get into energy
WITH THE CENTER FOR ENERGY WORKFORCE DEVELOPMENT

Career Pathway Spotlight

Discover a Career in Transmission & Distribution Operations

Discover your career in energy!

Transmission and distribution operations professionals plan, build, maintain, and modernize the high-voltage lines, substations, and grid infrastructure that move electricity from generators to homes, businesses, and communities every day.

Asset Management and Planning

At utilities and grid operators, asset managers and planners decide when transmission lines, substations, and transformers get replaced or upgraded. They model load growth, run condition assessments, and prioritize the investments that keep the grid healthy for decades.

Field Operations and Maintenance

In substations and along rights-of-way, T&D technicians, substation technicians, and protection and controls specialists inspect equipment, test relays, and maintain transformers. They diagnose faults, replace aging components, and keep critical infrastructure working safely through every major weather event.

Grid Modernization and Reliability

As utilities add sensors, automation, and smart grid technology, modernization and reliability specialists upgrade systems to handle more renewable generation, electric vehicle loads, and extreme weather. Their work analyzes outages, identifies risks, and makes the grid more resilient.

CAREER PATH

Start with:

» A high school diploma or GED

Get Educated:

» A community college or vocational technician program – Power systems, electrical technology, or substation programs
» A bachelor's degree for asset management or planning – Engineering, business, or related field
» A military pathway with electrical experience – Army Electrician, Navy Electrician's Mate, or Air Force Electrical Systems

Specialize With:

Knowledge in:

» Transmission systems
» Distribution networks
» Substations and transformers
» Grid modernization and resilience
» Reliability and risk management

OCCUPATIONAL SKILLS

» Strong electrical and systems-thinking aptitude
» Sharp attention to detail and safety focus
» Clear communication with field crews, engineers, and operators
» Strong problem-solving and root-cause analysis skills
» Physical stamina for active, outdoor field work
» Adaptability across substations, control rooms, and office settings
» Comfort with technical software, SCADA, and data analytics

BENEFITS

These energy industry careers offer:

» Strong, stable demand across utilities and operators
» Competitive pay and union benefits packages
» Growth into senior technician, manager, and director roles
» Specialize in substations, planning, or reliability work
» Meaningful work modernizing America's power grid

What Might You Do In Transmission & Distribution Operations?

get into energy
WITH THE CENTER FOR ENERGY WORKFORCE DEVELOPMENT

ENTRY LEVEL
1-4 years

What you will do:

- Assisting senior technicians with substation inspections, equipment testing, and routine maintenance
- Performing routine tests on transformers, breakers, and protective relay systems
- Documenting equipment conditions and entering all data into asset management databases
- Supporting outage investigations and analyzing reliability metrics for the grid system
- Helping with capital planning and load forecasting under senior engineer supervision
- Following lockout/tagout, PPE, and OSHA safety procedures on every shift

What knowledge, skills and abilities will you need to succeed?

- Listen and follow directions from senior technicians and engineers
- Basic understanding of electrical systems, transformers, and the grid
- Strong attention to detail when testing and entering data
- Comfort with PPE, climbing, and working in substation environments
- Eagerness to earn NERC, NETA, or vendor certifications

MID- CAREER
5-8 years

What you will do:

- Independently performing transformer, relay, and breaker testing and commissioning work
- Leading detailed condition assessments and writing repair-or-replace recommendations for management
- Investigating outages, analyzing fault data, and tracking reliability metrics across territories
- Using AI-assisted analytics and digital twins to predict equipment failures early
- Building load forecasts and detailed capital plans for the distribution system
- Training entry-level technicians and reviewing their test reports and field findings

What knowledge, skills and abilities will you need to succeed?

- Active NERC, NETA, or vendor-specific industry certifications
- Working knowledge of power flow, protective relaying, and grid codes
- Fluency in SCADA, asset management, and analytics software platforms
- Clear communication with crews, engineers, and operations teams
- Composure during outages, storms, and emergency restoration work
- Familiarity with renewable integration, EV loads, and battery storage

EXPERIENCED
8+ years

What you will do:

- Leading multi-year T&D capital plans and asset replacement strategies across territories
- Setting reliability standards, maintenance programs, and detailed inspection schedules companywide
- Driving grid modernization, smart sensors, and resilience initiatives across the territory
- Adopting new technology like AI predictive maintenance, sensors, and digital twins
- Coordinating with regulators, senior executives, and neighboring utilities during major outages
- Mentoring mid-career staff and shaping training and credentialing pathways companywide

What knowledge, skills and abilities will you need to succeed?

- Deep expertise across transmission, distribution, and substation systems and operations
- Leadership and people-management skills for multi-discipline operations and asset teams
- Strategic communication with executives, regulators, and grid operators
- Strong financial judgment for capital and reliability investments
- Mastery of change management as the grid modernizes
- Senior credentials such as NERC, PMP, or PE

GET PAID!

Entry Level:
- $55,000 / year*

As You Gain Seniority:
- $90,000 / year*

Later in Your Career:
- $146,500 / year*

*Source: Zip Recruiter (May 2026). These figures are based on aggregate job posting data because the role is not included in the United States Energy & Employment Report and has no precise match in BLS OEWS. Compensation figures should be used as a guide; actual compensation may vary depending on education, geography, experience, and many other factors.

ENERGY INDUSTRY CAREERS OFFER:

- Excellent salaries
- Opportunities for advancement
- Job growth & stability
- Professional development and training
- Great benefits

Scan to view our Job Board