

# UTILITY-SCALE TRANSFORMER WORKSHOP

**Thursday, October 29th**  
7:00AM to 5:00PM



1700 Centerview Dr., Little Rock, AR 72211  
Crimson Tide/Volunteer Room

## WORKSHOP

Utility-scale transformers are purpose-built for specific transmission and distribution system requirements, There are many different design approaches, materials and manufacturing processes that can be used to produce utility-scale transformers. These differences can result in varying levels of system performance, power transfer efficiency, fault tolerance, equipment life, cost and the like.

This one-day workshop will provide instruction on the many options available for the design and manufacture of utility-scale transformers, including phase shifting transformers. It will provide insight into specifying the design and manufacture of transformers that are most appropriate for specific system requirements. A sampling of subject matter to be covered in this workshop is provided at the end of this announcement.

**Upon completion of the workshop, participants will receive a certificate for eight PDHs.**



### INSTRUCTOR: Ronnie Minhaz, P.Eng.

Robbie Minhaz, P.Eng. is the president and founder of Transformer Consulting Services, Inc. He has more than ten years experience in the specification and design of utility-scale transformers. Prior to forming his own company, he worked as a Transformer Design Engineer at Pauwels Canada (manufacturer), an Equipment Engineer at SNC Lava Lin (ECPM), an Equipment Engineer at Enmax Power (utility), and a Lead Substation Engineer at McGregor Construction (substation construction). Mr. Minhaz holds a BS in Electrical Engineering from the University of Manitoba, Canada, and is a registered professional engineer in the province of Alberta, Canada. He is an active member of IEEE and IEEE Power & Energy Society. He has held various IEEE section-level leadership positions.

## COST & REGISTRATION

Membership Status	Through 10/16/15	After 10/16/15
IEEE Members	\$225.00	\$275.00
Non-IEEE Members	\$325.00	\$375.00
IEE Life Members, Students	\$100.00	\$150.00

***\*Become an IEEE member and enjoy the substantial IEEE member discount!***

You can register and pay online at:  
[https://meetings.vtools.ieee.org/meeting\\_view/index](https://meetings.vtools.ieee.org/meeting_view/index)  
**SELECT: REGION 5 & ARKANSAS**

The workshop fee includes breakfast, morning refreshments, lunch and workshop notebook.

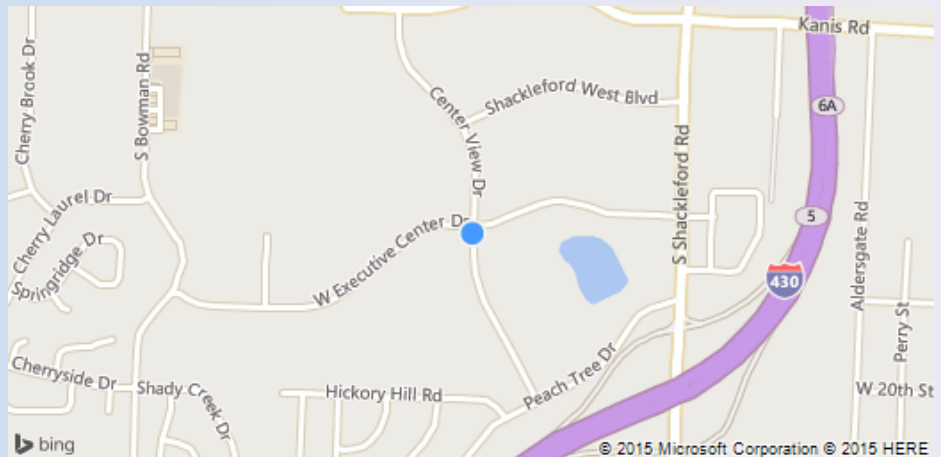
**You must preregister and prepay for this workshop. You must register by 10/26/2015 to receive a copy of the workshop notebook.**



1700 Centerview Drive  
Little Rock, AR 72211

*Crimson Tide &  
Volunteer Room*

### LOCATION



### WORKSHOP OBJECTIVES

#### 1) Transformer Design and Design Parameters

- a) Basics of Transformer Design
- b) Why North America Regulates from Low Voltage Side
- c) Why Europe Regulates from High Voltage Side

#### 2) Transformer Manufacturing Processes

- a) Industry-Wide Transformer Manufacturing Process
- b) Process Hold-Points
- c) Factory Inspection
- d) LV and HV Reconnection
- e) LTC Tap Changer (in tank and separate tank)
- f) Lead Works

#### 3) Phase Shifting Transformer Fundamentals

- a) PST Transformer Fundamentals
- b) Phase Shifting Transformers (PST Application)

### WORKSHOP SCHEDULE

07:00am-08:00am	Registration, Breakfast, Coffee, Networking
08:00am-08:15am	Opening, Instructor Information
08:15am-10:00am	Instructor Presentation Part #1
10:00am-10:30am	Morning Break
10:30am-11:00am	Continue Instructor Presentation Part #1
11:00am-12:00pm	Instructor Presentation Part #2
12:00pm-12:45pm	Lunch
12:45pm-02:00pm	Continue Instructor Presentation Part #2
01:15pm-02:45pm	Instructor Presentation Part #3
02:45pm-03:15pm	Afternoon Break
03:15pm-04:30pm	Continue Instructor Presentation Part #3
04:30pm-05:00pm	Wrap-Up and Q&A

### CONTACT & OTHER INFORMATION

If you have any questions or need any additional information about the workshop, please contact Douglas Bowman at [dbowman@spp.org](mailto:dbowman@spp.org) or (501) 688-1640.

**Doug Bowman, P.E.**  
Southwest Power Pool  
201 Worthern Drive  
Little Rock, Ar 72223

All cancellation and refund requests must be submitted in writing and received by Douglas Bowman at the address above prior to October 16. There will be a 20% processing fee charged for all refunds.