AMPP Auditing Standard: AS-3 ITO

Program for Accreditation of

Independent Training Organization to Provide

Coating Applicator Training Programs

15835 Park Ten Place
Houston, TX 77084 USA

Approved by the Legacy NIICAP Oversight Board: April 17, 2019

TABLE OF CONTENTS *

*This documentation is under revision as NIICAP is now a part of the QP Accreditation program with the merger of NACE and SSPC. All references to NIICAP should be replaced with AMPP QP Accrediation Program.

1. INTRODUCTION

1.1. The NACE International Institute Contractor Accreditation Program (NIICAP™) is the Contractor Accreditation Program of NACE International Institute Business Services LLC (hereafter referred to as NIIBS). This document is the NIICAP AS-3 ITO Auditing Standard, "Program for Accreditation of Independent Training Organization to Provide Coating Applicator Training Programs" (hereinafter referred to as AS-3 ITO). This standard shall be used in accordance with the "Contractor Accreditation Program Policies and Procedures Manual" (Reference 2.1) to conduct quality management audits for independent training organizations (hereinafter referred to as ITOs) providing trade skills training for surface preparation and coating/lining application personnel, and environmental, safety, and health training for any workers in the surface preparation and coating/lining application trades. These training and certification services are provided by the ITO to individuals or employees of another company or contractor.

1.2. Requiring NIICAP accreditation will improve the level of confidence that the owner has when s/he evaluates and selects a contractor to perform work. Participation in NIICAP is an indication that the contractor or ITO holds its work and training to a high standard of quality.

1.3. AS-3 ITO is a NIICAP auditing standard and represents a consensus of the NIICAP Oversight Board that reviewed this document, its scope, and its requirements.

1.4. The technical requirements of AS-3 ITO are managed by the NIICAP Oversight Board. Administrative oversight of the NIICAP accreditation program is by NIIBS personnel, the NIICAP Oversight Board, and the Policies and Procedures Committee of the NACE International Institute.

1.5. AS-3 ITO auditing standard, testing, and acceptance criteria are based on References 2.2, 2.3, and 2.7.

1.6. Management practice assessment will be based on Reference 2.5.

1.7. NIICAP assessments and audits may be performed for each independent training facility, or as a group representing no more than three (3) locations with audits occurring on a rotational basis. The decision to perform individual or representational basis will be determined solely by NIICAP to ensure adequate audit coverage and maintain the lowest practical risk for an owner.

2. REFERENCE DOCUMENTS

2.1. NIIBS "Contractor Accreditation Program Policies and Procedures Manual" (latest revision), (Houston, TX: NACE International Institute).

2.2. ANSI/NACE No. 13/SSPC-ACS-1 (latest revision), "Industrial Coating and Lining Application Specialist Qualification and Certification" (Houston, TX: NACE and Pittsburgh, PA: SSPC).

2.3. ASTM D4228 (latest revision), "Standard Practice for Qualification of Coating Applicators for Application of Coatings to Steel Surfaces" (West Conshohocken, PA: ASTM).

2.4. "NIICAP Auditor Manual" (latest revision), (Houston, TX: NIIBS).

2.5. ANSI/ISO/ASQ Q9001 (latest revision), "Quality Management Systems – Requirements" (Milwaukee, WI: ASQ).

2.6. NIICAP Standard AS-1 (latest revision), "Program for Accreditation of Field and Shop Coating Contractors" (Houston, TX: NIIBS Inc.).

2.7. NIICAP Standard AS-3 (latest revision), "Program for Accreditation of Employer Coating Applicator Training Programs" (Houston, TX: NIIBS Inc.).

3. SCOPE

3.1. NIICAP applies to all industrial and marine surface preparation and coating or lining application work performed by a NIICAP-accredited coating contractor firm. The intent of the program is to determine if an industrial/marine coatings contractor has access to the personnel, organization, qualifications, procedures, knowledge and capabilities to meet customer specifications on time and first time. This audit standard, AS-3 ITO, is used to assess the ability of an ITO to provide a trade skills training program that will provide the contractor with personnel trained and qualified to meet the customer's specifications by putting a professional workforce on the job site. NIICAP verifies that the training program content, program management, methods of delivery, testing practices, and objectivity of the testing protocol meet the NIICAP requirements at the time of the audit.

3.2. The ITO is required to meet NIICAP requirements whenever providing training or exam services for a contractor. However, the contractor shall determine what combination of training the contractor requires based on owner specifications and higher tier regulations. Therefore, the contractor shall be responsible for meeting the training and certification requirements of the owner's specification.

3.3. In all cases owners are responsible for reviewing appropriate health, safety, environmental, and regulatory documents and for determining their applicability in relation to NIICAP prior to its specification.

3.4. The baseline NIICAP accreditation, NIICAP AS-1, provides a core accreditation for the capability to perform surface preparation and coating/lining application process either in shop or in the field. After achieving the baseline AS-1 accreditation, or concurrent with achieving AS-1, contractors may seek additional NIICAP accreditation. This document, AS-3 ITO, is the audit standard to provide accreditation of an ITO to provide applicator training to contractor personnel based on References 2.2 and 2.3.

3.5. A NIICAP accreditation does not ensure, guarantee or certify that an ITO will perform in a professional, efficient, or ethical manner. A NIICAP accreditation indicates that an ITO demonstrated the capability to meet the requirements of the AS-3 ITO auditing standard at the time a NIICAP official audit was conducted. A sampling of the applicator trade skills training performed prior to and at the time of the audit, based on shop or field training and testing, and record observations, met the requirements of the AS-3 ITO auditing standard.

