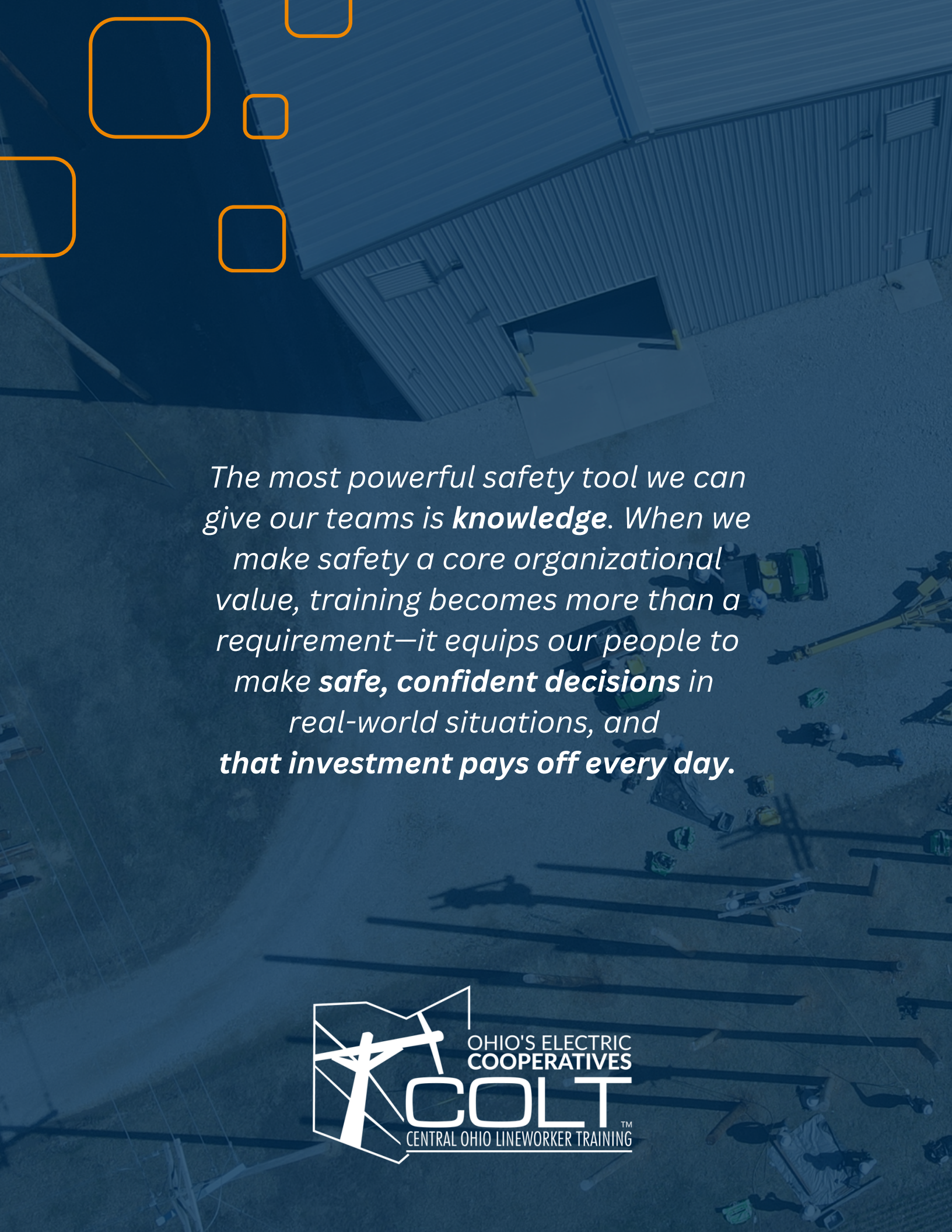




OHIO'S ELECTRIC  
COOPERATIVES

**COLT**<sup>TM</sup>  
CENTRAL OHIO LINEWORKER TRAINING





*The most powerful safety tool we can give our teams is **knowledge**. When we make safety a core organizational value, training becomes more than a requirement—it equips our people to make **safe, confident decisions** in real-world situations, and **that investment pays off every day.***





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”

*Electricity is a modern necessity of life and ought to be found in **every village, every home, and every farm** in every part of the United States.*

**-Franklin D. Roosevelt**



# OHIO COOPERATIVE

## History

Electricity powers every aspect of life. It lights homes and businesses, keeps us warm or cool indoors, and in today's modern world, electricity charges our mobile devices, even cars.

Electricity began illuminating American cities as early as 1879, but 50 years later, rural family farms in America's heartland were still working by kerosene lantern or candlelight. In 1936, that all changed with President Franklin D. Roosevelt's Rural Electrification Act which provided federal loans for the installation of electrical distribution systems to serve rural areas.

Investor-owned utility companies did not want the expense, so farmers united with a determination to build the electric lines themselves. They formed cooperatives and secured REA loans to complete the construction. Each farmer receiving electricity from the co-op-built line became a member-owner of the local electric cooperative. Those members elected trustees to form the board that governed their local cooperative. With electricity on the farm, agriculture was no longer the only business farmers could pursue. Factories came to farmland, workers migrated from the city, and the rural economy began to flourish.

The story of electric cooperatives is one of the true, great American stories that demonstrates what spirit, determination, and democracy can achieve. The first Rural Electrification Administration (REA) pole in the country was set in Piqua, Ohio, on November 14, 1935, in the territory of current Pioneer Electric Cooperative.

Within four years of the end of World War II, the number of rural electric cooperatives across the country doubled, which led to economic growth and jobs for service members returning home to rural America. By 1953, more than 90% of U.S. farms had electricity. Today, 99% of the nation's farms have electric service thanks to electric cooperatives.

In 77 of Ohio's 88 counties, there are 25 electric cooperatives that power more than 1 million people. More than 900 electric cooperatives exist across the United States — including in Hawaii and Alaska — and each is guided by the same seven cooperative principles upon which they were originally founded. In 1941, electric cooperatives in Ohio established a statewide services organization to foster collaboration and to advocate on their behalf.



WORKING TOGETHER DID IT  
ALL THE POWER YOU  
AT LOWEST COST!  
A DREAM COME TRUE



In 1959, they joined together to create Buckeye Power, Inc. (BPI) — a generation and transmission cooperative to supply reliable, affordable electricity to Ohio's electric cooperatives and their members.

Eventually, in the 1960s, Ohio's cooperatives joined an investor-owned utility and together built the 3-unit, coal-fired Cardinal Plant in Brilliant, Ohio, along the Ohio River. The joint ownership of Cardinal Plant with AEP lasted decades, but in 2022, Buckeye Power purchased AEP's unit and became sole owner of all three coal-fired units at Cardinal Plant. The plant supplies nearly 70% of the electricity for Ohio's cooperative members.

Ohio Rural Electric Cooperatives (OREC), the statewide association, and BPI together are called Ohio's Electric Cooperatives (OEC). OEC's focus is to provide safety training, communications, government relations, employee education, and development opportunities to all Ohio cooperative employees and trustees, and to provide reliable, affordable electricity to its member co-ops that distribute the power to their members' homes and businesses across the state.

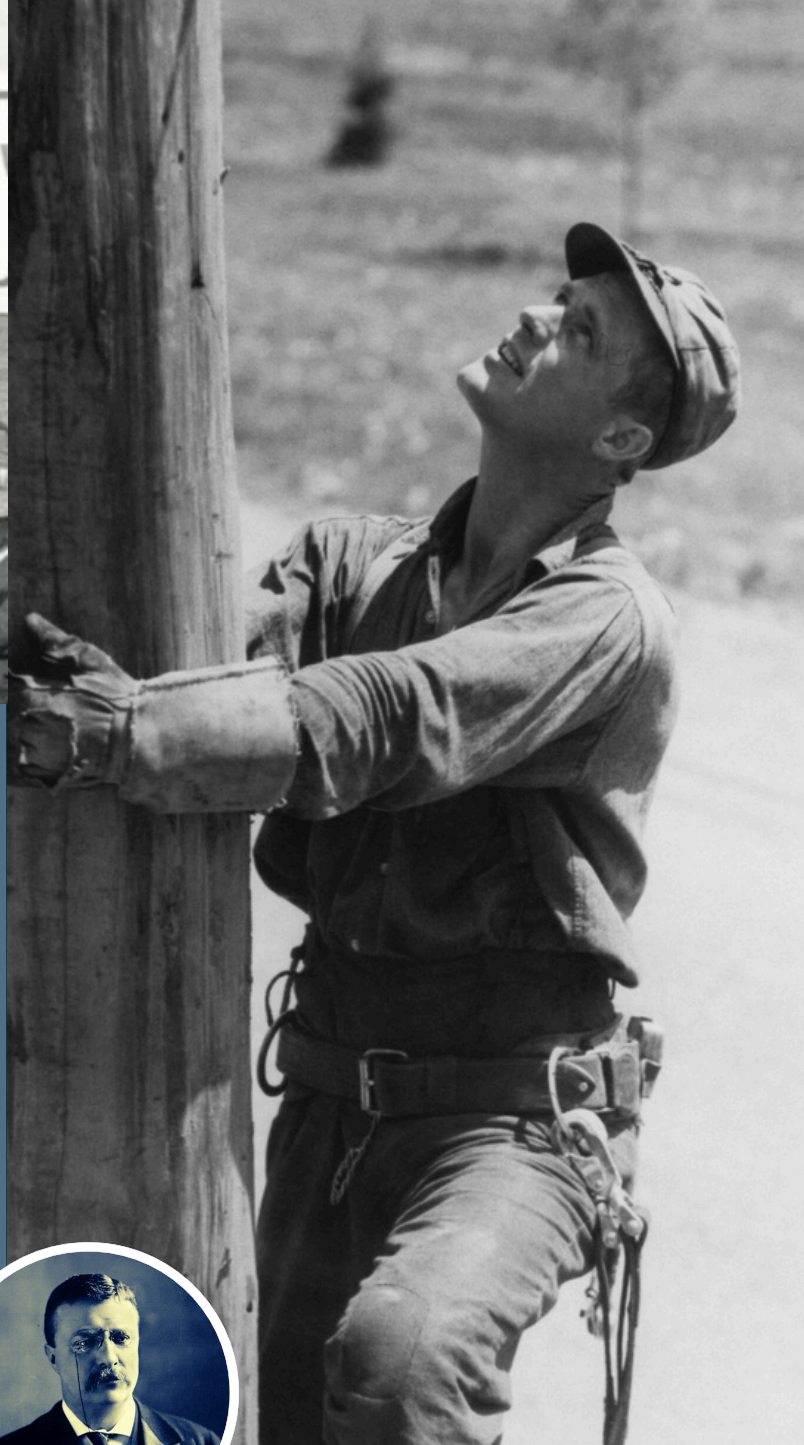
The co-op distribution lines are maintained by the hundreds of lineworkers employed by Ohio's 25 electric cooperatives. The need for highly trained, safety-focused lineworkers is always in high demand.



