

Gas Capital Rectifier School

October 1-2, 2019 • Student Union Building • SW229 C-D



TUESDAY, OCT. 1

- 7:30 a.m. Registration
- 8 a.m. Welcome NACE Gas Capital Section
- 8:30 a.m. Rectifiers and Their Applications, Styles, Types & Features
- 9:30 a.m. Technical Session – Basic Electricity - Ohm’s Law, AC/DC Volts, AC/DC Amps, AC/DC Watts, Resistance, and Power for Cathodic Protection Rectifiers
- 1 p.m. Rectifier Transformer Design and Operation — Single windings, Dual windings, Single phase, Three Phase, AC Secondary windings
- 2:30 p.m. Rectifier Stacks – Typical Failures and Troubleshooting Techniques of Silicon Diode Stacks – How diodes work, Forward diodes, Reverse diodes, SCR diodes, Surge protection, MOVs, Breakers, Fuses
- Selenium Stacks – Selenium configurations
- Bridge Module Stacks
- 2:30 p.m. Special Purpose Rectifiers – Three Phase, Constant Current, Potential Controlled, Multiple Circuit Remote Monitoring
- 3:30 p.m. Wiring Diagrams and Schematics – Typical Rectifier Types
- 4 p.m. Grounding and Safety Issues – Method for Checking Grounding
- 4:30 p.m. End Day One

WEDNESDAY, OCT. 2

- 8 a.m. Review and Discussion – Review of Day One and Questions from Attendees

WEDNESDAY, APRIL OCT. 2

- 8:30 a.m. Rectifier Efficiencies – Conventional and Improvements with Filter Chokes
- 9:00 a.m. Rectifier Maintenance and Troubleshooting Presentation and discussion
- 1 p.m. Hands-On Troubleshooting – Analyze Various Problems and Perform Repairs
- 3:00 p.m. General Discussion – Hands-On Review
- 3:00 p.m. Written Test – Basic (Self-graded)
- 4:00 p.m. Certificates and Door-Prize Drawing (Cash Drawing)
- 4:30p.m. End Day Two

Please bring your multi-meter for the hands-on session

QUESTIONS? REGISTER?

Call 620-417-1170 or email bandi@sccc.edu.

SCHOOL INFORMATION

Lunch: Lunch will be from 11:30 a.m. to 12:30 p.m. each day. Morning and afternoon refreshments will be provided. NACE Gas Capital Section will sponsor a *social hour/dinner on Tuesday, Oct. 1, 2019*, time and location to be announced.

Lodging Information: Hotel/motels in Liberal include: Best Western Plus 620-624-9700; Budget Host LaFonda, 620-624-5601; Comfort Suites, 620-626-5439; Days Inn, 620-626-7377; Fairfield Inn & Suites, 620-624-1200, Hampton Inn, 620-604-0699; Liberal Inn, 620-624-7254; Quality Inn, 620-624-0242; or Super 8 Motel, 620-624-8880; or visit www.visitliberal.com.

Emergency Contact Number: SCCC main switchboard number is 800-373-9951 or the Business & Industry Office is 620-417-1170.

Next School Date: The date of the next Gas Capital Rectifier School will be April 7 & 8, 2020.

REGISTRATION FORM

TO REGISTER:

- Call 620-417-1170
- Fax 620-417-1179
- Gas Capital Rectifier School
ATTN: Business & Industry Office
SCCC
PO Box 1137
Liberal, KS 67905-1137

NACE Member: Yes No

Do you plan on attending the Tuesday Night Dinner/Social? Yes No

Name: _____ Date of Birth: _____

Title: _____

Company: _____

Business Address: _____

City: _____ State: _____ Postal Code: _____

Telephone: _____ Fax: _____

Email: _____

PAYMENT INFORMATION – \$300 REGISTRATION FEE:

Check Enclosed – Check #: _____

Bill my company – Attn: _____

Charge my credit card:

AMEX Discover MasterCard VISA

Name on card: _____

Card #: _____ CVV #: _____

Exp. Date: _____

Signature: _____

CANCELLATION AND REFUND POLICY: Request for cancellation must be submitted in writing by *Tuesday, September 17, 2019*. No refunds will be issued after this date.

ABOUT THE INSTRUCTOR:

Mike Llamas has worked side by side with RM (Bob) Speck in each product that is manufactured through Universal. He has taught many trouble shooting hands on classes for NACE throughout the years. He was on the cutting edge team which introduced the first stages



of remote monitoring for Cathodic Protection. Mike Llamas along with Mike Speck are the trouble shooting specialist available at Universal Rectifiers to take calls when you need help. "Our main purpose here at Universal is to continue to manufacture a product that you can rely on as well as giving the best technical support in trouble shooting we can to keep you from any down time. With our large inventory of parts we are able to get you what you need as quickly as you need it."

RECTIFIER SCHOOL COMMITTEE:

Lonnie Broce, Fanisher Corrosion Service; Autry Coleman, SCCC; Kevin Dewell, ANR Pipeline Co.; Tommy Duncan, Jacam Chemicals, LLC; Ray Fankhouser, DCP Midstream; Francis Forbes, Retired; Adrian Garcia, Northern Natural Gas Co.; Mel Fry, Jr., WGT Hugoton LP; Dale Hayse, Hayse Management Services; Billy Higgins, Enterprise Pipeline, LLC.; Jim Kirkland, DCP Midstream; Alan Leclear, Northern Natural Gas Co.; Butch McPhail, Black Hills Energy; Joshua Messenger, Energy Transfer Partners; Curt Near, Enable Midstream;

Aaron Noblitt, Northern Natural Gas; Ted Patton, Black Hills Energy; Jay Salmans, Retired; Norma Jean Dodge, SCCC; and Jennifer Farmer, SCCC.



Wednesday – Hands-on Training on 12 stations

Business & Industry Office
SCCC
1801 N. Kansas
PO Box 1137
Liberal, KS 67905-1137



29TH ANNUAL GAS CAPITAL RECTIFIER SCHOOL

October 1-2, 2019

Seward County Community College
1801 N. Kansas Ave.
Liberal, KS

Sponsored by
Gas Capital Rectifier School



in partnership with
Seward County Community College