This Certified Electrical Safety Compliance Professional (CESCP) Candidate Handbook contains important program information, along with the following documents:

- Updated Eligibility Requirements
- Examination Content Area Blueprint and Weighted Criteria
- Recertification Requirements Chart

Please carefully review this handbook and retain it for future reference.
Certified Electrical Safety Compliance Professional (CESCP) Program Summary

Program Overview – The NFPA Certified Electrical Safety Compliance Professional (CESCP) program is designed to meet the needs of electrical and safety professionals who oversee electrical safety programs or who manage electricians and other personnel exposed to electrical hazards. It consists of a set of eligibility requirements (completed prior to program application), a 110 question computer-based exam, and a set of recertification requirements (based on a points system) that must be completed within a three (3) year time period following initial certification.

Program Application & Duration – The CESCP program application form is found in the CESCP candidate handbook as well as online at www.nfpa.org/cescp. You have twelve (12) months after you are accepted as a CESCP applicant to take and pass the exam. The twelve (12) month timer starts on the day your CESCP program application is accepted by the NFPA Admin & Support Services.

Program Fees - $350 USD each time the exam is taken, $150 USD to recertify at the end of your three (3) year certification period.

Payment – Payment must be received before any exam is taken. NFPA accepts credit cards and checks. Please ensure all checks are made payable to “NFPA” and are sent to the mailing address listed below.

Exam – The exam is a three (3) hour maximum, open-book, 110 multiple choice question, computer-based, proctored exam taken at an approved testing center. You may only bring an NFPA printed 2018 NFPA 70E Standard for Electrical Safety in the Workplace book and an approved calculator into the testing area during the exam. No photocopied or other duplicated or electronic versions of the NFPA 70E Standard are permitted in the testing area during your exam.

Exam Results – You will receive your exam results at the completion of your examination.

Retesting – If you fail your exam, you are permitted to retest two (2) additional times (completing a retest application and paying a retest fee each time) within twelve (12) months from the day your original CESCP application was accepted. If you fail the examination three (3) times within this period, you must wait until the twelve (12) month testing period expires before you will be allowed to restart the registration process. The retest application is found in the CESCP candidate handbook and online at www.nfpa.org/cescp. The cost to retest is $300 USD.

Recertification – Once you become CESCP certified, you must recertify every three (3) years. The recertification form is available in the CESCP candidate handbook as well as online at www.nfpa.org/cescp. The NFPA Admin & Support Services will mail you a reminder approximately three (3) months prior to your recertification date. You must earn a specific number of recertification points within the three (3) year recertification period. The fee for recertification is $150 USD.

NFPA Admin & Support Services
11 Tracy Drive
Avon, MA. 02322
(Email) adminsvs@nfpa.org
(Web) www.nfpa.org/cescp
Table of Contents

- About NFPA___________________________________________4
- NFPA Certification Mission - CESCP Goals & Benefits________5
- Obtaining the CESCP Certification_______________________6
- Recertification Requirements____________________________15
- Exam Content Blueprint and Weighted Criteria_____________18
About NFPA

Overview

The National Fire Protection Association (NFPA) is a nonprofit membership organization founded in 1896 and having today more than 75,000 members. The mission of NFPA is to reduce the worldwide burden of fire and other hazards on the quality of life.

NFPA’s technical activity involves development, publication, and dissemination of more than 350 timely consensus codes and standards intended to minimize the possibility and effects of fire and electrical and other hazards. NFPA codes and standards are developed by nearly 250 technical committees, each of which represents a balance of affected interests. More than 7,000 representatives serve voluntarily on NFPA committees. NFPA codes and standards, which are developed under the approved process of the American National Standards Institute (ANSI), are widely used as a basis of legislation and regulation at all levels of government. In some way, virtually every building, process, service, design, and installation in society today is affected by codes and standards developed through NFPA’s system.
NFPA Certification Mission - CESCP Goals & Benefits

Mission of NFPA Certification Programs

The overall mission of NFPA certification programs is to enhance human and organizational performance as related to the use and application of NFPA codes and standards.

Who is this program for?

The NFPA Certified Electrical Safety Compliance Professional (CESCP) program is designed to meet the needs of electrical and safety professionals who oversee electrical safety programs or who manage electricians and other personnel exposed to electrical hazards.