”

*The forward march of electric cooperatives has an even more profound significance in terms of our fight to preserve democracy.*

**-Franklin D. Roosevelt**





# OHIO COOPERATIVES AT A GLANCE



LOCATED IN  
**77 OF 88 COUNTIES**



**25**  
ELECTRIC COOPERATIVES IN OHIO



**415,000 METERS**



**1 MILLION**  
PEOPLE SERVED



**9.5 MILLION**  
MEGAWATT-HOURS SOLD IN 2026



**339**  
GRADUATED FROM COLT  
APPRENTICE PROGRAM

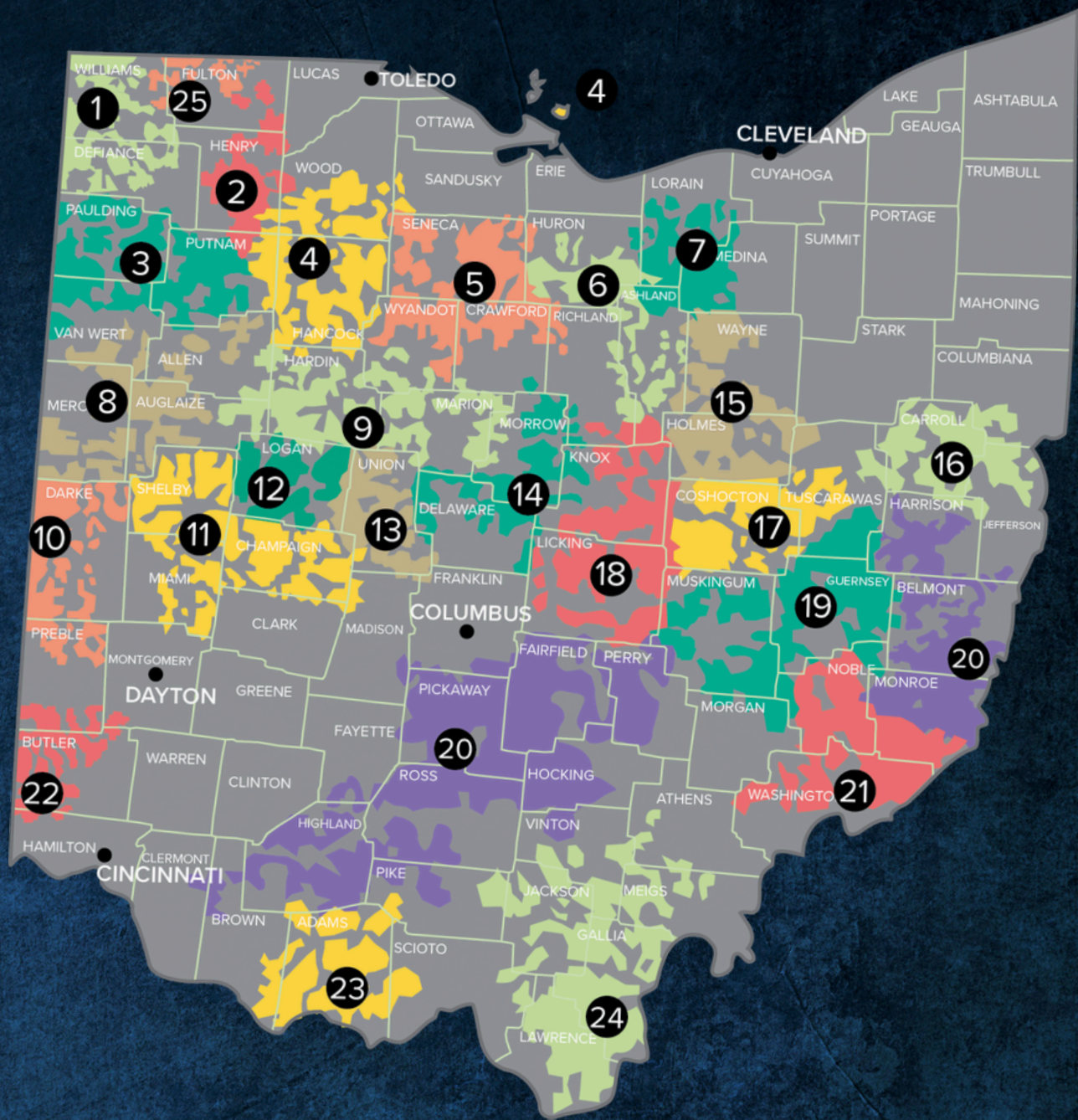


**151**  
CURRENTLY ENROLLED IN  
COLT APPRENTICE PROGRAM



**160**  
GRADUATED FROM COLT  
JOURNEYMAN REFRESHER PROGRAM





- |                     |                                 |                                           |
|---------------------|---------------------------------|-------------------------------------------|
| 1 — North Western   | 10 — Darke                      | 19 — Guernsey-Muskingum                   |
| 2 — Tricounty       | 11 — Pioneer                    | 20 — South Central Power                  |
| 3 — Paulding Putnam | 12 — Logan                      | 21 — Washington                           |
| 4 — Hancock-Wood    | 13 — Union                      | 22 — Butler                               |
| 5 — North Central   | 14 — Consolidated               | 23 — Adams                                |
| 6 — Firelands       | 15 — Holmes-Wayne               | 24 — Buckeye                              |
| 7 — Lorain-Medina   | 16 — Carroll                    | 25 — Midwest Energy*<br>Based in Michigan |
| 8 — Midwest         | 17 — Frontier                   |                                           |
| 9 — Mid-Ohio        | 18 — Licking (The Energy Co-op) |                                           |





# COLT<sup>TM</sup>

## THE BEGINNING



In 2000, frustrations abounded with apprentice lineworker programs that were available for Ohio's electric cooperatives. For years, the statewide association utilized the use of NUS and Merchant correspondence courses. Once a year, students would take a test at the statewide facility. This training program was sufficient, but it lacked the hands-on training needed to produce competent lineworkers who employed consistently safe work practices.

Discussions emerged among the cooperatives about what an apprentice program designed specifically for Ohio's and West Virginia's electric distribution cooperatives could look like. An advisory council was formed that included statewide personnel and cooperative managers.

These discussions evolved to include Marion Technical College (MTC) and, several years later, the Electrical Power Utilities Program was born. Apprentices would now receive college credits for 12 courses and on-the-job training.

The very first apprenticeship course was held in October 2004 with "Cohort 1" taking the EU-100 Wood Pole Climbing course, taught by two retired TELCOM employees. Gary Simpson, a retired lineman from URE, was then hired on as the first part-time instructor and taught most of the other 11 courses. In May 2007, Dwight Miller was hired as the first full-time instructor.



Doug Miller (left) pictured in 2017 at the COLT indoor facility dedication with first full-time COLT instructor, Dwight Miller (right).





The program evolved and grew quickly now that it had a full-time instructor. It soon became branded as the “Central Ohio Lineworker Training (COLT) of MTC.” In 2009, the Basic Lineworker Training Program was launched. By 2011, the COLT program was becoming nationally recognized for the quality candidates it produced in the six-week “Basic Lineworker Training” pre-apprentice course. In 2010, a large investor-owned utility listed COLT as the top preferred pre-apprentice program in the nation over all other programs — including the largest schools.

In 2014, Ohio’s Electric Cooperatives (OEC) and MTC parted ways due to a conflict discovered in the original agreement. All apprentice training moved to the statewide training center behind Consolidated Cooperative in Mt. Gilead, Ohio. This is where the COLT campus is located still today. MTC permitted OEC to keep the “COLT” brand with the program. A new agreement was reached with the Ohio State Apprenticeship Council to maintain the curriculum’s approved DOL certification status.

In 2017, the COLT program expanded from a 16-acre outdoor pole farm and a single classroom to a 7,200 square-foot indoor training facility. A long-time dream had become a reality. The program and facility continue to receive national recognition for program quality and unique design, which includes energized overhead and underground facilities, as well as fixed stations.