3.6. NIICAP accreditation of an ITO to perform applicator trade skills training, as implemented through AS-3 ITO, will provide industry and government with a recognized initial and ongoing accreditation program to verify that the ITO has demonstrated or produced the following:

3.6.1. Management and support infrastructure in place to provide an effective and thorough independent applicator trade skills training program.

3.6.2. Documented experience of at least six (6) months history of managing an independent applicator trade skills training program.

3.6.3. Specialized and documented trade skills training required to perform the surface preparation and coating/lining application practices in use by contractors in the industry. Training for specialized skills must have been witnessed during each audit.

3.7. Independent Training Organization Surface Preparation and Application Training Programs.

3.7.1. The ITO applicator trade skills training program shall meet the criteria in this standard. To receive NIICAP accreditation of an independent training program for surface preparation and application trade skills training, the independent trade skills training program must, at a minimum, meet the requirements of References 2.2 and 2.3 as implemented in this standard.

3.7.2. The NIICAP audit of an ITO application trade skills training program addresses training requirements for surface preparation tasks, coating/lining application tasks, skills and tasks ancillary to surface preparation and coating/lining application, and data collection related to in-

process QC functions. NIICAP does not provide an accreditation for ITO programs associated with independent QA/QC tasks. The only current method to obtain independent QA/QC qualification is by successfully completing one of the recognized commercially available courses.

3.7.3. The ITO is required to demonstrate an effective application trade skill training program, including testing and data/records collection for the surface preparation and coating/lining application methods typically used by contractors for industrial/marine coating/lining application.

4. DEFINITIONS

4.1. For use within NIICAP and this standard, definitions shall apply as shown in Reference 2.1.

5. INITIAL, MAINTENANCE, AND RENEWAL ACCREDITATION PROCESSES

5.1. The Initial accreditation process consists of a very thorough administrative review of management processes, documentation, lesson plan development, scheduling of training, test content and protocol, and recordkeeping, as well as an on site audit of trade skills training practices, mock up availability, training equipment condition and use to verify that in practice the trade skills training program in place meets the requirements of the trade skills training program written directions and policies. The Maintenance accreditation process is similar to the Initial accreditation process; however, it involves validation of a known functioning trade skills training program and is less intensive. Unlike AS-1, there is no “Renewal” accreditation. Subsequent audits will be “Maintenance” audits; however, NIICAP reserves the right to expand an audit either on site or administratively or conduct an unannounced audit at NIICAP’s sole discretion.

5.2. Initial Accreditation Process Overview

5.2.1. An AS-3 ITO Trade Skills application and training audit is addressed with its own application, and as a stand-alone audit.

5.2.2. The ITO submits Part 1 of the AS-3 ITO Application Form and fees.

5.2.3. The ITO fills out and submits Part 2 of the AS-3 ITO Application Form and supplemental forms and appendices. The submission should be in PDF format. The Application Part 2 sections include:

(a) ITO Facility Identification

(1) Organization Name

(2) Location Name or nomenclature

(3) Address

(4) Point of Contact information

(b) Independent Training Organization Information:

(1) Current bonding status, bond company and policy number (copy of cover sheet or declarations sheet should suffice).

(2) Current insurance policy cover sheet and declarations sheet including the current experience modification rate (EMR).

(3) Information on any health, safety or environment (HSE), national, state/province, or local citations or notices of violation (pending or final) received within the last forty-eight (48)

months for an initial application and within the last eighteen (18) months for subsequent applications.

(4) Information on any outstanding or known pending detrimental legal actions.

(5) Other company names the ITO has worked under in the past thirty-six (36) months for an initial application and within the last eighteen (18) months for subsequent applications.

(c) AS-3 ITO Appendix A: Independent Training Organization Facility Information Sheet.

(1) Describes the training facilities, classroom and lab facilities, major surface preparation and coating application equipment, and support equipment available. If several facilities have substantially the same availability of equipment and training facilities, they can be grouped on one AS-3 ITO Appendix A.

(d) AS-3 ITO Appendix B: Independent Training Organization Personnel Information Sheet.

(1) Position description including a list the experience and third-party certification for the training organization. Submit one form for each individual in the training department:

a) Training manager;

b) Instructor(s) or trainer(s).

(e) Organizational chart for the facility.

(f) AS-3 ITO Appendix C: List of Documents used to complete Part 2 of the AS-3 ITO Application.

(1) List of industry and regulatory references used to complete the application;

(2) List and copy of any proprietary references used such as internal instructions or manuals related to the training organization's application trade skills training program that was referenced to complete the AS-3 ITO Application Part 2. There is no need to include a copy of a proprietary document unless it is used to complete the AS-3 ITO Application Part 2; however, all proprietary documents shall be available during the onsite audit. Examples include:

a) Mishap investigation process;

b) Lesson plan development;

c) Training plan development including protocols or practices, such as:

1) Instructor-led training;

2) On the job training (OJT) experience tracking (when provided by contractor or student);

3) Individual study requirements;

4) Computer-based or hard copy training, quizzes, and testing;

5) Tracking and accreditation of skills (for ITO provided training); and

(g) ITO shall provide the auditor access to all program related documentation except financial records and protected personnel files.

