



# National Institute of BUILDING SCIENCES

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## Commercial Workforce Credentialing Council

# Blast Protection Professional (BPP) Certification Scheme

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## **A. Purpose of BPP Certification Scheme**

The National Institute of Building Sciences (NIBS) Commercial Workforce Credentialing Council (CWCC) was established to provide a forum and governing structure for the commercial buildings industry to develop guidelines for high-quality workforce credentialing programs in a neutral, collaborative environment. The purpose of the “Blast Protection Professional Scheme” is to assist certification programs, workers, employers, building owners and managers, facility security program administrators, and government officials in developing and identifying more consistent and comparable blast protection professionals.

## **B. Governance of BPP Certification Scheme**

The Blast Protection Professional effort was initiated and supported by the Department of Defense (DoD) Combating Terrorism Technical Support Office (CTTSO) and the Department of Homeland Security (DHS), but was industry-led by Karagozian and Case, Inc., a leading blast analysis and design firm, the National Institute of Buildings Sciences (the Institute), a Congressionally authorized 501c(3) non-profit organization whose mission is to support advances in building science and technology to improve the built environment, and Professional Testing, Inc., an internationally recognized psychometrics consultancy with extensive experience developing credentialing programs. The process was conducted under the auspices of the Commercial Workforce Credentialing Council (CWCC), a council of the Institute established to advance standards-based workforce development in the building industry. Attachment 1 contains the CWCC Charter.

The relationship of the organizations involved and the process for how the JTA and Scheme were developed is depicted in the following diagram.