”

*The facility we have now is **so much greater** than what we started off with. It allowed not only the training programs for alignment, but skill assessments and pre-employment assessments.*

**-Larry Fenbers, CEO  
Carroll Electric Cooperative**

## 16-acre pole farm OUTDOOR features

- Outdoor overhead electric system with four feeders and 50 wood pole structures
- Underground open-loop system with three 3-phase risers and 20 enclosures of various types
- Bucket and digger truck storage garage





# 7,200 sq ft INDOOR features

- Cost \$1 million to build
- Nineteen poles under roof for working energized and de-energized exercises on three-phase line and single-phase lines, while working out of a bucket or climbing
- Underground open-loop system with pad-mounted electrical equipment, energized to low voltage
- Specialized training stations replicating actual equipment used in cooperative systems
- Exhaust system allowing indoor operation of diesel-powered trucks and equipment
- In-floor radiant heating system
- Advanced technology to enhance learning, utilizing iPads, transformer and grounding simulator boards, online learning platforms, and specialized apps





**The COLT program** dream didn't happen overnight. It became reality through the desire and determination to improve the landscape of training and safety for lineworkers at Ohio's distribution cooperatives, and all those working in the industry around the country. The support of Ohio's cooperatives has been key to it all, allowing the program to continue evolving.

In March 2021, OEC reached an agreement with West Virginia University of Parkersburg (WVUP) to offer students who completed the COLT Power Lineworker Certification Program to receive 45 of the 60 credits required to earn an associate's degree in applied science in technical studies. That meant COLT graduates had just five courses remaining to complete their associate's degree with WVUP and students could take those classes online or in-person.

Folks still laugh today that the COLT training facility began as a hot line school in the 90s with a port-a-pot, a few poles, and a small shed.



”

*COLT has been a pillar of our safety program. **The facility's fantastic and the instructors are very effective.***

*We use it for entry-level screening to determine pre-hire physical requirements, and to determine our gaps for those that have experience in the trade.*

*Having the indoor and outdoor areas allows us to train year-round. We're able to get a really good look at work practices and coaching engagements, allowing us to really connect all the dots.*

**-Chris Hall, VP of Operations  
South Central Power**







”

*“Going to COLT really **gave me my career.** It’s where I learned how to do my work and how to do it safely.”*

**-Michael Taylor, COLT graduate  
Paulding Putnam**





OUTDOOR TRAINING YARD

COLT  
SUBSTATION

OUTDOOR  
TRAINING  
YARD

UNDERGROUND  
LOOPS

CLIMBING  
POLES

INDOOR  
FACILITY

CLASSROOM  
OFFICE

TRUCK  
BARN

### CAMPUS STATS:

- 16 acres
- 19 indoor poles
- 50 outdoor poles
- \$1 million indoor facility





# Instructor **Team**



**BRAD VARGO**

**COLT Instructor**

COLT Instructor: 1 year  
Journeyman Lineman: 14 Years



**TAYLOR HARRIS**

**Lead COLT Instructor**

COLT Instructor: 3 years  
Journeyman Lineman: 9 years



**CARTER QUAY**

**COLT Instructor**

COLT Instructor: < 1 year  
Journeyman Lineman: 5 years



**RICH KLINGEL**

**Manager, COLT**

COLT Instructor: 5 years  
Journeyman Lineman: 5 years

# Senior **Leadership**



**CHRIS NAPIER**

**Director, Safety Training  
& Loss Prevention**



**DOUG MILLER**

**Vice President,  
Statewide Services**







# COLT<sup>TM</sup>

## PROGRAMS



# Apprentice Lineworker Program

In October 2004, the apprenticeship program customized for Ohio's distribution cooperatives held its first course. By 2007, the Power Lineworker Certification Program was official. It received approval for national DOL certification and was recognized as an official RTI (related technical instruction) provider.

Today, the COLT indoor training facility is a one-of-a-kind, state-of-the-art training center that started as a collaborative passion project for all Ohio's distribution cooperatives who had a common goal — to meet the ever-growing demand for highly trained, safety-focused lineworkers for Ohio's electric cooperatives.

The path to becoming an Ohio electric cooperative lineworker begins with a pre-hire assessment to determine fitness for duty, skill, knowledge, and work ethic.

Once cleared for hire, the apprentice must complete four weeks of online testing and assignments before officially beginning the COLT Apprenticeship Program coursework.

The COLT Apprenticeship Program is a 4-year program comprised of 12 courses that include 600 contact hours, which run alongside 8,000 hours of on-the-job training administered by the cooperative.

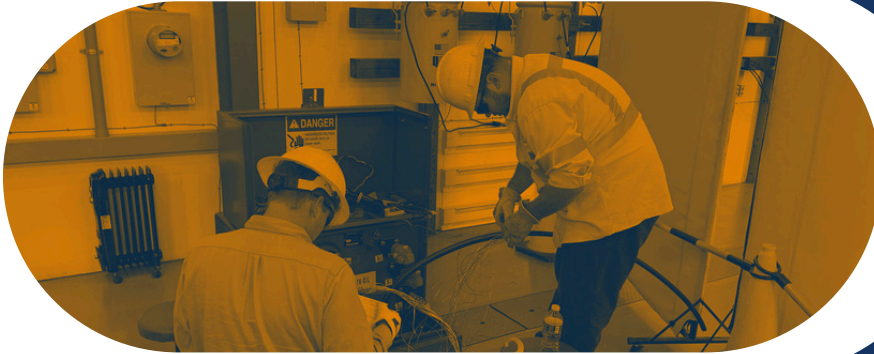
When participating cooperatives register their apprenticeship with Apprentice Ohio, the apprentice lineworker receives credentials from the Department of Labor through the Ohio State Apprenticeship Council, thus achieving official journeyman lineman status upon completion of the program.











## ***Apprenticeship*** **Course Pre-Work**

---

As a prerequisite, the student is required to complete assignments and tests online over a period of four weeks prior to the start of each individual class. This is to ensure the student comes into the COLT classroom invested in the knowledge needed to fully benefit from the course.

## ***Apprenticeship*** **Program Curriculum**

---

The COLT Apprenticeship Program's 12-course curriculum begins by introducing the student lineworker to the electrical power industry and learning the basics of power line work. The first skill the student will learn is wood pole climbing. The courses build on knowledge as the student progresses through the program, including study on understanding the electrical system, constructing and maintaining overhead powerlines and underground cables, and operation of utility apparatus — all with a strong emphasis on safe work practices. Courses include a strategic mix of hands-on and classroom-style learning.



**Year 1**

# **COLT 1000 - Intro to Power Linework I**



Introduction to the electrical power industry with a strong emphasis on basic safe work practices. Learn how to size, inspect, and maintain pole climbing equipment; introductory skills in testing, inspecting, and climbing wooden poles; safely using wood pole fall protection; maneuvering around the pole; identification and use of basic power utility materials, tools, and equipment; rope basics, tying knots, setting up a safe work zone, and conducting a comprehensive job briefing.



# Objectives

---

- 01** Display a sense of pride for the power lineworker trade
- 02** Demonstrate a knowledge of basic materials and tools used in the power lineworker trade
- 03** Demonstrate proper fitting, inspection, and maintenance of all equipment used for climbing wood poles including body belt, climbers, safety straps, and fall protection
- 04** Demonstrate the proper care, inspection, and sharpening of gaffs
- 05** Use correct methods for checking the soundness of wood poles
- 06** Display evidence of physical fitness and the ability to climb poles
- 07** Begin to ascend, descend, and maneuver on a wood pole using fall protection
- 08** Set up a safe work zone and control traffic in the work zone
- 09** Demonstrate an understanding of comprehensive job briefings
- 10** Correctly tie eight knots and know their uses

# Competency Stations

---

- A** Introduction to Wood Pole Climbing
- B** Crossarm Installation
- C** Pulling up Wire with a Hoist
- D** Single-phase Line Build
- E** Climbing “overs and unders”
- F** Rope Knots and Splices



## Year 1

# COLT 1050 - Intro to Power Linework II



This course is a continuation of the pole climbing portion of COLT 1000. Successful completion of this course and its prerequisite will result in the attainment of a wood pole climbing qualification using a WPFRD, such as the Bucksqueeze or Supersqueeze. The elements of the qualification include: safe climbing procedures, pole top rescue (hurtman), and attaining maximum prescribed heights while performing functional tasks at those heights. Instruction on splicing 3-strand rope, safe work practices in the industry, and learning how to be an effective, safe ground worker in an electrical environment. Students will also learn proper inspection, set up, and operation of bucket trucks and digger derrick trucks.



# Objectives

- 01** Correctly braid three different splices using twisted 3-strand rope
- 02** Demonstrate proper use and care of fiber rope and related equipment, including handlines and rope blocks
- 03** Demonstrate a knowledge of groundman responsibilities and safe work practices when working in an electrical environment, including step and touch potentials
- 04** Begin demonstrating familiarity with safe work practices and safety procedures that apply to a power lineworker
- 05** Demonstrate the skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment
- 06** Demonstrate the skills and techniques necessary to determine the nominal voltage of exposed live parts
- 07** Correctly identify the minimum approach distances specified by OSHA and NESC, corresponding to the voltages to which the student could be exposed to
- 08** Begin to demonstrate proper use of the special precautionary techniques, PPE, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electric equipment
- 09** Demonstrate proper inspection, setup, grounding, and operation of a digger derrick and bucket truck
- 10** Demonstrate proper emergency bucket rescue and basic pole top rescue
- 11** Display proper ascent and descent of wood pole using fall protection (WPFRD), climbing to certifiable heights
- 12** Demonstrate ability to climb over, under, and around obstacles, and maneuver and perform work at elevated heights

# Competency Stations

- |                                       |                                    |
|---------------------------------------|------------------------------------|
| <b>A</b> Bucket Rescue                | <b>F</b> Bucket Self-Rescue        |
| <b>B</b> Bucket Truck Operation       | <b>G</b> Pole Top Rescue           |
| <b>C</b> Digger Truck Operation       | <b>H</b> Temporary Traffic Control |
| <b>D</b> Double Crossarm Installation | <b>I</b> Rubber Glove Testing      |
| <b>E</b> Rope Toss                    |                                    |



**Year 1**

# **COLT 1100 - Electric System Power Overview**



This course will present an overview of the electrical power system, including the basic functions of various electrical apparatus. Students will gain a broad view of the electrical distribution system and learn basic electrical theory as well as apparatus found on distribution systems. The student will learn basic transformer theory and how to use tools and construction materials in the field, while demonstrating proper tool and equipment care. Voltage, current, and continuity will be measured on various multimeters and clamp-on ammeters on our live-line in the classroom. RUS standards of line construction will be the basis for the construction of typical pole framing taught on wooden poles, while using climbing equipment as well as framing poles on the ground prior to setting a pole.