(h) Independent Training Organization Facility Information sheet for each facility, including:

(1) A physical description of each training facility including details on major surface preparation equipment, major coating/lining application equipment, mock up equipment and fixtures;

(2) List of hands on surface preparation equipment and coating/lining application equipment available at the facility;

(3) Process Instructions, policies, procedures, SOPs Training Plans, Lesson Plans, and other documentation used to present trade skills training program and testing performed in the facility.

a) If multiple facilities use exactly the same instructions only one set of instructions is required. If there is any difference between instructions from one facility to another, a set of each of the differing instructions must be submitted with an indication of which facility uses which instructions.

5.2.4. The NIICAP chief auditor will perform a technical review based on the submitted documentation and develop a list ranking the individual training facilities.

(a) All facilities that have a trade skills training program equivalent to, or above, the facilities being audited in the ranking shall be eligible to receive AS-3 ITO accreditation for the Independent Trade Skills Training Program based on the facilities that have been audited.

(b) All facilities having a trade skills training program ranked lower, or less complete than the audited facility will not be eligible to receive AS-3 ITO accreditation for the Independent Trade Skills Training Program until the subject facilities are successfully audited, or evidence is provided showing that the training program at the subject facilities have been improved adequately to be ranked equivalent to, or above, the audited facility.

(c) The training organization may exercise the option to pursue AS-3 ITO accreditation for some facilities while not pursuing accreditation for other facilities.

(d) If a training organization exercises the option to pursue AS-3 ITO accreditation only at some facilities, no placard, statement, or evidence of AS-3 ITO accreditation can be displayed or attributed to a facility that has not received AS-3 ITO accreditation. Personnel qualifications based on AS-3 ITO accreditation are valid only from facilities that have achieved AS-3 ITO accreditation.

(e) When AS-3 ITO audits are performed that provide accreditation for multiple facilities, a maximum of three (3) independent training facilities shall be accredited based on the audit of one (1) facility. Subsequent audits shall rotate among each of the three (3) independent training facilities. Grouping of ITO audits will be at the sole discretion of NIICAP.

(f) Audit Fees are based on the number of facilities accredited, not the number of facilities audited.

5.2.5. The NIICAP administrator verifies payment of application fees prior to commencing a technical review.

(a) The NIICAP administrator shall review submitted administrative records, personnel records, doing business as and company history.

(1) The company history review will include a review of regulatory sites that provide information on company performance. In the U.S., this includes OSHA and EPA sites.

(b) The NIICAP chief auditor reviews technical portions of the submitted material and owner and job submissions to determine adequacy of the application.

(c) The NIICAP administrator or chief auditor may request any additional information needed from the ITO facility.

(d) The NIICAP administrator shall enter the application and submissions into the database and invoice the contractor for the audit fee.

(e) The NIICAP chief auditor shall select the auditor based on auditor experience and availability to match the auditor with the type of industry being audited and provide the auditor with access to the applicable documents.

(f) The auditor shall review submitted documents and perform the administrative portion of the audit to the maximum extent possible prior to traveling to the contractor's facility. The auditor sends a copy of the completed audit spread sheet to the chief auditor prior to consultation, then consults with the chief auditor regarding findings, observations, and what values to assign.

(g) Successfully completing the administrative portion of the audit is a prerequisite for verifying practices at the ITO facility. Therefore, if any of the documentation, instructions, or policies are incomplete or inadequate and will result in a failed audit, the chief auditor will notify the ITO facility of the discrepancy. The ITO facility may request NIICAP to suspend the audit while the discrepancies are addressed, and documentation is resubmitted; the request shall be submitted to the NIICAP administrator in writing.

(h) After all documentation, procedures, and instructions have been verified to be adequate and NIICAP personnel have verified that the ITO facility has paid audit fees, the auditor shall schedule the audit, travel to the contractor's facility, complete the administrative portion of the audit, and performs the shop/field portion of the audit.

5.2.6. The Initial audit shall be a thorough review of the training organization management policies related to student trade skills training. The prerequisite administrative review will include:

(1) Samples of the training organization's administrative controls, instructions, training plan, and tracking program that contributes to the adequacy and consistency of the trade skills training program; and

(2) Training records, test results, student performance reviews, and student training plans.

(3) Observing hands-on and/or written testing and grading of the test.

5.2.7. Activities of the on-site audit auditor:

(a) Observe the ITO training staff proctor a retention test or scheduled exam for selected students using the testing material previously approved during the document review portion of the audit;

(b) Verify mock-up facility and support equipment. If trade skills training and testing is performed in actual field/shop operations rather than using a mock up, the auditor shall determine if the complexity of the work site is comparable to the test apparatus described in Reference 2.3.

(c) Observe hands-on skills testing;

(d) A test cycle is one (1) student performing the practical testing applicable to the type of accreditation that will be earned. The test cycle will address either surface preparation, coating application, or both and includes grading of the hands-on test.

(e) The auditor will observe one (1) test cycle.

(f) The chief auditor and auditor review observations and possible findings during all steps of the audit to determine the facts, the significance of an observation, and whether it warrants an observation, minor finding, major finding or no designation of concern. The chief auditor and auditor shall also determine the appropriate values to assign to each of the observed attributes.

(g) The chief auditor and the auditor shall out-brief with the ITO manager. Often, this event is performed by telephone as it may occur several days after the audit.

(h) The contractor proposes corrective actions to be performed, if necessary, for consideration by the chief auditor.

(i) Once accepted, the contractor performs the corrective actions and the auditor shall verify the actions, either based on documentation or a follow up shop/field audit. Any follow up audit site-visit will be performed only after the NIICAP administrator receives payment from the ITO.

