



# Reliable Variable Frequency Drives

## Avoid installation pitfalls

You want to use variable frequency drives (VFDs) because you know they can save considerable amounts of energy. However, you're concerned after hearing reports of production interruptions when they unexpectedly trip off-line or cause breakdowns leading to unplanned outages. Learn how you can take the risk out of VFD applications and provide more reliable operations for your facility.

## This class will help you:

- Identify and avoid common problems associated with VFDs
- Recognize critical requirements for electric cables
- Address key factors that dictate the critical cable length
- Compare strategies for successful VFD operation
- Minimize potentially damaging effects of VFDs

## Who will benefit?

- Pump system operators and engineers
- Maintenance technicians and supervisors
- Facility and energy managers

## Instructor

### Ron Wroblewski, P.E., Productive Energy

Ron has over 25 years of engineering experience helping customers design, analyze, specify and optimize commercial and industrial energy systems. He is the senior DOE fan systems trainer, and provides industrial energy efficiency training worldwide for the United Nations.

**May 15, 2019**  
**8 a.m. to noon**  
**Wilsonville**

Check in & continental breakfast at 7:30 a.m.

Clackamas Community College/  
PGE Corporate University Campus  
29353 SW Town Center Loop East  
Wilsonville, OR 97070  
Free onsite parking.

**FREE** to PGE business customers.  
*Others may attend based on space;  
fee will apply.*

## Credits

- Clackamas Community College: 0.4 (CEUs)
- IFMA: 4 CFM maintenance points
- RETA: 4 PDHs

*Need special accommodations or assistance? Let us know when you register.*

For details and to register visit:

**PortlandGeneral.com/Classes**

Questions? Email [PGE.EnergyClasses@pgn.com](mailto:PGE.EnergyClasses@pgn.com)

or call 503-464-2931