# Objectives

---

- 01** Correctly identify tools used in electrical linework and give examples of their use
- 02** Correctly identify the materials and hardware used in overhead construction and basic materials and hardware used in underground construction
- 03** Demonstrate proper construction of various configurations of hardware
- 04** Demonstrate knowledge of insulators and hardware used for various line voltage configurations and applications
- 05** Demonstrate basic knowledge and understanding of RUS specifications bulletin 1728F-804
- 06** Identify classes of transformers and single-phase transformer connections
- 07** Identify various apparatus used in electrical linework along with basic functions
- 08** Identify the main components of the electric power system along with functions
- 09** Explain the difference between voltage, current, and resistance
- 10** Correctly measure voltage, current, and continuity using a clamp-on meter
- 11** Demonstrate ability to “ring out” conductors that need to be identified
- 12** Construct a complete single-phase service from meter socket to transformer

## Competency Stations

---

**A** Equipment and Material Identification

**B** Ohm's Law and Meter Socket Checks

**C** Meter / Transformer Connections

**D** Moving Conductors Horizontal to Vertical

**E** RUS (Rural Utility Service) Construction Introduction

**F** Voltage, Current, Resistance



**Year 1**

# **COLT 1200 - Powerline Safety**



Safety is the critical factor every power lineworker needs to maintain as a foundation for everything they do. The emphasis of this course is lineworker safety, as outlined in the NESC and OSHA 1910.269. Students will calculate loads for rope rigging and practice various rigging methods in the field. The student will learn hollow braided rope splicing. A thorough overview of all sections of the National Electrical Safety Code and OSHA 1910.269 will keep students aware of safety-first principles. Personal protective grounding and the theory of equipotential grounding will be a concentration. Basic chainsaw safety as well as right-of-way requirements for utility lines will also be studied. The course ends with trenching and excavation safety.



# Objectives

---

- 01** Demonstrate the proper inspection and rigging methods for various types of load slings
- 02** Calculate various line/load relationships when using rigging equipment with mechanical advantages
- 03** Demonstrate the proper rigging methods for relocating overhead conductors
- 04** Calculate line angles and tensions on a given distribution line
- 05** Properly construct a single braid 12-strand adjustable synthetic sling
- 06** Demonstrate equipotential overhead grounding and list all equipment needed for personal protective grounding for a given situation
- 07** Demonstrate familiarity with the NESC through basic understanding of applicable safety rules for electric supply stations, overhead lines, and underground lines
- 08** Demonstrate familiarity with the NESC through basic understanding of applicable safety rules for the operation of electric lines and equipment
- 09** Demonstrate proper chainsaw safety and care, along with proper use on trees and limbs in normal and emergency situations
- 10** Describe the hazards associated with trenching and excavation work
- 11** Demonstrate a basic understanding of OSHA 29 CFR 1910.269 safety rules for Generation, Transmission, and Distribution
- 12** Demonstrate increasing skills in basic pole top rescue

## Competency Stations

---

**A** Introduction to Personal Protective Grounding

**B** Adjustable Sling Build

**C** Chainsaw Safety

**D** Rigging Basics

**E** NESC (National Electrical Safety Code) Clearances



**Year 1**

# **COLT 1300 - Overhead Line Clearance, Testing, and Grounding**



This course will review the proper steps for de-energizing an overhead distribution powerline for employee protection. Students will learn how to properly obtain a line clearance by establishing a visible opening and properly applying clearance hold tags. Students will demonstrate proper voltage testing procedures and utilize personal protective grounds as final proof that lines are de-energized. Once the lines are de-energized, students will determine the “plus one” (equipotential, insulation, or isolation) most suitable for their situation and employ the appropriate method for personal protection against re-energization and induced voltages. Additionally, students will become familiar with various requirements found in their safety manuals while deepening their understanding of their own company rules. This will help students become much more familiar with the manual, helping them to successfully navigate the manual to help answer various job-related questions that come up in the field.



# Objectives

- 01** Understand proper visual and mechanical inspection of overhead system safety grounds
- 02** Learn the proper procedures for de-energizing single-phase and three-phase powerlines, utilizing noisy tester or contact tester along with handheld power supply verification
- 03** Determine the proper “PLUS ONE” for personal protection (equipotential, insulation, isolation)
- 04** Describe the differences between equipotential, insulation, and isolation techniques
- 05** Explain what personal protective grounding controls and how placement of grounds can determine how much voltage appears at a work location
- 06** Understand the importance of work-site grounding
- 07** Understand impact of SCADA systems on line clearance and testing and grounding requirements
- 08** Demonstrate proper personal protective grounding techniques for single-phase and three-phase systems
- 09** Demonstrate the proper method to repair a downed neutral conductor without service interruption through the use of advanced procedures
- 10** Navigate the OEC base safety manual and the overhead grounding guide
- 11** Convert a single-phase tangent structure to a single-phase double dead-end structure

# Competency Stations

- |                                                                                                                                                                                                                                                                   |                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>A</b> Conversion A1.1 to A6.2 (climbing gear)</p> <p><b>B</b> Conversion A6.2 to A1.1 (climbing gear)</p> <p><b>C</b> Ohio Grounding Q&amp;A, Scenarios on White Board, and Grounding Board</p> <p><b>D</b> Generator Backfeed, Ground Chain Inspection</p> | <p><b>E</b> Three-phase Personal Protective Grounding and Handling Neutrals on an Energized Circuit</p> <p><b>F</b> Safety Manual Exploration</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|



**Year 2**

## **COLT 2100 - Underground Powerline Construction**



In this first of two courses in underground residential distribution (URD), construction techniques and basic components of URD systems will be introduced. The course includes personal protective grounding techniques and equipment grounding of the underground distribution system. The student will gain knowledge of critical safety related work practices necessary to deal with URD system installations. Hands-on training will include transformer installation along with elbow and pothead terminations. Additionally, students will install risers in their climbers. RUS bulletin 1728F-806 will be the guide for all underground construction. The course concludes with digging equipment used in URD installs and how to safely work around this digging equipment.



# Objectives

- 01** Describe proper personal protective equipment (PPE) and safety procedures needed for work in underground electric utility construction
- 02** Demonstrate the proper use of underground stripping tools
- 03** Accurately describe the RUS standards for various underground distribution transformer and riser applications
- 04** Name various voltages used in primary underground distribution and the type of cable and conductors required for each use
- 05** Demonstrate the ability to correctly tag and label transformers, risers, and cables along with proper signage
- 06** Demonstrate the ability to correctly install primary and secondary cables in any given URD transformer installation
- 07** Identify and install proper sizing of elbows, potheads, and bushings for any given URD transformer installation
- 08** Demonstrate the ability to properly install an underground cable splice enclosure for any given level of distribution voltage
- 09** Demonstrate proper equipment grounding and installation of bleed wires for underground facilities
- 10** Demonstrate proper procedure for replacing a bayonet fuse
- 11** Demonstrate the ability to properly test for presence of voltage and install personal protective grounds on the following:
  - a. Single-phase underground riser (dip) pole
  - b. Single-phase transformer
- 12** Identify proper safety procedures when working around digging equipment (backhoes and trenchers)

