

NABCEP Associate Exam

Quick Facts

Eligibility

Santa Monica College Students

Students must successfully complete coursework in *Photovoltaic (PV) 3: Advanced Solar Photovoltaic Systems and Installation* at Santa Monica College with a grade of C or higher in order to be eligible to sit down for the North American Board of Certified Energy Practitioners (NABCEP) **Associate Exam**.

Fees

Paper and Pencil Examination Fee: \$180.00

Or

Computer Based Examination Fee: \$150.00

Payments are to be made in advance. Accepted forms of payment include: cash, checks, and credit cards (Visa or Mastercard only).

Re-Test: Candidates may retake the exam up to three times within a two-year period of completing the course, for a total of four attempts, before they must take another course to become eligible again. Full examination fees will be charged, there are no discounts for retakes.

Registration

To register, please visit <http://commed.smc.edu> or call (310) 434-3400.

The following items must be provided to Santa Monica College in advance:

- Examination Fee
 - Paper and Pencil Exam \$180.00
 - Or
 - Computer Based Test \$150.00
- Completed and signed NABCEP Candidate Eligibility form (Form B).
 - Fill out the form and give to your PV 3 instructor.
 - Instructor will send the form to the Office of Workforce & Economic Development.
 - Candidates will not be allowed to take the exam without this form on file.
- Completed Special Accommodations request form if needed (Form C).
 - Please submit as soon as possible to:
 - Ruth Casillas
 - Workforce & Economic Development
 - In Person – 3171 S. Bundy Drive
 - Los Angeles, CA 90066

By Mail - 1900 Pico Blvd
Santa Monica, CA 90405

Candidates must make requests for accommodation as far in advanced as possible as the process for review and approval can take several weeks or more. If granted, specific instruction will be provided to the Candidate and SMC prior to the scheduled exam.

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Paper and Pencil Exam - What to Bring

The exam is **NOT** an open book exam. The only material to be provided will be any formulas to answer questions, provided in the Exam Booklet by NABCEP.

Rulers, textbooks, reference materials and notes are **NOT** permitted in the examination area. Watches or hats may **NOT** be worn during the exam.

On the day of the exam, Candidates will be provided with a non-programmable calculator and two #2 pencils.

Candidates are required to provide **photo identification** to sit for the exam. The name you register with must match the name exactly as it is printed on your government issued photo identification. The following are acceptable photo identifications:

- Valid state Driver's License
- Current Passport
- Current Military Identification
- Valid State Identification with Photo
- International Photo Identification issued by a foreign country

Also, please be advised that due to circumstances beyond our control, examination sites may experience minor disturbances. It is recommended that candidates who are sensitive to noise bring earplugs.

Computer Based Test (CBT)

CBT Candidates are provided six (6) months to schedule and sit for the Exam upon submission of payment and the Candidate Eligibility form (Form B) by SMC to NABCEP. If the Candidate does not take the Exam within 6 months, he/she will need to pay an additional examination fee.

About the Exam

FORMAT

The exam consists of seventy (70) multiple choice questions and is based on the NABCEP Associate Handbook. **Candidates must complete the Exam within two (2) hours.**

TIME/LENGTH

Candidates will be given up to two (2) hours to sit for the examination. Note: 30-60 minutes of time is typically required for pre-Exam administrative activities once all candidates have arrived.

PASSING SCORE

Candidates must earn a score of 70% or higher to pass. Candidates can expect to receive their scores four to six weeks after the answer sheets have been received for scoring.

MINIMUM CANDIDATES

In order for the test to be administered, there is a minimum number of candidates that need to be registered. In the event that there are not enough candidates, you will be notified and your fees will be refunded in full.

Questions?

If you still have questions regarding the exam, please contact us.

casillas_ruth@smc.edu or (310) 434-4023

<http://www.smc.edu/workforcedevelopment>

EXAM SCHEDULE

Computer Based Test (CBT) – Once you register through Santa Monica College, you will receive an email from NABCEP to schedule your exam.

Paper and Pencil Exam – Tuesday, December 20th, 2016: 10am – 1pm.

CLASS SCHEDULE- Fall 2016



Santa Monica College
1900 Pico Boulevard
Santa Monica, CA 90405
(310) 434-4023

| Course | Section # | Days | Time | Location | Begin date |
|---|-----------|------|-----------------|----------|------------|
| PV 1 | 4435 | M W | 6:30 - 9:35pm | AIR 101 | 2/13/17 |
| | | F | 8:00am - 5:00pm | AIR 101 | |
| <i>Above section meets for 8 weeks: Feb 13 – Apr 7</i> | | | | | |
| PV 2 | 4436 | M W | 6:30 - 9:35pm | AIR 101 | 4/17/17 |
| | | F | 8:00AM - 5:00pm | AIR 101 | |
| <i>Above section meets for 8 weeks: Oct 24 – Dec 16</i> | | | | | |
| PV 3 | 3369 | T | 3:30 – 6:05pm | AIR 101 | TBD |
| | | Sat | 8:00am - 5:00pm | AIR 101 | |
| <i>Please refer to the schedule of classes at www.smc.edu/schedules for PV 3</i> | | | | | |

NABCEP™

Associate **HANDBOOK**



Photovoltaic



Solar Heating



Small Wind



Raising Standards. Promoting Confidence.

North American Board of Certified Energy Practitioners (NABCEP)
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Clifton Park, NY, 12065
www.NABCEP.org

Email
info@NABCEP.org

Phone: (800) 654-0021
Fax: (518) 899-1092

STATEMENT OF NONDISCRIMINATORY POLICY

The North American Board of Certified Energy Practitioners is dedicated to the principles of equal opportunity and equal access to its programs and services. NABCEP does not discriminate against any individual on the basis of religion, gender, ethnic background, nationality, disability, sexual orientation, or other reason prohibited by law. NABCEP grants certification without regard to an Applicant's membership or non-membership on any organization, association or other group.

Disclaimer Statement:

- ***NABCEP is a non-profit credentialing organization***
- ***NABCEP issues voluntary credentials to qualified individuals who satisfy eligibility requirements established by the Board of Directors***
- ***NABCEP credentials are not professional licenses issued by a government agency, and do not authorize a credential holder to practice***
- ***NABCEP Associates must comply with all legal requirements related to practice, including licensing laws***

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1 INTRODUCTION

The North American Board of Certified Energy Practitioners, Inc. (NABCEP®) is a nationally recognized credentialing body, incorporated in 2002, to set competency standards for professional practitioners in the fields of renewable energy and energy efficiency. NABCEP administers voluntary personnel credentials for individuals in the renewable energy industry, including the NABCEP Photovoltaic Associate™, NABCEP Solar Heating Associate™, and NABCEP Small Wind Associate™ for those at an early stage of their career; and the NABCEP PV Installation Professional™, NABCEP Solar Heating Installer™, and NABCEP PV Technical Sales Professional™ Certifications for those who have substantial experience in the industry. A workforce trained and tested to NABCEP's industry-verified standards enhances consumer confidence, improves quality, and expands the use of clean, renewable energy. NABCEP Associate credentials are available to individuals who either successfully complete a course on the relevant technology with a Registered NABCEP Associate Provider, or document at least 6 months of employment related to the technology. Additionally, individuals who previously took a course and passed a NABCEP Entry Level Examination may convert their Entry Level Passing Score Achievement to a NABCEP Associate credential.

This handbook contains information about NABCEP's Associate programs. It provides the policies and procedures for applying, achieving, and maintaining a NABCEP Associate credential.

Each applicant for a NABCEP Associate credential should read this *Handbook* thoroughly before applying.

BENEFITS:

NABCEP Associate Credentials, Professional Certifications, and Company Accreditation offer industry professionals increased credibility and marketing value, providing them with a competitive advantage and greater career mobility, while improving industry quality and standards of practice.

NABCEP Associate credentials distinguish individuals in the work place by:

- Promoting the status and credibility of renewable energy practices
- Facilitating consumer confidence in renewable energy technologies
- Enhancing worker safety and skill
- Advancing uniform professional standards by holding Associates to a Code of Ethics and Standard of Conduct
- Encouraging professional development through maintenance of the credential

2 OVERVIEW

2.1 PURPOSE

A NABCEP Associate credential informs the public, employers, and other interested stakeholders that an individual has knowledge of the fundamental principles of the application, design, installation and operation of photovoltaic, solar heating, or small wind energy systems. To earn a NABCEP Associate credential, an individual must pass a standardized examination based on industry validated learning objectives. To qualify for a NABCEP Associate Examination, one must either take a training course with a Registered NABCEP Associate Provider (Education Pathway) or demonstrate to NABCEP that he or she has at least six months of relevant work experience (Experience Pathway). The credential also recognizes a commitment to uphold a professional Code of Ethics and Standards of Conduct, and obligation to continue professional development through continuing education.

2.2 MYNABCEP – [HTTPS://MY.NABCEP.ORG](https://my.nabcep.org)

myNABCEP is NABCEP’s web-based platform for managing the NABCEP Associate and Professional Certification Programs. Each applicant, candidate, and credential holder must have an account on myNABCEP in order to apply for, manage, and maintain their credential(s). myNABCEP is accessed at <https://my.nabcep.org> from any web browser. While it may work on some mobile browsers, it is not optimized for mobile devices.

Accounts are created and accessed using an e-mail address as the unique identifier for each individual. E-mails used must be unique to the individual. The First and Last Name associated with each account must match the individual’s government issued photo identification. NABCEP credentials are only issued under an individual’s legal name, and the name must match the photo identification in order to be admitted to any exam administration.

Important notifications are sent from myNABCEP using the following e-mail address: mynabcep@nabcep.org. **Applicants and credential holders are strongly encouraged to add mynabcep@nabcep.org, and the full [nabcep.org](https://my.nabcep.org) domain, to their “safe sender” list in their email programs.** Additionally, candidates taking a computer based examination are strongly encouraged to add testing@castleworldwide.com to their “safe sender” list, as this is the address from which important scheduling information is sent.

2.3 FEES

All fees are non-refundable and non-transferable, except as may be allowed by procedures contained in this Handbook.

| FEE | DESCRIPTION | PAYABLE TO | AMOUNT |
|--------------------------------------|---|------------|--------|
| Examination Fee (Experience Pathway) | Candidates with at least 6 months of related work experience can apply directly to NABCEP. Fee includes a \$25 non-refundable application fee and \$125 toward the first examination attempt. | NABCEP | \$150 |

| | | | |
|--|---|--------------------|-------|
| Examination Fee (Education Pathway) | NABCEP charges Registered Providers \$125 for each candidate submitted to NABCEP, whether the candidate has already taken a paper and pencil exam or is being submitted for computer based testing. (Note: Examination Fee may or may not be included in course registration fee – check with your Provider). | Provider | \$125 |
| Administrative Fee (Paper & Pencil Exam) | Registered Providers may charge candidates an OPTIONAL Administrative Fee not to exceed \$55 for administering the Paper and Pencil version of an Associate Exam. | Provider | \$55 |
| Administrative Fee (Computer Exam) | Registered Providers may charge candidates an OPTIONAL Administrative Fee not to exceed \$25 for processing a Computer Based Testing candidate | Provider | \$25 |
| Re-Examination Fee | Retake a NABCEP Associate Examination (additional administrative fees above may apply if request is made through the Registered Provider – no additional fees are charged if request is made directly by candidate through their my.NABCEP account) | NABCEP or Provider | \$125 |
| Conversion Fee (Conversion Pathway) | Convert a NABCEP Entry Level Award to a NABCEP Associate credential | NABCEP | \$25 |
| Renewal Fee | Renew an active NABCEP Associate credential for another three years | NABCEP | \$150 |
| Replacement Document Fee | Obtain a replacement or additional copy of an official embossed NABCEP Associate Certificate | NABCEP | \$25 |

Fees payable to NABCEP are submitted via credit card or e-check online through my.NABCEP.org. If alternative payment method is required, such as money order, please contact NABCEP at (800)654-0021 for instructions.

3 REQUIREMENTS

3.1 ELIGIBILITY REQUIREMENTS

To become a NABCEP Associate and maintain the credential, the Applicant must minimally:

- Be 18 years of age

- Meet prerequisites of an education, experience, or conversion pathway
 - Education Pathway – complete a course that covers the full NABCEP Associate Learning Objectives for photovoltaic, solar heating, or small wind with a Registered NABCEP Associate Provider
 - Experience Pathway – document at least six months of full time equivalent work experience related to photovoltaic, solar heating, or small wind technologies
 - Conversion Pathway – have previously passed a NABCEP Entry Level Examination – if a passing score was achieved more than three years prior to applying, an applicant must also document at least 12 hours of continuing education in the technology during the last three years
- Sign and agree to uphold the NABCEP Code of Ethics and Standards of Conduct
- Pay all applicable fees to NABCEP or a NABCEP Registered Associate Provider
- Pass a NABCEP Associate Examination (except for Conversion Pathway applicants)
- Once credentialed, complete continuing education requirements, submit an Associate Renewal application, and pay a Renewal Fee, within the specified timeframe (3 years).

3.2 QUALIFYING FOR A NABCEP ASSOCIATE EXAM

There are two pathways to qualify to take a NABCEP Associate Examination: an Education Pathway and an Experience Pathway. Applicants will first choose the technology for which they want to take an exam: photovoltaic, solar heating, or small wind. A separate application is required to qualify for each examination. Applicants may choose different pathways to qualify to take each examination. Individuals who have previously passed a NABCEP Entry Level Examination do not need to take a NABCEP Associate Exam to obtain a NABCEP Associate credential for that technology, see Conversion Pathway below.

3.2.1 EXPERIENCE PATHWAY

To qualify through the Experience Pathway, applicants must provide documentation of six months of fulltime equivalent employment directly related to photovoltaics, solar heating, or small wind technologies. Experience in photovoltaics will qualify for the NABCEP Photovoltaic Associate Exam, solar heating for the NABCEP Solar Heating Associate Exam, and small wind for the NABCEP Small Wind Associate Exam. Each exam must be applied for separately even if the applicant’s work experience is in two or more technologies.

Experience requirements must show that the Applicant has engaged with the terminology and general functionality of the technology they are applying for. This experience can be obtained through a wide variety of job titles and functions, including: sales, site assessment, installation, roofing, plumbing, electrical, mechanical, design, advocacy, customer service, and many others.

It is unlikely that any one job will provide experience with all of the knowledge categories covered in the relevant NABCEP Associate Learning Objectives, on which each examination is built. **While there are no specific education requirements to**

qualify under the experience pathway, NABCEP strongly recommends that applicants take formal training related to the technology.

3.2.2 DOCUMENTING EXPERIENCE

Experience Pathway Applicants are required to submit proof of employment in a job that is directly related to the technology for which they are applying: photovoltaic, solar heating, or small wind. At least 6 months of full time equivalent employment must be documented. Full time employment is considered to be at least 35 hours per week. If employed less than 35 hours per week, additional experience beyond 6 months is required to document a minimum of 910 hours of experience (26 weeks x 35 hrs./week). For example, someone who works 20 hours per week will need to document at least 10.5 months of employment. All applicants must document at least 6 months of employment, even if they work more than 35 hours per week.

Experience is documented in one of the following ways:

- 1) Applicant uploads one or more completed and signed NABCEP Verification of Work Experience Form(s). The form is available for download within the online application system, myNABCEP, or may be printed from Appendix II of this Handbook.
- 2) Applicant submits one or more scanned letter(s), on company letterhead, from their employer(s) that describe the job duties and duration of employment of the applicant. Letters must include the Applicant's name, title, dates of employment, a brief description of job duties, and must be signed by a supervisor or other senior manager of the company. Contact information for the letter writer must be included if not included on, or different from, the letterhead.

3.2.3 EDUCATION PATHWAY

To qualify through the Education Pathway, an individual must successfully complete a course, or program, that covers the full NABCEP Associate Learning Objectives from a Registered NABCEP Associate Provider for one of the technologies: photovoltaic, solar heating, or small wind. NABCEP allows each Registered Provider to develop their own curriculum to cover the Learning Objectives and determine requirements for successful completion (such as minimum attendance requirements, completion of homework assignments, participation in hands on activities, and passing scores on quizzes or examinations). Each Registered Provider sets their own calendar and schedule for courses, may offer courses using different formats (such as in-person, on-line, or hybrid), and courses may vary in length and price.

Each course or program that qualifies individuals for a NABCEP Associate Examination must cover the full Learning Objectives for the particular technology. Courses with more contact hours, hands-on activities, and an instructor that has significant industry experience can all contribute to a better learning experience. NABCEP recommends that courses intended to prepare individuals for a NABCEP Associate Exam include a minimum of 40 hours of content instruction, allow ample time for homework and reading assignments, and include hands-on activities. Additional coursework in the

fundamentals of energy/electricity and mathematics may be necessary for students that do not already have a strong understanding of these concepts.

A current list of Registered Providers can be found on www.nabcep.org.

3.2.4 DOCUMENTING EDUCATION

Each Registered NABCEP Associate Providers shall issue a course completion document, transcript, or other method of verifying successful completion of the course. Additionally, students should obtain a signed NABCEP Associate Candidate Eligibility form from their instructor, which verifies that the student successfully completed a course that covered one of the NABCEP Associate Learning Objectives and is therefore eligible to sit for the relevant examination. Registered Providers will either administer the examination directly to their eligible students, or submit their contact information to NABCEP for testing through our partner's network of Computer Based Testing (CBT) centers. The date, time, and location of paper and pencil exam administrations are set by each Registered Provider. CBT exams provide candidates with the flexibility to schedule the exam at a date and time of their choosing (as available) at a testing center of their choice.

