



**SOCIETY OF MAINTENANCE AND RELIABILITY PROFESSIONALS  
CERTIFYING ORGANIZATION**

## **Candidate Guide for Certification and Re-certification**

Second Edition  
Copyright 16 March 2010



**ANSI Accredited Program  
PERSONNEL CERTIFICATION**

**#0739**

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This **Candidate Guide for Certification and Recertification** supersedes the Third Edition of the **SMRPCO Reference Guide** (Copyright 2006) by the SMRP Certifying Organization (SMRPCO) and the First Edition of the **Candidate Guide for Certification and Re-certification** dated 1 May 2007

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For further information about the SMRP Certifying Organization and its programs, please refer to the SMRP web site at [www.smrp.org](http://www.smrp.org).

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**SOCIETY OF MAINTENANCE AND RELIABILITY PROFESSIONALS  
CERTIFYING ORGANIZATION  
Candidate Guide for Certification and Recertification**

**I. Certification**

**A. Statement of Purpose** The Society for Maintenance and Reliability Professionals Certifying Organization (SMRPCO) is organized for the purpose of fostering high standards of ethical and professional practice in the delivery of services through a recognized, credible credentialing program that assures the competency of practitioners of Profession. The underlying ethic upon which the certification process rests is absolute fairness and equity in the administration of examinations and recertification for all applicants without discrimination. (i.e. because of age, color, creed, gender, ethic or religious background, lifestyle, marital status, national origin or political affiliation, race or sexual orientation.)

**B. Rationale for Certification: Achieving the SMRP Mission** The key elements of SMRP's mission are the improvement of the maintenance and reliability profession and supporting the education of maintenance and reliability practitioners.

From the first days of SMRP, it was clear that there were no consistent, well-defined standards for the body of knowledge and capabilities that maintenance and reliability practitioners should have to be effective. Further, there was no way to differentiate those who have mastered the various elements of excellence from those who simply hold the job. SMRP realized that without a well-defined body of capabilities and a method of assessment it could not realistically fulfill all elements of our mission.

Improving the profession requires a standard of excellence and an incentive to attain the standard. Maintenance and reliability managers are often promoted because of technical skills, without regard for their ability to improve work processes, create change, or manage people. SMRP believes that maintenance and reliability practitioners need greater stature and credibility in their organizations and industry to be heard. We believe the message of Maintenance and Reliability adding value is often drowned out by day-to-day production demands.

**C. Benefits of Certification** The benefits of certification are apparent for many fields and very attractive to practitioners in many organizations. The following is a short summary of the benefits that were highlighted by practitioners who responded to the certification survey in 1999 and reinforced by subsequent experience of those who have become certified since 2001:

- Clearer direction for career development and education
- Improved visibility and recognition within your current organization
- Differentiated pay scales
- Portable job skills and knowledge between plants and companies
- Assists in job promotion
- Greater job effectiveness
- Fewer frustrations with gaps in knowledge

- Improved ability to differentiate between candidates in the hiring and promotion process.
- Improved on-the-job training and outside training effectiveness.

In support of increasing the recognition and assurance of the capabilities of maintenance and reliability professionals, SMRPCO has developed and continued to improve a certification process for maintenance and reliability management. The CMRP exam has become the international standard measure of competence in our field.

Many are aware of other organizations that offer similarly titled certifications in this or other related subjects. How does SMRPCO's process differ from these?

- SMRP is an independent, practitioner-based, non-profit organization without ties to any commercial venture.
- The SMRP body of knowledge comprehensively addresses and examines equipment reliability and maintenance (R & M) as well as overall asset management, people and technical skills, as opposed to other programs that deal strictly with the technical aspects of R & M. SMRP sees this as an ongoing effort which requires periodic update (every 5-6 years) using the same process used to develop the original Body of Knowledge. Accordingly the SMRP has established a permanent Maintenance and Reliability Knowledge Committee of volunteer subject matter experts to carry on this work for the CMRP designation as well as others that may be developed. The effort is supported by paid staff. After over a year of preparation, a new Job Task Analysis survey is being conducted as this is written so as to be completed in 2008. Results in the form of an updated Body of Knowledge will be published as soon as possible after the survey results are analyzed and assimilated.
- SMRP uses broad representation in developing its Body of Knowledge and related certification program. Some of the leading organizations in manufacturing and service delivery, utilities, government activities and in the academic world participate on a regular basis to assure thorough validation of the work to develop the certification process.
- In September 2007 SMRPCO was accredited by the American National Standards Institute (ANSI) which uses the International Standards Organization (ISO) guidelines in ISO/IEC Standard 17024) for accreditation of certifying activities as its guide, a distinction not shared by other certification organizations in the field of maintenance and reliability.
- SMRPCO was set up by SMRP and continues to be sponsored by SMRP, the leading organization for maintenance and reliability practitioners. SMRPCO has its own budget, Board of Directors and Staff and operates its program with minimal oversight from its sponsoring organization. No other organization in our field has that distinction.
- SMRPCO plans to enhance the value of certification to certified practitioners through other advanced certifications.

#### **D. Background:**

SMRP decided in the mid-1990's to recognize those individuals who through study, training and work experience have attained a high degree of proficiency in the application of engineering and

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management principles to the maintenance and reliability of commercial, government, industrial and institutional fixed or mobile assets and machinery

Serious efforts towards developing a certification process began after an SMRP Strategic Planning meeting held in August of 1997. In this meeting the organizational structure of SMRP was changed to empower its directors to achieve the mission approved by the SMRP Board of Directors and Officers. The SMRP Board endorsed the certification goal of the Professional Certification Committee (PCC), and appointed Brad Peterson, originator and the main promoter of the idea of a certification scheme, as the Committee Chairman. In 1998 a team of volunteers gathered in Bowling Green, Kentucky to create a charter, objectives, activities and goals of the new PCC.