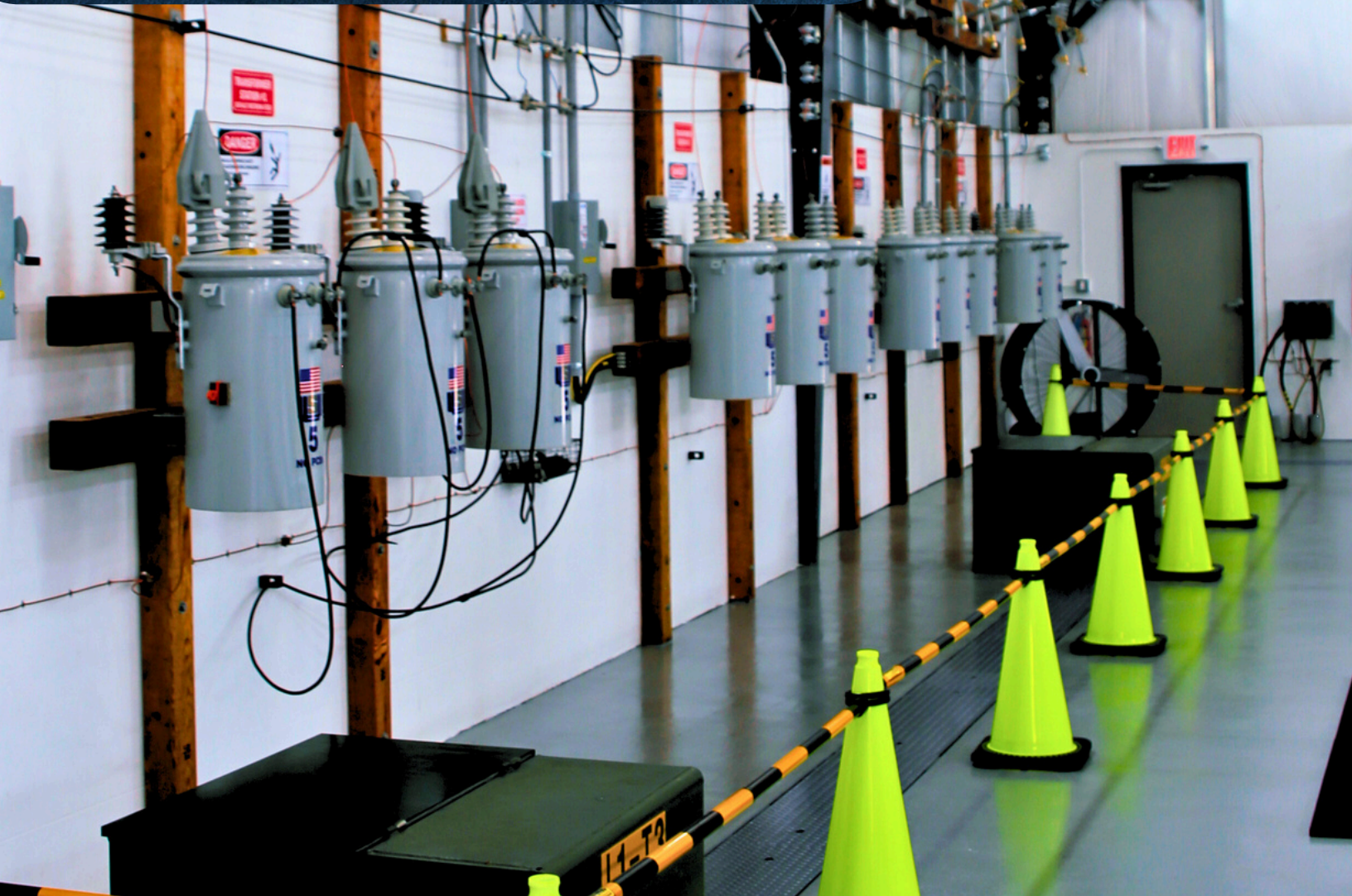
## Competency Stations

- |                                                                                   |                                     |
|-----------------------------------------------------------------------------------|-------------------------------------|
| <b>A</b> URD (Underground Residential Distribution) Personal Protective Grounding | <b>D</b> Underground Cable Locating |
| <b>B</b> URD Isolation                                                            | <b>E</b> URD Transformer Testing    |
| <b>C</b> Spiking, Splicing, URD Transformer Framing                               | <b>F</b> Bayonet Fusing             |
|                                                                                   | <b>G</b> Bleeder Wire Installation  |



## Year 2

# COLT 2200 - Distribution Transformers and Circuits



This course will give students a basic understanding of electrical essentials for powerline workers. They will be taught electrical units, the use of Ohm's Law, AC and DC circuit fundamentals, three-phase AC circuits, the use of clamp-on ammeters, and how to apply these concepts and skills to linework. This course will also include hands-on training in distribution transformers and Wye and Delta configurations of transformer banks. Students will learn the basics of single and three-phase revenue meters and safe meter sets. The course will conclude with an intermediate pole top rescue event where the student must climb around obstacles during the rescue.



# Objectives

- 01** Use Ohm's Law to solve for unknown electrical quantities
- 02** Demonstrate ability to work with series and parallel circuits
- 03** Demonstrate increasing proper use and care of a multimeter
- 04** Demonstrate proper pre-meter set inspections
- 05** Demonstrate general knowledge of transformer rated and self-contained metering
- 06** Use protective cover-up equipment on secondary voltages
- 07** Correctly interpret all transformer nameplate information
- 08** Demonstrate ability to construct all Wye/Delta transformer banks
- 09** Demonstrate ability to construct all Open-Wye/Open-Delta transformer banks
- 10** Demonstrate ability to construct all Wye/Wye transformer banks
- 11** Check rotation of a three-phase service
- 12** Demonstrate ability to troubleshoot pole top distribution transformers
- 13** Match phases on service conductors and parallel together single-phase transformers and various bank configurations
- 14** Demonstrate intermediate pole top rescue

## Competency Stations

- A** Transformer Connections
- B** Transformer Boards, Troubleshooting, and iPad Drawing
- C** Wye/Wye Transformer Connections — 120/208V 4W
- D** Wye/Delta Transformer Connections — 240V 3W Corner Grounded
- E** Wye/Delta — 120/240V 4W
- F** Transformer Connection Theory
- G** iPad Transformer Connections — All
- H** Transformer Boards
- I** Dry Erase Board Problems
- J** Open-Wye/Open-Wye Emergency Connections



## Year 2

# COLT 2300 - Overhead Powerline Maintenance I



This course introduces the student to proper rubber gloving procedures using this method to perform overhead live-line maintenance tasks. Safe work practices in a live-line work environment will be stressed along with properly applying and utilizing protective cover-up equipment. Other methods of distribution live-line maintenance, including hot sticking, will also be studied. In class, the students will re-conductor a live-line to 336 ACSR utilizing bucket trucks. Conductors will be strung through rollers proper sag tensioned on the conductors and tied in, load transferred, and the old conductors then removed. The student will also experience the use of hot boards. There will be strong emphasis on safety in all tasks performed during the course.



# Objectives

---

- 01** Demonstrate basic rubber gloving procedures on distribution primary voltages
- 02** Demonstrate proper procedures for installing/removing protective cover-up equipment
- 03** Demonstrate the ability to properly install and use a hot board
- 04** Demonstrate knowledge of basic hot sticking procedures
- 05** Demonstrate the ability to lead a crew in set up and change out of a utility line pole
- 06** Demonstrate proper setup of necessary equipment for installation and removal of wood poles
- 07** Show the ability to set up equipment for re-conductoring operations
- 08** Participate in the setup and pay-out of conductors using power reel equipment
- 09** Identify and demonstrate proper procedures and proper use of tools, and protective equipment specific to the process of re-conductoring operations
- 10** Demonstrate knowledge of methods and tools used to properly sag conductors over various spans (timing, sag board, dynamometer)
- 11** Demonstrate knowledge of various basic live-line maintenance procedures

# Competency Stations

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- A** Conversion A1.1 to A6.2
- B** Conversion A6.2 to A1.1
- C** Single-Phase A1.1 Simulated Change
- D** Single-Phase Line Build Preparation
- E** Dead-end Bell Change
- F** Installation of Floaters in Primary



**Year 3**

## **COLT 3100 - Overhead Powerline Maintenance II**



This course reviews and reinforces the skills learned in COLT 2300. The emphasis of safe work practices in an energized environment will continue to be a large part of the training in this course. A series of advanced overhead maintenance projects will be set up to simulate energized overhead line maintenance tasks. Students will be formed into work groups and will rotate through all the projects utilizing bucket trucks. Students will set poles in live-lines, replace insulators, crossarms, and apparatus, along with cutting in deadends on three-phase lines. The student will have a thorough understanding of job briefings, lockout-tagout, rubber gloving procedures, and writing of job hazard analyses.



# Objectives

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- 01** Demonstrate knowledge of the Job Safety Analysis process by writing a JSA for any selected live-line maintenance task
- 02** Given any selected hot line procedure, show ability to properly install and remove hot line cover-up equipment using the rubber gloving method from an insulated platform
- 03** Demonstrate the proper methods of clearance, lockout, and tagout on any given maintenance task
- 04** Demonstrate knowledge and skills required for the following live-line maintenance tasks using the rubber gloving method from an insulated platform:
  - a. Installation/removal of pin, suspension, and strain insulators
  - b. Installation/removal of crossarms with various specifications
  - c. Installation/removal of dead ends with various specifications
  - d. Installation/removal of in-line splices
  - e. Installation/removal of temporary mechanical jumpers
  - f. Installation/removal of hand-wrapped and prefabricated ties
  - g. Installation/removal of apparatus with various specifications for single-phase and multi-phase construction
- 05** Perform complete job briefings with a crew before live-line maintenance tasks begin

# Competency Stations

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- |                                    |                                          |
|------------------------------------|------------------------------------------|
| <b>A</b> Conversion C2.21 to C6.21 | <b>E</b> Double-circuit Simulated Change |
| <b>B</b> Conversion C6.21 to C2.21 | <b>F</b> Epoxy Bell Change Pole C2-4     |
| <b>C</b> Conversion C5.3 to C5.21  | <b>G</b> Conductor Stringing Preparation |
| <b>D</b> Conversion C5.21 to C5.3  |                                          |



**Year 3**

# **COLT 3200 - Electric Utility Apparatus and Substations**



This course introduces the student to the electric power utility distribution substation and various distribution apparatus. It begins with a focus on the overall structure and major components of a distribution substation. Safety practices while working in substations will be emphasized throughout the course. The mock substation at the training facility will be utilized offering the practical aspect. The general functions and control of the substation will be followed by a more detailed look at power transformers, circuit breakers, regulators, capacitors, relays, and control equipment found there. Further studies will be presented on regulators and their control and maintenance, basic types of reclosers and sectionalizers with proper inspection and operation, and transformer banking. The course will end with a focus on primary metering and troubleshooting along with advanced pole top rescue where the student will perform rescue in a random simulated emergency.