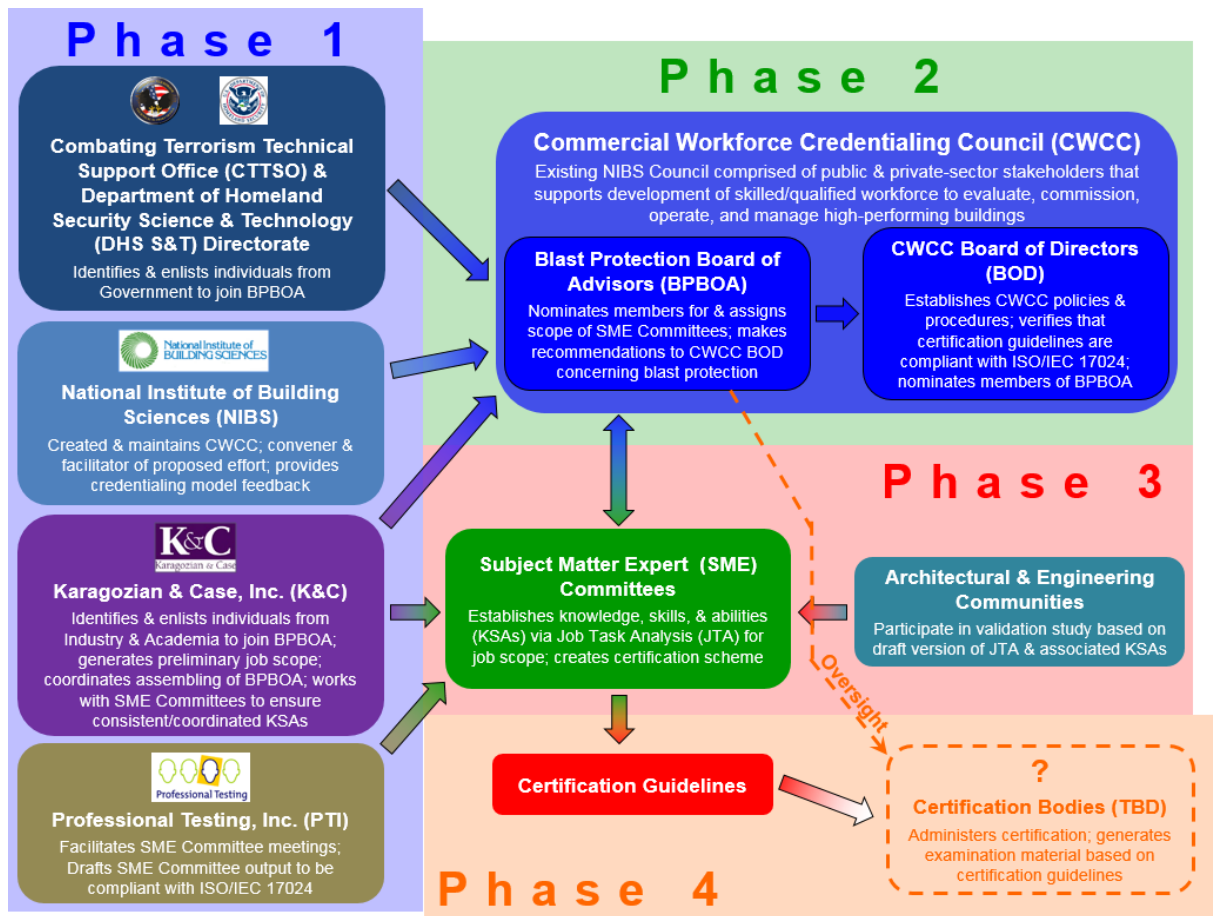


Figure 1 - BPP Development Process and Organization Structure

## C. Accreditation Requirements

Certification bodies using the Blast Protection Professional Job Task Analysis and Certification Scheme would be eligible to achieve accreditation under ISO/IEC 17024:2012, *Conformity assessment – General requirements for bodies operating certification of persons*<sup>1</sup>. Certification bodies earning accreditation may receive the additional benefit of formal recognition by the Government. While any certification body wishing to achieve compliance must meet all of the requirements of ISO/IEC 17024, Requirement 8 Certification Schemes has been developed and is contained in this document. This has been done in an effort to assure greater quality and consistency of credentialing programs for this job that has been deemed critically important to facility safety and security by the Government.

## D. Developing the Certification Scheme

The CWCC followed national and international best practices for workforce credentialing in developing the scheme requirements, beginning with a job-task analysis for Blast Protection Professionals. The CWCC identified a volunteer committee of twelve experienced subject-matter-

<sup>1</sup> This Standard is available for purchase at [www.ansi.org/standards](http://www.ansi.org/standards).

experts from across the industry to develop a Job Task Analysis (JTA). The JTA outlines the key duties, tasks, knowledge, skills, and attitudes necessary to perform the job at a high level of competence and form the basis for apportioning the examination blueprint upon which to base certification assessments. Karagozian and Case, Inc. facilitated the JTA sessions, using professional psychometricians from Professional Testing, Inc., a company specializing in developing high-quality certification programs.

The CWCC then validated the tasks and knowledge areas for each of the BPP duties with input from industry stakeholders and practitioners via an on-line survey. The original committee of twelve subject matter experts then reconvened to review: (1) industry feedback from the survey and (2) a subsequent review by the Blast Protection Board of Advisors, to produce the final JTA document, which formed the foundation for the certification scheme. The BPP JTA was published and made publicly available in May 2018. Attachment 2 contains the full BPP JTA.

Following the development of the JTA, the CWCC convened a new committee comprised of some of the original participants in the JTA studies, and some new subject-matter-experts, to develop the remaining scheme requirements. Experts from Professional Testing, Inc. facilitated the scheme committee meetings.

Attachment 3 contains the Selection Process and Timeline for selecting members of the Scheme Committee.

The competency requirements as set forth in the certification schemes were done so in accordance with the accreditation requirements of ISO/IEC 17024 (Requirement 8, Certification Schemes). The certification schemes identify the competency requirements and other components of a certification program, including: the scope of certification; job and task description; required competence; abilities; prerequisites; and code of conduct as agreed upon by experienced industry subject-matter-experts through a deliberative process.

Attachment 5 contains the Final Report from the Scheme Committee Meeting.

Attachment 6 contains the List of Scheme Committee Members.

Together, the JTA report and the certification scheme comprise the content of the voluntary, industry-developed, industry- and government-recognized BPP certification guidelines. The advantage to certification bodies utilizing the resulting scheme is that the scheme meets the requirements of ISO/IEC 17024. Industry certification bodies can choose to use the certification scheme to revise their existing certification program or to develop, administer and confer new certification programs under their current brand, just as they do now. The difference is that the revised or new certification they confer will be built on national, industry and government-recognized guidelines for workforce competency, developed jointly by a broad range of industry stakeholders and subject-matter-experts. Whether a certification body elects to revise an existing program or develop a new one utilizing the BPP scheme, the certification body must follow and meet all scheme requirements as set forth in ISO/IEC 17024: 2012 to obtain accreditation.