(j) The auditor and chief auditor shall develop and submit the proposed audit report to the NIICAP administrator upon completion of the shop/field portion of the audit.

(k) The chief auditor recommends appropriate action based on the audit report and validation of the corrective actions taken.

5.3. Initial and Maintenance Application Overview

5.3.1. The initial accreditation process is a very thorough review of the training organization's management, technical infrastructure of the training program, training and qualification of the instructor(s) and manager(s), training plans, lesson plans, test and quiz content and security.

5.3.2. The Maintenance accreditation process is the same as the Initial accreditation process; however:

(a) The Administrative review is less detailed and focused on determining continued consistent performance.

(b) If the ITO requests accreditation of multiple locations, each round of accreditation shall rotate among the ITO facilities.

5.4. Accreditation Cycle and Details

5.4.1. The Initial and Maintenance accreditations are valid for one (1) year.

5.4.2. The cycle consists of one (1) Initial accreditation, followed by annual Maintenance accreditations. For detailed actions refer to Section 7 of this standard.

6. AUDITOR QUALIFICATIONS

6.1. NIIBS manages a written process for selecting, training, qualifying, and evaluating NIICAP auditors who are independent contractors to NIIBS. See Reference 2.4.

7. INDEPENDENT TRAINING ORGANIZATION REQUIREMENTS TO ACHIEVE NIICAP AS-3 ITO-TRAINING ACCREDITATION

7.1. Business structure. This section is a description of the business practices used by the ITO to manage and deliver a trade skills training program and ensure the quality of the training being performed.

7.2. Applicator Trade Skills Training Program. The ITO shall have a trade skills training program and a documented Applicator Trade Skills Training Manual or collection of instructions, training plans, lesson plans, and/or Standard Operating Procedures (SOPs) directing the elements of the program defined below.

7.3. The Applicator Trade Skills Training Manual or collection of documentation shall define the parameters of the trade skills training program including:

7.3.1. Statement of training goals and student development objectives. The statements must be prominently posted and accessible to managers, instructors, and students. The primary goal shall be student development and education and the organization shall refer to the principles regularly in written and oral format.

7.3.2. Definition of the position descriptions defining responsibilities of personnel related to trade skills training functions, including training qualifications and experience expectations for the instructors.

7.3.3. Organizational chart identifying senior managers, program managers and supervisors, and instructors, including contact information. The contact information for the training organization personnel must be readily available to all employees and students.

7.3.4. Trade skills training and certification requirements for various student task assignments.

7.3.5. Description of Key Training Related-Functions and Requirements. Training related functions and requirements shall be assigned as appropriate within the organization. The key functions include:

(a) Training plan for each subject providing detail on progression from entry level helper to skilled journeyman applicator or surface preparation positions;

(b) Direction on how to develop, review, update, and deliver a lesson plan;

(c) Lesson plan specific to each subject, describing the methods for delivering the trade skills training, such as hands on, lecture, and class room or individual study;

(d) References to training plans for each subject being presented;

(e) Reference to industry standards related to the lesson plans and instructions;

(f) Direction or protocol for administering written and hands on testing, and quizzes;

(g) Direction for correcting quizzes, hands on and written tests, and recording test scores;

(h) Tracking student skills development;

(i) Perform periodic in-house surveillance or audit reports to determine compliance with applicable training requirements. The training manager shall review data developed during development, delivery, and testing of the lesson plans to develop and follow up on findings, corrective actions, and incorporate lessons learned into the training program where practical.

7.4. Effective In-house Applicator Training Management Team.

7.4.1. The ITO shall have an effective in-house training management team as defined in the organization's Applicator Trade Skills Training Manual or similar documentation. At a minimum the management team shall consist of an applicator training manager and an applicator trade skills instructor.

7.4.2. There shall be provision for updating the lesson plan and curriculum. This can be accomplished by assigning someone within the organization, or by using proprietary materials provided by a third party.

7.4.3. Depending upon the size and complexity of the ITO, and the extent of the training provided, additional instructors may be necessary for hazardous material, hazardous waste, occupational safety and health, environmental compliance, and specialty skills.

7.4.4. The team must have enough depth to support the number of students that the ITO supports at the peak workload. However, one individual may perform more than one function.

7.5. Position Descriptions. At a minimum, the position descriptions for the positions noted below should include the following responsibilities:

7.5.1. Applicator training manager responsible for management of the overall trade skills training program:

(a) Development and approval of the applicable training plans, lesson plans, exams, quizzes, lecture material, and retention testing except when these materials are obtained from a third party.

(b) Manage the functions and professional development of the Instructors;

7.5.2. Applicator trade skills instructor (reporting directly to the applicator training manager):

(a) Present material in accordance with the applicable lesson plan;

(b) Answer technical questions posed by the students;

(c) Proctor exams and quizzes;

(d) Counsel students on academic or trade skill strengths and weaknesses;

(e) Maintain records of the students' progress;

(f) Report recommendations for changes in the lesson plans to the applicator training manager; and

(g) The applicator trade skills instructor shall provide input regarding student progress.

7.5.3. Instructor reports directly to the applicator training manager and performs all of the instructor functions identified above for subjects other than trade skills that are required for effective business function, including:

(a) General safety, health, and environmental training; and

(b) Specialized subsets of safety, health, and environmental related to a specific task. Examples include:

(1) Heavy metals exposure;

(2) Elevated work platform operator;

(3) Hazardous material and hazardous waste generation, storage, labeling, and disposal management requirements;

(4) Fall protection; and

(5) Confined space.