# Objectives

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- 01** Describe process of electric power system flow to substation
- 02** Describe all substation functions
- 03** Describe proper procedures and use of equipment to handle an oil spill in a substation environment
- 04** Show the proper methods of conducting a substation visual inspection and what to look for during the inspection
- 05** Recognize hazards and demonstrate knowledge of safe work procedures for live-line maintenance in a substation
- 06** Demonstrate the proper methods used to bypass a regulator in a substation or on a line and explain when this process is required
- 07** Demonstrate proper methods required to bypass a recloser in a substation and on a distribution line and explain when this process is required using the following methods:
  - a. Bypass fuse
  - b. Bypass bus
- 08** Describe the items of inspection for a power transformer in a distribution substation
- 09** Demonstrate increasing knowledge of three-phase transformer connection
- 10** Demonstrate basic knowledge of instrument transformers and metering equipment used on primary voltages and the hazards associated with it
- 11** Given a voltage complaint, demonstrate the troubleshooting process to resolve the issue
- 12** Demonstrate the troubleshooting process to restore a power outage in any given scenario
- 13** Demonstrate advanced pole top rescue

## Competency Stations

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- |                                                                     |                                         |
|---------------------------------------------------------------------|-----------------------------------------|
| <b>A</b> Paralleling Substations in Field                           | <b>D</b> Capacitors                     |
| <b>B</b> Voltage Regulators – Bypassing and Neutral Testing Methods | <b>E</b> Regulator and Breaker Controls |
| <b>C</b> Meter Socket Checks Review                                 |                                         |



## Year 4

# COLT 4100 - Underground Powerline Maintenance



Beginning with a review of URD fundamentals and safety practices, this course presents the student with a full range of URD live-line maintenance exercises. Students will work in crews and rotate among the stations to gain maximum exposure to URD live-line maintenance. The training field will be energized to 120/208 with three risers feeding our three-phase open-loop system. The students will be trained in phasing, live-line switching, and real-life troubleshooting scenarios. The student will terminate a 600A tee-body and work with 600 amp switchgear. The student will be trained in cable locating and in secondary fault locating. Primary fault locating will be taught using automated arc reflection technology as the students learn to “thump” cable in the field with a capacitive discharge tester.



# Objectives

---

- 01** Describe and recognize various types of underground systems
- 02** Explain different methods of testing underground cable and components for absence and presence of voltage
- 03** Demonstrate proper procedure for switching an underground open-loop system when:
  - a. Isolating a padmounted transformer for maintenance or repairs
  - b. Isolating a section of underground cable for maintenance or repairs
  - c. Isolating apparatus for maintenance or repairs
  - d. Isolating a riser pole for maintenance or repairs
- 04** Identify, understand, and properly install various types of underground faulted circuit indicators
- 05** Demonstrate various methods and proper procedures for troubleshooting underground primary systems and use proper procedures for restoring service
- 06** Demonstrate knowledge of different types of switchgear and 600 amp underground materials
- 07** Demonstrate the process of locating primary and secondary underground cable
- 08** Demonstrate the process of locating primary and secondary underground cable faults
- 09** Understand different methods of temporary service restoration during fault conditions on underground secondary cable
- 10** Explain ferroresonance and how to avoid its occurrence on underground systems
- 11** Understand common problems associated with underground system reliability and how to reduce outages
- 12** Demonstrate proper installation of personal protective grounds on three-phase risers, padmounted transformers, and switchgear

## Competency Stations

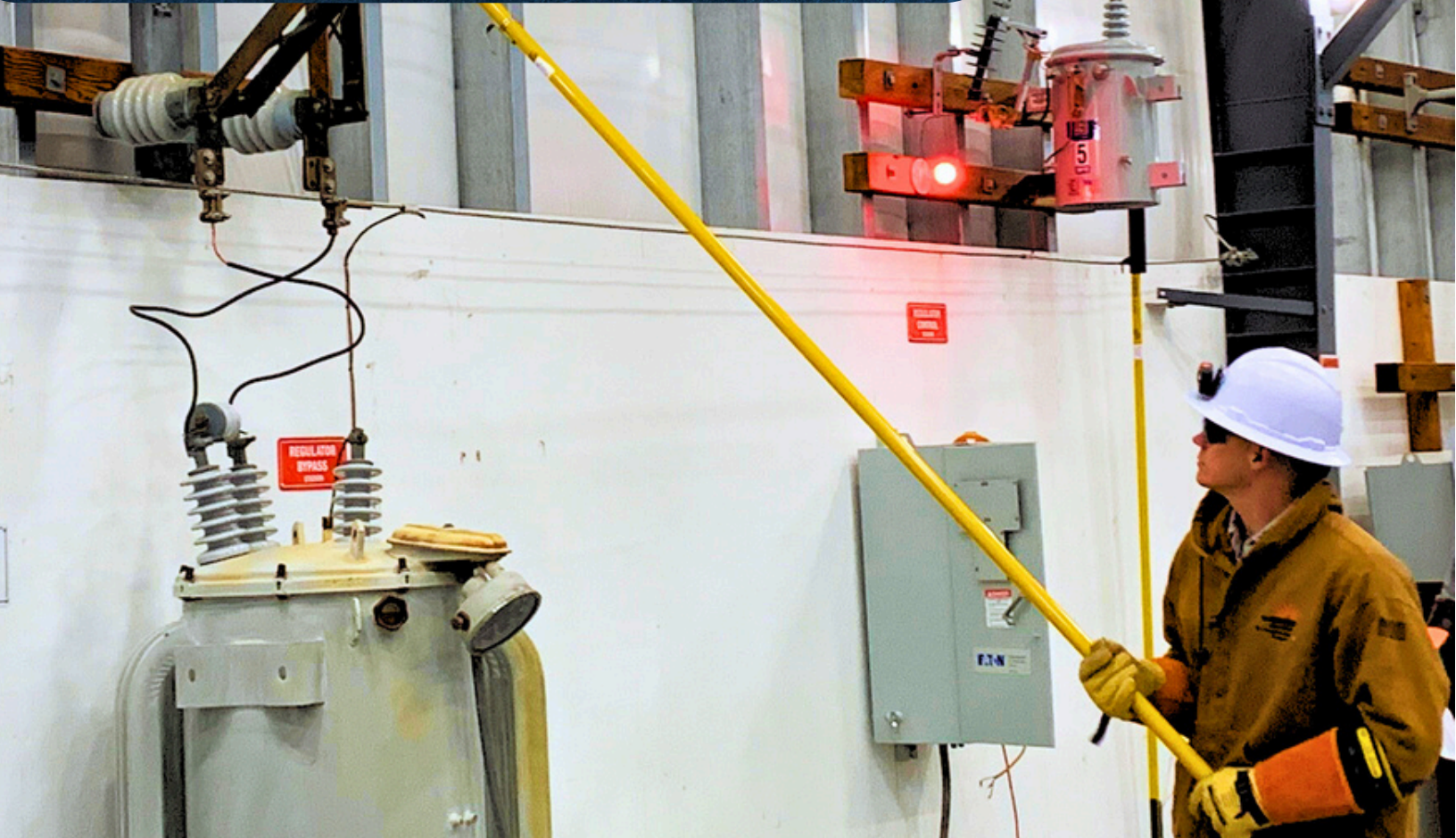
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- |                                                     |                                                   |
|-----------------------------------------------------|---------------------------------------------------|
| <b>A</b> Fault Wizard and Von Primary Fault Finding | <b>D</b> URD Locating and Secondary Fault Finding |
| <b>B</b> URD Field DC Hi-Pot Testing                | <b>E</b> URD Switch Board                         |
| <b>C</b> URD Field Switching                        |                                                   |



## Year 4

# COLT 4200 - Advanced Electric Utility Apparatus



This is a course dealing with a broader view of apparatus used in the electric power industry that linemen will encounter. The student will be exposed to regulators, reclosers, and the most common electronic controls and will have hands-on training in those areas. The student will gain a broad overview of switching circuits and substations along with the various hazards involved. System coordination will also be studied in-depth along with polyphase metering and instrument rated transformers. The student will learn how to connect both self-contained and transformer-rated polyphase meter systems. Upon completion of this course, the student will have a complete understanding of Wye and Delta systems and their applications. Industry experts will be guest speakers on a few of the subjects in this course. The course will end with a final advanced pole top rescue where the student will perform rescue in a random simulated emergency.



# Objectives

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- 01** Operate and interpret information on common solid state controls for voltage regulators
- 02** Operate and interpret information on common solid state controls for reclosers
- 03** Demonstrate an understanding of system protection in substations and on distribution lines, including lightning protection
- 04** Demonstrate an understanding of system coordination in substations and on a distribution line
- 05** Demonstrate an understanding of system and substation switching, including all tagging procedures
- 06** Demonstrate various methods and proper procedures for switching out any given overhead distribution system
- 07** Understand hazards associated with switching procedures and how to avoid common accidents associated with system switching
- 08** Demonstrate a complete understanding of primary and secondary instrument transformers
- 09** Connect a polyphase metering connection scheme for any given scenario
- 10** Troubleshoot a polyphase metering connection scheme for any given scenario
- 11** Operate assorted meter safety equipment for installation, testing, and troubleshooting
- 12** Demonstrate increasing skills in advanced pole top rescue

## Competency Stations

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**A** Troubleshooting Equipment

**B** Transformer Boards Review and Troubleshooting

**C** Transformer Rated Metering Hands-on Construction

**D** Transformer Rated Metering iPad Drawing







# Student Testimonials of Apprentice Program

*I really enjoyed my time at COLT. It has helped me to understand why we do certain things, how to do linework, and how it is done safely.*

*COLT has been a great experience for me...I've learned a lot and have really enjoyed my time here. The instructors have done an amazing job in teaching us what we need to know, but also made it fun and enjoyable to learn.*

*Overall experience at COLT was excellent. I enjoyed every week that I came up here and it's a great place to learn and connect the dots from what I've learned in the field. Thanks for everything.*

*COLT has been an amazing program and definitely tested us on what knowledge we really need for real life experiences at our cooperative.*

*Amazing school. Teachers are very knowledgeable and helpful. The overall COLT experience was amazing, I absolutely loved it.*

*Very strong program. All the instructors helped through all the things you struggled with. Helped get through stuff that some people don't work with all the time.*









# COLT™

## Journeyman Refresher Program

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**The Journeyman Refresher Program** offers veteran (7+ years of experience) lineworkers an opportunity to come out of the field and into the classroom to continue their education, hone their skills, and learn new techniques. They learn alongside their fellow alumni with whom they graduated the COLT apprenticeship program. The JRP program consists of COLT's 7000-series classes, which are five 2.5-day classes taken over the course of a calendar year. Upon completion, the veterans will receive a certificate of completion that is good for seven years.