3.3 CONVERSION PATHWAY

To qualify through the Conversion Pathway, an individual must have previously completed a course or program with a Registered Provider and obtained a passing score on a NABCEP Entry Level Examination. Individuals who passed the exam more than three years prior to submitting their NABCEP Associate application must also document that they have completed at least 12 hours of continuing education related to the technology during the last three years. An application is required to ensure NABCEP has current contact information, confirm that the individual agrees to the Code of Ethics and Standards of Conduct, understands that there are renewal requirements to maintain the credential, and create an account that will populate the online directory of NABCEP Associate credential holders.

3.3.1 DOCUMENTING PASSING SCORE

Individuals will need to submit information about their Entry Level Examination through an online application in myNABCEP. To confirm that a passing score was achieved, applicants are asked to provide information about their Registered Provider, date (month/year) when they passed the exam, and upload a copy of their passing score achievement document (certificate).

3.3.2 DOCUMENTING CONTINUING EDUCATION

Applicants who passed a NABCEP Entry Level Examination more than three years prior to submitting the NABCEP Associate application will need to document at least twelve (12) hours of continuing education during the last three years. See section 10.3.4 below for requirements for continuing education credits.

4 APPLICATION PROCESS

4.1 STARTING AN APPLICATION

Applications are required for the Experience and Conversion Pathways. Education Pathway candidates will have their account created by their Registered NABCEP Associate Provider. Applications for NABCEP Associate credentials and NABCEP Professional Certifications are submitted online via myNABCEP at <https://my.nabcep.org>. Accounts utilize an email address as the unique identifier for the individual – accounts should not be created using generic email addresses that multiple people have access to. Individuals with existing accounts in myNABCEP should utilize the existing account to apply for any new credential rather than starting a new account with a different e-mail address.

To start a new account, visit <https://my.nabcep.org> and click on the “Start your Application” button. New applicants will then be asked to provide contact information and an e-mail address for the account. The name supplied must exactly match the government issued photo identification that the applicant will present to be admitted to an exam administration. A confirmation e-mail with a temporary password will be sent to the email address provided.

Applicants and credential holders are strongly encouraged to add mynabcep@nabcep.org, and the full [nabcep.org](https://my.nabcep.org) domain, to their “safe sender” list in their email programs.

Once an account has been set up, individuals may begin an application for any NABCEP Associate credential or professional NABCEP Certification, return to any incomplete or flagged application, or begin a new renewal application for existing NABCEP Associate credentials or recertification application for professional NABCEP Certifications using the drop down menus provided on the account dashboard. All NABCEP Associate credentials and professional Certifications are applied for and maintained through a single account for each individual.

4.2 COMPLETING AN APPLICATION

Each application has multiple pages, which must be fully completed by the applicant before submission. The pages vary by each qualification category selected. Applicants may change the qualification category on the Help and Info page. Applicants navigate through the application by clicking on the Tabs displayed at the top of the page when logged into the application. Clicking on any tab, or on the Save button, will save the information that has been submitted on that page. Boxes on each tab indicate the progress made on completing each page. A blank box indicates that no information has been submitted on that page; a half filled box indicates that some, but not all, information has been submitted; and a check mark indicates that information has been submitted in all required fields. All pages must have check marks before the option to submit and pay for the application will be available. Once an application is submitted it will be in read-only mode while undergoing review by NABCEP staff, so applicants should ensure that all information was entered correctly and accurately before submitting an application.

4.3 VERIFICATION OF INFORMATION

In an effort to serve the public’s trust, NABCEP reserves the right to verify any and all information provided in an application. Failure to report truthfully may be considered a breach of the NABCEP

Code of Ethics and Standards of Conduct and could result in the denial and/or revocation of the credential.

4.4 APPLICATION REVIEW

All applications submitted to NABCEP will be reviewed by a staff person to ensure the selected eligibility criteria have been met. Upon initial review, an application will either be accepted or flagged. Flagged applications are returned to the applicant for one attempt at correcting any identified deficiencies. Upon return of a corrected application, NABCEP staff will conduct a second review to ensure the selected eligibility criteria have been met. Upon second review, an application will either be accepted or rejected.

4.4.1 ACCEPTED APPLICATIONS

Applications that demonstrate completion of all eligibility requirements for the pathway selected will be accepted by NABCEP staff. Upon application acceptance, the candidate will be sent an email from NABCEP's testing services vendor, Castle Worldwide, with instructions on how to schedule the exam through Castle's computer testing network, which includes over 500 locations throughout the United States and Canada. Applicants are strongly encouraged to add testing@castleworldwide.com and the castleworldwide.com domain to their "safe sender" list, to help ensure successful delivery of important exam scheduling information.

4.4.2 FLAGGED APPLICATIONS

Applications that are deemed to be incomplete or otherwise deficient in demonstrating completion of all eligibility requirements will be flagged by NABCEP staff. Upon flagging of an application, the applicant will be sent an email from myNABCEP informing them that the application has been flagged and instructing them to return to the application in order to make corrections and resubmit. Applicants will be provided with one opportunity to correct any deficiencies and resubmit the application for review.

Pages in the application that have deficiencies will be marked with a red X in the box for that page. Notes about the deficiency will appear at the top of each page marked with an X, when that page is selected. Applicants may change any information in a flagged application, including changing the eligibility pathway. Upon correction of any identified deficiencies, the applicant will need to resubmit the application for review (no additional fees are required).

4.4.3 REJECTED APPLICATIONS

Flagged applications that are returned to NABCEP by the applicant and deemed to still not demonstrate completion of all eligibility requirements for the pathway selected will be rejected by NABCEP staff. An Applicant may appeal the finding of ineligibility by submitting an appeal in writing to the Executive Director of NABCEP within thirty (30) days of the receipt of notification of ineligibility (see Appeals Policy in Appendix I.B). Rejected applications for the Experience Pathway will be refunded \$125 (of the \$150 paid) upon request. Rejected applications for the Conversion Pathway are not eligible for a refund.

4.5 ELIGIBILITY PERIOD

An Applicant who has been accepted to sit for the examination (Candidate) is eligible to take the exam for a period of two years from the date of their approval notification for the Experience Pathway, or the course completion date for the Education Pathway. The Candidate may take the exam up to a maximum of six times per year during each year of the two year period. If the Candidate does not pass the exam during this eligibility period they must requalify by meeting all the requirements of the Education or Experience Pathway, including completing another course with a Registered NABCEP Associate Provider or obtaining another 6 months of relevant work experience. Individuals may choose either the Education or Experience Pathway to become re-eligible, and are not limited to the pathway that they originally choose.

5 PREPARING TO TAKE THE EXAMINATION

5.1 EXAM CONTENT

NABCEP Associate Exams are written by volunteer industry Subject Matter Experts under the guidance of professional psychometricians (testing specialists). NABCEP Associate Learning Objectives provide the blueprint for each Exam and are the primary documents to reference with regard to what topics may be covered on an exam. Learning Objectives for each technology are available for free download on www.nabcep.org. Each question on the exam is designed to test one of the Learning Objectives. The Learning Objectives contain an Exam Blueprint, which delineates how many questions on each exam will come from each major content domain.

Each examination consists of seventy (70) equally weighted multiple-choice questions, with four (4) choices per question. Sixty (60) of the questions are scored and ten (10) of the questions are un-scored pilot questions. The pilot questions are randomly distributed throughout the examination and are not identified. Pilot questions are utilized so that NABCEP can test a question with a sample of real candidates before using it as a scored question, thus helping to ensure that the examinations are fair and reliable.

The **Photovoltaic Associate Learning Objectives** include ten (10) knowledge content domains:

- PV Markets and Applications
- Safety Basics
- Electricity Basics
- Solar Energy Fundamentals
- PV Module Fundamentals
- System Components
- PV System Sizing Principles
- PV System Electrical Design
- PV System Mechanical Design
- Performance Analysis, Maintenance and Troubleshooting

The **Solar Heating Associate Learning Objectives** include six (6) knowledge content domains:

- Conducting a site analysis , including load analysis

- Identifying Solar Heating safety practices, standards, codes and certification
- Identifying systems for specific climates and applications
- Identifying proper orientation and installation methods
- Identifying proper use of balance of system components and materials
- Identifying common Solar Heating maintenance items

The **Small Wind Associate Learning Objectives** include 10 knowledge content domains:

- Fundamentals of Electricity
- Applications and End Uses
- Fundamentals of Small Wind Turbines (including system components and science and theory)
- Towers, Foundations, and Installation Considerations
- Resource Assessment
- Site Assessment
- System Sizing Principles and Economics
- Operation, Maintenance, and Troubleshooting
- Safety and Best Practices
- Impacts and Challenges of Small Wind

For a copy of the complete PV, Solar Heating and Small Wind Associate Learning Objectives, please visit: www.nabcep.org.

5.2 EXAM DURATION

Candidates are provided with up to two hours to complete a NABCEP Associate Examination.

5.3 SPECIAL TESTING ACCOMMODATIONS

NABCEP complies with the provisions of the Americans with Disabilities Act (42 U.S.C. Section 12101, et. seq.) and with Title VII of the Civil Rights Act, as amended (42 U.S.C. Section 2000e, et. seq.). All Applicants who desire special testing accommodations due to a disability or religious observance must make this request at the time of exam scheduling. It is the responsibility of the Candidate to provide advance notice and appropriate documentation of the disability or religious observance, along with specifications of the type of accommodations or aids that will be required, when the Application form is submitted. (See Appendix II.F)

NABCEP will not pay any costs an individual may incur in obtaining the required diagnosis and recommendation for accommodation. However, NABCEP will pay for any reasonable accommodation(s) that are provided during the exam. NABCEP shall notify the Applicant regarding the acceptance of the request in advance of the Examination date. Appropriate arrangements and accommodation(s) shall be made for all Candidates with disabilities who file the appropriate request and include appropriate documentation, unless an accommodation changes the nature of the test. Under no conditions will an accommodation be made which changes the nature of the test.

6 TAKING THE EXAMINATION

6.1 ADMISSION TO THE EXAMINATION

Both Paper and Pencil and Computer Based Testing (CBT) Candidates **must show a valid government-issued photo identification that exactly matches the name on their application.** The Candidate must provide one of the following valid government-issued documents bearing a picture, name, and signature to gain admission to the test site: a driver's license, photo identification card, passport, or military identification card. Identification that has expired is not valid. Applicants are encouraged to confirm that their identification will not expire before scheduling an examination. Examples of **non-acceptable** identification include, but are not limited to: student ID, employer-issued ID, library cards, and credit cards.

Candidates who are unable to produce the required identification, or who produce an ID that is expired, will not be permitted entrance to the exam. Under these circumstances Candidates will be considered absent and will forfeit the full exam fee and will be required to re-schedule the exam and pay all applicable re-examination fees.

It is recommended that Candidates arrive at the examination site no later than thirty (30) minutes prior to the scheduled examination time. Additional time needed for procedures, payments, delays, traffic, parking, weather, etc., should be considered when arranging transportation to the examination site.

Paper and Pencil Exams

- A Candidate may use a basic-scientific, non-programmable, non-graphing calculator (defined as a device used solely for mathematical computations), such as a Casio fx260, a Texas Instruments TI-30Xa, or similar. Candidates should bring their own calculators to the Exam.
- Exam Answer Sheets are scored using an automated scoring machine. All answers must be completed using a #2 pencil. Candidates should bring at least two #2 pencils with them to the Exam.

Computer Based Exams

- Personal calculators may not be brought into the testing room. A calculator is available on screen, as part of the test delivery program.
- Candidates should bring at least two #2 pencils with them to the Exam to utilize for solving problems on the scratch paper provided.

No other personal items are allowed except the above mentioned calculator and pencils. The Exam is not an open book exam; **no notes or reference material of any kind will be allowed.** No digital devices of any kind (cell phones, digital music players, laptops, cameras, watches, etc.) will be allowed. All personal items brought into the examination room will be collected and stored by the Exam Proctor until the candidate is finished with the Exam and exits the room. Additionally, no hats or hoods will be allowed to be worn during the Exam.

6.2 ANSWER SHEETS

Paper and Pencil Candidates must follow the examination Proctor's instructions on completing the answer sheet. It is the Candidate's responsibility to correctly "bubble" in their "Candidate identification number" and "examination number." Answers must be recorded on the answer sheet provided. Answers recorded in the examination booklet or on scratch paper will not be scored. Candidates will only receive credit for answers completed on the answer sheet. Candidates must put down their pencils and turn in completed answer sheets, all examination materials, and scratch paper when time is called for the exam. Candidates will not be allowed to complete any answers, or transfer answers to the answer sheet, after time is called.

6.3 TEST TAKING ADVICE

The advice offered here is presented primarily to help Candidates demonstrate the knowledge they possess and maximize their chances of passing the examination.

- Read all instructions carefully.
- Candidates should periodically check their progress and pace. The more questions answered, the better the chance of achieving a passing score.
- There is no penalty for guessing, so Candidates should answer every question. It is recommended that Candidates record an answer for each question, even if not confident in the answer. Blank answers will be counted as incorrect.
- It is recommended that Candidates fill in answers on the answer sheet as they complete each question rather than waiting until the end of the examination. Time is not provided to transfer answers from the test booklet or scratch sheet after the examination ends.
- Candidates may write in the examination booklet during the exam, for instance to mark items to return to if time permits; however, candidates should be aware that under no conditions will marks in the examination booklet be utilized in scoring the exam.
- Candidates should speak to a proctor immediately concerning any problems that occur during the examination. Proctors will not answer any questions related to the content of the examination, but may be able to assist with eliminating distractions or other issues.
- Before the exam day, Candidates should ensure that they know the exact location of the examination site, the best way to get there, where parking can be found, and the actual location of the testing room.

7 EXAMINATION ADMINISTRATIVE POLICIES

7.1 RULES

The examination supervisor and proctors are the designated agents for maintaining a secure and proper administration of the examination. On behalf of NABCEP, administrators are required to enforce the following rules.

- There is to be no talking or moving around during the test. Any irregular Candidate conduct which violates the standards of test administration, such as communicating

with any other Candidate during exam or copying answers from another Candidate, is strictly prohibited and grounds for dismissal from the examination and confiscation of examination materials. Any Candidate involved in such behavior will be removed from the exam room, reported to NABCEP, and may be prohibited from taking the exam again.

- If a Candidate has an emergency or needs to use the restroom, they should raise their hand. The Proctor will take the test materials and secure them, then give the Candidate permission to leave the room. Only one Candidate at a time is permitted to leave the room.
- There is to be no smoking, eating, or drinking by Candidates in the test room.
- Candidates should not bring any personal items into the testing room. Any personal items brought into the room will be collected by the Proctors and stored at the front of the test room until the candidate has completed their examination and turned in all testing materials.
- The Proctor and assistants cannot answer any questions about test items during the test. Candidates should do the best they can on each item. Examination supervisors and proctors are not qualified or authorized to answer questions concerning the examination content; however, they will do their best to help with any procedural questions and address other concerns.
- If a Candidate feels there is a misprint or an error within an item, the Candidate should raise their hand. He or she will receive a Candidate Comment Form, which will be collected at the end of the exam.
- **No examination materials, documents, or memoranda of any kind are to be taken from the examination room.**
- Candidates are prohibited from writing or marking anything in any reference book. Doing so is grounds for confiscation of these documents by the exam administrators. Candidates are allowed to write in the examination booklet and scratch paper.
- Due to the noise associated with gathering reference books and materials at the end of the examination, Candidates who have not completed the exam by the time the 15-minute time limit is announced may not be permitted to leave the test center until the final time is called. Candidates will be asked to remain in their seats for the last fifteen minutes until time is called in order to minimize the disruption to those still testing.

7.2 EXAM SECURITY

Any Candidate who communicates with, or gives or receives help to others during the exam will be dismissed from the examination room. Candidates involved in such behavior will be reported to NABCEP and their exam will not be scored. Examination fees will not be refunded and the Candidate may be prohibited from taking the examination in the future.

The performance of all Candidates is monitored and may be analyzed to detect fraud. This information is reported to NABCEP. Candidates who violate security measures will not have their exam scored and may be prohibited from taking the examination pending investigation of the violation.

All exam materials, including all questions, answer booklets, and score sheets are the copyrighted property of NABCEP. Any distribution of these materials through reproduction or oral or written communication is strictly prohibited.

7.3 LATE ARRIVALS

Candidates are encouraged to arrive at least thirty (30) minutes before the scheduled start time for the examination. All Candidates who arrive before the scheduled start time of the examination will be processed and seated for the examination. Once all Candidates are processed, the doors to the exam room will be closed to further admission and the test will begin. Candidates who arrive after the doors are closed will not be admitted and will be considered to have missed the examination. These Candidates can reapply for a subsequent examination time and pay the re-examination fee (unless a Candidate's situation meets the specific exceptions listed below and he/she successfully files for an exception).

7.4 CANCELLATION AND EXAM RESCHEDULING POLICY

PAPER AND PENCIL CANDIDATES

If a Candidate is scheduled to take an examination and cannot attend, they must notify their Provider before the scheduled Exam date. Re-scheduling of Paper and Pencil exams is the sole responsibility of the Provider. Candidates who originally scheduled to take a NABCEP Associate Exam in Paper and Pencil format *may* re-schedule to take or re-take the exam via CBT.

