

Course Funding Available for Military Corrosion Specialists

By Cynthia Greenwood

Besides the dizzying array of new educational podcasts and videos that are online or in production, DoD personnel are encouraged to take advantage of training courses in the field of corrosion prevention and mitigation. A host of opportunities exist through technical societies such as NACE International, the Corrosion Society, and SSPC—The Society for Protective Coatings.

Technicians, inspectors, engineers, consultants, architects, and project managers may take advantage of a diverse array of courses related to Basic Corrosion, Cathodic Protection, Corrosion Assessment, Coatings, Coatings Inspection, and Water/Wastewater Facilities. The DoD Corrosion Policy and Oversight Office will fund the tuition and registration for all DoD employees through September 2010.

Complete course offerings are listed below, according to the subject area of expertise. To learn more about course schedules, content, and individual training providers, please click on a course title and you will be linked to the appropriate Web site and course description. As you complete a DoD course, you will be asked to take a new survey about the current corrosion training programs available for DoD personnel. This survey will also provide you the opportunity to evaluate the courses from NACE and SSPC and how they apply to your job.

General Corrosion Education

[Basic Corrosion](#)

This course focuses on corrosion and the potential problems caused by corrosion. It provides a basic but thorough review of the causes of corrosion and the methods by which it can be identified, monitored, and controlled. Active participation is encouraged through hands-on experiments and case studies, as well as an open discussion format.

[Designing for Corrosion Control](#)

This course reviews the principles of corrosion and corrosion control and provides a systematic method for applying the technology of corrosion prevention to the design process. It offers an overview of the steps involved in materials selection common to many industries. It also covers the economic considerations of incorporating corrosion control in system design and the financial principles used in evaluating alternative materials and designs. The course is suitable for anyone who has a technical corrosion background but is new to design: civil engineers, mechanical engineers, design and process engineers, consultants, contractors, and architects.

Cathodic Protection

[CP-1 Cathodic Protection Tester Course](#)

This is an intensive six-day course that presents CP technology to prepare students for the NACE Cathodic Protection Tester Certification Examination. Course topics include basic electricity, electrochemistry and corrosion concepts, CP theory, CP systems, and CP field measurement techniques. This course provides theoretical knowledge and practical fundamentals for testing on both galvanic and impressed current CP systems. It also involves lectures and intensive hands-on training with equipment and instruments used in CP testing. Hands-on training at outdoor facilities (weather permitting) is also provided. The course concludes with both a two-hour written and a two-hour practical (hands-on) examination.

CP-2 Cathodic Protection Technician

This is an intensive six-day course that presents CP technology to prepare students for the NACE Cathodic Protection Technician Certification Examination. Course topics include intermediate-level discussions of corrosion theory and CP concepts, types of CP systems, stray alternating current and direct current interference, and advanced field measurement techniques. This course provides both theoretical knowledge and practical techniques for testing and evaluating data to determine the effectiveness of both galvanic and impressed current CP systems and to gather design data. The course involves lectures and hands-on training with equipment and instruments used in CP testing. Hands-on training at outdoor facilities is also included, weather permitting.

CP-2 Cathodic Protection Technician-Maritime

Developed for NAVSEA, this six-day course provides theoretical knowledge and practical techniques for testing and evaluating data to determine the effectiveness of both galvanic and impressed current CP systems, as it applies to the marine industry. This is an intermediate CP course.

CP-3 Cathodic Protection Technologist

This is an intensive six-day course that presents CP technology to prepare students for the NACE Cathodic Protection Technologist Certification Examination. The CP 3–Cathodic Protection Technologist Course builds on the technology presented in the CP 2–Cathodic Protection Technician Course covering both theoretical concepts and practical application of CP with a strong focus on interpretation of CP data, CP troubleshooting, and mitigation of problems that might arise in both galvanic and impressed current systems. The course is presented in a format of lecture, discussion and hands-on, in-class experiments, and group exercises. There is a written examination at the conclusion of the course.

CP-4 Cathodic Protection Specialist

This is an intensive six-day course that focuses on the principles and procedures for CP design on a variety of structures for both galvanic and impressed current systems. The

course discusses the theoretical concepts behind the design and considerations that influence the design (environment, structure type/materials of construction, coatings), design factors, and calculations (including attenuation). The course involves lecture and in-class discussion and practice with design examples on various structures (i.e., pipelines, tanks and well casings, offshore applications, and steel reinforcing in concrete structures). The course concludes with the written NACE CP Specialist examination.

Coatings in Conjunction with Cathodic Protection

This course focuses on how to control metallic corrosion by applying coatings and CP—coatings being the primary method of corrosion control supplemented by CP. This course was developed for corrosion control personnel who must deal with the selection and application of protective coatings that will also be exposed to CP.