## **E. Maintaining the Certification Scheme**

Now that the scheme has been established, to maintain compliance with ISO/IEC 17024 requirements, it is required to monitor the scheme for currency, relevance and continued job-relatedness. The CWCC will convene interested parties periodically to ensure the same high level of coordination with industry continues and to assure the BPP scheme remains current. Input from a certification body (or bodies) will be crucial to producing a qualified workforce, and for providing a means, through certification, for ensuring practitioners share a common level of capability.

# Blast Protection Professional Certification Scheme

## 1. Scope of Blast Protection Professional Certification

A BPP characterizes hazardous explosion effects and designs solutions to mitigate the resulting consequences to specified assets.

## 2. Eligibility Requirements for Competence Assessment

Applicants wishing to apply for the Blast Protection Professional Certification Examination must meet the following Eligibility Requirements and must submit documentation on the Application for claimed blast experience.

Blast experience is research or work performed in the areas of establishing project requirements, including blast-related basis of design and blast testing support, determining loading, and performing analysis and design for blast effects. Documentation must include the following:

- Description of work performed (types of projects)\*
- Date range of project work performed
- Role on the project
- Verification of work performed (i.e., peer, supervisor attestation)

### 2.1. Mandatory Requirements:

At the time of application, the applicant must agree to uphold and abide by the BPP Code of Ethics.

### 2.2. Education and Experience Requirements:

In addition to meeting the Mandatory Requirements, applicants for the Blast Protection Professional Certification Examination must meet the following minimum education and experience requirements:

Professional Engineer (PE) or Structural Engineer (SE) license with 4 years of blast experience performed within 10 years prior to submission of the application for certification. (The PE or SE license must be current and in good standing.)

OR

Eight years of blast experience performed within 10 years prior to submission of the application for certification.

\*Recommendations for certification bodies administering the BPP regarding documentation of the applicant's blast experience to meet the eligibility requirements:

1. Model the application documentation requirements on the P.E. application work experience requirements so applicants can readily document the experience

requirements, and so each application can be reviewed by a certification administrator in a consistent manner.

2. The application must include a section whereby the applicant can clearly link their work experience (project and project types) to the competence requirements (duties and tasks on the examination blueprint) of the BPP certification.

### **3. Examination/Assessment of Competence Requirements**

The committee determined that several assessment methodologies would align with the competence requirements, and certification bodies should consider development of a certification examination that is a combination of multiple-choice, essay and/or oral methodologies to best assesses specific competence requirements. The BPP competence requirements must be assessed in their entirety.

The committee recommended certification be awarded for a period of four years.

### **4. Examination/Assessment Specifications**

Certification bodies seeking third party accreditation shall develop, maintain and administer an examination in accordance with ISO/IEC 17024:2012 accreditation requirements. Subject-matter-experts shall be used in the writing, review and revision of test questions.

### **5. Passing Score Study for Examination/Assessment**

If multiple choice questions constitute all or part of the examination, a passing score study shall be conducted following established psychometric and legal guidelines, and shall be applied in determining the pass and fail status of each candidate. The standard should be determined using a criterion-referenced technique. The ultimate goal is to maximize the probability that passing candidates are those who deserve to pass and that failing candidates are those who deserve to fail. These probabilities are maximized only when *criterion-referenced* standard setting is applied properly.

Establishing a passing score requires the application of systematic procedures that consider the defined performance level definition of the “minimally qualified certified person” and the difficulty of the examination. Before the final passing score is established, the certification body shall ensure that validity evidence supports the intended purpose of distinguishing the “minimally qualified candidates” from those who are not yet qualified.

At a minimum, a passing score study shall be conducted following each revision of the examination, or revalidation study. Should multiple forms of the exam be administered, certification bodies shall determine equivalency between examination forms.

## **6. Code of Ethics for Blast Protection Professional**

### **6.1. Preamble and Applicability:**

The Code of Ethics requires certified persons to uphold the rules and requirements of the certification scheme that allow for the proper discharge of their responsibilities to those served, protect the integrity of the credential, and safeguard the public's trust. Agreement to uphold and abide by the Code of Ethics is a requirement for earning and maintaining certification. Implicit in this agreement is an obligation not only to comply with the mandates and requirements of all applicable laws and regulations, but to act in an ethical manner in all professional services and activities. Certified persons who fail to comply with the Code of Ethics are subject to disciplinary procedures which may result in sanctions. The Code of Ethics is not set forth to determine behaviors resulting in criminal or civil liability, nor are they intended to resolve matters of market competition.