7.5.4. The ITO shall maintain records of student periodic reviews addressing his/her progress.

7.5.5. Depending upon the size of the ITO, one individual may perform any combination of the above positions, or the individual may have additional duties.

7.6. Required Skills and Proficiencies.

7.6.1. The training program shall include and document required skills and proficiencies, instructor-led training, on-the-job-training (based on student or employer reporting), and skills testing for various levels of students, from entry-level laborers to technicians skilled in the use of technical equipment appropriate for the work performed by, and equipment and processes used by, the employer.

7.6.2. Examples of technical surface preparation and application equipment include:

(a) Ultra-High Pressure (UHP);

(b) Abrasive blasting;

(c) Plural component airless spray;

(d) Airless spray;

(e) Conventional and High-Volume Low Pressure (HVLP) spray;

(f) Electrostatic and powder coating spray.

7.6.3. The ITO's applicator trade skills training program may be delivered internally, by a third party, through a commercially available program, or a combination of the above methods.

7.6.4. NIICAP recognizes the following third-party programs as meeting the requirements of general applicator trade skills training and meeting the body of knowledge requirements of Reference 2.2:

(a) International Union of Painters and Allied Trades Apprenticeship Training Program for Painters (IUPAT);

(b) NCCER Industrial Lining and Coating Application Specialist Training Program;

(c) SSPC Coating Applicator Specialist training program;

(d) NACE International Coating Application Training Program;

(e) NACE International Institute Coating Applicator Certification Program.

7.6.5. NIICAP recognizes the following third-party programs as meeting the requirements of the specific skills addressed by each certification:

(a) NACE CCA Program;

(b) SSPC C-7 Abrasive Blasting Program;

(c) SSPC C-12 Spray Application Program;

(d) SSPC C-13 Waterjetting Program;

(e) SSPC C-14 Marine Plural Component Program;

(f) SSPC ATT Train the Trainer Program; and

(g) NCCER Painting Program.

(h) An ITO program based on successful NIICAP AS-3 ITO accreditation.

7.6.6. The ITO program shall include the following details:

(a) All items mentioned in paragraph 5.2.3 (f) (2);

(b) One or more training plans that address each lesson plan. One training plan may address a collection of lesson plans, such as all subjects required for a student trade certification or skill set. Training plans may address such subjects as:

(1) Safety and environmental requirements including:

a) General and specialized knowledge and skill sets;

b) Respiratory requirements;

c) Basic training for student safety and health requirements required by higher tier regulations;

d) Environmental practices necessary to prevent spills or inadvertent discharge of hazardous material or hazardous waste to the environment;

e) Hazardous material and hazardous waste handing, storage and management skills and methods; and

f) Any other skills or qualifications defined by higher tier.

(2) Surface preparation skills and methods including awareness of surface preparation standards;

(3) Coating/lining application skills and methods;

(4) Specialized skills; examples include but not limited to elevated work platform, confined space, Competent Person, and material handling equipment use.

(c) A lesson plan for every subject presented by the organization. For subjects that are outsourced for development or delivery, there are two requirements to meet the requirements for a lesson plan:

(1) The organization presenting the training shall maintain the lesson plan.

(2) The organization that develops the training for delivery by the ITO shall provide the copy of the lesson plan.

(d) A tracking system for each student that includes managing and tracking:

(1) Training elements completed by the student;

(2) Certifications held by the student (when reported by the student or the employer);

(3) Skills testing completed by the student, test scores, observations, and approvals;

(4) Written input from the instructors regarding student progress based on instructor observation of quizzes, tests, and student understanding of the curriculum;

(5) A periodic review of the training being delivered to determine if the training plan is being followed and if the training plan needs to be modified. The review periodicity must be at least annually.

(e) An applicator training manager or instructor assigned to maintain and review the tracking and progress of the students including strengths and weaknesses as appropriate.

(f) The training program will define the student progress review frequency. The frequency will be at least annually.

(g) Training may be cursory or in-depth, depending upon if the training is intended to make a student aware of a program, or if the training is intended to qualify the student to actively participate in the task. An example is crane safety for an applicator who does not operate a crane would consist of awareness of the hazards and how to avoid them. Crane safety for an applicator who also operates a portable or wall mounted crane or performs rigging tasks would include hand signals, how to operate the crane, how to communicate an emergency stop, appropriate rigging practices, etc.

7.7. General Knowledge Requirements.

7.7.1. Testing or other methods shall be used to verify that the student can read, write, speak, and understand instructions in the language of the worksite. In some cities, regions, or countries, more than one language is in common use at worksites. The lesson plan shall verify that the student can communicate effectively in one of the common languages at the worksite.

7.7.2. Students receive safety and health training prior to exposure to any health or safety hazards and other general hazards as they apply to the working environment and as defined in Appendix 1 of this standard.

7.7.3. The principles of corrosion explaining what it is and why it is detrimental to engineered materials.

7.8. Training and Skills Development of Surface Preparation and Applicator Students. The ITO lesson plans or similar documentation shall contain the required elements, and all other documentation necessary as a prerequisite to the field/shop audit. The auditor will perform an on-site audit to verify that the ITO follows the training plan for all training practices, test administration, delivery of

content, and all functions defined in the contractor's training plan, including the general trade skills knowledge requirements below:

7.8.1. Environmental Controls.

(a) Environmental conditions requirements and testing procedures:

(1) Ambient temperature;

(2) Surface temperature;

(3) Humidity; and

(4) Dew point;

(5) All readings prior to, during, and after:

a) Surface preparation;

b) Coating/lining application; and

c) Cure to recoat and cure to service.