COMPUTER BASED TESTING CANDIDATES

CBT Candidates are subject to the cancellation and rescheduling policies of Castle Worldwide. Castle requires advance notice of at least four business days to schedule or reschedule an exam. The reschedule request must be submitted through Castle's online scheduling system. A fee will apply; the fee must be paid online at the time of the request.

7.5 NATURAL OR MAN-MADE DISASTERS

Any Candidate who is requesting to be excused from an exam must submit an Examination Change Form AND supporting evidence in writing within four (4) days after the scheduled examination date. Applicable fees may be waived if one of the following exceptions occur:

- 1) A serious illness of the Candidate or an immediate family member
- 2) Death in the immediate family
- 3) Disabling accident of the Candidate or an immediate family member
- 4) Unscheduled air travel delay
- 5) Court appearance or jury duty

6) Unexpected military duty

NABCEP reserves the right to request additional evidence to support the exception. Candidates for whom an excuse is accepted will be allowed to select a later exam date to which the fee will be applied. The examination fee is non-refundable and non-transferable. Candidates for whom an excuse is found to not be acceptable will forfeit their entire exam fee and will be required to reschedule the examination and pay a re-examination fee should they wish to continue the credentialing process.

7.6 FAILURE TO APPEAR

Candidates who fail to appear for the examination will forfeit their entire exam fee and will be required to reschedule the examination and pay a re-examination fee unless they meet cancellation policy guidelines above. Appearing to the examination site late (see Section 7.3), is considered a Failure to Appear.

8 SCORING AND GRADE NOTIFICATION

8.1 SCORING PROCEDURES

Paper and Pencil AND Computer Based Testing answers will be scored electronically. A statistical comparison of all responses may be performed as a quality control process to verify the accuracy of examination grades and the performance of test items. Any irregularities identified by this analysis that indicate cheating may have occurred may be considered grounds for denial of a credential. Paper answer sheets are computer-scanned multiple times by NABCEP's third-party testing services vendor to ensure accurate scoring. NABCEP does not provide the ability to request rescoring of NABCEP Associate examinations. All scores reported are final. All Exam Candidates should expect a score report within 4-6 weeks of taking the Exam. Score reports will be mailed via postal service to the address provided. NABCEP does not release scores over the phone, by fax, or by email.

A Candidate who achieves a passing score will receive a score-report letter that indicates that the individual has demonstrated basic knowledge of the fundamental principles of the application, design, installation and operation of the applicable energy system for the Exam taken (PV, Solar Heating, etc.) and a suitable-for-framing document listing the Candidate's name, signed by the Chairman of the Board of NABCEP.

8.2 DETERMINATION OF PASSING SCORE

The passing score of NABCEP examinations are set by a criterion-referenced standard-setting exercise by experts in the field under the guidance of a psychometrician. The NABCEP Associate examinations are not be graded "on a curve" – any Candidate who meets the eligibility requirements and achieves a passing score on the examination will earn the credential.

Because different test forms may vary slightly in difficulty from one version to another, it is testing industry best practice to have scores reported as scaled scores. Scaled scores are statistically derived by adjusting the raw score (the number of questions a Candidate answers correctly) by a factor that accounts for the difficulty of a particular exam format relative to other formats. Using a scaled score helps ensure that all candidates are treated fairly whether they

take an exam that is slightly easier or more difficult than an exam that other candidates took. A total scaled score is used to determine pass or fail status and is reported as a scaled score ranging between 0 and 99.

A scaled score of 65 is required to achieve a passing score on a NABCEP Associate Examinations.

8.3 CANCELLATION OF SCORES

NABCEP is responsible for the integrity of the scores they report. On rare occasions, circumstances such as a technical malfunction or Candidate misconduct may render a score invalid. NABCEP is committed to rectifying such discrepancies as expeditiously as possible. NABCEP reserves the right to cancel any examination scores if, in the sole opinion of NABCEP, there is adequate reason to question its validity. In the event of cancellation, NABCEP at its discretion may (1) offer the individual an opportunity to take the examination again at no additional fee, or (2) revoke or otherwise take action with regard to the application or credential deemed to be in violation of any policies or procedures of NABCEP applicable to the appropriate Credential program.

9 ASSOCIATE STATUS

9.1 DURATION OF ASSOCIATE CREDENTIAL

NABCEP Associate credentials are valid for three (3) years following the date of issuance. During that time an Associate may use the credential designation after their name to show that they are a NABCEP Associate (see Certification Mark Use Policy, Appendix I.C). Associates will receive a certificate and information on maintaining the credential when they are notified of their success on the Associate exam.

9.2 DISPLAYING A NABCEP ASSOCIATE MARK

Only persons who have been issued a NABCEP Associate credential by NABCEP, and who maintain active status and are in good standing, are authorized to use a NABCEP Associate Mark. Likewise, only persons certified by NABCEP, who maintain active status and are in good standing, are authorized to use a NABCEP Associate Mark. Each credentialed individual may use the Mark in professional advertising and informational materials, including telephone directory listings or advertisements, business cards, letterhead, brochures, signs, stationary, packages, and other similar marketing materials, consistent with the rules as explained in Appendix I.C, "NABCEP Associate Mark Use Policy." The Mark is personal to the individual and may not be transferred or assigned to any other individual, organization, business, or entity. Individuals who have previously passed a NABCEP Entry Level Examination are prohibited from claiming that they have obtained a NABCEP Associate credential until completing a Conversion Pathway application and receiving notification from NABCEP that they are an active NABCEP Associate and entitled to all rights and responsibilities thereof.

9.3 REPLACEMENT CERTIFICATES

In the event that a certificate arrives damaged or with incorrect name spelling, Credential Holders should immediately notify NABCEP to request a replacement. In the event of a name change or

in the case of loss or damage, Credential Holders may request a replacement certificate by contacting NABCEP. A fee of \$25 will be charged for each replacement certificate except in cases where damage, or typographical errors are immediately reported to NABCEP upon receipt of the certificate.

9.4 MISCONDUCT

Applicants for an initial Associate Credential and renewal, and Candidates for the examination, who have been determined to be involved in fraud, misrepresentation, or inappropriate behavior in the application, examination, or renewal process will be subject to disciplinary action which may result in denial or removal of NABCEP credential.

10 RENEWAL

10.1 INTRODUCTION

An Associate Credential is valid for three (3) years from the date of issuance. Associates must meet the requirements for renewal by the end of each three-year period in order to be eligible to renew their credential. Associates may perpetually repeat the renewal process every three years for as long as they continue to meet the established requirements for continuing education. NABCEP Associates who do not complete renewal requirements before credential expiration will be required to reapply and retest to obtain the credential again.

NABCEP sponsors and administers a number of rigorous, examination-based, professional certification programs. Associates and Professional Certificants are granted the conditional right to use the NABCEP credential and Certification Mark but must demonstrate an ongoing professional commitment to the field by satisfying the requirements of this Program. NABCEP Renewal assures that the Credential Holder remains committed to continued industry training and education and adherences to NABCEP's Code of Ethics and Standards of Conduct.

This policy establishes and explains the requirements which must be satisfied in order to maintain a NABCEP credential and related information including the standards, guidelines, and procedures of NABCEP Associate Credential Renewal.

10.2 STATEMENT OF PURPOSES

NABCEP Renewal is intended to: require reasonable and appropriate continuing education; enhance the ongoing professional development of credential holders; encourage and recognize individualized learning opportunities; and provide a standardized, objective, and straightforward process for attaining and recording professional development activities.

10.3 BASIC REQUIREMENTS FOR RENEWAL

All NABCEP Associates must document at least 12 contact hours of continuing education over the course of their 3-year certification cycle. A contact hour equals one 60-minute clock hour of organized learning activity including interaction between learner and instructor or learner and materials which have been prepared to cause learning. The number of contact hours for the course must be specified by the Provider before the course is offered. Credit is not awarded for time spent on sales presentations, breaks, travel, receptions, or meals. All contact hour credits

are subject to approval and confirmation by NABCEP. NABCEP Associates should log in to their account at www.my.nabcep.org to complete the process.

As an alternative to meeting continuing education requirements for any credential, the Associate may schedule, and successfully complete, the current NABCEP Associate Examination related to their NABCEP credential. A passing score on the Associate Examination is required, and the Examination must be completed prior to the end of the current Certification Period.

10.3.1 RENEWAL CYCLE

Each renewal cycle will be a three (3) year period. The first renewal cycle begins on the date of initial credential, and expires three years after that initial date of issue. ***The initial credential date is the date printed on the NABCEP Associate Certificate.*** Thereafter, each renewal cycle will be a three (3) year period starting on the same date (plus three years, plus six years, etc.).

10.3.2 RENEWAL TIME LINE AND FEES

Associates are encouraged to file a Renewal Application and pay the \$150 Renewal Fee at least ninety (90) days prior to the expiration of their credential. Associates who fail to renew before their credential expires will be subject to late fees in addition to the Renewal Fee.

Individuals with expired NABCEP Associate credentials may renew their credential up until 6 months following their credential expiration date. During this time, the Associate is NOT credentialed by NABCEP, nor may claim to be so. Expired Associates are removed from the online Verification Directory immediately upon expiration of the credential. During this renewal period, an individual will be permitted to recertify without having to re-apply or re-exam. Once the 6 month extended renewal period has ended, expired NABCEP Associates must reapply and re-exam in order to become credentialed again.

The Associate's expiration date will not change depending on at what point in the renewal cycle the individual meets renewal requirements. The new expiration date will be three years from the original issue or latest reissue of the credential whether the credential is renewed early or within 6 months of expiration.

10.3.3 RENEWAL APPLICATION PROCESS

Associates must log in to their myNABCEP account to renew their NABCEP Associate credential(s). Renewal applications are available in a credential holder's myNABCEP account at <https://my.nabcep.org>. Renewal applications are reviewed according to the same procedures outlined in section 4.4 above.

10.3.4 CONTINUING EDUCATION REQUIREMENTS FOR RENEWAL

NABCEP Associates are required to satisfy at least 12 hours of professional development every 3 years. Acceptable continuing education can be obtained from accredited or non-accredited courses. Courses must be delivered from a third-party. Course work must relate to the applicant's technology (PV, Solar Heating, or Small Wind) and attendance must be documented with an official signed course completion document, transcript, or other record.

NABCEP maintains a course catalog of Registered Continuing Education courses for the professional certifications. NABCEP also hosts an annual Continuing Education Conference where applicants may obtain all their required CE credits by attending Conference sessions.

10.3.5 QUALIFYING ACTIVITIES FOR CONTACT HOURS THROUGH PARTICIPATION IN CLASSES, TRAINING SEMINARS AND RELATED OFFERINGS

Unless otherwise permitted by this policy, in order to be accepted and approved by NABCEP, continuing education activities must be relevant and technology specific to the credential being recertified. Participation in the following educational activities will qualify for continuing education for renewal:

1. **College or University Courses:** Credit may be earned by successfully completing academic coursework at an accredited university or college during the current renewal cycle. Courses may be “audited for credit” if completed and a passing grade is received.
 - i. Documentation Required: Associates must maintain a transcript, grade report, or verification form issued by the educational institution, which indicates a passing grade in the course and a course description.
2. **Registered Apprenticeship Training:** Credit may be earned by successfully completing coursework in a U.S. Department of Labor Approved Apprenticeship Program.
 - i. Documentation Required: Associates must maintain a certificate or letter verifying attendance and a program description. Credit is only provided for coursework portion of an apprenticeship training program. On the job training hours are not valid for Continuing Education Credits.
3. **State or Provincial Contractor Licensing Board Approved Training:** Credit may be earned by successfully completing coursework delivered by a state or provincial Contractor Licensing Board approved training.
 - i. Documentation Required: Associates must maintain a certificate or letter verifying attendance and a program description.
4. **Interstate Renewable Energy Council (IREC) Institute for Sustainable Power Quality (ISPQ), or similar accrediting body, Accredited/Certified Training:**
 Credit may be earned by successfully completing coursework through a(n):
 - IREC Accredited Training Program
 - Course taught by an IREC Certified Instructor or Certified Master Trainer
 - i. Documentation Required: Associates must maintain a certificate or letter verifying attendance and a program description.
5. **Registered NABCEP Continuing Education Courses:** Credit may be earned by successfully completing coursework that is registered for Continuing Education Credit with NABCEP. Providers of these courses adhere to content standards established by NABCEP and are authorized to issue credit certificates to individuals who complete registered courses. A

listing of NABCEP registered courses is posted on NABCEP website at www.nabcep.org Renewal.

- i. Documentation Required: Associates must upload a certificate or letter with and a program description and verification of attendance.
6. **Seminars, Workshops, and Professional Conference Presentations:** Credit may be earned for attending seminars, workshops, or other presentations offered by as part of a professional level conference.
- i. Documentation Required: Associates must upload a NABCEP Continuing Education Credit Form or letter signed by the presenter verifying attendance, and a program description.

10.3.6 ETHICAL PRACTICE REQUIREMENT

As a part of the renewal process, Associates will be required to attest that they have maintained and will continue to maintain practices in conformity with NABCEP Code of Ethics and Standards of Conduct. Violation of the Code of Ethics or Standards of Conduct may be grounds for disciplinary action.

Associates applying for renewal must be in good standing with NABCEP. Associates against whom complaints are brought will be notified and will have the opportunity to refute the complaints filed against them. If a review process finds the Associate in violation of the Code of Ethics or Standards of Conduct, or if they are consistently performing work that does not reflect the skills and experience required for the credential, their credential may be revoked and the Associate may be denied the opportunity to attain renewal status.

10.3.7 CREDIT DENIAL

NABCEP reserves the sole and exclusive right to evaluate all activities and programs on an individual basis and at its discretion, to deny credits for those activities that fail to meet the terms of this policy and other NABCEP requirements. In its evaluation, NABCEP will consider the number of credits indicated for a program by other providers. However, NABCEP reserves the sole and exclusive right to make all final determinations concerning the number of credits granted for each activity. The Associate will be notified when credits are reduced or denied, including a statement indicating the basis for such action.

10.3.8 MAINTENANCE OF PERSONAL RENEWAL RECORDS

As explained in this policy, each category of qualifying renewal activities indicates the information and materials that must be collected and maintained in order to receive credit. Associates must maintain the applicable records and documentation related to each reported renewal activity for at least twelve (12) months after the current renewal cycle has ended. Such records should be stored in a safe and secure manner.

10.3.9 FAILURE TO SATISFY RENEWAL REQUIREMENTS

Associates who fail to satisfy the renewal requirements prior to the conclusion of the current renewal cycle will become **inactive and placed on an inactive list of Associates**. The following terms apply, unless otherwise provided by this policy:

Suspension

Following the issuance of a suspension notice, the Associate will be placed on immediate suspension status for the period of time identified in the Suspension Notice, or until such time as NABCEP recognizes that the individual fulfilled any and all requirements identified in the Notice. In the event of credential suspension, the applicable dates for the following renewal cycle remain effective and are not altered, i.e., the suspension period will be concurrent with the first year in the original renewal cycle. Upon satisfactory completion of all relevant renewal requirements, the Associate will be returned to active status.

Revocation

During a suspension period, failure to satisfy the relevant requirements will result in revocation and termination of a credential. Unless otherwise directed by NABCEP, a revoked or terminated credential may not be reinstated. In order to receive credentialed status, a former credential holder must reapply and satisfy all the initial credentialing requirements.

Prohibited use of Credential

An Associate whose credential has been suspended or revoked may not represent himself or herself as an active NABCEP Associate or as credentialed by NABCEP. They may not use any NABCEP Associate Marks until such time as they receive notice from NABCEP that the relevant renewal requirements have been satisfied or their active status has been reinstated, consistent with the terms of this policy.

11 VOLUNTARY, OPTIONAL CHANGES IN CREDENTIAL STATUS

11.1.1 RELINQUISHMENT OF THE CREDENTIAL

An Associate in good standing may voluntarily relinquish their credential by submitting a written request to NABCEP indicating acceptance of, and agreement to, the following terms. Such Associates will be removed from active Associate Verification directory.

11.1.2 PROHIBITED USE OF THE CREDENTIAL

An Associate who voluntarily relinquishes their credential may not represent themselves as an active Associate or as credentialed by NABCEP.

12 CONFIDENTIALITY

12.1 CONFIDENTIALITY OF APPLICATION MATERIALS

An Applicant's submitted materials shall remain confidential, unless authorized by other NABCEP policies and practices or unless otherwise stipulated in writing by the Applicant. Only members of the NABCEP Board of Directors, NABCEP staff, and designated individuals acting on behalf of the Board shall have access to these documents. NABCEP will take all reasonable precautions to

ensure that Applicant's application information will not be released to 3rd parties. Upon becoming credentialed, professional contact information will be considered public information and may be made available to the public upon request.

12.2 CONFIDENTIALITY OF SCORES

Individual Associate scores shall remain confidential unless an Associate agrees in writing to release their score to specific authorities, such as a state board of licensure. Registered Associate Providers are given access to the scores of those candidates who obtained eligibility by completing one of their courses. Individuals may indicate that they do not wish their scores to be released by filling out the applicable section on the NABCEP Associate Candidate Eligibility Form.

12.3 VERIFICATION REGISTRY

NABCEP will maintain a NABCEP Associate Verification Registry as a free benefit for Associates and the public. The NABCEP Associate Verification Registry will contain the name, city, state and NABCEP credential number of all NABCEP Associates in good standing. This database will be made available in a secure, online format, free of charge.