Goals of the CESCP certification program are to:

- Showcase an individual’s knowledge and proficiency with the practices and concepts found in NFPA 70E, Standard for Electrical Safety in the Workplace.
- Promote electrical safety awareness in workplace environments through the use of published NFPA standards
- Enhance professional development by ensuring a uniform, fair process for certification that is accessible to everyone who is eligible
- Promote professional development through continuous learning

Benefits of the CESCP certification include:

- Certification by NFPA, the foremost authority for NEC and electrical safety codes and standards
- Printed CESCP certificate suitable for framing
- CESCP hard hat sticker

Important Note Regarding Designation as a Qualified Person:

Per NFPA 70E Section 110.2(A)(1), designation as a Qualified Person involves factors such as training on equipment and work methods that can be specific to a work site, job function, or employer. Therefore, earning the CESCP credential alone does not make the certificant a Qualified Person. It is the responsibility of an employer or governmental agency having jurisdiction to outline the specific requirements necessary to become a Qualified Person for any given job or site. Employers and others may include this certification as one part of the requirements to become a Qualified Person.
Obtaining the CESCP Certification

Entry Requirements

This section describes the eligibility requirements for entry into the CESCP certification program. Because the CESCP certification is designed to be obtained by people with varied job roles/functions, your individual entry requirements will depend on several factors that may include your educational/training background and work experience.

Please note the following:

- All candidates must meet the requirements found in Table 1

In addition to meeting the requirements found in Table 1:

- Electricians must meet the requirements found in Table 2
- Electrical Engineers must meet the requirements found in Table 3
- All other candidates must meet the requirements found in Table 4

Note: Regarding Acceptable Documentation – Self-employed personnel with no direct supervisor should contact the NFPA Admin & Support Services by emailing us at adminsrvcs@nfpa.org. The certification administrators will work with you to gather the proper acceptable documentation.

Table 1: All Candidates

<table>
<thead>
<tr>
<th>All CESCP candidates (regardless of job function) must meet the following minimum requirements:</th>
<th>Acceptable Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Must hold a high school diploma or equivalent</td>
<td>No Documentation Required</td>
</tr>
</tbody>
</table>

AND

Must have completed a minimum of 40 hours of electrical safety training (online or classroom) from one or more of the following sources within the last 3 years:

- NFPA 70E or other Electrical Safety Training from professional organizations such as NFPA, IBEW, NECA, IEC, etc.
- Other approved electrical safety training (contact the NFPA Admin & Support Services if you wish to register another electrical safety program at adminsrvcs@nfpa.org)
- Teaching approved electrical safety classes will also satisfy this requirement, but only up to 20 hours (you must still receive some training regardless of the amount you teach).

NOTE: Training on NFPA 70, National Electrical Code is not considered electrical safety training for this requirement but is recognized as an important foundation. Therefore, such training counts on a ½ basis (i.e. 10 hours of NEC training counts as 5 hours toward this 40 hour requirement) and can only be counted toward a maximum of 5 of the required 40 hours.

Certificate or proof of attendance/completion (must list the number of hours/CEUs for each training attended)
### Table 2: Electricians

In addition to the minimum requirements found in Table 1, all Electricians applying for entry into the CESCP program must meet ONE of the following:

<table>
<thead>
<tr>
<th>Acceptable Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensed electrician with 8,000 hrs (4 years) of verifiable work experience with electrical power systems</td>
</tr>
<tr>
<td>• Proof of Licensure AND</td>
</tr>
<tr>
<td>• Letter from supervisor (showing number of hours worked)</td>
</tr>
<tr>
<td>OR</td>
</tr>
<tr>
<td>In lieu of licensure, must show proof of electrician job role and 8,000 hrs (4 years) of verifiable work experience with electrical power systems</td>
</tr>
<tr>
<td>• Copy of job description (signed by supervisor) AND</td>
</tr>
<tr>
<td>• Letter from supervisor (showing number of hours worked)</td>
</tr>
</tbody>
</table>

### Table 3: Electrical Engineers

In addition to the minimum requirements found in Table 1, all Electrical Engineers applying for entry into the CESCP program must meet ONE of the following:

<table>
<thead>
<tr>
<th>Acceptable Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate degree in electrical engineering from an accredited college or university with 8,000 hrs (4 years) of verifiable work experience with electrical power systems (field work)</td>
</tr>
<tr>
<td>• Proof of degree AND</td>
</tr>
<tr>
<td>• Letter from supervisor (showing number of hours worked)</td>
</tr>
<tr>
<td>OR</td>
</tr>
<tr>
<td>Bachelor’s degree (or higher) in electrical engineering from an accredited college or university with 4,000 hrs (2 years) of verifiable work experience with electrical power systems (field work)</td>
</tr>
<tr>
<td>• Proof of degree AND</td>
</tr>
<tr>
<td>• Letter from supervisor (showing number of hours worked)</td>
</tr>
<tr>
<td>OR</td>
</tr>
<tr>
<td>Licensed Registered Professional Electrical Engineer</td>
</tr>
<tr>
<td>• Proof of licensure</td>
</tr>
</tbody>
</table>
Table 4: Non-Electrician/Electrical Engineer (Other) Candidates

<table>
<thead>
<tr>
<th>In addition to the minimum requirements found in Table 1, all other candidates applying for entry into the CESCP program must meet ONE of the following:</th>
<th>Acceptable Documentation</th>
</tr>
</thead>
</table>
| Certified Safety Professional (CSP) with 6,000 hrs (3 years) of verifiable work experience with electrical power systems | • Proof of CSP  
  AND  
  • Letter from supervisor (showing number of hours worked) |
| OR |  
  Bachelor’s degree (or higher) in engineering, technology, or other related technical discipline from an accredited college or university with 6,000 hrs (3 years) of verifiable work experience with electrical power systems | • Proof of degree  
  AND  
  • Letter from supervisor (showing number of hours worked) |
| OR |  
  Facilities/Plant/Factory safety professional with 20,000 hrs (10 years) of verifiable work experience with electrical power systems | • Copy of job description (signed by supervisor)  
  AND  
  • Letter from supervisor (showing number of hours worked) |

Note: Please feel free to contact the NFPA Admin & Support Services with any questions regarding your entry into this certification program by emailing us at adminsvec@nfpa.org.

Non-Discrimination Policy

NFPA evaluates all CESCP candidates without regard to race, color, religion, sex, sexual orientation, national origin, ancestry, age, or disability.
Program Fees & Payments

The CESCP program fees are as follows:

- $350 USD on initial program application (includes initial examination fee)
- $300 USD retest examination fee (each time the exam is retested)
- $150 USD to recertify at the end of your three (3) year certification period

Note: Other fees may be assessed and you may forfeit your examination fee if you do not appear for an exam or if you reschedule your testing date (see the Rescheduling Exams paragraph later in this section).

All payments must be received before any exam is taken or, in the case of recertification, before your three (3) year certification period ends. The NFPA accepts credit cards and checks. Please ensure all checks are payable to NFPA and are sent to the mailing address listed here:

NFPA Admin & Support Services
11 Tracy Drive
Avon, MA. 02322
Application Acceptance

An application is accepted only when both of the following requirements are met:

- All required application information is provided to NFPA, including…
  - a completed and signed program application submitted online or via mail.
  - all acceptable documentation for your entry requirements
- The examination fee is processed by NFPA

Following the receipt of your CESCP application form and examination fee, the NFPA will send you an authorization letter with instructions on how to schedule the computer-based exam. A list of test centers is located at the test administrator's website at www.isoqualitytesting.com.

Program Duration

You have twelve (12) months after you are accepted as a CESCP applicant to take and pass the exam. The twelve (12) month timer starts on the day your CESCP program application is accepted by the NFPA Admin & Support Services. If you do not pass the exam before the twelve (12) month period expires, you will be required to submit a new application and payment of $350 USD.

Recertification

Once you become CESCP certified, you must recertify every three (3) years. In order to maintain currency and relevancy with electrical safety in the workplace, CESCP certification holders are required to demonstrate their continuing participation in professional development activities. This is accomplished through a points system. The detail of the process and the various means by which to earn recertification points can be found under Recertification Requirements on page 15.

The fee for recertification is $150 USD.

Exam Attributes

The exam is a three (3) hour maximum, open-book, 110 multiple choice question, computer-based, proctored exam taken at an approved testing center. Of the 100 exam questions, 100 are scored and 10 are being evaluated for future use as scored items. Examinees will not know which items are scored or un-scored.