(b) The principles of environmental controls, benefits, and concerns with enclosures, and ventilation principles.

(1) Containment designs and concerns;

(2) Exhaust ventilation (filtered and unfiltered);

(3) Dehumidification; and

(4) Heating and cooling.

7.8.2. Surface preparation.

(a) Initial cleanliness.

(1) Surface assessment including steel grade (A, B, C, or D);

(2) Understanding of health, safety, and environmental requirements related to existing coatings;

(3) Surface cleanliness standards prior to surface preparation;

a) Methods and materials to accomplish cleaning to SSPC SP-1 or locally specified equivalent:

1) Organic solvents;

2) Water;

3) Pressure washing;

4) Alkaline or acidic cleaners; and

5) Dipping;

(b) Surface preparation standards:

(1) SSPC hand and mechanical cleaning standards;

(2) Joint NACE/SSPC abrasive cleaning standards;

(3) Joint NACE/SSPC waterjetting and wet abrasive blasting standards; and

(4) ISO hand, mechanical, and abrasive cleaning standards.

(c) Common abrasives, examples include:

(1) Crushed slag;
(2) Aluminum oxide;
(3) Silicon carbide;
(4) Garnet;
(5) Steel shot;
(6) Steel grit;
(7) Glass beads;
(8) Plastic media; and
(9) Agricultural abrasives.

(d) Surface preparation of special substrates, examples include:
(1) Galvanized/zinc coated;
(2) Aluminum;
(3) Stainless steel; and
(4) Dissimilar metals.

(e) Surface preparation of complex geometry;

(f) Surface defects;

(g) Surface preparation methods:
(1) Dry abrasive blast;
(2) Wet abrasive blast;
(3) Centrifugal blast;
(4) Water jetting and water cleaning;
(5) Hand tool;
(6) Power tool;
(7) Acid etching; and
(8) Dipping.

(h) Surface preparation equipment:
(1) Dry abrasive blasting machine;
(2) Dust collector;
(3) Vacuum recovery equipment;
(4) Containment;
(5) Compressor;
(6) Wet abrasive blasting machine;
(7) Centrifugal abrasive blasting machine;
(8) Pressure washer;
(9) High-pressure or ultra-high-pressure water-jetting machine;
(10) Water containment and treatment methods;

(11) Hand tools;

(12) Power tools; and

(13) Shop vacuum.

(i) Surface preparation acceptance elements:

(1) Cleanliness achieved vs. cleanliness specified;

(2) Surface profile; and

(3) Invisible contaminants.

(j) Testing, inspection, frequency, and documentation:

(1) Equipment inspection;

(2) Nozzle aperture test;

(3) Blotter test;

(4) Needle pressure test;

(5) Profile testing;

(6) Nonvisible contaminants testing;

(7) Abrasive cleanliness; and

(8) Visual inspection of surface cleanliness and surface preparation standard achieved just prior to coating/lining application.

7.8.3. Coating/lining application

(a) Physical properties of coatings:

(1) Convertible vs. non-convertible;

(2) Curing mechanisms; and

(3) Properties of the types of coatings.

(b) Appropriate coating selection based on service;

(c) Product data sheet;

(d) Material storage and staging;

(e) Material mixing:

(1) Visual inspection for material condition;

(2) Proper components;

(3) Proper ratio;

(4) Proper sequence of mixing;

(5) Proper amount of mixing; and

(6) Proper stand in or induction time.

7.8.4. Coating/lining application methods:

(a) Brush and roll;

(b) Mitt;

(c) Airless spray;

(d) Plural component airless spray;

(e) Air assisted airless spray;

(f) Conventional spray;

(g) HVLP spray;

(h) Dip method; and

(i) Flood and flow method.

7.8.5. Coating/lining application equipment:

(a) Brush and roller;

(b) Mitt;

(c) Electrical or compressed air source airless spray pump;

(d) Plural component airless spray pump;

(e) Air-assisted airless spray pump;

(f) Conventional spray system:

(1) Separate pressure pot;

(2) Pressure feed attached pot; and

(3) Gravity feed attached pot.

(g) HVLP spray system;

(h) Dipping facility; and

(i) Flood and flow facility.

7.8.6. Recognizing and addressing application errors:

(a) Improper spray pattern or overlap;

(b) Fingering or tailing;

(c) Improper thickness (too thin, too thick);

(d) Holidays, complex geometry; and

(e) Off ratio pump.

7.8.7. Testing, inspection, frequency, and documentation:

(a) Wet Film Thickness readings;

(b) Dry Film Thickness readings;

(c) Visual inspection; and

(d) Adhesion testing.

7.8.8. Data Collection and Documentation.

(a) The ITO shall define the training and certification required to perform data collection and quality control tasks based on higher tier requirements, including Paragraph 2.2.

(b) Training and certification for the student to perform independent QA/QC functions shall be provided by a third party such as NACE, the NACE International Institute, NBPI, NCCER, SSPC or FROSIO.

(c) Training and certification for the student to perform in-process informal data collection and documentation may be provided by the ITO.

(d) Training and certification for the student to perform in-process informal data collection and documentation training shall include:

(1) Specific instruction on the use of precision measuring equipment and shop/field verification of the equipment's accuracy. The precision measurement training must be validated based on hands-on testing;

(2) Direction for actions to be taken if "out of specification" data is collected (recorded values are considered accurate; however, they are not in compliance with specification requirements);

a) Direction shall include requirement to reconcile the discrepancy based on technical direction either in the specification or provided in writing by the owner's representative.