13 GRIEVANCES & APPEALS

13.1 GROUNDS FOR APPEAL

NABCEP is directed, administered, and supervised by a volunteer Board of Directors. All challenges regarding actions of and by NABCEP are governed by the comprehensive and exclusive rules contained in the Certification Appeal Procedures (see Appendix I.B). This appeal process is the only way to resolve NABCEP application, eligibility, examination, and other credentialing or renewal challenges, complaints, and/or claims of irregularities.

An Applicant, Candidate, Certificant or Associate may submit to the Executive Director an initial appeal (request for review) of an adverse NABCEP action or decision based on any of the following grounds:

- a. The Candidate was found to be ineligible to take or unable to complete the Examination;
- b. The Candidate did not pass or successfully complete the Examination; or,
- c. The Applicant failed to satisfy a qualification requirement, or failed to satisfy a renewal requirement, including those requirements related to qualifications, education, and experience, or was otherwise deemed ineligible for credentialing or renewal.

In order for a request for review to be considered by the Executive Director, the written request must be received by NABCEP within thirty (30) days of the date of the adverse action.

13.2 APPEAL PROCEDURES

In order for an appeal to be considered by the Certification Appeals Committee, the appeal submission must contain the following information:

- a. The identity and signature of the Applicant, Candidate, Certificant or Associate submitting the appeal;

- b. A detailed explanation of the reasons and basis for the appeal, as defined and limited by Section E.2 in the Appeals Procedure
- c. All objections, corrections, and factual information the Candidate or credential holder believes to be relevant to the appeal;
- d. The names, addresses, telephone numbers, and email addresses, if available, of any persons with factual information relevant to the appeal, and a clear description of the factual information available from these persons; and,
- e. Copies of any and all relevant documents, exhibits, or other information the Applicant, Candidate, or Certificant wants to submit in support of the appeal.

13.3 COMPLAINT, DISPUTE, & GRIEVANCE POLICY

The Complaint, Dispute, and Grievance Resolution Policy (available online or by contacting NABCEP) will apply to any grievance matter concerning an action, policy or practice of NABCEP as a corporate body; NABCEP Candidates or credential holders; NABCEP Board of Directors and Officers; NABCEP executive management and staff; NABCEP Committee members; and NABCEP volunteers and representatives acting on behalf of NABCEP (parties).

14 CONTACTING NABCEP

14.1 OBTAIN INFORMATION AND ASK QUESTIONS

Please contact the Board office at (800) 654-0021, or visit our website at www.nabcep.org for additional information.

North American Board of Certified Energy Practitioners
56 Clifton Country Road, Suite 202
Clifton Park, NY, 12065
Email: info@nabcep.org
Phone: (800) 654-0021
Fax: (518) 899-1092

14.2 CHANGE OF ADDRESS OR NAME

Applicants and credential holders are responsible for updating all employment and contact information through their account at www.my.nabcep.org.

14.3 OTHER POLICIES

Other NABCEP policies, including the Ethics Case Procedure and the Complaint, Dispute and Grievance Resolution Policy, are available online at www.nabcep.org or by contacting NABCEP at the contact info listed above.

APPENDIX I: NABCEP POLICIES

A. *NABCEP Code of Ethics & Standards of Conduct*

Among other primary goals, NABCEP is dedicated to the implementation of appropriate professional standards designed to protect consumers and the profession. NABCEP Candidates, Certificants and Associates are expected to act in an appropriate manner, which promotes the integrity of, and reflects positively on, the practitioner, NABCEP, and the renewable energy profession, consistent with accepted moral, ethical, and legal standards.

NABCEP CODE OF ETHICS

As a professional in the fields of renewable and sustainable energy and energy efficiency technologies, a NABCEP Candidate, Certificant and Associate has the obligation to:

- deal with all clients, consumers, and other professionals and professional organizations fairly and in a timely manner;
- provide safe and quality services to clients and consumers;
- respect and promote the rights of clients and consumers by offering only professional services that he/she is qualified to perform, and by adequately informing clients and consumers about nature of proposed services, including any relevant concerns or risks;
- maintain the confidentiality and privacy of all client and consumer information;
- avoid conduct which may cause a conflict with client or others;
- engage in moral and ethical business practices, including accurate and truthful representations concerning professional information and system performance expectations;
- be truthful with regard to research sources, findings, and related professional activities;
- maintain accurate and complete business and professional records;
- respect the intellectual property and contributions of others;
- further the professionalism of renewable energy industry services; and,
- behave in a courteous and professional manner when communicating with NABCEP representatives.

NABCEP STANDARDS OF CONDUCT

The following NABCEP Ethical Standards of Conduct describe appropriate and enforceable professional practice standards, and set forth the minimal ethical standards of professional conduct for NABCEP Candidates, Certificants and Associates. These Ethical Standards of Conduct also serve as a professional resource for renewable energy industry practitioners, as well as for those served by NABCEP Candidates and credential holders, in the case of a possible ethical violation.

SECTION A: COMPLIANCE WITH LAWS, POLICIES, AND RULES RELATING TO THE PROFESSION

1. NABCEP Candidates, Certificants and Associates will be aware of, and comply with, all applicable federal, state, and local laws and regulations governing the profession. NABCEP Candidates, Certificants and Associates will not knowingly participate in, or assist, any acts that are contrary to applicable professional laws and regulations. Lack of awareness or misunderstanding of these laws and regulations does not excuse inappropriate or unethical behavior.
2. NABCEP Candidates, Certificants and Associates will be aware of, and comply with, all NABCEP rules, policies, and procedures, including rules concerning the appropriate use of NABCEP certification marks and the proper representation of NABCEP credentials. Lack of awareness or misunderstanding of a NABCEP rule, policy, or procedure does not excuse inappropriate or unethical behavior. NABCEP Candidates, Certificants and Associates will not knowingly participate in, or assist, any acts that are contrary to NABCEP rules, policies, and procedures.
3. NABCEP Candidates, Certificants and Associates will make all reasonable and appropriate efforts to promote compliance with, and awareness of, all applicable laws, regulations, and NABCEP rules and policies governing the profession.
4. NABCEP Candidates, Certificants and Associates will make all reasonable and appropriate efforts to prevent violations of applicable laws, regulations, and NABCEP rules and policies governing the profession.
5. NABCEP Candidates, Certificants and Associates will provide accurate, truthful, and complete information to NABCEP concerning all certification related eligibility information, and will submit valid application materials for fulfillment of current certification and renewal requirements.
6. NABCEP Candidates, Certificants and Associates will maintain the security, and prevent the disclosure, of NABCEP certification examination information and materials.
7. NABCEP Candidates, Certificants and Associates will report possible violations of this Code of Ethics to the appropriate NABCEP representative(s).
8. NABCEP Candidates, Certificants and Associates will cooperate fully with NABCEP concerning the review of possible ethics violations and the collection of related information.

SECTION B: PROFESSIONAL PRACTICE

1. NABCEP Candidates, Certificants and Associates will deliver safe, competent services in a timely manner, and will provide quality services with appropriate professional skill and competence.
2. NABCEP Candidates, Certificants and Associates will recognize the limitations of his/her professional ability, and will only provide and deliver professional services for which he/she is qualified. NABCEP Candidates, Certificants and Associates will be responsible for determining

his/her own professional abilities based on his/her education, knowledge, competency, credentials, extent of practice experience in the field, and other relevant considerations.

3. NABCEP Candidates, Certificants and Associates will provide clients and consumers with adequate and detailed information regarding the nature of proposed services, and the related options, outcomes, risks, and concerns.

4. NABCEP Candidates, Certificants and Associates will use all professional resources in a technically appropriate and efficient manner.

5. NABCEP Candidates, Certificants and Associates will provide services based on client or consumer requests and needs, and will avoid unnecessary services. NABCEP Candidates, Certificants and Associates will provide services that are both appropriate and necessary to satisfying client or consumer requests and needs.

6. NABCEP Candidates, Certificants and Associates will exercise diligence and thoroughness in providing services, and in making professional assessments and recommendations solely for the benefit of the client or consumer. NABCEP Candidates, Certificants and Associates who offers his/her services to the public will not decline a client or consumer based on age, gender, race, color, sexual orientation, national origin, disability, religious affiliation, or any other basis that would constitute unlawful discrimination.

7. NABCEP Candidates, Certificants and Associates will prepare and maintain all necessary, required, or otherwise appropriate records concerning his/her professional practice, including complete and accurate client and consumer services records.

8. NABCEP Candidates, Certificants and Associates will not delegate the responsibility to provide professional services to an unqualified person. Where supervision is appropriate and necessary, NABCEP Candidates, Certificants and Associates will not delegate responsibility for the provision of professional services without providing appropriate supervision.

9. NABCEP Candidates, Certificants and Associates will not act in a manner that may compromise his/her professional judgment, performance, or obligation to deal fairly with all clients and consumers.

10. NABCEP Candidates, Certificants and Associates will be truthful and accurate in all advertising and representations concerning professional qualifications, experience, competency, and performance of services, including representations related to professional status and/or areas of competence. NABCEP Candidates, Certificants and Associates will not make false or deceptive statements concerning professional or occupational training, experience, competence, ability, academic training or degrees, credentials, institutional or association affiliations, services, or fees for services.

11. NABCEP Candidates, Certificants and Associates will not knowingly make false or misleading statements about, or guarantees concerning, any service or the efficacy of any renewable energy system, product, or device, orally or in writing.

SECTION C: CONFLICT OF INTEREST AND APPEARANCE OF IMPROPRIETY

1. NABCEP Candidates, Certificants and Associates will not engage in conduct that may cause an actual or perceived conflict between his/her own interests and the interests of his/her client or organization. NABCEP Candidates, Certificants and Associates will avoid conduct that causes an appearance of impropriety.
2. NABCEP Candidates, Certificants and Associates will act to protect the interests of the client or consumer before his/her own interests, unless such action is in conflict with any legal, ethical, or professional obligation.
3. NABCEP Candidates, Certificants and Associates will disclose to clients and organizations any circumstance that could be construed as a conflict of interest or an appearance of impropriety, or that could otherwise influence or interfere with the exercise of professional judgment.
4. NABCEP Candidates, Certificants and Associates will refrain from offering or accepting inappropriate payments, gifts, or other forms of compensation for personal gain, unless in conformity with applicable laws, regulations, and NABCEP rules and policies.

SECTION D: COMPENSATION AND REFERRAL DISCLOSURES

1. If responsible for setting professional fees and related costs, NABCEP Candidates, Certificants and Associates will charge fair, reasonable, and appropriate fees for all professional services, and will provide clients and consumers with truthful and accurate information concerning such services.
2. NABCEP Candidates, Certificants and Associates will charge fees that accurately reflect the services provided to the client or consumer.
3. NABCEP Candidates, Certificants and Associates will make all appropriate disclosures to clients and consumers and prospective clients and consumers regarding any benefit paid to others for recommending or referring his/her services.
4. NABCEP Candidates, Certificants and Associates will make all appropriate disclosures to clients and consumers and prospective clients and consumers regarding any benefit received for recommending or referring the services of another individual.

SECTION E: CLIENT CONFIDENTIALITY AND PRIVACY

1. NABCEP Candidates, Certificants and Associates will maintain and respect the confidentiality of all client and consumer information obtained in the course of a professional relationship, unless: the information pertains to illegal activity; the client or consumer expressly directs the release of specific information; or, a court or government agency lawfully directs the release of the information.
2. NABCEP Candidates, Certificants and Associates will respect and maintain the privacy of his/her clients and consumers.

SECTION F: RESEARCH AND PROFESSIONAL ACTIVITIES

1. NABCEP Candidates, Certificants and Associates will be accurate and truthful, and otherwise act in an appropriate manner, with regard to research findings and other professional activities, and will make reasonable and diligent efforts to avoid any material misrepresentations.
2. NABCEP Candidates, Certificants and Associates will maintain appropriate, accurate, and complete records with respect to research and other professional activities.
3. When preparing, developing, or presenting research or other professional information and materials, NABCEP Candidates, Certificants and Associates will not copy or use, in substantially similar form, materials prepared by others without acknowledging the correct source and identifying the name of the author and/or publisher of such material.
4. NABCEP Candidates, Certificants and Associates will respect and protect the intellectual property rights of others, and will otherwise recognize and protect the professional contributions of others.

SECTION G: MISCONDUCT PROHIBITIONS

1. NABCEP Candidates, Certificants and Associates will not engage in any criminal misconduct relating to his/her professional activities.
2. NABCEP Candidates, Certificants and Associates will not engage in conduct involving dishonesty, fraud, deceit, or misrepresentation relating to his/her professional activities.
3. NABCEP Candidates, Certificants and Associates will not engage in unlawful discrimination relating to his/her professional activities.
4. NABCEP Candidates, Certificants and Associates will avoid any behavior that is clearly contrary to accepted moral, ethical, or legal standards, and that may compromise the integrity of, or reflect negatively on, the profession

B. NABCEP Appeals Policy

Introduction

The North American Board of Certified Energy Practitioners, Inc. (NABCEP), is a private, non-profit, professional credentialing organization that sponsors the development, maintenance, evaluation, promotion, and administration of a rigorous, examination-based credential program in the fields of renewable and sustainable energy and energy efficiency technologies. The purpose and goal of NABCEP is to assess and measure objectively the professional knowledge of renewable energy industry practitioners, and to promote the advancement of the renewable energy industry by identifying to professionals and the public those practitioners who have voluntarily met and satisfied relevant NABCEP standards.

In order to be certified by NABCEP, each Candidate must: satisfy all education and experience eligibility and credentials requirements established by NABCEP Board of Directors; and pass a written credential examination. In addition, all individuals certified by NABCEP must demonstrate an ongoing professional commitment to the fields of renewable and sustainable energy and energy efficiency technologies in order to maintain certification.

NABCEP eligibility standards and credential requirements are applied fairly, impartially, and consistent with applicable laws. NABCEP will not discriminate against any Applicant, Candidate, Associate or Certificant on the basis of an unlawful reason, and will grant credential without regard to their membership or non-membership in any organization, association, or other group.

NABCEP Associates and Candidates seeking certification or renewal agree that: these procedures are a fair process for resolving certification complaint or appeal matters; they will be bound by decisions made pursuant to these procedures; these procedures are governed by the principles of the law of the State of Nevada; and, these procedures do not constitute a contract between NABCEP and the individual.

A. General Provisions

1. Nature of the Process. NABCEP is directed, administered, and supervised by NABCEP Board of Directors. All challenges regarding actions of and by NABCEP are governed by the comprehensive and exclusive rules contained in these procedures. This appeal process is the only way to resolve all NABCEP application, eligibility, examination, and other certification or renewal challenges, complaints, and/or claims of irregularities.

Because these informal procedures are not legal proceedings, they are designed to operate without the assistance of attorneys. While a party may choose to be represented by an attorney, Candidates and Associates are encouraged to communicate directly with NABCEP. If a party has retained an attorney, that attorney will be directed to communicate with NABCEP through NABCEP Legal Counsel.

2. Participants. NABCEP Executive Director, the Certification Appeals Committee, NABCEP Board of Directors, and any other authorized representative of NABCEP, may be involved in deciding matters to be resolved or arising under these procedures.

3. Time Requirements. NABCEP will make every effort to follow the time requirements noted in these appeal procedures. However, NABCEP's failure to meet a time requirement will not prohibit the consideration or final resolution of any matter arising under these procedures. NABCEP Candidates or Associates are required to comply with all time requirements specified in this document. Unless provided otherwise, time extensions or postponements may be granted by NABCEP if a timely, written request explaining a reasonable cause is submitted, consistent with these procedures.

4. Litigation/Other Proceedings. NABCEP may accept and resolve a dispute arising under these proceedings when civil or criminal litigation, or other proceedings related to the dispute are also before a court, regulatory agency, or professional body. NABCEP may also continue or delay the resolution of any appeal, complaint, or other matter.

5. Confidentiality. In order to protect the privacy of all parties involved in matters arising under these procedures, all material prepared by, or submitted to, NABCEP will be confidential. Disclosure of material prepared by, or submitted to, NABCEP is permitted only when specifically authorized by NABCEP policy, the Board of Directors, the Certification Appeals Committee, or the Executive Director.

Among other information, NABCEP will not consider the following materials and documents to be confidential:

- a. Published certification and eligibility criteria;
- b. Records and materials that are disclosed as the result of a legal requirement;
- c. Upon the written request of a Candidate or Certificant, any certification information concerning certification status or application materials which the Candidate or Certificant would like made available to other credentialing agencies, professional organizations, or similar bodies; and,
- d. All decisions and orders of the Board of Directors, the Certification Appeals Committee, or the Executive Director, which are considered final and closed, consistent with these procedures.

6. Failure to Disclose/Improper, False, or Misleading Representations. Where a Candidate or Certificant fails to disclose information related to certification or renewal requested by NABCEP, or where a Candidate or Certificant makes an improper, false, or misleading representation to NABCEP, the Executive Director, Certification Appeals Committee, the Board of Directors, or other authorized representative may penalize or discipline the individual, and/or issue corrective action related to such failure or improper representation. NABCEP may

temporarily or permanently prevent and bar an individual from being certified or recertified, or may issue any other appropriate directive(s). Where a penalty, discipline, order, or other directive is issued by NABCEP under this Section, the Candidate or Certificant involved may seek review and appeal under these procedures.