Exam Results

You will receive your preliminary exam results at the completion of your examination.

The CESCP exam is a pass/fail exam where you must reach a specific score to pass the exam. We do not reveal the number of correct questions that must be
answered (known as a cut score). Your actual number (%) exam score will never be reported to you for either a passing score or a failed score. If you pass the exam, you will only be told that you passed (meaning that you reached or exceeded the cut score. If you fail the exam, you will be provided with a list of the five (5) exam domains and the percent (%) of items you answered correctly for each domain. Note: This is not your exam score – it is just a percent (%) correct value for each domain. This domain percent (%) correct information is provided so you may focus on areas of improvement for your retest. See the CESCP Exam Weighted Criteria Table in the Appendix section of this handbook for a listing of the CESCP exam domains.

Retesting

If you fail your initial exam, you are permitted to retest two (2) additional times (completing a retest application and paying a retest fee each time) within twelve (12) months from the day your original CESCP application was accepted. If you fail the examination three (3) times within this period, you must wait until the twelve (12) month testing period expires before you will be allowed to restart the registration process. The retest application is found in the CESCP candidate handbook as well as online at www.nfpa.org/cescp. The cost to retest is $300 USD.

IMPORTANT: When emailing the retest application to NFPA, you MUST use the NFPA secure email server. Once you access this server and create your NFPA secure email account, you should select OTHER from the "To" pull-down list, and then enter adminsvc@nfpa.org in the address box. Complete the email process by attaching your personal documentation and clicking "Send."

Exam Rescheduling

You may reschedule your computer-based examination for a different date and time by notifying the NFPA test delivery partner (ISO Quality Testing) at least five (5) calendar days (U.S. New York time) prior to your previously scheduled examination date. You will be assessed a $25 rescheduling fee (IMPORTANT: See related computer-based exam rescheduling instructions located in your ISO Quality Testing – Candidate Admission Letter). You will forfeit your entire application fee if you fail to contact ISO Quality Testing at least five (5) business days (U.S. New York time) prior to your previously scheduled examination date. See Cancellation and Rescheduling Exceptions.

Cancellation and Rescheduling Exceptions

NFPA may waive the rescheduling fee or cancellation penalties in the event of one of the following emergency or special circumstances:

- Jury Duty
- Death of an immediate family member
- Military Deployment
- Serious Illness or Injury

If you experience any of the above, you must provide relevant documentation (doctor’s note, military orders, death certificate or obituary, jury summons, etc.) to
Examination Preparation & Reference Materials

Here is a listing of recommended exam preparatory learning and reference materials:

- For candidates new to electrical safety topics, The NFPA recommends completion of the NFPA Overview of NFPA 70E seminar (or equivalent training).
- The NFPA recommends familiarity with the NFPA 70E Handbook for Electrical Safety in the Workplace® 2018 Edition (Note: This book is for optional exam preparation use only and therefore is NOT allowed in the testing center during the actual exam).
- Through self-study and other learning methods (see the section entitled Entry Requirements earlier in this handbook for details on preparatory training hour requirements), candidates must become thoroughly familiar with the NFPA 70E Standard for Electrical Safety in the Workplace® 2018 Edition Note: This (NFPA original printed book) is the only reference allowed in the testing center for your use as “open book” material during the actual exam.

Taking the Examination

The following suggestions, regulations, and procedures pertain to every applicant taking the examination:

- You must present a valid photo ID at the test center.
- You are permitted to use a calculator during the Examination. Only silent, hand-held, battery/solar-operated (programmable or non-programmable) calculators, without paper-tape printing capabilities, can be used. Calculator malfunction during a test does not constitute grounds for challenging test scores or requesting additional testing time.
- Wrist Watches (optional). You will not be permitted to continue the test beyond the established three-hour time limit. Note: The computer-based exam has a 3 hour countdown timer built into the testing application.
- You should bring only the approved, published and copyrighted NFPA references identified in this handbook into the exam room. Photocopies of the standards, additional pages with notations, and other test taking aids are not permitted. All materials taken into the exam room are subject to review by the test center proctor.
- You may highlight, tab, and make notations within your NFPA documents prior to entering the exam room. Only commercial permanent adhesive type tabs are allowed. Post-it type notes and flags or other types of easily moveable tabs are not permitted. You may not write on, mark in, or tab the pages of your NFPA documents during the examination. Doing so will be grounds for dismissal from the test site.
- Electronic versions of the reference materials are not permitted to be used at the test site.
- Visitors are not permitted at the test center.
- If you wish to leave the room during the test, you must secure the proctor’s permission. You will not be allowed to make up lost time.
- Smoking, phones, and pagers are not permitted in the testing area.
- The NFPA shall have the right to revoke or invalidate any examination score with or without a finding of fault or misconduct if data forensic analysis or other credible evidence establishes a reasonable possibility that a score is not valid or the integrity or security of the exam was compromised.
- Examination Security: Failure to follow candidate instructions regarding examination security will result in your application being voided and forfeiture of your examination fee. Conduct that results in violation of examination security or disrupts the administration of the examination could result in cancellation of your examination and dismissal from the testing center. In addition, your examination will be considered void and will not be scored. Examples of misconduct include, but are not limited to, the following: writing in your NFPA 70E Standard book, looking at another candidate’s examination, or talking with other candidates anytime during the entire examination period. You are particularly cautioned not to do so after you have completed the examination, as other candidates in the area might be taking a break and still not have completed the examination. You may not attend the examination only to review or audit test materials. You may not copy any
portion of the examination for any reason. No examination information may leave the test room under any circumstances. This includes memorizing questions for distribution to any other person. No unauthorized persons will be admitted into the testing area. It is very important for you to note all examination content is strictly confidential. You may only communicate about the test, or questions on the test, using the appropriate forms provided within the examination delivery system. At no other time, before, during or after the examination, may you communicate orally, electronically or in writing with any person or entity about the content of the examination or individual examination questions.

Completing the Certification Process

Once scoring of your exam is complete and other certification program requirements are met, you will receive the following items by mail from NFPA:

- Printed CESCP certificate suitable for framing
- CESCP hard hat stickers
Recertification Requirements

Recertification Process and Timing

Once you attain your CESCP certification, you must recertify every three (3) years (36 months from the date on your certification documentation). Failure to meet all recertification requirements in a timely manner will result in you being removed from the NFPA certification list and will require you to register and retake the examination as a new CESCP candidate.

NFPA will attempt to send you a letter with an enclosed recertification form approximately three (3) months before your certification expiration date.

The recertification form may be found on the CESCP certification web page located at www.nfpa.org/cescp or in the Appendix of this handbook. If you plan to fill out and submit your form by email, it is recommended that you download and use the version of the recertification form found on the website.

**IMPORTANT:** When emailing the recertification application to NFPA, you must use the NFPA secure email server. Once you access this server and create your NFPA secure email account, you should select OTHER from the "To" pull-down list, and then enter adminsvc@nfpa.org in the address box. Complete the email process by attaching your completed form and clicking "Send."

Recertification Fee

The fee for recertification is $150 USD

Recertification Points System

Recertification of your CESCP is accomplished by accumulating a required amount of recertification points, as shown in Table 5, before your three (3) year certification period ends. It is important that you begin accumulating the required points as soon as possible. If college courses are declared for training hours, the same course cannot be taken twice within the 3-year period, and the candidate must convert credit hours to actual hours spent in the classroom.

A copy of the recertification submittal form and the points form are found on the CESCP certification pages located at www.nfpa.org/cescp or in Appendix I of this handbook. It is highly recommended that you track your progress using these forms as you accumulate points over the three (3) years of your certification and before your certification expiration date.
Table 5: Recertification Requirements Point System

