

# 45th Annual Western States Corrosion Seminar

May 3 to 5, 2011 • California State Polytechnic University • Kellogg West, Pomona, CA

## PROGRAMS OFFERED

Western States Corrosion Seminar begins on Tuesday morning with a General Session. The General Session consists of introductory remarks, welcome by NACE International President or representative, and the classic and informative film "Corrosion in Action."

In the afternoon, the seminar breaks into the following four courses of study:

**Fundamentals**—The introductory corrosion fundamentals course is designed for the new comer in the field and those with less than 2 years of experience. The objective of the corrosion fundamentals course is for each student to understand the basic fundamentals of electricity, galvanic and stray currents, corrosion control methods, and field testing procedures so that each student will have a basic technical foundation on which to build corrosion control knowledge.

**Intermediate**—The intermediate course is designed for those with at least 2 years of experience. The objective of the course is for each student to understand the forms of corrosion, corrosion control design, rectifier troubleshooting, and isolation of cathodic protection systems, soil corrosivity, and coating inspection.

**Advanced**—The advanced course provides specialized information or advanced information and theory on a wide variety of subjects.

**Each student may attend all classes in a given course or may choose to attend select classes among the various sessions.**

## OPEN FORUM AND LUNCH

An informal open forum concludes the seminar and is held during Thursday lunch. Students are encouraged to participate. Comments are solicited regarding the material covered in the courses and this is an excellent opportunity for students to ask additional questions about material covered, and provide input that will help to shape future classes. There is also a drawing for door prizes donated by the WSCS committee, exhibitors, and sponsors.

## WHO SHOULD ATTEND

Engineers in all fields, corrosion technicians, construction foremen, maintenance foremen, and management, who have responsibility for approving engineering and corrosion control related expenses, will discover the corrosion control options, their importance, and overall savings possible when corrosion control is properly implemented.

## 13th ANNUAL CP TESTER RECOGNITION COURSE

Western States Corrosion Seminar is proud to offer this 2 1/2-day course once again. It runs concurrently with the seminar. It presents cathodic protection (CP) and electricity fundamentals, basic electricity related to CP, galvanic corrosion, galvanic and impressed current CP systems, soil resistivity testing, use of shunts, routine CP testing such as structure-to-electrolyte potential testing and rectifier readings, and safety considerations. In addition to classroom instruction and discussion, students will participate in hands-on training.

**Prerequisites:** An understanding of basic electricity and a minimum of 240 hours of actual CP testing-related work experience are seriously recommended.

A CP Tester exam will be given. Those who successfully complete the exam and who have documented work experience within the last year are qualified to become recognized as a "CP Tester" as defined in Code 40 CFR 280.12 of the Code of the Federal Regulations. A certificate of completion is included upon passing the test.

Cathodic protection field personnel, technicians, and those desiring recognition as a "CP Tester" should attend this course.

Registration fee is \$640 before April 25 and \$690 after April 25. Space is limited.

## CP RECTIFIER COURSE

Western States Corrosion Seminar is proud to offer this new 2-1/2 day course. It runs concurrently with the seminar.

The course presents:

- rectifiers and their application, styles, types, features, typical field installations
- theory and operation, Ohm's Law, basic cathodic protection, reference voltages, potentials, and IR free definition
- demonstration of a working model of a CP system and the relationship to a rectifier
- rectifier component design and operation
- special purpose rectifiers and their use
- wiring diagrams and schematics
- rectifier and CP systems efficiencies and improvements
- general rectifier maintenance and repairs
- hands-on troubleshooting

A test will be given—those who successfully complete the exam will be given a certificate of completion.

An understanding of basic electricity and a minimum of 240 hours of actual CP testing-related work experience are recommended.

Cathodic protection field personnel, technicians, and those desiring knowledge of rectifiers should attend this course.

Registration fee is \$390 by April 25 and \$440 after April 25. Space is limited.

## COURSE EXAMINATIONS

Three course exams, Fundamentals, Intermediate, and Advanced, are being offered. These exams are designed to test your knowledge of the information presented during the course. All questions in the exams are discussed in the course sessions. The questions and answers were developed by the instructor teaching the course.