7. **Party Conduct/Failure to Cooperate.** All parties must behave in a courteous and professional manner when communicating with NABCEP representatives. Where a Candidate or Certificant fails or refuses to cooperate fully with NABCEP concerning matters arising under, or related to, these procedures, and it is determined that the lack of cooperation is without good cause, the Executive Director, Certification Appeals Committee, the Board of Directors, or other authorized representative may penalize or discipline the individual, and/or issue corrective action related to such failure to cooperate. NABCEP may temporarily or permanently prevent and bar an individual from being certified or recertified, or may issue any other appropriate directive(s).

Where a penalty, discipline, order, or other directive is issued by NABCEP under this Section, the Candidate or Certificant involved may seek review and appeal under these procedures.

8. **Professional Complaint Matters.** Following notice, and a reasonable opportunity to present a response, the Executive Director, Certification Appeals Committee, the Board of Directors, or other authorized representative may temporarily or permanently prevent an individual from being certified or recertified, or may issue any other appropriate directive(s), where the Candidate or Certificant was the subject of any complaint or similar matter relating to his/her professional activities as a renewable energy industry practitioner, or where the Candidate or Certificant is the subject of matters or proceedings involving criminal charges, lesser offenses, or similar matters regardless of: when the alleged violation occurred; and, whether the professional license of the Candidate or Certificant was in good standing at the time of NABCEP decision or action.

Where a penalty, discipline, order, or other directive is issued by NABCEP under this Section, the Candidate or Certificant involved may seek review and appeal under these procedures.

C. Actions and Decisions Concerning the Certification Process

1. **Certification Application Actions.** Under the supervision of the Executive Director acting with the guidance of the Application Review Committee, NABCEP will make one of the following determinations and decisions with regard to a Candidate's application for NABCEP certification examination eligibility: (a) accept the application; (b) request additional or supplemental information; or, (c) reject the application on the ground(s) that the Candidate does not meet the relevant certification eligibility requirements, or the Candidate has violated, or acted contrary to, a NABCEP policy or rule.

2. **Certification Examination(s) Actions.** NABCEP will notify each Candidate whether he/she has achieved a passing or failing score on the Certification Examination. Where a Candidate acts

contrary to NABCEP policies during the administration of any Certification Examination(s) or Section, the Candidate may be prevented from taking or completing the Examination(s), or other appropriate action may be issued.

3. **Renewal Application Actions.** NABCEP will make one of the following decisions with regard to a Certificant's Renewal Application: (a) grant renewal; (b) conditionally accept the Renewal Application, pending satisfactory completion of all renewal requirements; (c) request additional information; or, (d) reject the application on the ground(s) that the Certificant does not meet the necessary criteria for renewal, or the Certificant has violated, or acted contrary to, a NABCEP policy or rule.

D. Initial Request for Review/NABCEP Executive Director

1. **Grounds for Initial Appeal (Request for Review).** A Candidate or Certificant may submit to the Executive Director an initial appeal (request for review) of an adverse NABCEP action or decision based on any of the following grounds:

- a. The Candidate was found to be ineligible to take or complete the Certification Examination;
- b. The Candidate did not pass or successfully complete the Certification Examination; or,
- c. The Candidate or Certificant failed to satisfy a certification or renewal requirement, including those requirements related to qualifications, education, and experience, or was otherwise ineligible for certification or renewal.

2. **Content of a Request for Review.** A Candidate or Certificant may submit a written request for review of an adverse certification-related action or decision by notifying the Executive Director in writing. The Candidate or Certificant must state and explain in detail the nature of the request and the specific facts and circumstances supporting the request, including all reasons why the action or decision should be changed or modified. The Candidate or Certificant must also provide accurate copies of all supporting documents.

3. **Time Period for Submitting Request for Review.** In order for a request for review to be considered by the Executive Director, the written request must be received by NABCEP within thirty (30) days of the date of the adverse action.

4. **Executive Director Actions.** Upon receipt, all requests for review will be considered informally by the Executive Director or other authorized NABCEP representative. Following review of the Candidate's or Certificant's request for review, the Executive Director will acknowledge receipt of the request within thirty (30) days, and may take the following actions:

- a. **Informal Resolution.** The Executive Director will resolve and decide the matter based on the record, including relevant and credible information presented by the Candidate or Certificant. The informal resolution will include the findings of the Executive Director and a summary of the relevant facts upon which the decision is based, and may uphold or modify the adverse action or decision, or indicate other appropriate action. The

Executive Director will issue the informal resolution within thirty (30) days of receipt of the request, or as soon thereafter as is practical; or,

- b. Referral of Request. The Executive Director will refer the matter to the Certification Appeals Committee for resolution as an appeal. The Executive Director will provide the Certification Appeals Committee with all relevant materials, including the documents and materials submitted by the Candidate or Certificant.

E. Appeal/Certification Appeals Committee

1. Certification Appeals Committee. At least three (3) members of NABCEP Appeals, Grievance, and Ethics Committee will be appointed to serve as the Certification Appeals Committee to resolve appeals or referred matters. Subject to the limitations set forth in these procedures, the Certification Appeals Committee will hear and resolve a first appeal where: the matter has been referred by the Executive Director; or, a Candidate or Certificant is dissatisfied with the final informal review and action of the Executive Director, and requests an appeal consistent with these procedures.

2. Grounds for Appeal. In order for an appeal to be considered by the Certification Appeals Committee, the appeal submission must contain substantial information supporting at least one of the following grounds:

- a. The Candidate's eligibility to sit for the Certification Examination(s), or other eligibility for certification, was denied incorrectly;
- b. The Candidate's Certification Examination(s) was scored incorrectly, or was not credited with an appropriate response to particular questions, and as a direct result of the incorrect scoring the Candidate is entitled to receive a passing score on the examination(s);
- c. The Candidate was barred or otherwise prohibited incorrectly from taking the Certification Examination(s) or from becoming certified; or,
- d. The Certificant's Renewal Application was incorrectly rejected under the relevant renewal standards, and the Certificant would have qualified for renewal if the correct standards had been applied, or the Certificant was otherwise incorrectly found ineligible for renewal.

3. Content of Appeal. In order for an appeal to be considered by the Certification Appeals Committee, the appeal submission must contain the following information:

- a. The identity and signature of the Candidate or Certificant submitting the appeal;
- b. A detailed explanation of the reasons and basis for the appeal, as defined and limited by Section E.2, above
- c. All objections, corrections, and factual information the Candidate or Certificant believes to be relevant to the appeal;
- d. The names, addresses, telephone numbers, and email addresses, if available, of any persons with factual information relevant to the appeal, and a clear description of the factual information available from these persons; and,

- e. Copies of any and all relevant documents, exhibits, or other information the Candidate or Certificant wants to submit in support of the appeal.

4. **Time Period for Submitting Appeal.** A Candidate or Certificant seeking to present an appeal must submit a written, signed appeal, consistent with the requirements of these procedures, to the Certification Appeals Committee within thirty (30) days of the date of the final action and decision of the Executive Director. Upon written request by the Candidate or Certificant received at least ten (10) days prior to the appeal deadline, the Certification Appeals Committee Chair may, in his or her discretion, extend the time period for filing the appeal. Denials of time extension requests are not subject to appeal. Appeals received beyond given time periods will not be reviewed or considered by the Certification Appeals Committee, except upon a written request showing good cause, as determined by the Certification Appeals Committee.

5. **Appeal Deficiencies.** The Certification Appeals Committee Chair may require the Candidate or Certificant to clarify, supplement, or amend an appeal submission.

6. **Appeal Rejection.** If the Certification Appeals Committee Chair determines that an appeal does not meet the appeal requirements or otherwise warrant further formal review, consistent with the requirements set forth in these procedures, the appeal will be rejected. The Certification Appeals Committee Chair will notify the Candidate or Certificant of the rejection, as well as the reason(s) for the rejection, by letter within twenty-one (21) days of the determination. Appeal rejection determinations are not subject to appeal.

7. **Appeal Hearing Requests.** In the first appeal submission, the Candidate or Certificant may request to participate in the informal hearing. In the event that the Candidate or Certificant does not request to participate in the hearing, the appeal will be resolved and decided based on the appropriate written record, as determined by the Certification Appeals Committee.

8. **Scheduling of Appeal Hearing.** Within forty-five (45) days of receipt of a complete and proper written appeal, the Certification Appeals Committee will schedule a hearing date and time for appeal consideration, generally not later than one-hundred twenty (120) days after receipt of the appeal, and will notify the Candidate or Certificant of the hearing date and time. Where the Candidate or Certificant has requested participation in the hearing, the Candidate or Certificant may be required to provide additional information concerning hearing presentation requirements prior to the hearing date. The Certification Appeals Committee will conduct an informal hearing designed to review and consider all of the available proof and information, including the record of the initial request for review and the materials submitted by the Candidate or Certificant.

9. **Decision of the Certification Appeals Committee.** The Certification Appeals Committee will resolve and decide the appeal based on the record, including relevant and credible

information presented by the Candidate or Certificant, NABCEP policies, and, if applicable, the action or decision of the Executive Director. The Certification Appeals Committee Decision will include the Committee findings and a summary of the relevant facts upon which the decision is based, and may uphold or modify the decision of the Executive Director, or indicate other appropriate action. The Certification Appeals Committee will issue the Decision within thirty (30) days of the end of the appeal review, or as soon thereafter as is practical.

F. Final Appeal / NABCEP Board of Directors

1. NABCEP Board of Directors. NABCEP Board of Directors, or a panel of three (3) or more Board Directors designated to represent the Board of Directors, will resolve each final appeal. Subject to the limitations set forth in these procedures, the Board of Directors will hear and resolve a final appeal where a Candidate or Certificant is dissatisfied with the Certification Appeals Committee Decision, and submits an appropriate appeal consistent with these procedures.

2. Grounds for Final Appeal. In order for an appeal to be considered by the Board of Directors, the appeal submission must contain substantial information supporting at least one of the following grounds. The grounds upon which a final appeal may be based are strictly limited to the following:

- a. Procedural Error: The Certification Appeals Committee Decision misapplied a procedural rule contained in these rules, and the rule misapplication significantly prejudiced the Candidate or Certificant with respect to the outcome of the appeal decision;
- b. New or Previously Undiscovered Information: Following the issuance of the Certification Appeals Committee Decision, the Candidate or Certificant located relevant information and facts that were not previously available and that would have significantly affected the outcome of the Certification Appeals Committee Decision in the Candidate's or Certificant's favor;
- c. Misapplication of Certification Standards: The Certification Appeals Committee Decision misapplied the relevant certification or renewal standards, and the misapplication significantly prejudiced the Candidate or Certificant and the outcome of the appeal decision; or,
- d. Contrary to the Information Presented: The Certification Appeals Committee Decision clearly is contrary to the most substantial information in the record.

With respect to the grounds listed in Sections 1.a. and 1.c., above, the Board of Directors will consider only arguments that were previously presented to the Certification Appeals Committee.

3. Contents of Final Appeal. In order for an appeal to be considered by the Board of Directors, the appeal submission must contain the following information:

- a. The identity and signature of the Candidate or Certificant submitting the appeal;
- b. A detailed explanation of the reasons and basis for the appeal, as defined and limited by Section F.1, above;

- c. All objections, corrections, and factual information the Candidate or Certificant believes to be relevant to the appeal, including all documents and exhibits in support of the appeal;
- d. The names, addresses, and telephone numbers of any persons not previously identified with factual information relevant to the appeal, and a clear description of the factual information available from these persons; and,
- e. Copies of any and all relevant documents, exhibits, or other information the Candidate or Certificant wants to submit in support of the appeal.

4. **Time Period for Submitting Final Appeal.** A Candidate or Certificant seeking to present a final appeal must submit a written, signed appeal, consistent with the requirements of these procedures, to the Board of Directors within thirty (30) days of the date of the Certification Appeals Committee Decision. Upon written request by the Candidate or Certificant received at least ten (10) days prior to the appeal deadline, the Board Chair or authorized representative may, in his or her discretion, extend the time period for filing the appeal. Denials of time extension requests are not subject to appeal. Appeals received beyond given time periods will not be reviewed or considered by the Board of Directors, except upon a written request showing good cause, as determined by the Board of Directors.

5. **Final Appeal Deficiencies.** The Board Chair or authorized representative may require the Candidate or Certificant to clarify, supplement, or amend an appeal submission.

6. **Final Appeal Rejection.** If the Board Chair or authorized representative determines that an appeal does not meet the final appeal requirements or otherwise warrant further formal review, consistent with the requirements set forth in these procedures, the appeal will be rejected. The Board Chair or authorized representative will notify the Candidate or Certificant of the rejection, as well as the reason(s) for the rejection, by letter within approximately twenty-one (21) days of the determination. Appeal rejection determinations are not subject to appeal.

7. **Scheduling of Final Appeal Hearing.** Within sixty (60) days of receipt of a complete and proper written appeal, the Board of Directors will schedule a hearing date for appeal consideration, generally not later than the next or second regularly scheduled Board meeting, and will notify the Candidate or Certificant of the date. The Board of Directors will conduct an informal hearing designed to review and consider all of the available proof and information, including the record of the first appeal and the materials submitted by the Candidate or Certificant.

8. **Final Appeal Decision of the Board of Directors.** The Board of Directors will resolve and decide the appeal based on the record, including relevant and credible information presented by the Candidate or Certificant, NABCEP policies, and the action or decision of the Certification Appeals Committee. The Final Appeal Decision will include the findings of the Board of Directors and a summary of the relevant facts upon which the decision is based, and may uphold or modify the decision of the Certification Appeals Committee, or indicate other appropriate action. The

Board of Directors will issue the Final Appeal Decision within thirty (30) days of the end of the appeal review, or as soon thereafter as is practical.

G. Finalizing and Closing Appeals

1. Conditions for Closing the Appeal. An appeal will be closed, and all proceedings ended, when any of the following occurs:

- a. An appeal has been resolved and decided by the Executive Director, the Certification Appeals Committee, or the Board of Directors, and the allowable time period for the filing of an appeal under these procedures and rules has passed or lapsed; or,
- b. The appeal has been withdrawn or terminated by the Candidate or Certificiant

C. NABCEP Associate Mark Use Policy

A. Policy Purpose.




NABCEP Associate marks and credentials (NABCEP Associate Marks) recognize that authorized individuals have satisfied applicable credential requirements established by NABCEP. NABCEP Associate Marks represent a standard of knowledge in the field of renewable energy.

This Policy has been developed to assist NABCEP Associates in understanding the rules and requirements for use of the NABCEP Associate Marks, including proper use of the marks in professional and business materials. All NABCEP authorized individuals should review this Policy carefully to ensure that all uses of the appropriate marks conform to the Policy requirements.

B. NABCEP Associate Marks.

1. Mark Ownership.

The following NABCEP Associate Marks are owned and controlled by NABCEP:

| | |
|---|--|
|  | <p>NABCEP Photovoltaic Associate™ NABCEP PV Associate NABCEP PVA™</p> |
|  | <p>NABCEP Solar Heating Associate™ NABCEP SHA™</p> |
|  | <p>NABCEP Small Wind Associate™ NABCEP SWA™</p> |

NABCEP retains all trademark and other ownership rights concerning the NABCEP Associate Marks. NABCEP may create and use additional certification marks, as it deems appropriate.

2. Authorized Use of NABCEP Associate Marks.

NABCEP grants limited permission to use specific NABCEP Associate Marks to qualified individuals who satisfy all applicable NABCEP Associate credential requirements. Consistent with applicable law and corporate policies, NABCEP will ensure that the Associate Marks are displayed and otherwise used properly, as such use represents NABCEP credentials to the public.

3. Prohibited Use of NABCEP Associate Marks.

Permission by NABCEP to use a NABCEP Associate Mark does not include authorization to use any NABCEP Trademarks, Certification Marks, or any other NABCEP Marks.

4. Persons and Organizations Authorized to Use the NABCEP Associate Marks/ Credential Holder Responsibilities.

Use of the NABCEP Associate Marks is limited strictly to those individuals who are NABCEP Associate credential holders in good standing. Each NABCEP Associate is authorized to use only the NABCEP Associate Mark which represents the appropriate credential.

Each NABCEP Associate accepts and assumes sole responsibility for understanding and satisfying all applicable organizational and legal requirements related to the use and/or display of the NABCEP Associate Marks. Among other requirements, each NABCEP Associate is responsible for ensuring that the use of any NABCEP Associate Mark in professional and business-related materials (e.g., business cards, stationery and/or letterhead, email signatures, advertisements, brochures, Internet websites, or signs) is consistent with this Policy, and is not in conflict with applicable laws. NABCEP assumes no responsibility concerning the interpretation or application of such legal requirements.

NABCEP shall not be liable or otherwise responsible for any claims, complaints, suits, or damages whatsoever, relating to a NABCEP Associate's use or display of a NABCEP Associate Mark.

5. Non-Assignability and Non-Transferability of the NABCEP Associate Marks.

Permission to use the appropriate NABCEP Associate Mark is limited to the NABCEP Associate and may not be transferred to, assigned to, or otherwise used by, any other individual, organization, business, or entity.