<table>
<thead>
<tr>
<th>CESCP Recertification Requirements</th>
<th>Allotted Points</th>
<th>Minimum Points</th>
<th>Maximum Points</th>
<th>Required Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Training and Professional Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical Safety Training: Classroom or online training in electrical safety*</td>
<td>1 point per contact hour</td>
<td>20</td>
<td>50</td>
<td>Certificate or letter of completion from presenter</td>
</tr>
<tr>
<td>NFPA 70: National Electrical Code (NEC) training</td>
<td>0.5 point per contact hour</td>
<td>0</td>
<td>16</td>
<td>Certificate or letter of completion from presenter</td>
</tr>
<tr>
<td><strong>Other Professional Development</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attendance at an electrical safety conference (such as the NFPA Conference &amp; Exposition or others)</td>
<td>10 points per conference</td>
<td>0</td>
<td>10</td>
<td>Proof of registration</td>
</tr>
<tr>
<td>Instructing or lecturing by the certification holder</td>
<td>2 pts per hour of delivered training</td>
<td>0</td>
<td>40</td>
<td>Letter from supervisor or organizational training record</td>
</tr>
<tr>
<td>Membership on the NFPA 70E Technical Committee</td>
<td>10 pts Per recertification period (3 years)</td>
<td>0</td>
<td>10</td>
<td>Official listing as technical committee member.</td>
</tr>
<tr>
<td>Publication by the certification holder</td>
<td>5 points per blog / self-published per article in a periodical per book</td>
<td>0</td>
<td>30</td>
<td>Copy of article</td>
</tr>
<tr>
<td></td>
<td>10 points</td>
<td></td>
<td></td>
<td>Copy of title page identifying author</td>
</tr>
<tr>
<td></td>
<td>30 points</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: NFPA reserves the right to alter any recertification requirements as deemed necessary

* Training for this section can be on NFPA 70E, NFPA 70B, NESC, OSHA electrical safety training, or any other course that is genuinely about electrical safety, subject to approval by the NFPA Admin & Support Services.

CEU/Point Conversion: 1 CEU = 10 contact hours = 10 points
Recertification Audit

Certification holders will be subject to a random audit of their CESCP recertification documentation for a period of up to six months after their recertification date. Accordingly, certification holders are expected to retain recertification documentation in their possession for six months beyond their recertification date. Recertification Points Forms are available at www.nfpa.org/cescp. Back up documentation is not required when submitting the Summary of Recertification Points Form.

Documentation

Reasonable proof of attendance/participation in the described categories will be accepted. Reasonable proof includes copies of agendas, rosters, or other descriptive program materials which have been signed and dated by the presenter/sponsor indicating the certification holder’s attendance, course certificates, letters of attestement from course sponsors, college transcripts, and letters from employers. The certification holder is required to sign the descriptive materials as an attestment of their attendance.

Note: While NFPA will attempt to contact you before your recertification period expires, you are ultimately responsible to maintain your recertification points and send NFPA the recertification application and fee before your recertification period expires. Informing NFPA Certifications Department of any changes to your contact info will help greatly in ensuring we can reach you with reminders.

For more information please contact:

Mail: NFPA Admin & Support Services
11 Tracy Drive
Avon, MA. 02322

Email: adminsvc@nfpa.org
Web: www.nfpa.org/certification
The following table indicates the approximate percentage (%) of exam content (exam items) for the five (5) major domain areas and the sub-components of those domain areas:

I. Understand Employer's Responsibilities 15%
   A. Implement the employer's electrical safety program
      i. Identify safety program principles
      ii. Identify safety program controls
   B. Recognize electrical safety program audit requirements
      i. Recognize audit principles and procedures
      ii. Recognize the required frequency of audits
      iii. Recognize when revisions to the safety program are appropriate
   C. Identify requirements for a job briefing
   D. Recognize requirements for host employer and contractor relations

II. Understand Electrical Safety-Related Work Practices 20%
   A. Identify and define terminology related to electrical safety
   B. Identify the requirements for qualified and unqualified persons related to electrical equipment and systems
      i. Identify the requirements for a person to be qualified
      ii. Identify the training requirements
         a. Qualified persons
         b. Unqualified persons
      iii. Identify tasks only a qualified worker can perform
   C. Recognize potential electrical hazards
      i. Identify the hazards associated with energized electrical conductors and circuit parts
         a. Recognize when a shock hazard exists
         b. Recognize when an arc flash and arc blast hazard exists
         c. Recognize that incident energy levels change with respect to location in the system or equipment
      ii. Explain the relationship between electrical hazards and potential injuries
         a. Contact injuries (e.g., current flow through tissue, burn)
         b. Arc flash and arc blast injuries (e.g., thermal burn, hearing damage, concussion)
      iii. Identify methods to control the risk associated with electrical hazards
         a. Hazard elimination (i.e., create an electrically-safe work condition)
         b. Substitution (e.g., use of non-electrical equipment, battery-operated hand tools)
         c. Engineering control (e.g., GFClS, barriers)
         d. Awareness controls (e.g., signs, labels, barricades)
         e. Administrative controls (e.g., training, job planning, procedures)
         f. Personal protective equipment (e.g., insulated tools, arc-rated apparel, voltage-rated gloves)
   D. Identify emergency procedures for assisting victims of electrical incidents
      i. Identify methods of release from contact
      ii. Identify emergency response requirements