NAVSEA Cathodic Protection Design Specialist (NCPDS) Course

This course is a five-day, NAVSEA-designed and owned program that certifies an individual's capability to understand and apply cathodic protection design principles to Navy ships and submarines in accordance with the technical requirements of the ABS-Naval Vessel Rules and the Navy Technical Manual, Publication T9633-AT-DSP-010, "Ship's Cathodic Protection, Design Calculations, Design Requirements Manual." While the course is intended to certify individuals to the NAVSEA NCPDS level, the class also provides a firm foundation in CP engineering for attendees who may not be seeking full certification at this time.

*Note: Funding for this course may be provided by the DoD Corrosion Office. For more information about tuition reimbursement, please contact Andrew Seelinger at Andrew.Seelinger@navy.mil.

Corrosion Assessment

Offshore Corrosion Assessment Training (O-CAT)

The Offshore Corrosion Assessment Training course is a five-day intensive program addressing the elements of in-service inspection and maintenance planning for fixed offshore structures. The course also addresses the Minerals Management Services (MMS) A-B-C facility evaluation grading-system requirements for Level I inspection reporting.

Shipboard Corrosion Assessment Training (S-CAT)

In this five-day course developed for naval personnel, students learn how to survey and evaluate protective coating systems as part of a maintenance program for marine vessels. This course is intended to provide a foundation in coatings, corrosion, and corrosion control knowledge for assessing the condition of tanks and other structures, and determining the required actions necessary to effectively maintain fully operational status. The course will equip the assessor with practical guidelines for surveying and

evaluating the condition of the protective coating system on specific areas of a marine vessel. The desired end result is that assessors use a consistent, orderly, and repeatable process of evaluation that has the confidence of all those involved in the maintenance cycle.

Coatings and Coatings Inspection

[C-7 Abrasive Blasting Program](#)

C-7 is designed to certify operators of dry abrasive or portable centrifugal blast cleaning equipment. It covers principles of surface preparation, surface cleanliness, surface profile, dust and debris control, and abrasives. The program's primary focus is the certification of the blasters who demonstrate proper blasting techniques during the hands-on session. *The one-day classes are restricted to 10 students or fewer.*

[C-12 Airless Spray Basics](#)

This course is designed to train marine/industrial applicators to operate airless spray equipment, incorporating the use of a paint simulator for hands-on training. You'll learn the proper technique for airless spray painting by using a program that simulates real life situations and equipment used in the field. There are two course options that allow participants to complete training and certification that meet NAVSEA 009-32 requirements. Click on the link above for details about each course offering.

[Coating Inspector Program \(CIP\) Level 1](#)

This course is an intensive presentation of the basic technology of coating application and inspection over a full 60 hours of personal instruction and practice. This course provides both the technical and practical fundamentals for coating inspection work on structural steel projects.

[Coating Inspector Program \(CIP\) Level 2](#)

This course focuses on advanced inspection techniques and specialized application for both steel and non-steel substrates. The course includes in-depth coverage of surface preparation, coating types, inspection criteria, and failure modes for various coatings, including specialized coatings and linings.

[Coating Inspector Program \(CIP\) Level 2 Maritime Emphasis](#)

This course includes topics from CIP Level 1 and CIP Level 2, with a focus on coating inspection in the maritime industry. The course provides in-depth coverage of surface preparation, coating types, inspection criteria, failure modes, and case studies from the maritime industry. CIP Level 2, Maritime Emphasis highlights the skills and knowledge required to correctly address the inspection requirements of the International Maritime Organization's (IMO) Performance Standard for Protective Coatings (PSPC). The course concludes with both written and practical exams.

Coating Inspector Program (CIP) Level 3 Peer Review

This course is a detailed oral examination in front of a three-member review board that lasts approximately two hours and is graded on a pass/fail basis. The Peer Review includes a series of questions to test the candidate's practical and theoretical knowledge of coatings and coating inspection. Candidates are questioned from a random draw of topics ranging from standards, procedures, ethics, coatings use, inspection instruments, role-playing, and specific case questions. Successful completion of the CIP Peer Review is required to achieve recognition as a NACE Certified Coating Inspector Level 3 individual.

C-11 CCI Concrete Coating Inspector Program

Students who take this course will be able to determine incompleteness and/or technical errors in a specification and bring these issues to the attention of the specification writer or a supervisor. The course also reviews how to use concrete coating inspection equipment according to the manufacturer's guidelines. The certification portion of this program will certify concrete coating inspectors in the process of correctly observing, assessing, documenting, and reporting all relevant job data as determined by the specification and referenced documents. Students completing the technician-level training (first four days only) would be qualified to work under the guidance of a certified concrete coating inspector.