### **6.2. Compliance:**

The certification body shall require adherence to the Code of Ethics by all certified individuals and shall require individuals to return a signed copy of the Code of Ethics to the certification body as a condition of applying for initial certification and recertification. Electronic versions and signatures are acceptable.

Any individual may file a complaint against a certified person and complaints shall be fully investigated and adjudicated by the certification body. All complaints must allege a violation of the Code of Ethics and shall be investigated according to the rules and procedures of the certification body which shall allow for due process.

The following types of sanctions may be imposed on individuals found in violation of one or more of the tenets. Sanctions shall be based on the severity of the violation, and shall include, but not be limited to:

- Revocation of credential
- Non-renewal of credential
- Suspension of credential
- Reprimand; or
- Other corrective action.

In addition to imposing sanctions, certification bodies shall have the authority to report sanctions to legal and regulatory authorities, and other credentialing organizations as appropriate.

### **6.3. Minimal Requirements for the Code of Ethics**

Certification bodies must enforce a code of ethics that at a minimum includes the tenets as set forth in 6.4. Certification bodies may enforce additional codes as they deem appropriate.



#### 6.4. BPP Certification Scheme Code of Ethics

As a condition of earning and maintaining certification, applicants for the Blast Protection Professional certification must agree to uphold and abide by the Code of Ethics, the tenets of which are set forth as follows:

**Preamble:**

The Code of Ethics of the [name] Certification Body requires certified persons to uphold the rules and requirements for the Blast Protection Professional (BPP). The Code of Ethics allows for the proper discharge of the responsibilities of BPP's, those they serve, and for the protection and integrity of the credential. Agreement to uphold and abide by the Code of Ethics is a requirement for earning and maintaining BPP certification. Implicit in this agreement is an obligation not only to comply with the mandates and requirements of all applicable laws and regulations, but to act in an ethical manner in all professional services and activities. Certified persons who fail to comply with the Code of Ethics are subject to disciplinary procedures which may result in sanctions. The Code of Ethics is not set forth to determine behaviors resulting in criminal or civil liability, nor are they intended to resolve matters of market competition.

As a Blast Protection Professional, I agree to uphold and abide the following tenets of the BPP Code of Ethics:

1. Hold paramount the safety, health, and welfare of the public in the execution of their professional duties.
2. Perform professional duties in accordance with all applicable laws.
3. Perform professional duties in a competent and ethical manner consistent with industry standard of care.
4. Perform professional duties only in the areas of their competence.
5. Avoid acts or omissions amounting to professional negligence.
6. Avoid malicious conduct that would injure the professional reputation or practice of others.
7. Provide complete and accurate information when applying for certification and recertification.
8. Refrain from behavior that may compromise the integrity of the credential.
9. Disclose any felony convictions within the last ten years.
10. Disclose any suspensions or revocations of professional licenses within the last ten years.
11. Safeguard confidential and privileged information and exercise due care to prevent its improper disclosure.
12. Abide by and uphold the policies of the Certification Body.
13. Use the logo and certification marks only in an authorized and approved manner.
14. Pay all fees and provide information required by the Certification Body.
15. Agree to surrender the certificate and refrain from all references to certification should certification be revoked.

## 7. Recertification Requirements

Certification may not be awarded for a period longer than four (4) years. Certification bodies may determine the length of the certification cycle, for example, one year, two years, three years or four years. Regardless of certification length, the certified person must complete one of the following requirements within four years. Recertification activities must align with the competency requirements of the Blast Protection Professional Certification. Certified persons wishing to recertify their Blast Protection Professional Certification must meet the following Recertification Requirements and must submit documentation on the Recertification Application which demonstrates compliance with the requirements. The purpose of the recertification is for the BPP to demonstrate continued competence with the certification competencies.

Recertification Options:

1. Pathway 1: Complete 4 years blast experience work post-certification award and 16 PDH of continuing education.
2. Pathway 2: Substitute 4 PDH for each year without blast experience work up to a maximum total of 32 PDH.
3. Pathway 3: Take certification exam and complete a recertification application for the examination.

### 7.1. Mandatory Requirements:

1. Agree to uphold and abide by the BPP Code of Ethics.

### 7.2. Qualifying Recertification Options:

Pathways 1 and 2: Professional Development

The purpose of the continuing professional competency requirement is to demonstrate a continuing level of competency of Blast Protection Professionals (BPPs) through completion of professional development hours (PDH).