WSCS will test each student who signs up for the exam. Those students who pass the test will be awarded a certificate of successful completion of the corresponding course. The tests are 2-hour, 40 question, open book exams. Test scores will be mailed to the student and the student's supervisor, as requested. Each student will receive the following new hard bound book at the beginning of the course:

**Fundamentals**—*Peabody's Control of Pipeline Corrosion* and accompanying workbook and CD (List Price \$136).

**Intermediate**—NACE International's *Corrosion Basics*—*An Introduction, Second Edition* by Pierre Roberge (List Price \$215).

**Advanced**—H. H. Uhlig's *Corrosion and Corrosion Control—An Introduction to Corrosion Science and Engineering 2nd Edition* (List Price \$190).

The cost of each exam is \$125 (book, exam, and certificate) in addition to the normal registration fee.

## EXHIBITS

Products and services from foremost corrosion control companies will be on display. This is an excellent opportunity to meet local and internationally known companies in the field of corrosion control. Open throughout the seminar, the exhibit hall is the main gathering place during morning and afternoon breaks.

## CONTACT HOURS

Contact hours will be available. Each course attended provides 1.5 contact hours for a maximum number of 14.5 hours.

## REGISTRATION & LODGING FEE

The registration fee is \$390 if received by April 25 and \$440 if received after April 25. This fee includes 3 lunches, continuous refreshments, and two evening hosted social hours.

Lodging is available for the convenience of the attendee commuting from out of the area. Single-occupancy lodging for Tuesday and Wednesday nights is \$110 per night and includes breakfast and dinner. Lodging for Monday and Thursday nights is \$95 per night and includes breakfast only. Dinner for Monday and Thursday nights can be purchased in the dining room. Room check-in is available after 3 pm.

One-day registration fee for the seminar is \$175. The fee includes 1 lunch and continuous refreshments.

All attendees receive a copy of the proceedings, additional handouts, attendee roster, and attendance certificate.

## NACE INTERNATIONAL CORROSION TECHNICIAN AND CORROSION TECHNOLOGIST CERTIFICATION EXAMINATIONS

Attendees can apply to take the NACE International certification examination for Corrosion Technician, Corrosion Technologist, or other specialties to be given on Thursday afternoon. Persons who have taken the Fundamentals, Intermediate, and Advanced Sessions at WSCS should consider this an excellent opportunity to obtain professional recognition.

The Corrosion Technician exam is a 50 question multiple-choice exam divided into four parts. Exam time is 2 hours with 30 minutes per part and is open book. The exam includes basic questions on cathodic protection, electricity, metallurgy, and corrosion mechanisms. Applicants for this level of NACE certification are required to have two years of corrosion work experience. Passing grade is 70 percent and only pass/fail notifications are given.

The Corrosion Technologist exam is a 100 question, multiple-choice, four-part exam covering elementary and intermediate corrosion control facts and calculations. Exam time is 4 hours with 1 hour per part and is open book. Applicants for this level of NACE certification are required to have four years of corrosion work experience. Passing grade is 70 percent and only pass/fail notifications are given.

Persons wishing to take any of the examinations must contact Marie Newton at marie.newton@nace.org or 281-228-6211 no later than April 1 to obtain a Professional Recognition Program Information Guide which includes recommended reference materials for the exams and the appropriate application. On-site registration for the certification exams is not available.



**Earn up to 14.5 Professional Development or Contact Hours!**

## PRE-REGISTRATION

Early registration is essential to assure accommodations on the Kellogg West campus. Registration received after April 25 will incur an additional \$50 fee. You may register online at [www.westernstatescorrosion.org](http://www.westernstatescorrosion.org) or by fax, mail, or phone.

## CANCELLATION DATE

The seminar committee reserves the right to retain registration fees for students cancelling their reservation after April 15.

## TAX DEDUCTION

An income tax deduction may be allowed for educational expenses (including registration fees, travel, meals, lodging) undertaken to maintain or improve professional skills (See Treas. Reg. 1.162-5, Coughlin Vs Commissioner 203F 2d307).

## CLOTHES

The attire is strictly informal. The weather in May is very comfortable but the attendee should prepare for cool mornings and evenings.