III. Identify the Requirements for Establishing an Electrically-Safe Work Condition 20%
   A. Identify requirements for de-energization according to employer program
   B. Recognize that all possible sources of electric supply must be identified
      i. Recognize requirements for single-line diagrams
      ii. Recognize that disconnecting means must be located for each power source
C. Recognize the requirement to visually verify isolation where possible
D. Identify the employer's documented and established policy to apply lockout/tagout (LOTO) devices
E. Identify the steps to verify the absence of voltage
F. Recognize the requirements for temporary protective grounding equipment
G. Identify the components and elements of the LOTO program and procedures
   i. Training
   ii. Procedures
   iii. Forms of control
      a. Simple
      b. Complex
   iv. Coordination
   v. Equipment
   vi. Elements of control

IV. Identify Precautionary Techniques for Work Involving Electrical Hazards

A. Identify justification for not establishing an electrically-safe work condition
   i. Greater hazard to de-energize
   ii. Infeasibility
   iii. Less than 50 volts (consider capacity)
B. Determine energized electrical work permit requirements
   i. Identify the permit elements
   ii. Identify exemptions to the permit
C. Understand the requirements for an electrical hazard risk assessment
   i. Identify the components of a shock risk assessment
      a. Recognize the requirement to identify the voltage of electrical conductors and circuit parts
      b. Explain the approach boundaries and their use
   ii. Identify the components of an arc flash risk assessment
      a. Describe incident energy
      b. Understand the effect of clearing time, short circuit current, and worker distance on incident energy
      c. Interpret hazard information conveyed on equipment labels
      d. Explain the arc flash boundary and its use
      e. Understand the use of the hazard/risk category classification method
         1. Understand that the tables incorporate risk
         2. Understand that the tables are task/equipment based
         3. Identify table limiting parameters
   iii. Verify compliance with PPE requirements for electrical hazards
      a. Understand the PPE requirements for electrical hazards
         1. Head, face, neck, and chin protection
         2. Eye protection
         3. Hearing protection
         4. Body protection
            a) Arc-rated garments
            b) Layering
            c) Underlayers
         5. Hand and arm protection
         6. Foot and leg protection
      b. Understand the requirements for the care and maintenance of PPE
         1. Testing
2. Inspection
3. Care, maintenance, and storage
   c. Ensure no prohibited materials are worn
d. Understand PPE ratings
   1. Voltage rating
   2. Arc rating
e. Understand limitations of PPE
f. Understand the use of Table H.3(a) and H.3(b) in Annex H to select appropriate PPE when an incident energy analysis is performed and PPE requirements are not provided
g. Understand the use of PPE requirements when using the hazard/risk category classification method
   iv. Recognize requirements for other protective equipment (e.g., insulated tools, ladders, shields)
v. Identify situations where equipment failure may occur
D. Understand the requirements for reenergizing circuits after operation of overcurrent protective devices (OCPD)
E. Understand the requirements related to the use of test instruments
   i. Verify that employees are properly trained on each test instrument they will use
   ii. Verify that all test instruments used are adequately rated
F. Understand the use of other equipment
   i. Understand the appropriate use of portable electric equipment
   ii. Verify that field tests of GFCI protection devices occur in accordance with the manufacturer's recommendations
   iii. Verify that visual and mechanical inspections of portable electric equipment and cord sets occur as required
G. Understand the required use of alerting techniques
   i. Signs and tags
   ii. Barricades
   iii. Attendants
   iv. Identification of look-alike equipment
V. Understand Documentation Requirements
   A. Electrical safety program
   B. Host-contractor meeting
   C. Training
   D. LOTO procedure
   E. Electrical safety audit
   F. Energized electrical work permit
   G. Equipment labeling
   H. Incident energy analysis
   I. Maintenance, tests, and inspection
   J. Single line diagrams