6. Appearance and Proper Use of the NABCEP Associate Marks.

Each NABCEP Associate may use the appropriate NABCEP Associate Mark in professional and business-related materials, consistent with the following rules:



- a. Proper Use. Each individual NABCEP Associate must use the appropriate NABCEP Associate Mark only in conjunction with his/her name, and in connection with the services related to the credential. The NABCEP Associate Marks may not be positioned, displayed, or used in a manner which may lead the public to believe that a company or organization is certified or otherwise endorsed by NABCEP. The proper font for the NABCEP Associate's name and/or credential number is "Arial Bold," in a font size such that the text is proportional to, or slightly smaller than, the text in the design mark.
- b. Proper Appearance. The NABCEP Associate Marks must be associated solely with the credentialed individual, who is authorized to use the Mark(s). Additionally, a NABCEP Associate Mark should always be used in its entirety, and must always appear with the appropriate subscript/superscript "®" or "™" trademark symbol.

With respect to other affiliation marks and/or logos, the NABCEP Associate Mark may be

located near these other marks or logos, but must remain separate and distinct so as to avoid confusion concerning the source of the credential, and to avoid the appearance that other marks, certifications, credentials, designations, or organizations are associated with, or endorsed by, NABCEP.

- c. Examples of Proper Use and Appearance. Proper use and appearance of the NABCEP Associate Marks include, but are not limited to, the following examples.

➤ Proper Use Examples.

| | |
|--|--|
| James Robinson NABCEP Photovoltaic Associate™ | Jane Doe NABCEP Solar Heating Associate™ |
| James Robinson NABCEP PV Associate™ #010101-01 | Jane Doe NABCEP Solar Heating Associate™ #010101-01 |
| James Robinson NABCEP PVA™ | Jane Doe NABCEP SHA™ #010101-01 |
|  Photovoltaic™ James Robinson #010101-01 |  Solar Heating™ Jane Doe, #010101-01 |

Any questions concerning the proper use of NABCEP Associate Marks should be submitted to the NABCEP Executive Director.

7. Non-Interference with Use of the Marks by Other Credential Holders.

A NABCEP Associate may not prohibit, restrict, or otherwise limit the authorized and appropriate use of a NABCEP Associate Mark by another credential holder.

8. Violation Reporting Responsibilities.

Each NABCEP Associate has the responsibility to report the unauthorized use, misuse, or other violation of this Policy to NABCEP in a timely manner. This reporting responsibility includes any circumstance where the use of a NABCEP Associate Mark is related to an individual or organization that is not a NABCEP Associate, or where a NABCEP Associate Mark is used improperly by a NABCEP Associate.

9. Policy Violations and Related Matters.

NABCEP reserves, and may use, any and all remedies available under applicable laws and corporate policies to protect the NABCEP Associate Marks. Infringement or other misuse of any NABCEP Associate Mark will be challenged. NABCEP Associates are required to cooperate fully in the review and resolution of such matters.

Following receipt of information that an inappropriate or unauthorized use of a NABCEP Associate Mark may have occurred, NABCEP will determine if responsive action(s) will be taken in accordance with this Policy and applicable laws.

10. Disciplinary Actions Related to Mark Misuse By a NABCEP Associate or Applicant.

Following notice and a fair opportunity to respond, a NABCEP Associate or applicant who acts contrary to the terms of this Policy or applicable law, may be sanctioned under applicable NABCEP policies.

In addition, the NABCEP Executive Director or his/her designee may refer cases of NABCEP Associate mark misuse, infringement, or other similar matters to appropriate agencies and other organizations, or may initiate appropriate legal action.

11. Policy Violation Actions Concerning Third Parties.

Following receipt of information that an inappropriate or unauthorized use of the NABCEP Associate Mark(s) by a third party individual, organization, or company may have occurred, NABCEP will determine if responsive action(s) will be taken consistent with NABCEP policies and applicable laws.

D. Compliance Monitoring Policy

The NABCEP Board of Directors adopts the following Compliance Monitoring Policy (Policy) to establish an appropriate process to monitor compliance with NABCEP certification maintenance requirements. Specifically, this Policy explains the conditions to be satisfied for continuing certification, and the process for reviewing compliance with these conditions in an appropriate and impartial manner. A credential holder must submit information confirming that they possess the occupational knowledge and skills necessary to perform competently as a NABCEP Associate or NABCEP Certified Professional in the field of renewable energy. This Policy also is designed to confirm continuing satisfactory work activities.

I. CERTIFICATION COMPLIANCE METHODS AND REQUIREMENTS.

In order to demonstrate compliance with NABCEP certification and renewal process, credential holders must satisfy the following requirements during each three (3) year Certification Period.

A. Certificant Ethics Reporting Requirements/ Disclosure of Complaint and Regulatory Matters.

As a condition of NABCEP certification and renewal, NABCEP credential holders must accept, and act consistent with, NABCEP Code of Ethics and Ethical Standards of Conduct (Code of Ethics), and related policies. In support of this certification requirement, NABCEP credential holder must report to NABCEP legal, disciplinary, and similar matters that relate to their competence and ethical behavior.

Specifically, within sixty (60) days of receiving notice, NABCEP credential holder must disclose the following matters in writing to NABCEP:

1. Any charge, complaint or conviction related to a criminal matter, or other court matter that involves a jail sentence (imprisonment);
2. Any complaint or charge by a government or other regulatory body, professional association, or certifying organization;
3. A violation of any law, regulation, or policy by a government or other regulatory body, professional association, or certifying organization; or,
4. Any other court or governmental matter or proceeding, related to his or her professional practice or business activities.

If NABCEP credential holders fails to disclose such information to NABCEP in a timely and accurate manner, NABCEP may initiate an ethics disciplinary complaint pursuant to the Ethics Case Procedures. Such ethics complaints may result in the imposition of sanctions, including certification suspension or revocation.

B. Complaint Communications from Interested Parties and Regulatory Authorities.

Consistent with the NABCEP Code of Ethics, and other certification policies, NABCEP will accept, review, and resolve communications from the public and regulatory authorities alleging improper conduct or incompetent performance by an Applicant or credential holder. Such communications will contain the information necessary to evaluate the conduct or performance under the relevant NABCEP policies.

II. CERTIFICATION COMPLIANCE AND MONITORING PROCESS.**A. Certificant Ethics Reporting Review Procedure.**

NABCEP will review all ethics reporting and disclosure documents to determine whether information has been submitted in a timely manner, and whether the reported information may be subject to review under the Code of Ethics. In the event that the reported information results in the issuance of an ethics complaint by NABCEP, the ethics matter will be processed pursuant to the Ethics Case Procedures.

When NABCEP determines that an applicant or credential holder has acted contrary to the Code of Ethics, NABCEP may issue any of the following disciplinary or remedial actions: denial and rejection of any certification or renewal application; specific training, supervision, and/or instruction concerning professional activities, or other appropriate conditions; private or public reprimand and censure; certification probation for a period of up to three (3) years; suspension of the credential for a period of no less than six (6) months, and no more than three (3) years; and/or, revocation of the NABCEP credential. Ethics Case Procedures, Section E, 8.

B. Complaint Communications Review Procedure.

In order to support the Code of Ethics, and to advise the public and regulatory authorities of NABCEP's professional practice standards, NABCEP will publish the current Code of Ethics on its Internet site. NABCEP will review all complaint communications from the public and regulatory authorities alleging improper conduct or incompetent performance by an applicant or credential holder to determine if the matter is subject to review under the Code of Ethics. In the event that the reported information results in the issuance of an ethics complaint by NABCEP, the ethics matter will be processed pursuant to the Ethics Case Procedures.

If an individual is found to violate the Code of Ethics, NABCEP may issue any of the disciplinary or remedial actions described in Policy Section II, B above.

APPENDIX II: NABCEP FORMS***A. Candidate Information Sheet*****NABCEP ASSOCIATE EXAM
CANDIDATE INFORMATION SHEET
For Education Pathway Qualifying Candidates**

To Be Distributed To All Education Pathway Candidates Prior to Exam Date

INTRODUCTION

The North American Board of Certified Energy Practitioners, Inc. (NABCEP®) is a nationally recognized credentialing body, incorporated in 2002, to set competency standards for professional practitioners in the fields of renewable energy and energy efficiency. NABCEP administers voluntary personnel credentials for individuals in the renewable energy industry, including the NABCEP Photovoltaic Associate™, NABCEP Solar Heating Associate™, and NABCEP Small Wind Associate™ for those at an early stage of their career; and the NABCEP PV Installation Professional™, NABCEP Solar Heating Installer™, and NABCEP PV Technical Sales Professional™ Certifications for those who have substantial experience in the industry. A workforce trained and tested to NABCEP's industry-verified standards enhances consumer confidence, improves quality, and expands the use of clean, renewable energy. NABCEP Associate credentials are available to individuals who either successfully complete a course on the relevant technology with a Registered NABCEP Associate Provider, or document at least 6 months of employment related to the technology. Additionally, individuals who previously took a course and passed a NABCEP Entry Level Examination may convert their Entry Level Passing Score Achievement to a NABCEP Associate credential. For more information about NABCEP Certifications please visit www.nabcep.org.

The NABCEP Associate Exams are written by industry Subject Matter Experts under the guidance of professional psychometricians (testing specialists). The NABCEP Associate Learning Objectives, which are also developed by industry Subject Matter Experts, provides the blueprint for the Exam and is the primary document to reference with regard to what topics may or may not be covered on the Exam.

Becoming Eligible to take the NABCEP Associate Exam:**Experience Pathway – 6 Months of Work Experience:**

NABCEP Associate exam candidates may qualify to take an exam if they can document at least 6 months of full time equivalent work experience in the renewable energy field for which they are testing. The NABCEP Associate Learning Objectives, posted on our website under Associate Credential>Learning Objectives, provides a blueprint for the Exam and references what topics may be covered.

Education Pathway - Successful Course Completion:

The Associate Program relies on a network of Registered NABCEP Associate Registered Exam Providers to offer courses that prepare individuals to sit for an Exam. A list of Registered Exam Providers can be found on the NABCEP website under “Associate Credential” and “For Students.” Completing coursework to cover the NABCEP Associate Learning Objectives with a Registered Exam Provider is the only requirement to sit for the Associate Exam via the Education Pathway.

Eligibility Period:

Qualified Candidates are eligible to take the exam for a period of two years from the course completion date. The Candidate may take the exam up to a maximum of six times per year during each year of the two year period.

Candidate Eligibility Form:

All NABCEP Associate Exam Candidates qualifying through the Education Pathway, must complete and sign a *Candidate Eligibility Form*. The contact information entered on this form will be used for communication from NABCEP about the Exam. An e-mail address must be provided; e-mail is used by NABCEP to send Authorization-to-Test notifications for Computer Based Exams and other Exam related communications. A mailing address must also be provided; score reports and other paperwork are delivered via the U.S. Postal Service. Exam personnel will use the name provided on the Candidate Eligibility Form to confirm eligibility and identification on Exam day. THE NAME PROVIDED ON THE FORM MUST MATCH THE NAME ON THE GOVERNMENT ISSUED PHOTO ID THAT WILL BE USED TO PROVE IDENTIFICATION ON THE DAY OF THE EXAM. THE CANDIDATE WILL NOT BE ADMITTED TO THE EXAM IF THE NAMES DO NOT MATCH EXACTLY.

In addition to contact information, the *Candidate Eligibility Form* has some other features, including: acknowledgment that the candidate has received this *Candidate Information Sheet* and *the Associate Learning Objectives*; an opportunity to opt-out of releasing scores to the Registered Exam Provider; and a place to indicate if any special accommodations are requested for the Exam.

Exam Delivery Options:

Experience Pathway - Work Experience Candidates may choose a time and location to take their Exam by computer through our Computer Based Testing (CBT) network, Castle Worldwide.

Education Pathway - Registered Provider Candidates may choose to take their Exam in either Paper & Pencil format, if their Provider offers this option, or by computer through our Computer Based Testing (CBT) network, Castle Worldwide.

A candidate may schedule a CBT Exam upon our acceptance of their qualifications for testing. Approved candidates will receive a Notice-to-Schedule email with instructions on how to select a location, date and time for their exam. Paper & Pencil Exams are only available from a Registered Exam Provider at date(s) and time(s) selected by the Provider. Candidates may only take a Paper & Pencil Exam with the Registered Exam Provider who conferred eligibility to the candidate.

| FEE | DESCRIPTION | PAYABLE TO | AMOUNT |
|--|---|--------------------|--------|
| Examination Fee (Experience Pathway) | Candidates with at least 6 months of related work experience can apply directly to NABCEP. Fee includes a \$25 non-refundable application fee and \$125 toward the first examination attempt. | NABCEP | \$150 |
| Examination Fee (Education Pathway) | NABCEP charges Registered Providers \$125 for each candidate submitted to NABCEP, whether the candidate has already taken a paper and pencil exam or is being submitted for computer based testing. (Note: Examination Fee may or may not be included in course registration fee – check with your Provider). | Provider | \$125 |
| Administrative Fee (Paper & Pencil Exam) | Registered Providers may charge candidates an OPTIONAL Administrative Fee not to exceed \$45 for administering the Paper and Pencil version of an Associate Exam. | Provider | \$45 |
| Administrative Fee (Computer Exam) | Registered Providers may charge candidates an OPTIONAL Administrative Fee not to exceed \$25 for processing a Computer Based Testing candidate | Provider | \$25 |
| Re-Examination Fee | Retake a NABCEP Associate Examination (additional administrative fees above may apply if request is made through the Registered Provider – no additional fees are charged if request is made directly by candidate through their my.NABCEP account) | NABCEP or Provider | \$125 |
| Conversion Fee (Conversion Pathway) | Convert a NABCEP Entry Level Award to a NABCEP Associate credential | NABCEP | \$25 |
| Renewal Fee | Renew an active NABCEP Associate credential for another three years | NABCEP | \$150 |
| Replacement Document Fee | Obtain a replacement or additional copy of an official embossed NABCEP Associate Certificate | NABCEP | \$25 |

Paper & Pencil Examination Procedures:

To be admitted into the examination, a candidate must present government-issued photo identification. The name on the ID must exactly match the name on a *Candidate Eligibility Form* submitted to NABCEP.

A Candidate may use a basic-scientific, non-programmable, non-graphing calculator (defined as a device used solely for mathematical computations), such as a Casio fx260, a Texas Instruments TI-30Xa, or similar. Candidates should bring their own calculators to the Exam.

Exam Answer Sheets are scored using an automated scoring machine. All answers must be completed using a #2 pencil. Candidates should bring at least two #2 pencils with them to the Exam.

No other personal items are allowed except the above mentioned calculator, pencils, and water. The Exam is not an open book exam; no notes or reference material of any kind will be allowed. No digital devices of any kind (cell phones, digital music players, laptops, cameras, etc.) will be allowed. All personal items brought into the examination room will be collected and stored by the Exam Proctor until the candidate is finished with the Exam and exits the room. Additionally, no hats or hoods will be allowed to be worn during the Exam.

Computer Based Testing Procedures:

Personal calculators may not be brought into the testing room. A calculator is available on screen, as part of the test package.

Exam Time-limit, Length, and Format:

Candidates are allowed a maximum of two hours to complete 70 multiple choice questions. It is important to note that pre-examination procedures may take 30-60 minutes (or more) before the Exam time-limit begins, so individuals should expect to be in the room for a period of up to three hours. ANY LATE ARRIVING CANDIDATE THAT ARRIVES AFTER THE PRE-EXAM PROCEDURES HAVE BEGUN WILL NOT BE ADMITTED TO THE EXAM.

Special Accommodations:

Special testing accommodations for physical or mental disabilities must be pre-approved by NABCEP. Accommodation requests should be made as far in advance as possible, as the review process can take several weeks or more. Requests must be submitted using the *Special Accommodation Request Form* that is available from the Registered Exam Provider or directly from NABCEP. All requests must be accompanied by documentation from an appropriate professional.

Terms and Conditions:

Before sitting for the NABCEP Associate Exam, all candidates are required to sign the NABCEP Associate Exam Candidate Agreement. The Agreement is printed on the front of the Paper & Pencil Exam Booklet and is displayed on the screen at the start of a CBT Exam. The Agreement states:

I understand that the NABCEP Associate Exam is intended to test basic knowledge.

I further understand that the Associate Program is not equivalent to the advanced NABCEP Professional Certifications, and that passing this exam does not represent any permission or license to work in any field or position.

I further understand that receiving a passing score on the NABCEP Associate Exam does not provide any guarantee of employment.

I further understand that I am prohibited from making any such claims concerning this NABCEP Program, and agree to abide by all applicable NABCEP policies.

I understand and agree to these terms as a condition of taking the NABCEP Associate Exam. I understand that if I fail to sign below, my Examination will not be accepted for scoring.

Scoring and Passing Achievement:

All Exam Candidates should expect a score report within 4-6 weeks of taking the Exam. Score reports will be mailed via U.S. Postal Service to the address provided on the *Candidate Eligibility Form* along with Passing Score Certificate documents. NABCEP does not release scores over the phone, by fax, or by email.

A Candidate who achieves a passing score will receive a score-report letter indicating that the individual has demonstrated basic knowledge of the fundamental principles of the application, design, installation and operation of the applicable energy system for the Exam taken (PV, Solar Heating, etc.) and a suitable-for-framing document listing the Candidate's name, signed by NABCEP's Chairman of the Board. NABCEP Associates will then be listed on our website verification directory.

Answer sheets are computer-scanned multiple times by NABCEP's third-party testing services vendor to ensure accurate scoring. NABCEP does not provide the ability to request rescoring of Associate examinations. All scores reported are final.

A Candidate who fails the exam may retake the Exam up to five times within 12 months of their course completion date. To register for a re-take, **candidates must log into their myNABCEP Account**. \$125 is charged for each re-exam administration. Re-examinations must be scheduled within two years; after two years, candidates must re-apply and re-qualify.