## PRIOR PROCEEDINGS

Additional proceedings for past and present seminars can be purchased for \$35 each.

## MESSAGE CENTER

Page service and a message board are available. The phone number for the message center is 909-869-2222.

## SEMINAR FACILITIES

Kellogg West Conference Center and Lodging is on the California State Polytechnic University campus in Pomona. It is situated on 1438 acres of rolling ranch land in the Pomona Valley with the San Gariel Mountains as a backdrop. Its purpose is to support education, training, and professional development in an idyllic environment.

The 85 guest rooms and suites have just completed a multi-million dollar renovation. The result is a warm, rustic feel of raw pine and earth tones. In-room features, such as a daily newspaper, a pay-per-view movie channel, mini bar, cordless phone, and nationally recognized amenities, create an atmosphere of comfort and views of the surrounding mountains and/or campus. The newly completed pool and spa provide a relaxing setting after a full day of study.

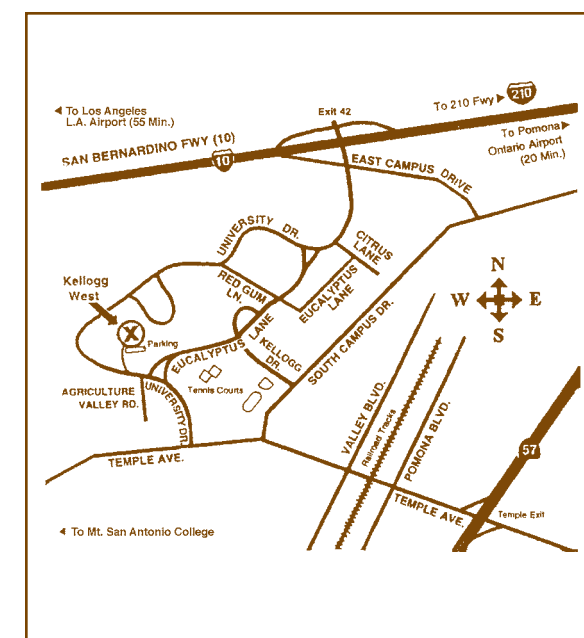
## Directions to the Campus —By car:

From San Bernardino Freeway (Interstate 10), take Kellogg Drive off-ramp and follow "Kellogg West" signs through the campus to the Kellogg West Conference Center. Obtain a complimentary parking tag at Kellogg West prior to parking.

From the Orange Freeway (Route 57), take Temple Avenue off-ramp west for approximately one mile. Turn right onto University Drive. Follow the "Kellogg West" signs through the campus to the Center. Obtain a complimentary parking tag at Kellogg West prior to parking.

## By air:

Kellogg West offers complimentary shuttle service to and from nearby Ontario International Airport for Kellogg West lodgers or \$30 one-way/\$60 round-trip for non-lodgers. Call 909-869-2222 48 hours prior to arrival for pick-up. If renting a car, follow the signs to the westbound San Bernardino Freeway (Interstate 10) and then follow the instructions above.



# 45TH ANNUAL WESTERN STATES CORROSION SEMINAR

## Corrosion Control in Action

May 3 to 5, 2011

California State Polytechnic University  
Kellogg West, Pomona, California

Sponsored by NACE International, Western Area  
[www.westernstatescorrosion.org](http://www.westernstatescorrosion.org)

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**IF UNABLE TO ATTEND, PLEASE PASS ON TO OTHER INTERESTED PERSONNEL**  
[www.westernstatescorrosion.org](http://www.westernstatescorrosion.org)