# **Journeyman**

## **COLT 7100 - Overhead Personal Protective Grounding, Safety Manual, Electrical Test Equipment, and Wood Pole Climbing**



This classroom-based safety course will first address in mini-seminar format what many consider the most sacred practice in linework: personal protective grounding. Students will construct an adjustable braided rope sling and rotate through two stations in this quick-moving course, which includes refresher material and material they may be learning for the first time. The dynamic and energized electrical test equipment portion will include secondary troubleshooting techniques, single and three-phase meter socket checks, and a hands-on understanding of current flow. Students will improve their knowledge and skills in all aspects of wood pole fall protection, as well as their general climbing skills. Working with fiber rope, students will refresh on knot tying. The course will conclude with journeyman-level discussion of portions of the NESC and OSHA 1910.269, including qualified persons, live-line work, crew leader responsibility, and more.



# Objectives

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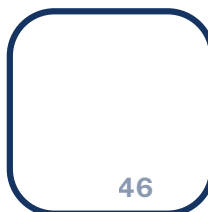
- 01** Understand elements needed for effective personal protective grounding on overhead lines
- 02** Understand the relationship between a grounding scheme and a bonding scheme
- 03** Understand application of various methods of protection to use in combination with personal protective grounding
- 04** Apply proper meter socket checks for self-contained single and three-phase meters
- 05** Understand and utilize effective methods to troubleshoot secondary voltage complaints
- 06** Construct a single-braid adjustable sling
- 07** Understand nature and prevention of recovery voltage available in a circuit
- 08** Expand understanding and application of the NESC, OSHA 29 CFR 1910.269, and safety manual
- 09** Utilize the torque formula to confirm soundness of wood poles using rocking method
- 10** Demonstrate proper inspection, adjustment, and use of fall protection equipment

# Competency Stations

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**A** Electrical Test Equipment

**B** Safety Manual





# **Journeyman**

## **COLT 7200 - URD Personal Protective Grounding, Isolation and 200A Terminations, Splices**



This course will address one of the most critical and improperly executed tasks in the field, often leaving the lineman's safety dependent upon the accuracy of a simple tag: URD personal protective grounding. Students will rotate through three stations, which will offer sufficient time to hone their personal protective grounding and isolation skills. Students will observe the hazards of an energized transformer lacking proper connection of bleed wires. Students will gain important understanding of the “why” of cable termination, and have ample opportunity to practice on elbows, terminators, and splice kits in the classroom and the field.



# Objectives

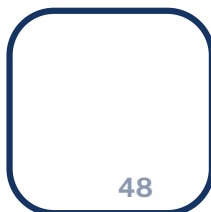
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- 01** Understand the criticality of employing safe work procedures when working on URD systems
- 02** Demonstrate several methods of testing for presence of voltage on URD systems
- 03** Demonstrate the ability to install personal protective grounding on URD systems
- 04** Demonstrate the ability to understand and practice the isolation technique of protection in proper situations
- 05** Identify the various URD 200A voltage classes and understand results of improper application
- 06** Understand and demonstrate proper installation of bleed wires on URD systems
- 07** Understand the importance of proper terminations and the results of using improper cable stripping techniques and installation
- 08** Demonstrate proper cable stripping and installation of URD elbows, terminators, and splice kits
- 09** Demonstrate proper technique for replacement of bayonet fuses
- 10** Demonstrate proper inspection, adjustment, and use of fall protection equipment

# Competency Stations

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- A** Testing, Grounding, Bleed Wires, Bayonet Fuses
- B** Cable Spiking (Piercing) and Isolation
- C** Cable Termination





## **Journeyman**

# **COLT 7300 - URD Switching and Troubleshooting 600A Terminations**



This hands-on, fast-paced, advanced URD course comes in natural progression following JRP 7200. It presents the students with a full range of URD live-line maintenance exercises as students work in crews and rotate among the stations to gain maximum exposure to URD live-line maintenance. The three-phase, open-loop underground system at the COLT field will be energized to 120/208 volts. The students will be trained in phasing, live-line switching, and real-life troubleshooting scenarios using modern equipment. The student will terminate a 600A T-body and work with switchgear. The student will be trained in cable locating and secondary fault locating. Primary fault locating will be taught using automated arc reflection technology as the students learn to hi-pot and thump cable in the field.



# Objectives

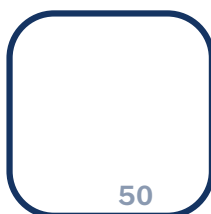
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- 01** Construct a 600-amp T-Body termination
- 02** Test medium voltage underground cable and components for presence / absence of voltage using various methods
- 03** Write switching orders and properly switch out an underground open-loop system when:
  - a. Isolating a padmounted transformer for maintenance or repairs
  - b. Isolating a section of underground cable for maintenance or repairs
  - c. Isolating apparatus for maintenance or repairs
  - d. Isolating a riser pole for maintenance or repairs
- 04** Troubleshoot underground medium-voltage systems utilizing DC hi-potting techniques
- 05** Identify different types of switchgear and 600-amp underground materials
- 06** Locate primary and secondary underground cable in all types of environments
- 07** Locate primary underground cable faults using hi-pot, TDR, and capacitive discharge techniques
- 08** Locate secondary underground cable faults using an A-Frame fault locator
- 09** Understand application of personal protective grounds on three-phase risers, padmounted transformers, switchgear, and 600A cabling systems
- 10** Troubleshoot a padmount transformer using a traditional transformer tester

# Competency Stations

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- A** Switching/Phasing in Energized Field
- B** Underground Cable and Fault Locating
- C** Switching/Troubleshooting on Board
- D** Primary and Secondary Fault Finding





# Journeyman

## COLT 7400 - Apparatus, Controls, Switching & Metering



This quick-moving journeyman course will open with a discussion on system coordination, followed by a full hands-on experience with various solid state recloser and regulator controls. Polyphase metering and instrument-rated transformers will be studied, and the student will connect various self-contained and transformer-rated polyphase metering systems utilizing the “meter wall” and iPads. Students will thoroughly inspect, control, and bypass a voltage regulator, and use various methods to return an offline regulator to neutral before re-energizing. The course will conclude with system switching while students learn practical ways to safeguard against typical switching hazards.



# Objectives

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- 01** Demonstrate an understanding of system coordination for distribution systems
- 02** Operate and interpret information on common solid state recloser and regulator controls
- 03** Safely install, inspect, and bypass voltage regulators, testing for neutral on line as well as off line
- 04** Demonstrate a complete understanding of primary and secondary instrument transformers
- 05** Demonstrate knowledge of principles associated with polyphase transformer-rated and self-contained metering connections
- 06** Demonstrate proper procedures for switching and tagging any given overhead distribution system
- 07** Understand hazards associated with system switching and how to avoid accidents commonly associated with it

# Competency Stations

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- A** Cooper CL6 & CL7 Regulator Controls
- B** Cooper Form 6 Recloser Controls with Triple-Single NOVA
- C** Cooper Form 4C, 4D, 5 Recloser Controls with Three-Phase NOVA
- D** Metering Principles and Polyphase Metering Connections
- E** Voltage Regulator and Control Inspection, Online RND Testing, Bypassing
- F** Offline RND Testing (poor man's test JR23), Substation Switching with Board



# Journeyman

## COLT 7500 - Distribution Transformer Connections and Troubleshooting



*“You don’t need to remember that – just look it up in the book.”* That old lineman mentality might get you by when simply building a transformer bank, but what happens when a technical issue arises, something changes, or there is trouble? This final 7000-series hands-on course will give students the opportunity to “understand” transformer concepts rather than “remember” connections. Following a classroom review, the students will have ample opportunity to practice their skills as they rotate through a series of hands-on stations energizing transformers, utilizing iPads, learning boards, and dry erase props to learn three-phase distribution transformer connections, transformer safety, and transformer troubleshooting.