Use of a Passing Score Certificate:

A PASSING SCORE ON A NABCEP ASSOCIATE EXAM CONFERS THE TITLE OF **NABCEP PV ASSOCIATE, NABCEP SOLAR HEATING ASSOCIATE or NABCEP SMALL WIND ASSOCIATE**. THIS CREDENTIAL DOES NOT CONFER THE TITLE OF A NABCEP CERTIFIED PROFESSIONAL™. A successful candidate may state that they have passed an Associate Exam issued by the North American Board of Certified Energy Practitioners (NABCEP). They may use the title of NABCEP Associate ONLY, in accordance with the *NABCEP Associate Mark Use Policy*. The passing score document may only be displayed in association with the individual who achieved the passing score, as the credential is personal and may not be transferred, assigned to, displayed or used by any other individual, organization, business, or entity.

Replacement documents are available from NABCEP for a fee of \$25.00 USD.



NABCEP Associate Handbook

Contact Information:

NABCEP Associate Program
56 Clifton Country Road, Suite 202
Clifton Park, NY, 12065
USA

Phone: (800) 654-0021

Fax: (518) 899-1092

Email: mbell@nabcep.org

B. Special Accommodations Request Form

The North American Board of Certified Energy Practitioners, Inc. (NABCEP) complies with the Americans with Disabilities Act of 1990. To ensure equal opportunities for all qualified persons, NABCEP will make reasonable accommodations for candidates when possible. If you require special accommodations related to a disability in order to take the examination, please complete this form and return it with your examination application. The information you provide and any documentation regarding your disability and your need or accommodation will be treated with strict confidentiality. Review of requests for accommodations can take 3-4 weeks or more and should be submitted as far in advanced as possible.

For which of the examinations below are you requesting accommodation?

- Photovoltaic Installation Professional (PVIP)
- Solar Heating Installer (SHI)
- Photovoltaic Technical Sales (PVTS)
- Solar Heating Associate (SHA)
- PV Associate (PVA)
- Small Wind Associate (SWA)

Please type or print all information clearly (*fillable pdf available at www.nabcep.org*)

| 1. Personal Information | | |
|--|------------------------|----------------|
| Name: Last | First | Middle Initial |
| Phone Number: | Anticipated Exam Date: | |
| Email Address: | Anticipated Exam Site: | |
| 2. Reason for Request | | |
| <i>I am requesting an exam accommodation due to:</i> a disability <input type="checkbox"/> a religious observance <input type="checkbox"/> other <input type="checkbox"/> | | |
| Please provide a detailed explanation of the reason(s) why you are seeking accommodation(s). For example, if you are seeking accommodation due to a disability, you should explain how it substantially limits one or more of your sensory, manual, speaking or other functional skills (e.g., disability that significantly impairs your ability to read, concentrate, or otherwise complete the examination). Attach additional pages if need. | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| 3.Special Accommodation Needed | | |
|---|---|---|
| Please select the accommodation(s) you are requesting | | |
| <input type="checkbox"/> Time and a half | <input type="checkbox"/> Additional _____ minutes | <input type="checkbox"/> Assistance completing answer sheet |
| <input type="checkbox"/> Reader | <input type="checkbox"/> Magnified print | <input type="checkbox"/> Separate Room |
| <input type="checkbox"/> Extra or extended breaks (without additional exam time) | <input type="checkbox"/> Sign language interpreter or printed copies of verbal instructions | <input type="checkbox"/> Paper and pencil version of computerized exam* *Available only in U.S. and Canada |
| <input type="checkbox"/> Other: (please specify) | | |
| 4. Accommodation History | | |
| Have you ever received special accommodations: Yes <input type="checkbox"/> No <input type="checkbox"/> If you have ever received special accommodation please provide the following information | | |
| Year of accommodation | Type of accommodation | Name of institution/organization that provided accommodation |
| | | |
| | | |
| | | |
| 5. Documentation of Need for Accommodation | | |
| <p>If you are requesting an accommodation due to a health condition or a functional disability, you must provide NABCEP with written documentation from an appropriate health care professional supporting the accommodation you are requesting. This documentation must include a specific diagnosis of your health condition and/or functional disability, results from all assessments that were used to determine the diagnosis, and a specific recommendation for the special testing accommodation(s) that you require. In most cases, this documentation cannot be dated later than three years previous. NABCEP will not pay any cost you may incur in obtaining the required diagnosis and recommendation; however, NABCEP will pay for any reasonable accommodations that are provided for you.</p> <p>If you are requesting an accommodation due to a religious observance, you must provide a letter from an appropriate religious authority attesting to the nature of the religious observance that is in conflict with the scheduled examination date.</p> | | |
| Documentation from a healthcare professional is attached: Yes <input type="checkbox"/> No <input type="checkbox"/> Documentation from a religious authority is attached: Yes <input type="checkbox"/> No <input type="checkbox"/> | | |
| 5. Signature | | |
| I attest that the information contained in this document or attached to it is true and correct. | | |
| Signature | Date | |
| | | |

C. Verification Of Employment Form

(For Experience Pathway candidates only; fillable pdf available from my.nabcep.org)



VERIFICATION OF EMPLOYMENT GUIDELINES

This employment verification form is to qualify the following individual for a NABCEP Associate Exam. Please provide a brief description of their job duties in the area of photovoltaics (PV), solar heating and/or small wind technology. More information about the NABCEP Associate credentials may be found at www.nabcep.org

COMPANY INFORMATION

| | |
|----------------------------------|----------------------|
| Company Name | <input type="text"/> |
| Company physical mailing address | <input type="text"/> |
| Supervisor/Manager Name | <input type="text"/> |
| Company Website | <input type="text"/> |

EMPLOYEE INFORMATION

| | | |
|---|----------------------------|--------------------------|
| Employee Name | <input type="text"/> | |
| Employment Period | From: <input type="text"/> | To: <input type="text"/> |
| Briefly describe employee's job duties: | | |
| <input type="text"/> | | |

VERIFICATION

| | | |
|-----------------|----------------------|----------------------------|
| Name and Title | <input type="text"/> | |
| Email | <input type="text"/> | Phone <input type="text"/> |
| Signature _____ | | Date <input type="text"/> |

56 Clifton Country Road, Suite 202, Clifton Park, NY 12065 800.654.0021 www.nabcep.org



PROVIDERS RETAIN THIS FORM FOR 5 YEARS

CANDIDATE ELIGIBILITY FORM

Please PRINT all information clearly. This is how your name will appear on your Associate Certificate.

Name: In the boxes below enter your name exactly as it appears on your Government Issued Photo ID.
NOTE: If the name does not match your Photo ID you will not be admitted into the Exam.

| | | | | | |
|------------------|--|-----------------|--|-----------|--|
| FirstName | | LastName | | MI | |
|------------------|--|-----------------|--|-----------|--|

An unique **E-mail Address** is required in order to receive communications from NABCEP about the Associate Exam. The e-mail will not be used for any other purpose. NOTE: your eligibility cannot be processed without an unique email address.

| | |
|---------------|--|
| E-mail | |
|---------------|--|

Mailing Address: NABCEP sends score notification via US Postal Service. In the boxes below enter the mailing address that should be used to send score notification letter.

| | |
|-----------------|--|
| Street 1 | |
|-----------------|--|

| | |
|-----------------|--|
| Street 2 | |
|-----------------|--|

| | | | | | |
|-------------|--|--------------|--|------------|--|
| City | | State | | Zip | |
|-------------|--|--------------|--|------------|--|

| | | |
|---|--|--|
| Check the box next to the format of the Exam that you plan to take: (Note: the Computer Based Testing (CBT) Exam costs \$125 and Providers can charge up to an additional \$25 administrative fee; Paper and Pencil Exams cost \$125 and Providers can charge up to an additional \$55.) | Paper & Pencil with my Provider | |
| | CBT with Castle Worldwide | |

Special Accommodations are available for individuals who can document a physical, mental, or learning disability that qualifies under the Americans with Disability Act. Initial the box to the right if you plan on requesting special accommodations for the NABCEP Associate Exam. A Special Accommodation Request form will need to be filled out and submitted to NABCEP along with supporting documentation from a qualified professional before any accommodations are granted.

Release of Scores: NABCEP releases the individual score results to the registered Exam Provider for all of the candidates to which the Provider confers eligibility. If you would prefer to not have your score released to the Provider, you may “opt-out” by initialing the box to the right.

By signing below I acknowledge that I have received and read the *NABCEP Associate Handbook* and the *NABCEP Associate Exam Learning Objectives*. Furthermore, I acknowledge that I understand that the NABCEP Associate Exam is intended to test basic knowledge, that the Associate Program is not equivalent to NABCEP Professional Certification, and that passing this exam does not confer or imply any permission or license to work in any field or position.

| | | | |
|------------------|--|-------------|--|
| Signature | | Date | |
|------------------|--|-------------|--|

EXAM PROVIDER USE ONLY

| | | | |
|----------------------|--|-----------------------------|-------------------|
| Provider Name | | Indicate Technology: | PV Associate Exam |
|----------------------|--|-----------------------------|-------------------|

By the authority invested in me by NABCEP, I confirm that the above named candidate completed coursework that qualifies him or her to sit for the NABCEP Associate Exam on: (Fill in the **Course Completion Date** in the space to the right and sign below).

| | | | |
|--|--|--|-------------------------|
| | | | Solar Heating Associate |
| | | | Small Wind Associate |

| | | | | | |
|------------------------|--|------------------|--|-------------|--|
| Instructor Name | | Signature | | Date | |
|------------------------|--|------------------|--|-------------|--|

| | | |
|---|-----------------------|--|
| IMPORTANT: AFTER A PAPER AND PENCIL EXAM ADMINISTRATION THE “IDENTIFICATION NUMBER” MUST BE TRANSFERRED TO THIS FORM FROM THEIR ANSWER SHEET IN ORDER FOR SCORES TO BE PROCESSED | Candidate ID # | |
|---|-----------------------|--|

PROVIDERS USE THIS FORM TO COMPLETE ONLINE ROSTER THEN RETAIN



PROVIDERS RETAIN THIS FORM FOR 5 YEARS

PROVIDERS USE THIS FORM TO COMPLETE ONLINE ROSTER THEN RETAIN

SPECIAL ACCOMMODATIONS REQUEST FORM

The North American Board of Certified Energy Practitioners, Inc. (NABCEP) complies with the Americans with Disabilities Act of 1990. To ensure equal opportunities for all qualified persons, NABCEP will make reasonable accommodations for candidates when possible. If you require special accommodations related to a disability in order to take the examination, please complete this form and return it with your examination application. The information you provide and any documentation regarding your disability and your need or accommodation will be treated with strict confidentiality. Review of requests for accommodations can take 3-4 weeks or more and should be submitted as far in advanced as possible.

For which NABCEP Examination below are you requesting accommodation?

| | |
|---|--|
| <input type="checkbox"/> PV Installation Professional (PVIP) | <input type="checkbox"/> PV Associate (PVA) |
| <input type="checkbox"/> Solar Heating Installer (SHI) | <input type="checkbox"/> Solar Heating Associate (SHA) |
| <input type="checkbox"/> PV Technical Sales Professional (PVTs) | <input type="checkbox"/> Small Wind Associate (SWA) |

| 1. Personal Information | | |
|--|---|---|
| Name: Last | First | Middle Initial |
| Phone Number: | Anticipated Exam Date: | |
| Email Address: | Anticipated Exam Site: | |
| 2. Reason for Request | | |
| <i>I am requesting an exam accommodation due to:</i> a disability <input type="checkbox"/> a religious observance <input type="checkbox"/> other <input type="checkbox"/> | | |
| Please provide a detailed explanation of the reason(s) why you are seeking accommodation(s). For example, if you are seeking accommodation due to a disability, you should explain how it substantially limits one or more of your sensory, manual, speaking or other functional skills (e.g., disability that significantly impairs your ability to read, concentrate, or otherwise complete the examination). Attach additional pages if need. | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| 3. Special Accommodation Needed | | |
| Please select the accommodation(s) you are requesting | | |
| <input type="checkbox"/> Time and a half | <input type="checkbox"/> Additional _____ minutes | <input type="checkbox"/> Assistance completing answer sheet |
| <input type="checkbox"/> Reader | <input type="checkbox"/> Magnified print | <input type="checkbox"/> Separate Room |

| | | |
|--|---|---|
| <input type="checkbox"/> Extra or extended breaks (without additional exam time) | <input type="checkbox"/> Sign language interpreter or printed copies of verbal instructions | <input type="checkbox"/> Paper and pencil version of computerized exam* |
|--|---|---|

Other: (please specify)

4. Accommodation History

Have you ever received special accommodations: Yes No
 If you have ever received special accommodation please provide the following information

| Year of accommodation | Type of accommodation | Name of institution/organization that provided accommodation |
|-----------------------|-----------------------|--|
| | | |
| | | |
| | | |

5. Documentation of Need for Accommodation

If you are requesting an accommodation due to a health condition or a functional disability, you must provide NABCEP with written documentation from an appropriate health care professional supporting the accommodation you are requesting. This documentation must include a specific diagnosis of your health condition and/or functional disability, results from all assessments that were used to determine the diagnosis, and a specific recommendation for the special testing accommodation(s) that you require. In most cases, this documentation cannot be dated later than three years previous. NABCEP will not pay any cost you may incur in obtaining the required diagnosis and recommendation; however, NABCEP will pay for any reasonable accommodations that are provided for you.

If you are requesting an accommodation due to a religious observance, you must provide a letter from an appropriate religious authority attesting to the nature of the religious observance that is in conflict with the scheduled examination date.

Documentation from a healthcare professional is attached: Yes No
 Documentation from a religious authority is attached: Yes No

5. Signature

I attest that the information contained in this document or attached to it is true and correct.

| | |
|-----------|------|
| Signature | Date |
|-----------|------|

N A B C E P

PV

Associate

**Learning
Objectives**

PV Associate Learning Objectives

Objectives and Scope

Upon completion of the course(s) taught in accordance with the NABCEP PV Associate learning objectives, and prior to taking the NABCEP PV Associate Exam, students should have demonstrated a basic understanding of the following principles outlined in the learning objectives. A person who passes the NABCEP PV Associate Exam has demonstrated a basic, elementary knowledge of photovoltaic systems. The knowledge demonstrated by passing this test does not replace the knowledge, skills or abilities of the electrical or other construction trades, or those of other professions or degree programs that require considerably more academic and/or practical experience. It should also be noted that individuals passing the NABCEP PV Associate Exam should not be confused with NABCEP Certified PV Installers. The latter can only be achieved by highly experienced individuals who have passed a much more rigorous examination and have demonstrated the capability to supervise complete PV system installations, and who have a detailed working knowledge of the electrical codes, standards and accepted industry practice associated with PV installations.



Residential PV solar installation in Minnesota

Learning Objective Categories

Listed below are the ten major categories for the NABCEP Associate Program:

1. PV Markets and Applications
2. Safety Basics
3. Electricity Basics
4. Solar Energy Fundamentals
5. PV Module Fundamentals
6. System Components
7. PV System Sizing Principles
8. PV System Electrical Design
9. PV System Mechanical Design
10. Performance Analysis, Maintenance and Troubleshooting

Students taking the NABCEP PV Associate exam will be tested to some degree in all ten categories. Consequently, in teaching pre-paratory courses for the exam, it is important that all ten categories be adequately covered. For each major category, a suggested percentage time allotment is indicated. For example, NABCEP suggests devoting 15% of training to Category 8, PV System Electrical Design (see below). In addition to the suggested time allotment, a learning priority has been assigned to each learning objective. The three assigned learning priorities are *critical* (must be taught), *important* (should be taught), and *useful* (could be taught). This is to assist instructors in budgeting their time so that the most important items are covered. Please see the overall course and test specification blueprint for a typical course at the end of this document.

NABCEP Learning Objectives for the PV Associate Program

1. PV Markets and Applications *Suggested Percentage Time Allotment: 5% or less*

| | | Learning Priority |
|-----|--|-------------------|
| 1.1 | Identify key contributions to the development of PV technology. | Useful |
| 1.2 | Identify common types of PV system applications for both stand-alone and utility interactive systems with and without energy storage. | Important |
| 1.3 | Associate key features and benefits of specific types of PV systems, including residential, commercial, BIPV, concentrating PV, and utility-scale. | Useful |
| 1.4 | List the advantages and disadvantages of PV systems compared to alternative electricity generation sources. | Useful |
| 1.5 | Describe the features and benefits of PV systems that operate independently of the electric utility grid. | Useful |
| 1.6 | Describe the features and benefits of PV systems that are interconnected to and operate in parallel with the electric utility grid. | Useful |
| 1.7 | Describe the roles of various segments of the PV industry and how they interact with one other. | Useful |
| 1.8 | Understand market indicators, value propositions, and opportunities for both grid-tied and stand-alone PV system applications. | Useful |
| 1.9 | Discuss the importance of conservation and energy efficiency as they relate to PV system applications. | Useful |

Note: Establishing safety competencies and qualified persons are beyond the scope of the NABCEP Associate program. Refer to the OSHA Safety and Health Regulations for Construction: 29 CFR 1926 for further details on requirements for safety training and certification.

