# Gas Capital Rectifier School

April 6-7, 2027
SCCC Student Union Building • SW229C-D

## TUESDAY, APR 6

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|---|---|
| 7:30 a.m. | Registration |
| 8 a.m. | Rectifiers and Their Applications, Styles, Types & Features |
| 8:30 a.m. | Welcome AMPP Gas Capital Section |
| 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<br>Selenium Stacks - Selenium configurations<br>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 -<br>Method for Checking Grounding |
| 4:30 p.m. | End Day One |

## WEDNESDAY, APR 7

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|---|---|
| 8 a.m. | Review and Discussion - Review of Day One and Questions from Attendees |
| 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?**
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. AMPP Gas Capital Section will sponsor a social hour/dinner on Tuesday, April 6, 2027, 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; Holiday Inn Express & Suites 620-624-2485; 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 is Fall 2027. Dates TBD.

## REGISTRATION FORM

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

AMPP 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:_____Zip Code:_____
Telephone:_____
Fax:_____
Email:_____

PAYMENT INFORMATION - $300 REGISTRATION FEE:
☐Check Enclosed – Check #:_____
☐Bill my company – Attn:_____
Credit card:

**Please Call 620-417-1170 with credit card information.**

CANCELLATION AND REFUND POLICY: Request for cancellation must be submitted in writing by Tuesday, March 23, 2027 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 troubleshooting hands on classes for AMPP 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 keep you from any down time. With our large inventory of parts, we can get you what you need as quickly as you need it."

**RECTIFIER SCHOOL COMMITTEE:**

Lonnie Broce, Fanshier Corrosion Service; Kevin Dewell, Retired; Ty Dixon, Energy Transfer, Tommy Duncan, Geo Chemicals; John Fales, Southern Star Central Gas Pipeline, Ray Fankhouser, Phillips 66; Zach Feldman, Eiger, Mel Fry, Jr., Eiger; Dale Hayse, Hayse Management Services; Darren Hayse, Hayse Management Services; Billy "Ty" Herman, Phillips 66; Billy Higgins, Retired; Mike Hoskinson, Energy Transfer; Jim Kirkland; Tyler Kitts, Southbow; Alan LeClear, Retired; Bobby Marshall, Matcor, Inc.; David Martin, ONEOK; Butch McPhail, Retired; Joshua Messenger, Energy Transfer Partners; Aaron Noblitt, Northern Natural Gas; Curtis Patrick, Energy Transfer; Ted Patton, Black Hills Energy; Rick Preisner, Northern Natural Gas; Tate Reed, WTG; Yahir Salazar, NNGCO; Jay Salmans, Retired; Brad Slemp, Eiger; Bob Speck, Retired; Chris Stahlecker, Energy Transfer; Parker Stauth, Northern Natural Gas; Braden Stevens, Northern Natural Gas; Robert Tacha, Black Hills Energy; Will Worley, Retired; and Jennifer Farmer, SCCC; Amber Randles, SCCC, Nikki Cole, SCCC and Sarah Thompson, SCCC.

Wednesday-Hands-on Training on 12 stations

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

AMPP CHAPTER GAS CAPITAL

37TH ANNUAL

# GAS CAPITAL RECTIFIER SCHOOL

April 6-7, 2027

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

Sponsored by
AMPP Gas Capital Rectifier School

in partnership with
Seward County Community College