# Objectives

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- 01** Understand the theory of Wye and Delta configurations
- 02** Understand the effect of internal and external series and parallel transformer connections
- 03** Troubleshoot open neutral conditions with greater understanding
- 04** Demonstrate ability to construct Wye/Delta and Wye/Wye transformer banks
- 05** Demonstrate ability to construct Open-Wye/Open-Delta transformer banks
- 06** Demonstrate ability to construct Delta/Wye transformer banks
- 07** Check rotation of a three-phase service
- 08** Demonstrate ability to troubleshoot various transformer scenarios
- 09** Match phases and parallel together various bank configurations
- 10** Correctly interpret all transformer nameplate information

# Competency Stations

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- A** Wye/Wye Transformer Connections — 120/208V 4W
- B** Wye/Delta Transformer Connections — 240V 3W Corner Grounded
- C** Wye/Delta — 120/240V 4W
- D** Transformer Connection Theory
- E** iPad Transformer Connections — All
- F** Transformer Boards
- G** Dry Erase Board Problems
- H** Open-Wye/Open-Wye Emergency Connections







# Journeyman Testimonials of JRP Program

“

*This is a good refresher to remember things that I haven't done or heard in a long time.*

”

“

*I came into JRP not wanting to come, but very glad I did. I thoroughly enjoyed all the classes. I learned something new every class and I look forward to the next time I can get here.*

”

“

*Great job. It's always good to get together as linemen and see how things are going at other shops.*

”

“

*A lot of good discussion about grounding. A lot of good discussion on matters we struggle with and succeed with.*

”

“

*Great job. The labs were perfect and sparked great discussions. Thanks.*

”

“

*I enjoyed the course. Coming into the co-ops new, just wanted to say thank you for making it enjoyable and very informative.*

”



# Pre-Hire Assessments

## Pre-Hire Physical Skills Assessment

When COLT began its Basic Lineworker Training program in 2009, the COLT physical skills assessment criteria were established as the baseline for new hires. It began as a 2-day assessment to help COLT identify students off the street that could succeed in the rugged COLT basic lineworker training environment. Today, this has been compressed into a 1-day assessment used solely for new hire candidates.

Nearly every cooperative in Ohio and West Virginia is now using the COLT pre-hire assessment process as a critical step prior to hiring new employees to enhance its own interview process. The pre-hire assessment is now seen as one of the most valuable services that COLT offers. COLT instructors will assess candidates who've never put on a set of pole climbers, as well as assess a seasoned journeyman lineworker being considered for hire. The goal is to assess competency in critical areas.

For a student without any job experience, the following physical skills assessment is used. This could include a candidate that has or has not attended a pre-apprentice program. After receiving proper training, the student is scored on the following skillsets:



- 01** Attitude and effort
- 02** Climbing-ascent, descent, and maneuverability on pole
- 03** Load lifting a 200-pound transformer with rope blocks
- 04** Framing out a crossarm on the ground
- 05** A1 pole-framing with provided spec sheet
- 06** Sag and deadend conductor with hoist
- 07** Dig hole; tamp back in

Following the assessment, the cooperative will receive a written summary of the candidate's performance. They'll also receive a score on a scale from 1-10 in each of the practical skillsets above, along with an overall proficiency average.



# Post-Hire Assessments

## Post-Hire Gaps Placement Assessment

When a cooperative decides to hire an experienced lineworker without a pre-hire assessment, COLT developed a post-hire gaps assessment that cooperatives can use to determine placement into the COLT program. The gaps assessment is also used as a pre-hire assessment and consists of three primary elements:

- 01** Extensive interview to help determine schedule for the day
- 02** Comprehensive written testing to determine knowledge
- 03** Field testing to determine competency in critical areas



Following the gaps assessment, the cooperative receives a written summary of the student's performance, along with a list of recommended COLT courses. The cooperative also receives a proposed schedule.







# COLD: COLT On-site Lineworker Development Program

In **2024**, COLT took its philosophy of educating and coaching into the field where COLT instructors could observe lineworker crews doing real, hands-on work. The COLD program, or COLT Onsite Lineworker Development Program, is the newest addition to the COLT program.

COLT instructors not only observe the crews work firsthand in the field, but also offer technical training on-site that potentially includes anything taught in the entire apprenticeship. Cooperative leaders also join the COLT instructors on the job site to observe their crews in action. The program helps to foster positive conversations among leaders, instructors, and lineworkers around challenges, and gets them working together to find safe solutions in the moment. Leaders, instructors, and employees are all encouraged to share their thoughts, ideas, and suggestions for improving a process if needed and ensuring safety is paramount.

COLT has found the most effective approach in developing skills and growing a safety culture is to coach lineworkers on the job site. A good crew observation is workforce development at its finest and comes in a positive environment where questions are asked, work practices are discussed, and honest feedback is given.

The COLD program works best when the co-op has already established a healthy safety culture, open and honest communication between line crews and leaders, and an environment that takes fear out of speaking up. The thought of someone observing us work can be intimidating, so it can take many positive observation visits to overcome tension of the past.





# Workshops Facilitated by COLT Instructors



## TEC 5500 Cable Locating

This 2-day workshop is led by COLT instructors. Using techniques taught at COLT in apprentice and journeyman training, this workshop expands on the training to help employees who are responsible in any way for locating underground facilities.



## Electrical System Essentials for Non-Electrical Personnel

This free, 2-hour Non-Electrical Employee Workshop is a fun and fast-paced class taught by COLT instructors at the indoor facility. The workshop will help non-operational personnel understand electric distribution systems at a deeper level. The high-level information obtained should be useful regarding safety and liability concerns with hazards and conversations with members. Completion of this workshop will equip participants with a better overall understanding of why parts of your distribution systems act the way they do.



## NEE 9100 Electrical Hazards for Non-Electrical Employees

NEE 9100 is a 2.5-day course designed specifically for Information Technology (IT) personnel who are expected to perform work inside of energized distribution substations. Even though this course was designed specifically for IT employees who need to enter substations, the training is very general in nature and would be beneficial for any person who needs to understand the hazards energized facilities present, including fiber personnel.



# Higher Learning Partnership



Ohio's electric cooperative lineworkers began expressing their desire to continue their education and grow their career opportunities within the cooperative industry after the partnership with Marion Technical College was dissolved. OEC's partnership with West Virginia University Parkersburg (WVUP) now provides that pathway for past and present students of the COLT Program to earn not only an associate's degree, but also a bachelor's degree. The partnership fosters loyalty between Ohio's electric cooperative employees and the cooperative industry, and can lead to increased retention rates of valued employees who appreciate the pathway for career growth provided by Ohio's cooperatives. The coursework required for the associate's and bachelor's degrees can be completed online, making it possible for students to work full-time while completing their degree at their own pace.



**Kyle Hoffman** began his Ohio cooperative career as a lineman at Pioneer Electric Cooperative. After nine years as a lineman, Kyle was hired to be a COLT instructor and coordinator, then was later promoted to manager of COLT. While at COLT, Kyle completed his Bachelor's Degree in Applied Science through the partnership with WVUP. In 2024, Kyle shifted into a chief operations officer at two Ohio co-ops, and now serves as president and CEO of Carroll Electric Cooperative.







**COLT<sup>TM</sup>**  
**SAFETY IS A CULTURE.**



**COLT**'s apprentice and journeyman courses immerse students in an environment of safety, which is highly integrated into every technique and procedure taught in the field, and every discussion held in the classroom. Students aren't just taught the "how to" of the job — they are thrust into an environment that requires them to learn the "why" behind industry-standard safe work practices. The goal is to ensure they understand the consequences of deviating from these safe work practices.

Over the last 20 years, the safety dynamic instilled in students at COLT has changed their approach at their own cooperative, and has helped evolve a safety culture among all lineworker crews across Ohio and West Virginia.

Students learn that safety isn't just about checking a box, using the right tool, or following a written procedure — it's also about humility and being vulnerable enough to admit you don't know something, or that you made a mistake.

”

*Culture is the sum of what we practice, permit, and promote; and a **strong safety culture is rooted in care**, in an environment of open communication where expectations have been clearly established by leadership.*

- Dwight Miller, former senior director  
Safety Training & Loss Prevention

The environment at COLT helps to create a safe space where lineworkers can openly and honestly talk about their experiences or lack of experience, so that together, everyone can learn, improve, and ultimately go home to their families each night.

The students take this culture of safety back to their own cooperative, where it becomes an expectation of the whole team, a brotherhood, and a way of life on the job.

To create a culture of safety in a lineworker training program, at a cooperative, and in the field, it all starts at the top — with the instructors in the program, the leader of the cooperative, and the leaders among your lineworker crews. What leaders say matters. What leaders don't say matters. Leaders must demonstrate that safety is not just a priority, but a value above all else, demonstrated every *single day*.

The COLT instructors embrace and reinforce this as they train new students and visit past students during field observations. The collective efforts of COLT and Ohio's electric cooperatives to integrate safety into every work practice — and every part of the cooperative — has ignited a safety culture that is incredibly strong.







ExploreAg





# Commitment to Community

Ohio's electric cooperatives are guided by seven co-op principles, and COLT exemplifies principle #7 — Concern for Community — and a commitment to sponsor and promote worthwhile causes in co-op service territories.

Each year, COLT hosts the Ohio Farm Bureau's free ExploreAg program, which aims to provide high school-age students immersive experiences in agriculture and other STEM related fields. It's the perfect pairing as COLT hopes to inspire and safely train the next generation of cooperative lineworkers.

On two separate days during the year, COLT opens its doors and welcomes a select number of high school students who are curious about pursuing a career as an electric lineworker.

COLT also hosts legislators to showcase the school's top-notch teaching facility. The day-long legislative event offers an opportunity for co-op CEOs to speak face-to-face with lawmakers about challenges that exist in the electric utility industry that could impact their electric cooperative member constituents.

Just like the ExploreAg students, the lawmakers are invited to hoist a transformer and ascend a pole. OEC's government affairs team is on-site to explain the cooperative business model and the important role electric cooperatives play in powering homes and businesses, spurring economic growth, and creating jobs in Ohio's rural communities.







BUILDING AMERICA'S NEXT GENERATION OF LINEWORKERS

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OHIO'S ELECTRIC  
**COOPERATIVES**

Your Touchstone Energy® Cooperatives 

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