2. Safety Basics *Suggested Percentage Time Allotment: 5%*

| | | Learning Priority |
|-----|---|-------------------|
| 2.1 | Identify the various safety hazards associated with both operating and nonoperating PV systems and components. | Critical |
| 2.2 | List different types of personal protective equipment (PPE) commonly required for installing and maintaining PV systems. | Critical |
| 2.3 | List different methods and identify safe practices for hoisting and rigging, the use of ladders, stairways and guardrails, the use of head, feet, hearing and face protection, the use of power tools, and the use of the appropriate fall protection, including the requirements for personal fall arrest and safety-monitoring systems according to OSHA standards. | Critical |
| 2.4 | Recognize the principal electrical safety hazards associated with PV systems, including electrical shock and arc flash. | Critical |

Note: The NABCEP Associate program is not a substitute for recognized electrical systems training, experience, and credentials. The electrical concepts introduced in the learning objectives are very basic, and considerable additional electrical training and experience are required of practicing PV system installers.

3. Electrical Basics *Suggested Percentage Time Allotment: 10%*

| | | Learning Priority |
|-----|---|-------------------|
| 3.1 | Understand the meaning of basic electrical parameters including electrical charge, current, voltage, power and resistance, and relate these parameters to their hydraulic analogies (volume, flow, pressure, hydraulic power and friction). | Important |
| 3.2 | Explain the difference between electrical power (rate of work performed) and energy (total work performed). | Important |
| 3.3 | Describe the function and purpose of common electrical system components, including conductors, conduits/raceways and enclosures, overcurrent devices, diodes and rectifiers, switchgear, transformers, terminals and connectors, grounding equipment, resistors, inductors, capacitors, etc. | Useful |
| 3.4 | Identify basic electrical test equipment and its purpose, including voltmeters, ammeters, ohmmeters and watt-hour meters. | Useful |
| 3.5 | Demonstrate the ability to apply Ohm's Law in analyzing simple electrical circuits, and to calculate voltage, current, resistance or power given any other two parameters. | Important |
| 3.6 | Understand the fundamentals of electric utility system operations, including generation, transmission, distribution and typical electrical service supplies to buildings and facilities. | Important |

4. Solar Energy Fundamentals *Suggested Percentage Time Allotment: 10%*

| | | Learning Priority |
|-----|---|-------------------|
| 4.1 | Define basic terminology, including solar radiation, solar irradiance, solar irradiation, solar insolation, solar constant, air mass, ecliptic plane, equatorial plane, pyranometer, solar declination, solstice, equinox, solar time, solar altitude angle, solar azimuth angle, solar window, array tilt angle, array azimuth angle, and solar incidence angle. | Critical |
| 4.2 | Diagram the sun's apparent movement across the sky over any given day and over an entire year at any given latitude, and define the solar window. | Important |
| 4.3 | For given dates, times and locations, identify the sun's position using sun path diagrams, and determine when direct solar radiation strikes the north, east, south and west walls and horizontal surfaces of a building. | Important |
| 4.4 | Differentiate between solar irradiance (power), solar irradiation (energy), and understand the meaning of the terms peak sun, peak sun hours, and insolation. | Critical |
| 4.5 | Identify factors that reduce or enhance the amount of solar energy collected by a PV array. | Important |
| 4.6 | Demonstrate the use of a standard compass and determine true geographic south from magnetic south at any location given a magnetic declination map. | Important |

Continued

| | | |
|------|--|-----------|
| 4.7 | Quantify the effects of changing orientation (azimuth and tilt angle) on the amount of solar energy received on an array surface at any given location using solar energy databases and computer software tools. | Important |
| 4.8 | Understand the consequences of array shading and best practices for minimizing shading and preserving array output. | Critical |
| 4.9 | Demonstrate the use of equipment and software tools to evaluate solar window obstructions and shading at given locations, and quantify the reduction in solar energy received. | Important |
| 4.10 | Identify rules of thumb and spacing distances required to avoid inter-row shading from adjacent sawtooth rack mounted arrays at specified locations between 9 am and 3 pm solar time throughout the year. | Important |
| 4.11 | Define the concepts of global, direct, diffuse and albedo solar radiation, and the effects on flat-plate and concentrating solar collectors. | Important |
| 4.12 | Identify the instruments and procedures for measuring solar power and solar energy. | Important |

5. PV Module Fundamentals *Suggested Percentage Time Allotment: 10%*

| | | Learning Priority |
|------|--|-------------------|
| 5.1 | Explain how a solar cell converts sunlight into electrical power. | Useful |
| 5.2 | Distinguish between PV cells, modules, panels and arrays. | Useful |
| 5.3 | Identify the five key electrical output parameters for PV modules using manufacturers' literature (V_{oc} , I_{sc} , V_{mp} , I_{mp} and P_{mp}), and label these points on a current-voltage (I-V) curve. | Critical |
| 5.4 | Understand the effects of varying incident solar irradiance and cell temperature on PV module electrical output, illustrate the results on an I-V curve, and indicate changes in current, voltage and power. | Critical |
| 5.5 | Determine the operating point on a given I-V curve given the electrical load. | Important |
| 5.6 | Explain why PV modules make excellent battery chargers based on their I-V characteristics. | Useful |
| 5.7 | Understand the effects of connecting similar and dissimilar PV modules in series and in parallel on electrical output, and diagram the resulting I-V curves. | Critical |
| 5.8 | Define various performance rating and measurement conditions for PV modules and arrays, including STC, SOC, NOCT, and PTC. | Critical |
| 5.9 | Compare the fabrication of solar cells from various manufacturing processes. | Useful |
| 5.10 | Describe the components and the construction for a typical flat-plate PV module made from crystalline silicon solar cells, and compare to thin-film modules. | Important |
| 5.11 | Given the surface area, incident solar irradiance and electrical power output for a PV cell, module or array, calculate the efficiency and determine the power output per unit area. | Important |
| 5.12 | Discuss the significance and consequences of PV modules being limited current sources. | Useful |
| 5.13 | Explain the purpose and operation of bypass diodes. | Important |
| 5.14 | Identify the standards and design qualification testing that help ensure the safety and reliability of PV modules. | Important |

6. System Components *Suggested Percentage Time Allotment: 15%*

| | | Learning Priority |
|-----|---|------------------------------|
| 6.1 | Describe the purpose and principles of operation for major PV system components, including PV modules and arrays, inverters and chargers, charge controllers, energy storage and other sources. | Critical |
| 6.2 | List the types of PV system balance of system components, and describe their functions and specifications, including conductors, conduit and raceway systems, overcurrent protection, switchgear, junction and combiner boxes, terminations and connectors. | Important |
| 6.3 | Identify the primary types, functions, features, specifications, settings and performance indicators associated with PV system power processing equipment, including inverters, chargers, charge controllers, and maximum power point trackers. | Important |
| 6.4 | Understand the basic types of PV systems, their major subsystems and components, and the electrical and mechanical BOS components required. | Important |

7. PV System Sizing Principles *Suggested Percentage Time Allotment: 10%*

| | | Learning Priority |
|-----|--|------------------------------|
| 7.1 | Understand the basic principles, rationale and strategies for sizing stand-alone PV systems versus utility-interactive PV systems. | Important |
| 7.2 | Given the power usage and time of use for various electrical loads, determine the peak power demand and energy consumption over a given period of time. | Important |
| 7.3 | Beginning with PV module DC nameplate output, list the de-rating factors and other system losses, and their typical values, and calculate the resulting effect on AC power and energy production, using simplified calculations, and online software tools including PVWATTS. | Critical |
| 7.4 | For a specified PV module and inverter in a simple utility-interactive system, determine the maximum and minimum number of modules that may be used in source circuits and the total number of source circuits that may be used with a specified inverter, depending upon the expected range of operating temperatures, the inverter voltage windows for array maximum power point tracking and operation, using both simple calculations and inverter manufacturers' online string sizing software tools. | Critical |
| 7.5 | Given a stand-alone application with a defined electrical load and available solar energy resource, along with PV module specifications, size and configure the PV array, battery subsystem, and other equipment as required, to meet the electrical load during the critical design period. | Critical |

Note: Qualified electrical contractors and engineering approvals are required for many PV installations. The NABCEP Associate program is not intended as a substitute for recognized training, competencies and qualifications of electrical contractors or design professionals. The PV system electrical design and installation concepts covered in the learning objectives are intended to provide a very basic overview of the considerations involved, and are not intended to imply an in-depth understanding of the electrical codes and their application.

8. PV System Electrical Design *Suggested Percentage Time Allotment: 15%*

| | | Learning Priority |
|------|--|----------------------|
| 8.1 | Draw and prepare simple one-line electrical diagrams for interactive and standalone PV systems showing all major components and subsystems, and indicate the locations of the PV source and output circuits, inverter input and output circuits, charge controller and battery circuits, as applicable, and mark the directions of power flows through the system under various load conditions. | Critical |
| 8.2 | Understand how PV modules are configured in series and parallel to build voltage, current and power output for interfacing with inverters, charge controllers, batteries and other equipment. | Critical |
| 8.3 | Identify basic properties of electrical conductors including materials, size, voltage ratings and insulation coverings and understand how conditions of use, such as location, other conductors in the same conduit/raceway, terminations, temperature and other factors affect their ampacity, resistance and corresponding overcurrent protection requirements. | Critical |
| 8.4 | Understand the importance of nameplate specifications on PV modules, inverters and other equipment on determining allowable system voltage limits, and for the selection and sizing of conductors, overcurrent protection devices, disconnect means, wiring methods and in establishing appropriate and safe interfaces with other equipment and electrical systems. | Critical |
| 8.5 | Determine the requirements for charge control in battery-based PV systems, based on system voltages, current and charge rates. | Important |
| 8.6 | Identify the labeling requirements for electrical equipment in PV systems, including on PV modules, inverters, disconnects, at points of interconnection to other electrical systems, on battery banks, etc. | Important |
| 8.7 | Understand the basic principles of PV system grounding, the differences between grounded conductors, grounding conductors, grounding electrode conductors, the purposes of equipment grounding, PV array ground-fault protection, and the importance of single-point grounding. | Critical |
| 8.8 | Apply Ohm's Law and conductor properties to calculate voltage drop for simple PV source circuits. | Important |
| 8.9 | Identify the requirements for plan review, permitting, inspections, construction contracts and other matters associated with approvals and code-compliance for PV systems. | Critical |
| 8.10 | Demonstrate knowledge of key articles of the National Electrical Code, including Article 690, Solar Photovoltaic Systems. | Important |

Note: Roofing systems and structural engineering expertise are required for many PV installations. The NABCEP Associate program is not intended as a substitute for recognized training, competencies and qualifications of roofing contractors or professional engineers. The PV system mechanical design and installation concepts covered in the learning objectives are intended to provide a very basic overview of the considerations involved.

9. PV System Mechanical Design *Suggested Percentage Time Allotment: 10%*

| | | Learning Priority |
|------|---|--------------------------|
| 9.1 | Identify the common ways PV arrays are mechanically secured and installed on the ground, to building rooftops or other structures, including rack mounts, ballasted systems, pole mounts, integral, direct and stand-off roof mounts, sun tracking mounts and for other building-integrated applications. | Important |
| 9.2 | Compare and contrast the features and benefits of different PV array mounting systems and practices, including their design and materials, standardization and appearance, applications and installation requirements, thermal and energy performance, safety and reliability, accessibility and maintenance, costs and other factors. | Important |
| 9.3 | Understand the effects on PV cell operating temperature of environmental conditions, including incident solar radiation levels, ambient temperature, wind speed and direction for various PV array mounting methods. | Important |
| 9.4 | List various building-integrated PV (BIPV) applications and compare and contrast their features and benefits with conventional PV array designs. | Useful |
| 9.5 | Identify desirable material properties for weathersealing materials, hardware and fasteners, electrical enclosures, wiring systems and other equipment, such as UV, sunlight and corrosion resistance, wet/outdoor approvals and other service ratings appropriate for the intended application, environment and conditions of use, and having longevity consistent with the operating life expectancies of PV systems. | Important |
| 9.6 | Understand the requirements for roofing systems expertise, and identify the preferred structural attachments and weathersealing methods for PV arrays affixed to different types of roof compositions and coverings. | Critical |
| 9.7 | Identify the types and magnitudes of mechanical loads experienced by PV modules, arrays and their support structures, including dead loads, live loads, wind loads, snow loads, seismic loads, in established combinations according to ASCE 7-05 Minimum Design Loads for Buildings and Other Structures. | Important |
| 9.8 | Identify PV system mechanical design attributes that affect the installation and maintenance of PV arrays, including hardware standardization, safety and accessibility, and other factors. | Important |
| 9.9 | Identify mechanical design features that affect the electrical and thermal performance of PV arrays, including array orientation, mounting methods and other factors. | Important |
| 9.10 | Review and recognize the importance of PV equipment manufacturers' instructions with regard to mounting and installation procedures, the skills and competencies required of installers, and the implications on product safety, performance, code-compliance and warranties. | Critical |

10. Performance Analysis, Maintenance and Troubleshooting

Suggested Percentage Time Allotment: 10%

| | | Learning Priority |
|------|--|------------------------------|
| 10.1 | Discuss various potential problems related to PV system design, components, installation, operation or maintenance that may affect the performance and reliability of PV systems. | Useful |
| 10.2 | Identify and describe the use and meaning of typical performance parameters monitored in PV systems, including DC and AC voltages, currents and power levels, solar energy collected, the electrical energy produced or consumed, operating temperatures and other data. | Important |
| 10.3 | Compare PV system output with expectations based on system sizing, component specifications and actual operating conditions, and understand why actual output may be different than expected. | Important |
| 10.4 | Describe typical maintenance requirements for PV arrays and other system components, including inverters and batteries, etc. | Important |
| 10.5 | Understand the safety requirements for operating and maintaining different types of PV systems and related equipment. | Critical |
| 10.6 | Identify the most common types of reliability failures in PV systems and their causes due to the equipment, quality of installation and other factors. | Important |
| 10.7 | Review component manufacturers' instructions for operation, maintenance and troubleshooting for PV modules and power processing equipment, and develop a simple maintenance plan for a given PV system detailing major tasks and suggested intervals. | Important |
| 10.8 | Understand basic troubleshooting principles and progression, including recognizing a problem, observing the symptoms, diagnosing the cause and taking corrective actions leading from the system, subsystem to the component level. | Important |

Course and Test Specification

The following provides a blueprint for courses taught to the NABCEP Associate Program, including the primary learning objectives and suggested percentage time allotment. NABCEP recognizes the diversity of training programs offered and their participants, including short courses, continuing education programs, and more in depth and lengthy programs of study, including formal apprenticeship, multicourse certificate programs, and degree-track programs. The NABCEP PV Associate is not intended as an installer in-training credential, but rather as an important first step in preparing individuals to become highly skilled, qualified and experienced tradespersons and professionals in the PV industry.

| Category | Course Time By % | Exam Items | Level of Testing | Study Materials |
|---|------------------|------------|---|-----------------------------------|
| 1. PV Markets & Applications | 5% | 3 | Comprehension | References 1 and 5 below |
| 2. Safety Basics | 5% | 3 | Comprehension Application | References 1, 2 and 3 below |
| 3. Electricity Basics | 10% | 6 | Comprehension Problem Solving | References 1 and 5 below |
| 4. Solar Energy Fundamentals | 10% | 6 | Comprehension Application Problem Solving | References 1, 4 and 5 below |
| 5. PV Module Fundamentals | 10% | 6 | Comprehension Application Problem Solving | References 1, 4 and 5 below |
| 6. System Components | 15% | 9 | Comprehension Application Problem Solving | References 1, 4 and 5 below |
| 7. PV System Sizing Principles | 10% | 6 | Application Problem Solving Design | References 1, 4 and 5 below |
| 8. PV System Electrical Design | 15% | 9 | Application Problem Solving Design | References 1, 2, 4 and 5 below |
| 9. PV System Mechanical Design | 10% | 6 | Application Problem Solving Design | References 1, 4 and 5 below |
| 10. Performance Analysis, Maintenance and Troubleshooting | 10% | 6 | Analysis Problem Solving | References 1, 4 and 5 below |
| Totals | 100% | 60 | | |

Notes: Prerequisite or bridge training and/or experience in electrical systems, mathematics, and other subjects may be required for some students to fully comprehend and satisfactorily demonstrate knowledge of all of the learning objectives. Also, for intensive short courses (e.g., 40-hour, one-week workshops) students should be encouraged to spend approximately 2-3 additional hours outside of class (for each hour in class) to review the subject matter, solve problems, and study reference materials prior to taking the PV Associate Exam. This will usually require the student to take the exam at a later date rather than immediately following the course.

Suggested References and Study Materials

1. Photovoltaic Systems, 2nd Edition, by James P. Dunlop, ISBN 978-0-8269-1287-9. ©July 2009 National Joint Apprenticeship and Training Committee and American Technical Publishers: www.jimdunlopsolar.com
2. Code of Federal Regulations, Chapter 29 Part 1926 - Safety and Health Regulations for Construction, Occupational Safety and Health Administration: www.osha.gov
3. 2008 National Electrical Code®, NFPA 70 or 2008 National Electrical Code® Handbook, National Fire Protection Association®: www.nfpa.org
4. Study Guide for Photovoltaic System Installers, North American Board of Certified Energy Practitioners, Version 5.1.2, December 2011: www.nabcep.org
5. Solar Electric Handbook, Photovoltaic Fundamentals and Applications, Second Edition, 2013, Solar Energy International, www.solarenergy.org/bookstore/solar-electric-handbook-photovoltaic-fundamentals-and-applications-media-bundle-textbook-e



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