC/DC Drive | Grounding Systems | Stray Voltage | Energy Consumption | Sub-Synchronous Harmonic Resonance | Neutral Current Elimination