



# Eaton's turnkey solutions; start to finish and beyond

Eaton helps Federal Government customers design, build and maintain a safer, automated, secured and cost-effective infrastructure for:

- Data Centers/Mission Critical
- Hospitals
- Office Buildings
- Distribution Centers
- Power Plants
- Flight and Space Operations
- Electrical Distribution Systems

Eaton holds GSA, US Army Corp of Engineers, FAA and Air Force contracts.

## A single point of contact

Eaton's Turnkey Solutions team designs and manages construction projects from start to finish. From switchgear replacement, equipment modernization, or constructing and commissioning a new substation, Eaton has the resources and experience to meet your project's requirements.

Eaton's modernization and turnkey power system services place personnel in the field to complete a variety of undertakings, such as managing a construction project from start to finish, reconditioning or upgrading equipment, or modernizing your power system. With our project management services, you'll have a single point of accountability and a reduced risk of project delays and failures. The result is a safer, more reliable and cost-efficient power system.

To ensure that support is there when and where you need it, Eaton has experienced engineers and field technicians located throughout the world. In addition, we provide additional support from regional product centers for specialized services like equipment reconditioning.

### Turnkey project implementation

We offer centrally coordinated management of all procurement, installation, startup and commissioning of the products and systems required to implement unique power system solutions. Whether you have single or multiple sites, Eaton has the capabilities and the expertise to function as your single-source service provider.

### Project management

Eaton's Turnkey Solutions team relieves you from the burden of multi-supplier coordination by serving as a single point of accountability for all technical, financial and commercial coordination within the scope of the project. Additionally, our turnkey engineers manage the technical and commercial risk inherent in meeting project objectives, including performance, cost and time goals. Depending on your needs, Eaton manages either designated or all aspects of your system design and development.



Powering Business Worldwide

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## DESIGN

Eaton provides you with expert engineering support to ensure a proper and safe design

**Engineering and consulting services focus on understanding your requirements and setting strategies for your power system in order to satisfy your business needs.**

### System design and monitoring

- New substation design
- Protection and control design
- Distribution system design up to 345 kV
- Microgrid design
- Alternate power generation design
- Control system automation
- Generation systems
- SCADA design
- Programmable logic controller (PLC) data acquisition and control
- Commissioning plans
- Power system studies and analysis
- Safety and reliability studies
- Construction feasibility studies

### Power system studies and analysis

- Load flow analysis / power factor correction studies
- Motor starting studies
- Advanced design and analysis
- Switching transient analysis
- Distribution systems reliability analysis
- Disturbance monitoring
- Harmonic analysis
- Effective grounding
- Power quality site surveys
- Energy management
- Power system design

### Safety and reliability studies

- Short circuit
- Protective device evaluation
- Protective device coordination
- Power system investigations
- Grounding
- Arc flash
- Power system audit
- Troubleshooting

## BUILD

Eaton provides cost-effective, on-time system improvements with a single point of contact

**Modernization and turnkey power system services deploy personnel in the field to complete projects, whether upgrading an existing installation or building a brand new facility.**

### Turnkey services

- Modular integrated transportable substation (MITS)—a turnkey engineering substation solution
- Complete turnkey substation expansion and refurbishment
- Turnkey substation capacitor bank design, installation and commissioning
- Construction services including site, civil, electrical and structural
- Standardized documentation practices including scheduling, reporting and project closeout
- Installation services including subcontracting capability of all trades with on-site project management
- Turnkey hydroelectric solutions
- Turnkey synchronous condenser projects
- Mobile apparatus including substations, voltage regulators and switchgear
- Multi-vendor equipment supply chain
- Supply of the complete range of Eaton products
- Coordination and purchase of all third-party customer-preferred components
- Prefabricated control house
- Modular collector substation
- Utility grid management and monitoring systems
- Demand management

Eaton can maximize your uptime, reliability and safety with ongoing services

**Contract and support services provide the maintenance, parts and service needed to get the best performance from your existing power systems.**

#### Startup and commissioning

- Acceptance testing and installation certification
- Ground fault certifications
- Interconnect confirmation and commissioning
- Warranty extension
- Installation support and supervision
- Startup and training
- Ground grid testing

#### Preventive and predictive maintenance

- Maintenance program design and implementation
- Periodic testing and maintenance services
- Thermographic surveys
- Troubleshooting/testing
- DC power systems
- Ultrasonic partial discharge detection
- Transformer oil processing
- Battery/cell testing
- Generator load bank testing
- Transformer/breaker oil testing
- Contact alignment

#### Maintenance and emergency services

- Complete scope of testing, repair and evaluation
- Short-/long-term maintenance contracts
- Crisis response personnel dispatch

#### Direct results tests

- Insulation resistance
- Contact resistance
- Turn ratio testing
- Primary injection testing
- Secondary injection testing
- Dielectric withstand test—hi-pot (destructive)
- Breaker injection testing
- Protective relay testing and calibration
- Power factor
- Ground grid testing
- Transformer/breaker oil test and breaker time/travel test

#### Electrical equipment life extension and modernization

- Class 1 breaker reconditioning LV and MV
- LV air replacement breakers
- MV vacuum replacement breakers
- MV-VSR
- Upgrade equipment front door metering and relaying

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## Eaton's Electrical Engineering Services & Systems coverage map



## About Eaton's Electrical Engineering Services & Systems

Eaton's Electrical Engineering Services & Systems is one of the largest and most experienced industrial service organizations in North America. With more than 1500 highly trained professionals in 60 engineering service locations throughout the U.S. and Canada, Eaton's Electrical Engineering Services & Systems has complete local, national and international capabilities to provide a full range of electrical, civil and mechanical equipment services. This broad range of service capabilities has established us as a leader in the engineering service industry.

For more information, visit  
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