



# Hands-on Transformer Vectoring and Transformer Training

## WHAT LEARNERS SAY...

"Best training offered in the Line trade. Material is directly tied to safety and efficiency of our business."

*Journeyman Lineman,  
Midstate Electric Cooperative, Inc.*

"Outstanding job. I really learned something... or relearned what I should have known."

*Journeyman Lineman,  
PacifiCorp*

"The trainers did an outstanding job presenting the material."

*Journeyman Lineman,  
Klickitat PUD*

"Very good, will put people ahead of the game for our industry."

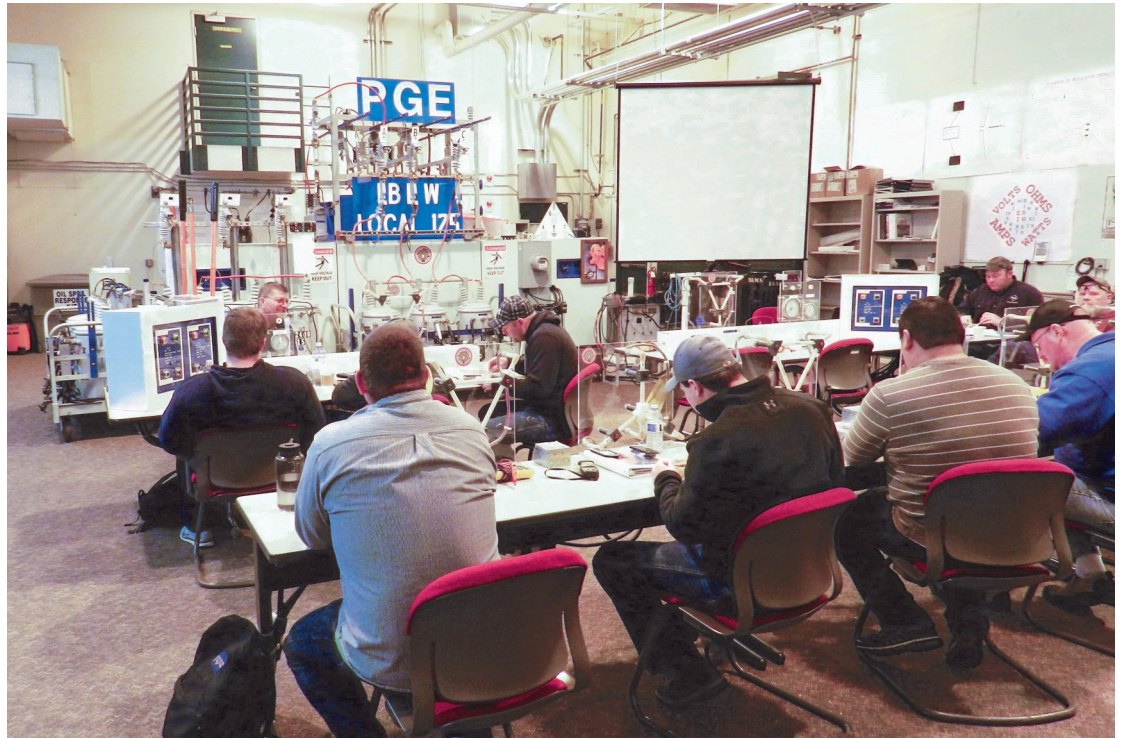
*Journeyman Lineman,  
Columbia River PUD*

"I learned more in six hours of vectoring class than I did in three years of apprenticeship, and I understood why I was doing it and how it worked."

*Apprentice Lineman*

"There was not one question that one of the three instructors could not answer."

*Journeyman Lineman,  
Columbia Basin Electric Cooperative, Inc.*



*An opportunity for Journeyman Linemen and Hot Apprentices to have a hands-on experience, seeing what happens to connecting transformers the wrong way and the right way!*

## What you get:

- A 1-day Transformer Vectoring class teaches how to know if your connections are correct, before you build the transformer bank and how to trouble shoot existing banks.
- Followed by a 4-day Transformer class to teach Journeyman Linemen and Apprentices practical applications about transformers.
- This one-of-a-kind equipment was built specifically to train Journeyman Linemen and Apprentices how and why voltages and currents do what they do.
- The equipment is working off standard configurations of 12470-volt and 7200-volt distribution transformers.
- These transformers run real loads, (3-phase hydraulic pumps and resistive heater banks).
- No other class can offer this level of training.
- Up to 12 students per class follow a workbook, using voltmeters and amp meters (at the tables) to measure voltage and currents, to find out what is right and wrong with the hook ups.



# Hands-on Transformer Vectoring and Transformer Training

## 2017 SCHEDULE

M-F, 8:00 AM - 2:30 PM

April 24th - April 28th

May 22nd - May 26th

June 26th - June 30th

July 24th - July 28th

August 21st - August 25th

September 25th - September 29th

October 23rd - October 27th



## 2017 PRICING

Vectoring/Transformer Training (5-days)

\$1,548.75  
per person

For more information contact  
Annie Yang at  
Annie.Yang@pgn.com or  
503-582-5025

Wilsonville Training Center  
29353 SW Town Center Loop East  
Wilsonville, OR 97070

### Safety First:

- You learn about backfeed from single-phase transformers, 3-phase pad mount transformers, and 3-phase transformer banks as well as from customer's load.
- You will cover polarity tests, how a single-phase transformer works, Delta-Delta, Wye-Delta, Open-Delta-Open-Wye and Wye-Wye 3-phase banks.
- Unbalanced voltage and mismatched impedances transformers.
- Installation and removal of single-phase regulators.
- See what happens if the connections are wrong and learn how to find out before they damage the customers or the utility's equipment.
- Special precautions to take around 3-wire straight power services.
- Go through the proper way to bank together 3-phase delta secondary banks, using vectors first, and then actually tying them together hot!
- This equipment and the class were designed, built, and is taught by IBEW Local 125 trained Journeymen Linemen.
- If you want your Journeymen Lineman to be the best, this school can only improve their skills!