

# GET INTO ENERGY CAREER PATHWAYS

## Transmission & Distribution Technicians: Putting STEM\* to Work

START  
HERE

HIGH SCHOOL  
DIPLOMA OR GED

### EARN CREDENTIALS:

- National Career Readiness Certificate
- Energy Employability Skills Certificate
- Industry Fundamentals Certificate
- Utility Technician Accelerated Degree or Traditional Associate's Degree

LEARN MORE / EARN MORE

### EDUCATIONAL OPPORTUNITIES FOR ADVANCEMENT

- Apprenticeship (for College Credit)\*\*
- Experience in Position

1-4 YEARS\*\*

Pass Pre-Employment Tests and Become a  
**SUBSTATION MECHANIC,  
RELAY TECHNICIAN,  
METER TECHNICIAN,  
ENGINEERING TECHNICIAN**  
(\$28,000)

- Associate's Degree
- Long-Term On-the-Job Training

3-6 YEARS\*\*

**EXPERIENCED SUBSTATION  
MECHANIC, RELAY, METER,  
ENGINEERING TECHNICIAN**  
(\$62,000)

- Bachelor's Degree
- Long-Term On-the-Job Training

8+ YEARS\*\*

**UTILITY SUPERVISOR**  
(\$75,000)

\* Science, Technology, Engineering, and Math

\*\* Dependent on company requirements



# T & D TECHNICIANS:

## What will you do?

**What competencies will you need?** (built on energy foundational competencies—incremental as career advances)

Note: Most utilities use a pre-employment test—to pass you will need math, communications, problem solving, and mechanical reasoning skills.

### APPRENTICESHIP TRAINING COMPONENTS:

- Fundamentals of Electricity (Alternating Current / Direct Current)
- Substation Mechanical Operations
- Advanced Substation Mechanics
- Computer Aided Design and Drafting (CADD)
- Electric Distribution Fundamentals: Technical–Advanced
- 4 KV & 13 KV Basic Relaying
- Generator Relaying
- Fundamentals of Electronic Test Equipment
- Transmission Relaying
- Polyphase Meter
- Transformer Meter
- Wiring Inspection
- Advanced Meter

- Teamwork
- Able to lift 75 lbs
- Listening and following directions
- Math skills including algebra, trig and geometry
- Come to work on time and prepared
- Physical ability to climb stairs and ladders
- Operate stiff valves manually, lift weights, control pneumatic or hydraulic wrenches
- Read and interpret information displayed in simple graphic, chart or print form (e.g., blueprints, sketches, diagrams or drawings).
- Apply knowledge learned in training to work environment

### EXPERIENCED TECHNICIAN:

- Read diagrams of electric circuits
- Serve as an expert on how a substation works and its equipment
- Perform routine operations at the substation
- Open and close switches to isolate defective relays, then perform adjustments or repairs
- Inspect and test equipment to identify problems using special wiring diagrams and testing devices
- Disconnect and replace equipment that manages voltage on high-voltage power lines
- Set and remove meters
- Inspect wiring to meters
- Repair meters
- Participate in surveying to lay out installation of new customer services
- Inspect project sites to ensure crews are following design specification

- Use information to diagnose and solve problems
- Be able to manage multiple tasks at once
- Demonstrate understanding of basic mechanical principles (e.g., gear trains, centrifugal force, heat flow)
- Comprehend entire systems and how they function
- Foresee system implications of malfunctions or of own actions
- Anticipate required future conditions in numerous interacting systems
- Evaluate alternative procedures and select the most effective approach to a job in terms of safety, time, material or other requirements.
- Solve problems involving limited options (e.g., selecting the correct instrument or gauge for a job).
- Adapt work procedures or priorities in response to changing or unforeseen requirements or conditions

### UTILITY SUPERVISOR:

- Determine schedules and work activities of team members
- Review team member performance and provide feedback
- Prepare and manage budgets
- Report to management
- Deal with potentially stressful situations

- People management
- Communications skills
- Financial management
- Computer skills for report preparation
- Assign priority or sequence to the steps for completing a job
- Coordinate several, competing activities for efficient use of time and material



## ENERGY INDUSTRY COMPETENCY MODEL



### Energy industry careers offer:

- Excellent salaries
- Job growth & stability
- Great benefits
- Opportunities for advancement
- Community service

### Where can I find training?

Go to the Get Into Energy web site at [www.getintoenergy.com/careers.php](http://www.getintoenergy.com/careers.php) and check "Training Programs and Work-Based Training."

### Where can I find a job?

Go to the Get Into Energy web site at [www.getintoenergy.com/careers.php](http://www.getintoenergy.com/careers.php) and check "Featured Employers."