

# INSIDER NEWSLETTER

## FROM MY DESK

### WHY DO UTILITIES MOUNT THE NEUTRAL ON AN INSULATOR?

During a recent safety meeting with one of our members, an interesting question came up, following a one-day transformer training class they had attended:

“We attended a transformer class yesterday and the instructor stated he didn’t understand why utilities place the neutral conductor on an insulator on every pole when it’s tied directly to ground at nearly every pole.”

It’s a fair question - and one worth explaining.

First, this practice is not unique to Indiana. In fact, it is standard construction practice at the vast majority of electric utilities across the United States.

Under the National Electrical Safety Code (NESC), the neutral on a multigrounded distribution system is considered an effectively grounded conductor and is intentionally bonded to earth at numerous locations throughout the system. However, the NESC does not specifically require either of the following:

- The neutral must be mounted directly to grounded hardware
- The neutral must be mounted on an insulator

Utilities therefore have discretion in how the neutral is mechanically supported. So why do most utilities use spool or pin-type insulators on the neutral even though it is grounded repeatedly?



IMEA Executive Director, Duane Richardson

### 1. Controlled Grounding and Current Paths

A multigrounded neutral is intentionally grounded at locations such as:

- Transformers
- Pole grounds
- Arrester grounds
- Guy bonds
- Capacitor banks
- Periodic grounding points

However, utilities generally avoid making every attachment point and every piece of pole hardware part of the neutral current path. (Continued, Page 2)

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The neutral conductor carries electrical current, including:

- Load imbalance current
- Fault current
- Harmonic current
- Induced and surge current

Because of this, the neutral is not always at zero potential. During lightning events, switching operations, heavy load imbalance, or fault conditions, the neutral can temporarily rise above earth potential.

Using an insulator allows utilities to better control where current enters and leaves the grounding system rather than unintentionally flowing through:

- Through-bolts
- Braces
- Guy wires
- Anchor rods
- Crossarm hardware
- Messenger systems

This controlled grounding philosophy improves system performance and reduces unintended current paths.

## 2. Corrosion Reduction

One of the biggest practical reasons for insulated neutral supports is corrosion prevention.

Typical distribution construction involves combinations of:

- Aluminum neutral conductors
- Galvanized steel hardware
- Copper grounding conductors
- Moisture
- Salt contamination
- Industrial pollution

When dissimilar metals remain continuously bonded together in the presence of moisture, electrochemical corrosion can occur.

If the neutral were directly bonded to grounded hardware at every pole, utilities could experience accelerated:

- Galvanic corrosion
- Electrolysis-related deterioration
- Hardware degradation
- Conductor strand damage

Over time, this may result in:

- Loss of galvanized coatings
- Pitted hardware
- Deteriorated aluminum strands
- Damaged copper-to-aluminum interfaces

Using an insulated neutral support helps reduce unintended metal-to-metal bonding and limits uncontrolled circulating current paths that contribute to long-term corrosion problems.

Utilities learned these lessons decades ago, particularly in:

- Coastal environments
- Areas with heavy road salt use
- Industrial regions
- Wet climates

## 3. Lightning and Surge Performance

Although the neutral is grounded repeatedly, mechanically isolating it from every piece of pole hardware can also improve surge behavior.

This approach helps utilities better manage how lightning energy and fault current travel through the system. The neutral remains solidly grounded where intended, but the grounding is controlled rather than occurring indiscriminately at every attachment point.

## The Bottom Line

While the neutral insulator is not serving the same purpose as a primary phase insulator, it does provide important benefits in:

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- Current path control
- Corrosion reduction
- Surge performance
- Hardware longevity
- Overall system reliability

That is why this construction practice is used by the overwhelming majority of utilities across the country. When nearly every utility in the country follows a particular construction practice, it is usually based on decades of operational experience, engineering evaluation, and lessons learned in the field.

Duane Richardson, IMEA  
Executive Director

### **IMEA 2026 Workshops**

**Register Today - [www.imea.com](http://www.imea.com)  
(workshops)**

#### **August**

August 4 - 6, 2026

#### **IMEA Top Out (Class #082222)**

Rensselaer, In.

#### **September**

September 21 - 25, 2026

#### **IMEA 613 Advanced Workshop (Class #102323)**

Rensselaer, In.

#### **October**

October 5 - 9, 2026

#### **IMEA 611 Basic Workshop (Class #092925)**

Rensselaer, In.

### **Associate Member Highlight**

#### **Edmunds GovTech**

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#### Company Description

Edmunds GovTech (EGT) provides cloud and on-prem ERP software to 2,300+ local governments across the nation. EGT offers a variety of solutions including an integrated suite of 26 different modules, web portals, mobile applications, and other technological services.





# 2026 IMEA Annual Business Meeting & Vendor Expo

**REGISTRATION IS AVAILABLE IN MAY!**

IMEA Annual Business Meeting & Vendor Expo provides an opportunity to learn from industry experts and network with peers. It attracts all levels of the Indiana utility professionals and staff from member communities, as well as IMEA staff.

The conference features educational sessions on technical programs focused on the utility industry. It also provides an opportunity to collaborate with other utilities one on one during the IMEA business meeting.

In order to make sure that all guest are provided hotel room availability we ask that you reserve your room ahead of time. This way we are able to keep track of quantity and increase the group block if needed.