In establishing options for PDH, the Committee referenced and adapted the NCEES Model Rules for engineering licensure as an established industry standard.

#### 7.2.1. Definitions & Terminology

Terms used in this section are defined as follows:

1. Professional Development Hour (PDH)—One contact hour (nominal) of instruction or presentation. The PDH is the common denominator for other units of credit.
2. Continuing Education Unit (CEU)—Unit of credit customarily used for continuing education courses. One continuing education unit equals 10 hours of class in an approved continuing education course.
3. College/Unit Semester/Quarter Hour—Credit for college courses approved in accordance with Section E.
4. Course/Activity—Any qualifying course or activity with a clear purpose and objective that will maintain, improve, or expand the skills and knowledge relevant to blast protection as defined by the BPP competence requirements.

Regular duties documented as work experience are not considered qualified activities.

### **7.2.2. Requirements**

Every BPP is required to obtain the equivalent of 16 PDHs per four-year recertification cycle (renewal period). These PDHs may be obtained anytime during the applicable renewal period. Four additional PDHs may be substituted for any year when the BPP does not document blast experience work. PDHs may be earned as follows:

1. Successful completion of college courses.
2. Successful completion of short courses, tutorials, webinars, and distance-education courses offered for self-study, independent study, or group study and through synchronous or asynchronous delivery methods such as live, correspondence, archival, or the Internet.
3. Presenting or attending qualifying seminars, in-house courses, workshops, or professional or technical presentations made at meetings, conventions, conferences, or educational institutions.
4. Teaching or instructing in 1 through 3 above.
5. Authoring published papers, articles or books.
6. Active participation in professional or technical societies.
7. Patents.

### **7.2.3. Units**

The conversion of other units of credit to PDHs is as follows:

1. 1 semester hour = 9 PDHs, 1 quarter hour = 6 PDHs
2. 1 continuing education unit = 10 PDHs.
3. 1 hour of professional development in coursework, seminars, or professional or technical presentations made at meetings, conventions, or conferences = 1 PDH.
4. For teaching in 1 through 3 above, apply multiple of 2, valid only for the first offering or presentation. Full-time faculty may not claim teaching credit associated with their regular duties documented as work experience.
5. Publication as author or co-author of a peer-reviewed paper, chapter or book = 10 PDHs, publication of a non-peer-reviewed paper, chapter or article = 5 PDHs.
6. Active participation in professional/technical society = 2 PDHs per organization per year of service.
7. Each patent = 10 PDHs.

## **7.3. Recommendations to certification bodies (CBs) administering the recertification program.**

1. The CB should make accreditation of continuing education courses a requirement, and establish quality assurance requirements for offerings that are not accredited.
2. Determination of Credit

The Certifying Body has final authority with respect to approval of courses, credit, PDH value for courses, and other methods of earning credit.

- a. Credit for college or community college approved courses will be based upon course credit established by the college.
  - b. Credit for qualifying seminars and workshops will be based on 1 PDH for each hour of attendance. Attendance at qualifying programs presented at professional and/or technical society meetings will earn PDHs for the actual time of each program.
  - c. Credit determination for activities is the responsibility of the BPP, subject to review as required by the certifying body.
  - d. Credit for activity in subsection 3. Units, Activity 6, is limited to 2 PDHs per organization and requires that the BPP actively participate on a committee. PDHs are not earned until the end of each year of service is completed.
3. Recordkeeping
- The BPP is responsible for maintaining records to be used to support credits claimed. Records required include, but are not limited to (1) a log showing the type of activity claimed, sponsoring organization, location, duration, instructor's or speaker's name, and PDHs earned; and (2) attendance verification records in the form of completion certificates or other documents supporting evidence of attendance. The Certifying Body reserves the right to require submission of such documentation for any credit claimed by the BPP for recertification.

## **8. Normative Documents**

1. ISO/IEC 17024:2012, Conformity Assessment—General requirements for bodies operating certification of persons for purchase at [www.ansi.org/standards](http://www.ansi.org/standards).
2. Guidance Documents and Sample Policy and Procedures Template available at [www.nibs.org](http://www.nibs.org).

## **9. Attachments**

1. CWCC Charter
2. Reports from Job-Task-Analysis Study and DACUM Chart
3. Selection Process for Selecting Members of the Scheme Committee
4. Reports from Scheme Committee Meetings
5. List of Scheme Committee Members