



# SUBSTATION DESIGN & ENGINEERING

At RMS Energy, we have a team of industry professionals with a comprehensive background in substation engineering and design services for systems up to 765 kV systems. Our team specializes in protection & control, grounding, SCADA/EMS architecture, studies/compliance (arc flash, short circuit, system modeling), and detailed electrical and physical design. We ensure regulatory compliance, robust performance, and safe, high-quality results following industry standards through proven technical experience.



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- ⚡ DATA CENTER PLANT DESIGN
  - ⚡ HIGH-QUALITY AND ROBUST SUBSTATION DESIGN
  - ⚡ UTILITY COORDINATION AND REGULATORY COMPLIANCE
  - ⚡ SPECIALIZED P&C DESIGN
  - ⚡ RENEWABLE ENERGY PLANT DESIGN
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# OUR SERVICES

TAILORED SOLUTIONS EMPOWERING ROBUST AND HIGH-QUALITY SUBSTATION DESIGN

## Common Substation Design Challenges

### ⚡ UTILITY/REGULATORY COMPLIANCE CHALLENGES

- Utility, NERC, FERC standards constantly reviewed and evolving
- Overlapping federal, state, and local regulations along with utility-specific standards
- Environmental permitting and land use constraints potentially causing substantial delays
- ISO/RTO interconnection requirements and delays in study or deliverability assessment results.

### ⚡ SITE CONSTRAINT CHALLENGES

- Navigating limited space or challenging topography
- Environmentally sensitive site locations
- Regions with extreme weather requiring complex and resilient design adaptations
- Expansion/Retrofit projects with legacy equipment that needs to be relocated or preserved.
- Lack of future expandability

### ⚡ MULTI-DISCIPLINE COORDINATION CHALLENGES

- Conflicting design requirements among electrical, civil, and structural elements leading to delays in design completion.
- Design dependencies requiring each phase of design to be completed timely.
- Modeling and drawing misalignment causing inconsistent updates across all drawings.

## RMS Energy Offerings

### ⚡ PROTECTION, CONTROL, AND AUTOMATION

- Use of advanced tools including ASPEN OneLiner, CAPE, ETAP, SKM and Easy Power
- Regulatory Compliance Studies (NERC PRC-019, PRC-024, PRC-025, PRC-026, and PRC-027)
- Advanced internal tools to ensure protection settings are meticulously optimized and customized to meet the unique needs and specific objectives of each protection system.
- Advanced Metering Infrastructure (AMI), Fault Location, Isolation, and Restoration (FLISR systems, distribution automation, and smart grid technologies

### ⚡ GROUNDING AND LIGHTNING PROTECTION

- Optimized grid upgrades to ensure cost-effective solutions.
- Modeling Transmission and Distribution network to calculate split factor.
- Ground Potential Rise (GPR) and ground grid impedance report.
- Support brownfield expansions and greenfield AIS/GIS substations.
- Maintaining proper electrical clearances in congested yards.

### ⚡ UTILITY COORDINATION SUPPORT

- Extensive experience in most ISO/RTOs in North America.
- Strong understanding of interconnection processes and requirements for various ISO/RTO/Utilities to support seamless connection to the existing grid.
- Expert knowledge and understanding in applying NERC/FERC standards as well as adapting to utility specific standards.

## WHY CHOOSE RMS ENERGY?



EXPERTISE



CUSTOMER FOCUS



INNOVATION



RELIABILITY



SAFETY



Connect with us to learn more about how we can support your power system needs and help you achieve your energy goals.



[rmsenergy.com](https://rmsenergy.com)  
888-683-3630  
[RMS.Consulting@rmsenergy.com](mailto:RMS.Consulting@rmsenergy.com)



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