

ELECTRICAL ENGINEERING SERVICES



EXPANSEELECTRICAL.COM

The Expanse Advantage

- Experts in Power Systems
- EPC Services
- Project Management
- Over 9,000 Power System Studies Performed
- Installation, Testing, Commissioning, Maintenance, and Support Services

Power System Design, SCADA and Electrical Engineering Studies from Expanse

Electrical system engineering design ensures the safe and efficient distribution of electricity, enhancing reliability and resilience, while ensuring a consistent power supply even in adverse conditions. By optimizing the design, engineers minimize energy wastage, reducing environmental impact and operational costs.

Expanse Engineering provides engineering services for Expanse Electrical's EPC projects, along with owner engineer services in support of High (HV), Medium (MV) and Low Voltage (LV) applications. We also perform power system studies on existing and proposed electrical systems. Industries include commercial, institutional, hospitals, data centers, industrial, chemical, petrochemical, midstream, and upstream oil and gas.

By studying advancements in smart grid technologies, automation, and digital monitoring, our engineers are enhancing system control and management, leading to improved energy conservation and load balancing.

Capabilities & Solutions

COMPREHENSIVE POWER SYSTEM DESIGN CAPABILITIES

Our extensive experience with engineering, procurement, and construction of LV, MV and HV systems for industrial and utilities enables our team of engineers to deliver well-informed, cost effective and robust designs.

DESIGN

- Capital budgeting
- Permit assistance
- Physical design
- Substation layout and site design
- Equipment specifications and procurement
- Breakers and transformer sizing
- Grounding systems and studies
- Foundation
- Structure and bus work design and specification
- Conduit and cable systems
- Bus work
- AC and DC distribution systems
- Relaying systems
- Metering and instrumentation
- Strain buses
- Fiber OSP design
- Construction document preparation
- Construction support

SUBSTATIONS

- Planning consultation
- Ring bus and breaker and one-half configurations
- Autotransformer
- Low-side transformer bus tie and feeder
- Load tap changers, bus and feeder regulators
- Circuit breaker, and disconnect switches
- High-voltage air-core reactor bank assemblies
- Underground power cable terminations
- Site survey and layout
- Equipment layout and specification
- Bill of material and bid package development
- Spill prevention, control and countermeasure plants
- Station grounding design
- Station batteries
- Lightning protection
- Line, Bus, and Feeder protection
- Fencing and architectural perimeter
- Robust QC process

ELECTRICAL SYSTEM STUDIES CAPABILITIES

Expanse engineers perform power system coordination studies to assess the performance and reliability of electrical systems.

- Load flow analysis
- Project scope development
- Short circuit analysis

- Protective device coordination studies
- Relay coordination studies
- ARC Flash analysis

- Reliability studies
- Motor starting studies
- Harmonics studies

CIVIL AND STRUCTURAL ENGINEERING CAPABILITIES

Expanse's civil and structural engineering services play a pivotal role in the design, construction and maintenance of critical infrastructure within the electrical power distribution and transmission industry.

- Civil site work including drainage and retention ponds (SPCC)
- Seismic design for structures, bus systems, buildings, etc.

- Existing structure analysis
- Foundations
- Structural steel
- Bus system mechanical design

- Architectural and structural design for concrete, block and metal buildings
- Access road design
- Fencing

Why Expanse?

- 24/7 Emergency Response
- 70 Years of Experience

- Turnkey Services & Solutions
- Experienced Craftsmen

- Local Expertise on National Scale
- Customer Support Across Geographical & Operational Spectrums