C-1 Fundamentals of Protective Coatings for Industrial Structures

This course provides a practical and comprehensive overview for those who are new to the protective coatings industry. It is also an ideal refresher for reviewing the fundamentals of corrosion and the use of coatings as a protective mechanism against corrosion and deterioration of industrial structures.

C-1 eCourse Fundamentals of Protective Coatings for Industrial Structures

This online course provides a practical and comprehensive overview for individuals who are new to the protective coatings industry as well as those needing a review of the fundamentals of corrosion and the use of coatings as a protective mechanism. It begins on the 15th of every month in 2009.

C-2 Specifying and Managing Protective Coatings Projects

This course is designed to sharpen your skills in managing the specific requirements of protective coatings projects.

C-2 eCourse Specifying and Managing Protective Coatings Projects

This online management course is designed to sharpen your understanding of overall industry practices, beyond your area of specialization, and put your experience in unison with the most current theories and practices that govern coatings project management. It begins on the 15th of every month in 2009.

C-14 MPCAC—Marine Plural Component Program

This course is designed to certify craft workers operating plural-component spray equipment. It also certifies those applying protective coatings on steel in immersion service by airless spray using plural-component spray equipment.

NBPI—NAVSEA Basic Paint Inspector Course

The NBPI course is similar to NACE Level I or SSPC C-1 but it was developed by the Navy. This four-day quality assessment course was developed by NAVSEA to train coatings inspectors to inspect critical coated areas as defined by Navy policy documents. These areas include but are not limited to cofferdams, decks for aviation and underway replenishment, chain lockers, underwater hulls, bilges, tanks, voids, well deck overheads, and others. The content of the course is similar in nature to the NACE CIP Level I, but with a particular focus on ship-painting issues. What makes this course valuable is that it also provides both the technical and practical fundamentals for coating inspection work for any steel structure projects other than ships.

Protective Coating Specialist 1 – Basic Principles

The course provides an introduction to coatings and linings used to control corrosion, as well as the economic benefits of managing them. This course defines and examines common coatings used for corrosion control and addresses when, how, and why they should be used.

Internal Pipeline Corrosion

Internal Corrosion for Pipelines – Basic

This course provides students with the fundamentals of implementing, monitoring, and maintaining an internal corrosion control program as part of an overall Pipeline Integrity Management program. It is an introductory level course focusing on the internal corrosion of liquid and natural gas pipelines used for transmissions, storage, and gathering systems. The course combines lecture, hands-on field-testing and case studies. The course concludes with both a written and practical examination. The practical examination includes Operator-Quality Covered Task Assessments for the following tasks: (1) Insertion and removal of internal corrosion coupons, (2) Measurement of corroded area and pit depth measurement (with pit gauge), (3) Measurement of wall thickness using handheld ultrasonic meter.

[Internal Corrosion for Pipelines – Advanced](#)

This course focuses on the monitoring techniques and mitigation strategies required to assess internal corrosion and develop and manage internal corrosion control programs. Data interpretation, analysis and integration, and criteria for determining corrective action for high-level internal corrosion problems within a pipeline system will be covered in detail. The course will be five (5) days in length. Students successfully completing the course examination, who meet the requirements, can apply for certification as a Senior Internal Corrosion Technologist.

Additional Training Opportunities

[Corrosion Prevention and Control in Industrial Water](#)

This course is designed for the infrastructure manager who requires an understanding of the world of corrosion control in federal water facilities. Course topics include current facilities equipment and best practices used in both the military community and industry for corrosion prevention and control. This course is geared for individuals working in the management or maintenance of industrial water facilities, including steam production, power generation, cooling water systems, and firewater/deluge systems.

[Defense Acquisition University CLM 038 – Corrosion 101](#)

This online Basic Corrosion course, designed for the Department of Defense, is now available online through the Defense Acquisition University (DAU) Web site. Designated as CLM 038 by the DAU, it covers basic corrosion theory, federal law pertaining to corrosion mitigation, the structure of the acquisitions community, corrosion prevention design, and several topical live-action scenarios.

DoD personnel can enroll for the course online and access it at www.dau.gov. The course is also available for non-DoD personnel to take online without credit. Those who take the course for credit will receive 12 continuing education units (CEUs) upon successful completion.

For More Information

For more information about the organizations that provide training for DoD employees, please consult the following Web sites:

[NACE International, The Corrosion Society](#)

[SSPC—The Society for Protective Coatings](#)