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www.westernstatescorrosion.org

| TUESDAY, MAY 3, 2011  |  |   |   | WEDNESDAY, MAY 4, 2011                           |                                     |  |                                     | THURSDAY, MAY 5, 2011                             |                                     |  |                                     |   |                                     |  |                                     |   |                                     |
|---|--|---|---|--|-------------------------------------|--|-------------------------------------|---|-------------------------------------|--|-------------------------------------|---|-------------------------------------|--|-------------------------------------|---|-------------------------------------|
| 7:30 a.m. to 1 p.m.   | 1 to 2:30 p.m.   | 3 to 4:30 p.m.  | 4:30 to 6 p.m.  | 6 to 7 p.m.                                      | 7 to 8 a.m.                         | 8 to 9:30 a.m.                                   | 10 to 11:30 a.m.                    | 1 to 2:30 p.m.                                    | 3 to 4:30 p.m.                      | 4:30 to 6 p.m.   | 6 to 7 p.m.                         | 7 to 8 a.m.   | 8 to 9:30 a.m.                      | 10 to 11:30 a.m.   | 1 to 5 p.m.                         |   |                                     |
| 7:30 to 8:30 a.m.<br>Registration   | <b>FUNDAMENTALS</b><br>(Auditorium)                    | Fundamentals of Electricity and Corrosion               | 2:30 to 3 p.m.  | Fundamentals of Cathodic Protection              | 4:30 to 6 p.m.                      | Cathodic Protection Demonstration                | 8 to 9:30 a.m.                      | Cathodic Protection Interference Causes and Cures | 10 to 11:30 a.m.                    | Basic Cathodic Protection Instruments and Testing Techniques             | 11:30 a.m. to 1 p.m.                | Cathodic Protection Design for Sacrificial and Impressed Current Groundbeds | 3 to 4:30 p.m.                      | Use and Misuse of Permanent Reference Electrodes                                   | 8 to 9:30 a.m.                      | Fundamentals of Protective Coatings                         | 1 to 5 p.m.                         |
| 8:30 to 8:50 a.m.<br>Welcome & Introduction<br><i>Sylvia Hall, WSCS Chairman</i>  | <b>R. Nelson</b><br>LADWP (Retired)                    | <b>E. Frechette</b>                                     | <b>P. Harren</b>  | <b>R. Jackson</b>                                | <b>R. Bianchetti</b>                | <b>S. Fox</b>                                    | <b>S. Foreman</b>                   | <b>G. Matlack</b>                                 | <b>T. Hobbs</b>                     | <b>G. Matlack</b>  | <b>T. Hobbs</b>                     | <b>G. Matlack</b>   | <b>T. Hobbs</b>                     | <b>G. Matlack</b>  | <b>T. Hobbs</b>                     | <b>G. Matlack</b>   | <b>T. Hobbs</b>                     |
| 8:50 to 9:15 a.m.<br>NACE President or Representative   | <b>INTERMEDIATE</b><br>(Campus Vista)                  | Forms of Corrosion                                      | 9:30 to 10:30 a.m.  | Introduction to Corrosion Control Design         | 10:30 to 11:30 a.m.                 | Design and Installation of Deep Anode Groundbeds | 11:30 a.m. to 1 p.m.                | Coating Inspection                                | 1 to 2:30 p.m.                      | Understanding Soil Corrosivity Testing                                   | 2:30 to 3:30 p.m.                   | Decoupling and Overvoltage Protection on Cathodically Protected Structures  | 3 to 4:30 p.m.                      | Cathodic Protection Rectifier Troubleshooting                                      | 4:30 to 6 p.m.                      | Construction Problems with Some Cathodic Protection Designs | 6 to 7 p.m.                         |
| 9:15 to 10 a.m.<br>Film: Corrosion in Action  | <b>P. Harkins</b><br>Tinker & Rasor                    | <b>Dr. V. Ravi</b>                                      | <b>R. Jackson</b>   | <b>S. McKim</b>                                  | <b>P. Sweeney</b>                   | <b>Dr. J. Bell</b>                               | <b>M. Tachick</b>                   | <b>J. Loomis</b>                                  | <b>G. Matlack</b>                   | <b>J. Loomis</b>   | <b>G. Matlack</b>                   | <b>J. Loomis</b>  | <b>G. Matlack</b>                   | <b>J. Loomis</b>   | <b>G. Matlack</b>                   | <b>J. Loomis</b>  | <b>G. Matlack</b>                   |