(3) Direction for actions to be taken when a gauge calibration cannot be verified (gauge is significantly out of the calibration range, or calibration has expired);

a) Direction shall include what actions are required for isolation of the gauge or instrument; and

b) Direction shall include what actions are required to reconcile all data collected since the last successful verification of gauge or instrument calibration, or all data collected since the gauge or instrument calibration expired.

(4) Data collection and documentation requirements including completing a sample set of process QA/QC documentation;

(5) Specific hold point tasks, and general observation tasks; and

(6) Importance of objectivity and integrity in data collection and documentation.

7.9. Testing Policies to Verify Trade Skills Knowledge.

7.9.1. The Applicator Trade Skills Training Manual or training program instruction shall contain a section covering testing protocols used for quizzes, written tests, and hands on testing for demonstrating trade skill knowledge. The following policies shall be included:

7.9.2. Required policies include:

(a) Maintain physical and intellectual security of test materials, test keys, student records and grades;

(b) Requirement that any cheating during a test will be cause for failing the test;

(c) Utilize a separate but similar question bank for quizzes and tests;

(d) Maintain a log sheet verifying that each question can be traced back to information that was delivered, or assigned during the training; and

(e) Test apparatus for hands on testing:

(1) Ensure that hands-on testing for surface preparation and coating application is performed on a test apparatus that meets the requirements of Reference 2.3 or an apparatus or location of similar difficulty.

(2) If hands-on testing is performed on an apparatus or location determined to be of similar difficulty, make note of the change in the test documentation, and provide a description and photos of the apparatus or location.

(f) Correcting or grading tests.

(1) All grading or correcting of written tests shall be based on a test key.

(2) All grading or correcting of hands-on tests shall be based on a written guideline with the acceptance range defined.

(3) If any deviation is required from values defined in the test key, written guidelines, or acceptance ranges, the deviation and the reason for the deviation shall be written on the test sheet or test key at the time of the deviation, signed by the Instructor, and approved by the training manager.

(4) Strict objectivity shall be maintained when grading or correcting test sheets and when observing hands-on testing.

7.9.3. Test pass/fail ranges from one test to another shall be consistent unless a change is made to the training plan. If an ITO with a NIICAP AS-3 ITO Accreditation significantly changes any portion of the training plan or lesson plan covered by elements within this section, the ITO shall immediately contact NIICAP to determine if the change will affect the accreditation.

8. PREREQUISITES AND ACTIONS FOR ORGANIZATION TRADE SKILLS TRAINING AUDIT:

8.1. The ITO shall ensure that students are available for testing of written and hands-on surface preparation and coating/lining applications skills. The auditor shall randomly select the required number of students from the list of qualified students attending training during the audit and submit the names to the ITO. The ITO may remove one (1) student for cause. However, the auditor will select another student from the list. The ITO Instructor shall have one-half hour for a final briefing of the students and the testing shall begin.

8.2. While testing and test grading is being performed, the auditor shall observe work practices and task execution to determine compliance with technical direction and industry standards, as invoked and appropriate.

9. AUDIT CRITERIA ATTRIBUTE CREDIT

9.1. Attribute scoring will be as follows:

9.1.1. Outstanding value (5 points) will be awarded for an outstanding finding of compliance. Requirements for an outstanding rating are defined in those attributes where an outstanding rating is possible. If an outstanding finding occurs, there is no reasonable recommendation to be made for improvement. An outstanding finding indicates the ITO has an efficient process that meets the requirements and minimizes risk, schedule, and cost.

9.1.2. Expected value (3 points) will be awarded for an adequate or satisfactory finding. Requirements for an expected rating are defined in the attributes. Typically, an adequate finding occurs when the ITO's process meets the requirement; however, there is a potential for process improvement to reduce risk, schedule, or cost. It should be noted that generally (3 points) will be awarded by NIICAP, and that is an acceptable rating.

9.1.3. One point will be awarded for an unacceptable finding. Typically, an unacceptable finding occurs when the ITO's documentation or process does not meet the NIICAP requirement. For the administrative portion of the audit, an inadequate program may warrant a score of (2 points), or non-existent program may warrant a score of (1 point). An unacceptable finding in the training section should be the result of significant error or failure in the training or testing process. Even the best ITO may experience a process failure occasionally; however, if the ITO does not seem to have control of the process, does not understand the process requirements or standards, or does not address the training discrepancy adequately, an unacceptable rating may be appropriate.

9.1.4. Attribute observations do not always neatly fall into the defined conditions above. If an observation is between the defined conditions the auditor will adjust the point value appropriately i.e., a score of (2 points) or (4 points) points.

9.1.5. Auditor comments or description of the observation are required for all ratings. It is important that after the audit, or when discussing the findings with the ITO, that the auditor can explain specifically what was observed. Comments may be one or two sentences, or longer as appropriate. Comments for the Administrative Practices section of the audit may be as simple as the document and paragraph or section where the requirement was found and a brief description of the documentation.

9.1.6. If an attribute does not apply to the process or item being observed, then the auditor shall note "N/A" in the "Comments" block and shall include a brief description unless a description has been provided in another block within the audit section.

9.1.7. Each section of the audit (Administrative Practices and Training Practices) requires an overall score of (3). Each sub-section of the Administrative Practices and the Training Practices section require a minimum score of (2.9) if the sub-section is applicable. However, any occurrence of (1 point) must be discussed between the chief auditor and the auditor. A score of (1 point) may be the basis for a "major" finding.

