

### **SUBSTATION, TRANSMISSION AND DISTRIBUTION, AND INDUSTRIAL POWER ENGINEERING EXPERTS**

Saber Power's Engineering Division provides all aspects of electrical power system design, analysis and integration for medium, high and extra-high voltage installations. Saber develops solutions that fit our clients' needs, addressing common issues such as budget and time constraints, constructibility, outage awareness, technical and logistical concerns and coordination with adjacent projects.

We serve a variety of markets in North America including electric utilities, mid-stream oil and gas, renewable, industrial and petrochemical facilities, data centers/cryptocurrency facilities, battery energy storage systems (BESS), electric cooperatives and constructors. Regardless of whether our client generates, transmits, distributes or utilizes electricity, Saber's engineering team provides a technically superior, constructible and timely design.

#### **Power Systems Design**

Saber understands successful projects are engineering-led and construction-focused. Our high-performance engineering team covers all aspects of electrical power system work, including physical design, protection and control, civil, structural and transmission. Continual feedback from our construction and testing groups has allowed Saber to develop a team focused on accurate, practical and constructible designs. Unlike large, multi-disciplinary engineering and construction organizations, Saber's sole focus is the design of medium and high-voltage electrical power systems.

#### **Power Systems Analysis**

Saber has a dedicated power systems studies group that serves as in-house protection experts for our project teams, in addition to performing hundreds of stand-alone studies for our clients. Our studies engineers constantly monitor the latest protection and control technologies along with the ever-evolving industry standards to ensure we bring the most up-to-date information to our clients.

#### **Power Systems Integration and Automation**

Saber is staffed with seasoned integration and automation engineers and technicians. We can design and implement systems to enhance power system reliability and operational flexibility by linking all IEDs with automation controllers, customizing HMI's and facilitating remote control and monitoring of your power system. Working with our wholly-owned subsidiary, Saber Power Field Services, we are your one-stop-shop for fully designed, programmed, tested and commissioned automation systems.

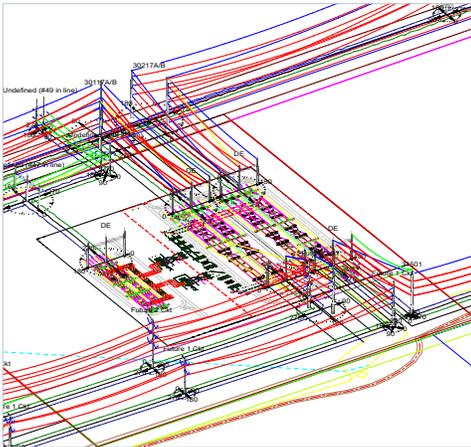
#### **Substation Development Services**

- Conceptual design
- Value-add engineering
- 3D modeling
- Grading & drainage
- Structural steel
  - Standard shapes
  - Tapered tubular
- Foundations
  - Drilled piers
  - Spread footings
  - Piles with pile caps
  - Pipe piles
  - Direct-embed
  - Helical piles
  - Augur cast piles
- Above-grade electrical
- Lighting systems
- Static protection and mitigation systems
- Below-grade electrical
- Protection & control
- Integration and SCADA systems
- DC control power system design
- Control building
- Communication systems (power-line carrier, microwave, fiber optic, telephone)
- Noise abatement
- System hardening
- Insulation coordination
- Permitting support
- Construction support



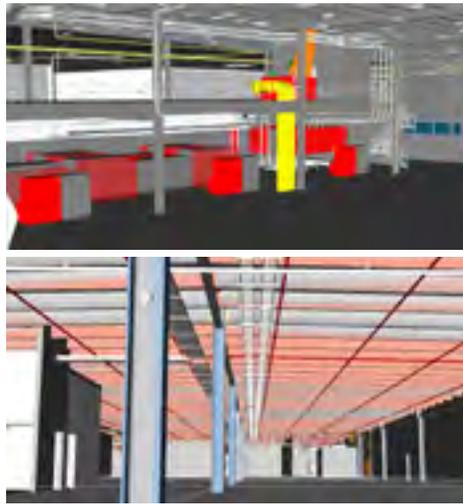
## Transmission and Distribution Development Services

- Above-grade plan and profile drawings
- Below-grade plan and profile drawings
- Overhead and underground collector systems for renewable projects
- Substation strain bus
- 3D modeling
- Staking sheets
- Access roads
- Structures
  - Wood
  - Spun concrete
  - Fiberglass
  - Monopoles
  - Lattice
- Foundations
  - Direct embed
  - Drilled shafts
  - Piles with pile caps
  - Pipe piles
- LiDAR validation
- Surveying
- Assembly details and bills of material
- Tower location and conductor optimization
- High-temperature designs
- OPGW and ADSS fiber designs
- System hardening
- Permitting support
- Construction support



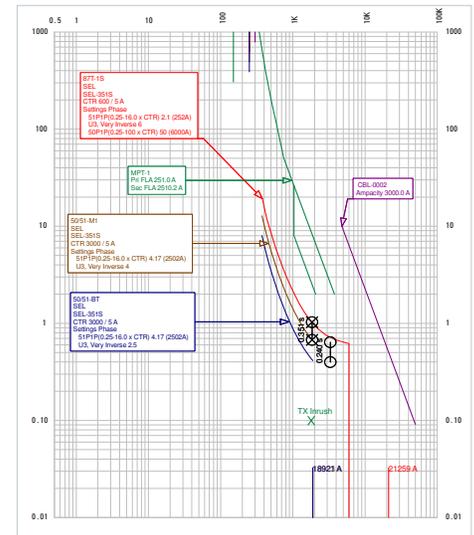
## Industrial and Commercial Power Systems

- Medium-voltage variable frequency drives (VFDs)
- Pipe rack design
- Cable tray and cable routing
- Cable bus and non-seg bus duct
- Metal-clad and metal-enclosed switchgear
- Low and medium-voltage MCCs
- Static protection and mitigation systems
- VFD synchronous transfer
- Mimic panels
- Arc-resistant designs
- Interposing relay panels and DCS interface
- Hazardous area designs
- Concrete-encased duct banks
- Permitting support
- Construction support



## Power System Studies and Analysis Services

- Power flow
- VAR compensation
- Short-circuit
- Harmonics analysis including surveying
- Device coordination
- Arc-flash hazard assessment
- Transient/dynamic stability
- Power switching
- Motor starting
- Insulation coordination
- Reliability
- Protection and control
- Generation integration
- Transmission systems
- Grounding systems
- Insulation coordination



Saber's engineering team has been a great resource for answers and ideas with our projects. I can't say enough good things about them.

— **S.P., Global power facilities company**



### Contact Us

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