| 10 to 10:30 a.m.<br>Break in Exhibits   | <b>ADVANCED</b><br>(Poly Vista)                        | Theory and Application of Internal Corrosion Monitoring | 10:30 to noon<br>Corrosion: An Interplay of Economics, History, Electrochemistry, Electronics, and Metallurgy/Materials<br><i>Dr. V. Ravi</i> | Materials and Their Role in Corrosion Prevention | 11:30 a.m. to 1 p.m.<br>Lunch       | Corrosion Control of Concrete Pressure Pipe      | 1 to 2:30 p.m.                      | Corrosion Monitoring & Remote Monitoring Methods  | 2:30 to 3:30 p.m.                   | Screening Corroded Piping Systems Using Long-Range Ultrasonic Inspection | 3 to 4:30 p.m.                      | Coating Failures—Causes & Avoidance   | 3 to 4:30 p.m.                      | Underwater Photographic Inspection of Coatings and Other Corrosion Control Systems | 4:30 to 6 p.m.                      | Use and Misuse of Galvanic Anodes                           | 6 to 7 p.m.                         |
| 10:30 to noon<br>Corrosion: An Interplay of Economics, History, Electrochemistry, Electronics, and Metallurgy/Materials<br><i>Dr. V. Ravi</i> | <b>T. Matlack</b><br>GMC Electrical                    | <b>C. Moore</b>   | <b>Dr. V. Ravi</b>  | <b>S. Hall</b>                                   | <b>C. Moore</b>                     | <b>P. Mansour</b>                                | <b>B. Barman</b>                    | <b>D. Gross</b>                                   | <b>J. Villalobos</b>                | <b>D. Gross</b>  | <b>J. Villalobos</b>                | <b>D. Gross</b>   | <b>J. Villalobos</b>                | <b>D. Gross</b>  | <b>J. Villalobos</b>                | <b>D. Gross</b>   | <b>J. Villalobos</b>                |
| Noon to 1 p.m.<br>Lunch   | <b>CP TESTER RECOGNITION COURSE</b><br>(Hillside West) | <b>CP TESTER RECOGNITION COURSE</b>                     | <b>CP TESTER RECOGNITION COURSE</b>   | <b>CP TESTER RECOGNITION COURSE</b>              | <b>CP TESTER RECOGNITION COURSE</b> | <b>CP TESTER RECOGNITION COURSE</b>              | <b>CP TESTER RECOGNITION COURSE</b> | <b>CP TESTER RECOGNITION COURSE</b>               | <b>CP TESTER RECOGNITION COURSE</b> | <b>CP TESTER RECOGNITION COURSE</b>                                      | <b>CP TESTER RECOGNITION COURSE</b> | <b>CP TESTER RECOGNITION COURSE</b>   | <b>CP TESTER RECOGNITION COURSE</b> | <b>CP TESTER RECOGNITION COURSE</b>  | <b>CP TESTER RECOGNITION COURSE</b> | <b>CP TESTER RECOGNITION COURSE</b>                         | <b>CP TESTER RECOGNITION COURSE</b> |
|   | <b>J. Jenkins</b>                                      | <b>J. Jenkins</b>                                       | <b>J. Jenkins</b>   | <b>J. Jenkins</b>                                | <b>J. Jenkins</b>                   | <b>J. Jenkins</b>                                | <b>J. Jenkins</b>                   | <b>J. Jenkins</b>                                 | <b>J. Jenkins</b>                   | <b>J. Jenkins</b>  | <b>J. Jenkins</b>                   | <b>J. Jenkins</b>   | <b>J. Jenkins</b>                   | <b>J. Jenkins</b>  | <b>J. Jenkins</b>                   | <b>J. Jenkins</b>   | <b>J. Jenkins</b>                   |
|   | <b>CP RECTIFIER COURSE</b><br>(Valley Vista)           | <b>CP RECTIFIER COURSE</b>                              | <b>CP RECTIFIER COURSE</b>  | <b>CP RECTIFIER COURSE</b>                       | <b>CP RECTIFIER COURSE</b>          | <b>CP RECTIFIER COURSE</b>                       | <b>CP RECTIFIER COURSE</b>          | <b>CP RECTIFIER COURSE</b>                        | <b>CP RECTIFIER COURSE</b>          | <b>CP RECTIFIER COURSE</b>   | <b>CP RECTIFIER COURSE</b>          | <b>CP RECTIFIER COURSE</b>  | <b>CP RECTIFIER COURSE</b>          | <b>CP RECTIFIER COURSE</b>   | <b>CP RECTIFIER COURSE</b>          | <b>CP RECTIFIER COURSE</b>                                  | <b>CP RECTIFIER COURSE</b>          |
|   | <b>J. Bollinger</b>                                    | <b>J. Bollinger</b>                                     | <b>J. Bollinger</b>   | <b>J. Bollinger</b>                              | <b>J. Bollinger</b>                 | <b>J. Bollinger</b>                              | <b>J. Bollinger</b>                 | <b>J. Bollinger</b>                               | <b>J. Bollinger</b>                 | <b>J. Bollinger</b>  | <b>J. Bollinger</b>                 | <b>J. Bollinger</b>   | <b>J. Bollinger</b>                 | <b>J. Bollinger</b>  | <b>J. Bollinger</b>                 | <b>J. Bollinger</b>   | <b>J. Bollinger</b>                 |