9.1.8. If there is a pattern of several related "minor" findings that show a pattern of weakness in a particular area, the cumulative findings may be changed to a "major" finding in the event that the auditor or NIICAP personnel consider these minor findings to be indicative of a serious systemic pattern.

10. COMMUNICATIONS

10.1. NIICAP will include the ITO representative in conversations as appropriate during the audit.

10.2. ITO personnel are encouraged to contact NIICAP as appropriate with any questions, recommendations, or discussion.

10.3. The NIICAP web page can be found at www.niicap.net. For more information about the NIICAP program, visit the web page.

APPENDIX 1

Training Content and Percentage Requirements

Student Position	Program Meeting Certification Requirement
Supervisor – Foreman, when competent person functions are supported by a separate assigned person present during working hours	• QA Certification from the NACE International Institute, SSPC, FROSIO, NCCER. U.S. Navy NBPI program accepted for Navy ship work. OR • NACE International Institute Certified Coating Applicator certification, or an applicator certification that meets Reference 2.2 (ANSI/NACE No. 13/SSPC-ACS 1) OR • NACE or SSPC PCS (Protective Coating Specialist Certification)
Supervisor – Foreman, when performing the functions of the competent person for environmental, safety, and health	• QA Certification from the NACE International Institute, SSPC, FROSIO, (U.S. Navy NBPI program accepted for Navy ship work). OR • NACE International Institute Certified Coating Applicator certification, or an applicator certification that meets Reference 2.2 (ANSI/NACE No. 13/SSPC-ACS 1) OR • NACE or SSPC PCS (Protective Coating Specialist Certification) AND • All training required for a worker exposed to hazardous substances, health hazards, or safety hazards • Additional eight (8) hours specialized training covering: Employer's safety and health program. Associated student training programs; PPE program; Spill containment program; and, Health hazard monitoring procedures and techniques. "Competent person" is defined as one who is capable of identifying existing potential or probable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to employees and has the authorization to take prompt corrective measures to eliminate them. NOTE: Even if a legal authority does not define specific training protocol, the competent person shall be designated by the contractor, and shall show a combination of experience and training to effectively perform the duties of the position, as well as having the authority to take prompt corrective action.

Student Position	Program Meeting Certification Requirement
Competent Person	• All training required for a worker exposed to hazardous substances, health hazards, or safety hazards, • Additional eight (8) hours specialized training covering Employer's safety and health program; Associated student training programs; PPE program; Spill containment program; and, Health hazard monitoring procedures and techniques, "Competent person" is defined as one who is capable of identifying existing potential or probable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to employees and has the authorization to take prompt corrective measures to eliminate them. NOTE: Even if a legal authority does not define specific training protocol, the competent person shall be designated by the contractor, and shall show a combination of experience and training to effectively perform the duties of the position, as well as having the authority to take prompt corrective action.
Trainer of Applicators	NACE International Institute Certified Coating Applicator certification, or an applicator qualification that meets Reference 2.2 (ANSI/NACE No. 13/SSPC-ACS 1).
Trainer for Environmental, Safety and Health Requirements	• Qualified to instruct students about the subject matter that is being presented. • Complete a training program qualifying the Instructor to teach or have academic credentials and instructional experience necessary to teach the subjects. • Instructor shall demonstrate competent instructional skills and knowledge or the applicable subject matter.
Quality Control Representatives performing data collection to accept or reject work	QA/QC Technician certification from the NACE International Institute, FROSIO, NCCER, SSPC (NBPI program accepted for Navy ship work).
Plural Component Pump Applicator	SSPC C-12 or a program included in a NIICAP AS-3 OR AS-3 ITO accreditation.
Plural Component Pump Operator	SSPC C-14 or a program included in a NIICAP AS-3 OR AS-3 ITO accreditation.
Airless Pump Applicator	SSPC C-12 or a program included in a NIICAP AS-3 OR AS-3 ITO accreditation.
Airless Pump Operator	Contractors train or brief the operator; no documentation required.
Conventional – HVLP Applicator	Program included in a NIICAP AS-3 OR AS-3 ITO accreditation.
Paint Mixer	Train or brief the operator, no documentation required.
Brush and Roll	Train or brief the operator, no documentation required.
Abrasive Blasting Nozzle Operator	SSPC C-7 or a program included in a NIICAP AS-3 OR AS-3 ITO accreditation.
Blast Equipment Operator	SSPC C-7 or a program included in a NIICAP AS-3 OR AS-3 ITO accreditation.
Power – Hand Tool Operator	Train or brief the operator, no documentation required.

Student Position	Program Meeting Certification Requirement
Support Workers with potential exposure to health hazards, or safety hazards	• Training equivalent to "OSHA 10" See specifics in NIICAP Standard AS-2, Appendix B. • Student right to know. • Safety, health and recognition of other hazards present at the work site. • Work practices to minimize risks from hazards. • Emergency action plan actions At time of employment. Whenever the student's responsibilities or actions change. Whenever the plan is changed. • Refresher training annually eight (8) hours.
Workers Entering Confined Spaces	Confined space entry prior to exposure to confined spaces.
Students with Emergency Response Actions	Elements of the emergency response plan and specific assignments
Qualified Person	Qualified person is a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience has successfully demonstrated his/her ability to solve and resolve problems related to the subject matter, the work, or the project. NOTE: Even if a legal authority does not define specific training protocol, the qualified person must be designated by the employer, and must show a combination of experience and training to effectively perform the duties of the position.