We need your voice to be heard & your experience of the Public Power Industry to share with others during the IMEA Annual Business meeting.

We Look Forward to Your Participation!



**13 - 15 October, 2026**



**Belterra Casino Hotel & Resort  
777 Belterra Dr, Florence, IN 47020**

# IMEA MEMBER SERVICES & RESOURCES

- Education & Networking
- Safety & Training
- Legislative, Regulatory, and Limited Legal Assistance
- Lineman Apprentice Skills Trainin
- Mutual Aid
- DOL Journeyman Lineworker Apprentice Program
- Annual Business Meeting & Vendor Expo
- Educational Scholarships
- Joint Programs & Committees
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- Public Power Promotions
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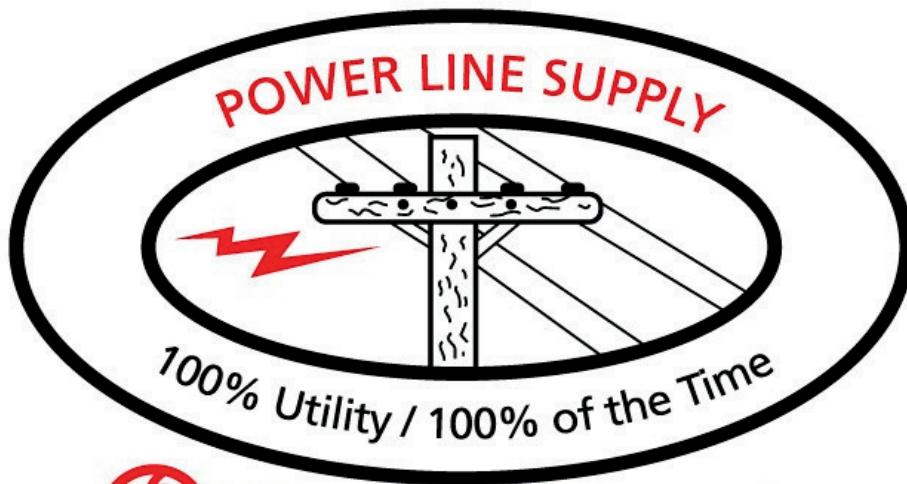


## IMEA ASSOCIATE MEMBERS

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# WHY YOU SHOULD CHOOSE IMEA LINEMAN TRAINING INSTITUTE

- Better Student-to-Instructor Ratio at 10:1 versus larger schools
- Each lineman instructor has at least 20+ years of experience
- Diverse instructor staff. Many of our linemen have not only over 30 years' experience but are well versed in substation, overhead distribution, underground utility construction, and transmission.
- Our instructors are patient, knowledgeable, constructive, and collaborative with students-not adversarial.
- In-house FULL CDL training and testing facilities. This cannot be emphasized enough as obtaining a CDL is critical to job placement, and IMEA makes obtaining a CDL very easy and affordable versus other programs. MOST schools will help you only obtain the permit versus earning the entire CDL. We do ALL of the training and TESTING in-house, on-site.
- Job placement services and career planning services.
- IMEA is a Non-Profit Organization, unlike other schools so we can provide the same training at a significantly lower cost.
- On-site lodging.



INDIANA MUNICIPAL  
ELECTRIC ASSOCIATION

# LINEMAN TRAINING INSTITUTE

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*Enrollment packages  
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## OUR PROFESSIONAL SERVICES



### Personal Protection Equipment and Procedures

Students will learn about safety working procedures and personal protection equipment.



### Electrical Systems

Students will learn the basics of the entire electrical system from generation through transmission, distribution, and conversion.



### Basic Electricity

The students will be taught the fundamentals of practical and mathematical application of Direct Current and Alternating Current.



### Transformers

Students will learn how and why transformers are used, banked, energized and the various configurations of both Delta and Wye.



### Personal Protective Grounding

Students will learn how and why companies work on transmission and distribution lines as well as all equipment and methods used when working.



### Rigging And Knot Tying

Students will learn how to tie specific knots, splice rope and learn the proper use of various ropes, slings, block and tackle.

## Why Us?

### Are You Ready To Begin Your Career Ahead Of Your Competitors?

Our lineman school program will allow you to begin your career ahead of all the rest. Our students have experience performing the jobs of a lineworker, as well as obtaining professional knowledge of the industry while they proceed through our program. Our students are well equipped to stand out from the interview to the actual job. Our program will provide an outlet for electric companies to search for new qualified applicants.

Our students will be able to enter the industry with the technical skills that their employers can't pass up!

Do you want to learn from Experienced and Knowledgeable Linemen?

The lineman school instructors at IMEA Lineman Training Institute have extensive real-world experience in power generation, transmission and distribution. Their exceptional understanding of the industry and what companies are looking for makes our program a cut above other school. Our students will have hands-on experience in the trade and be coached in problem-solving skills in order to help them excel in their work.

Do you want to be able to graduate and have the opportunities for immediate positions anywhere? Then this trade is the right career for you. IMEA Lineman Training Institute provides its lineman school graduates with a listing of municipalities that will be useful in your search. Our instructor's connections with the leaders of the trade will also give the students of IMEA Lineman Training Institute the upper hand at finding a career. Our students will be trained, not only to look for the job, but to find jobs. A career planning class is required to help our students create a resume and learn to find their own jobs.

So is it what you're looking for?



### Indiana Municipal Electric Association IMEA Lineman Training Institute

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