## REGISTRATION FOR WESTERN STATES CORROSION SEMINAR

### CP TESTER RECOGNITION COURSE

### CP RECTIFIER COURSE

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Register online at [www.westernstatescorrosion.org](http://www.westernstatescorrosion.org) or complete and return this form.

- |  |  |
|--|--|
| <input type="checkbox"/> \$390 Seminar Registration—By April 25            | <input type="checkbox"/> \$125 Fundamentals Exam on Thursday Afternoon         |
| <input type="checkbox"/> \$440 Seminar Registration—After April 25         | <input type="checkbox"/> \$125 Intermediate Exam on Thursday Afternoon         |
| <input type="checkbox"/> \$175 One-Day Seminar Registration                | <input type="checkbox"/> \$125 Advanced Exam on Thursday Afternoon             |
| <input type="checkbox"/> \$640 CP Tester Recognition Course—By April 25    | <input type="checkbox"/> \$95 Lodging—Monday Night with Breakfast              |
| <input type="checkbox"/> \$690 CP Tester Recognition Course—After April 25 | <input type="checkbox"/> \$110 Lodging—Tuesday Night with Dinner & Breakfast   |
| <input type="checkbox"/> \$390 CP Rectifier Course—By April 25             | <input type="checkbox"/> \$110 Lodging—Wednesday Night with Dinner & Breakfast |
| <input type="checkbox"/> \$440 CP Rectifier Course—After April 25          | <input type="checkbox"/> \$95 Lodging—Thursday Night with Breakfast            |

WSCS is offering a two-hour, open-book exam for Fundamentals, Intermediate, and Advanced courses. All students taking the exam will receive a corrosion reference book at the beginning of the seminar. All students who pass the test will receive a certificate of successful completion.

Do you intend to take a NACE Corrosion Certification exam on Thursday afternoon?  Yes  No

Payment Method:  Check  VISA  MasterCard  Discover  American Express

Attendee Name: \_\_\_\_\_ Title: \_\_\_\_\_

Company: \_\_\_\_\_ Address: \_\_\_\_\_

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 For more information: Jamal Safa at 213-367-6903 or [jamal.safa@ladwp.com](mailto:jamal.safa@ladwp.com)

## SEMINAR COMMITTEE

- **Chairman** *Sylvia Hall*, Ameron International
- **Vice-Chair** *Gary Matlack*, GMC Electrical
- **Secretary** *Timothy Matlack*, GMC Electrical
- **Treasurer** *Sharon Coombs*
- **Exhibits** *Paul Adling*, S. Calif. Gas Co.
- **Facilities** *Bill Stead*, Mt Baldy Fire Dept.
- **Program** *Gary Matlack*, GMC Electrical

**Fundamentals** *Ray Nelson*, LADWP (retired)

**Intermediate** *Peter Harkins*, Tinker & Rasor

**Advanced** *Timothy Matlack*, GMC Electrical

■ **Publications** *Ray Nelson*, LADWP (retired)

■ **Publicity** *Jamal Safa*, LADWP

■ **Registration** *Sylvia Hall*, Ameron International

[www.westernstatescorrosion.org](http://www.westernstatescorrosion.org)