The next task undertaken by the PCC was to determine what a professional practitioner in the field of maintenance and reliability (M & R) needed to know to be considered a true professional. SMRPCO engaged the services of consultants in the fields of job task analysis and testing for certification to guide their efforts and provide needed expertise which M & R practitioners generally do not possess.

By early 1999, the PCC had identified the capabilities of high performing people leading Maintenance and Reliability initiatives. Approximately 400 maintenance and reliability practitioners who completed a job task analysis survey subsequently validated these capabilities. The majority of survey responses were very supportive of developing a certification process. Respondents overwhelmingly said that these and a few other capabilities are important. The PCC received nearly 20 pages of comments that encouraged the organization to proceed! With the aid of expert consultants this material became the basic Body of Knowledge for the M & R professional, the first ever aggregation of such information in a single document.

The PCC developed a strategic plan for certification by late 1999. It received a green light from the SMRP Board to proceed with creating an evaluation process, an administration process, a testing scheme and a way to market the program to all interested parties.

In the first half of 2000, the development team worked hard to develop definitions, references, certification test questions, methods, and documentation of the testing process.

Volunteer applicants took the first public beta exam during the 2000 SMRP Conference in Cleveland, Ohio. The results from this exam helped validate the exam content and improve it for use in the official certification exam.

The PCC was renamed the SMRP Certifying Organization (SMRPCO) in October 2001, This was to clarify SMRP's role as the sponsoring organization and SMRPCO as the certifying organization that manages the certification program. Independent administration of the certification process is required to ensure impartiality, eliminate the possibility of bias, and for accreditation of the process by third party organizations. SMRPCO has its own Bylaws, Officers, Board of Directors and budget execution authority.

In October 2001, the first official certification exams were conducted.

As mentioned above, SMRPCO was accredited as a Certifying Activity in September 2007 under Standard 17024 established by the International Standards Organization of Geneva, Switzerland. Auditors from the American National Standards Institute of Washington, DC conducted the two-day audit after a thorough study of SMRPCO's application containing nearly 1000 pages of data, procedures, policy documents and related information.

Exams continue to be developed to test candidates' competency in terms of their knowledge, skills and experience in fields common to reliability engineering and maintenance management. The exams are directed toward, but not limited to, individuals who make decisions to improve the reliability and maintenance using generally accepted principles of these fields. The SMRPCO certification exam's focus is on applied knowledge. The study of references alone is highly unlikely to ensure success on the certification examination. Statistics from years of exam administration has shown a high correlation between applied experience and success on the exam.

By the close of 2009 over 5500 exams had been administered to professionals from over 40 countries and counting. Approximately 3000 professionals have successfully completed the exam. Both the quantitative data and the inputs from the examinees suggest that the exam is fair, challenging and a good measure of the competencies necessary for the professional practitioner.

Successful participants are awarded a certificate of recognition for having achieved a passing grade on the exam and are entitled to apply the designation associated with specific certification to their name and list of accomplishments -- Certified Maintenance and Reliability Professional – CMRP.

#### **E. Exam Venues**

Paper and Pencil Based Tests The examination for certification as a maintenance and reliability professional has been offered at many venues each calendar year, with one of the venues always being the SMRP annual conference, held each Fall. Where possible and practical, examinations will be coordinated with other SMRP activities, such as SMRP Chapter events, Executive Meetings and in conjunction with SMRP sponsored workshops to reduce travel for persons who plan to participate. Third party venues are also scheduled when proper conditions for conducting an exam are assured. All currently scheduled venues are listed on the SMRP website. The examination registration form is available on the SMRP web site by clicking on the "SMRP Certification" tab and following the "Register for the CMRP Exams –More Information prompt to the venue listing". Click on the venue chosen and the registration form will be made available for downloading. At the present time you must access and download the form for mail or Fax submission.

Computer Based Testing (CBT) Starting in January 2008, candidates have the option of sitting for the exam at one of hundreds of electronic testing sites throughout the world. SMRPCO has partnered with a computer based testing (CBT) company, SMT, to host exams at locations all throughout North America and other countries. Take advantage of being able to take the exam close to home or work in any month out of the year!

The electronic CMRP exam can only be taken at one of the SMT approved testing sites. It is not an exam that you can take on your home computer. To find a testing center near you and to

register for an electronic exam click on the “SMRP Certification” tab and follow the links to “Certification Exams.”

**F. Overview of the Certification Examination Process** The Examination for Certification in Maintenance and Reliability Management consists of 110 multiple-choice questions. Examinees are allowed two hours to complete it. The examination is closed book with no reference materials allowed in the examination room (except strict translation dictionaries for candidates whose native language is not English, under conditions specified in Section II of this guide). A hand-held or computer screen based calculator with arithmetic functions is provided for use by those sitting for the exam. No other personal calculators, computers or electronic devices are permitted.

A set of sample exam questions is provided in Appendix A to this document. These are typical questions that will give the candidate exposure to the format of questions that are included on the exam. These sample questions will not appear on certification exams.

**G. Statement of Policy with Respect to Training Courses, Publications or Other Offerings Related to Certification in the M & R Profession**

SMRPCO will not offer any training to assist persons in preparing for the certification examinations. A foundational belief in developing this examination is that professionals in the maintenance and reliability industry receive their experience and training from a variety of sources, both on the job and from outside training. Therefore, no experience or educational requirements are set for the exam.

The examinations are designed to test both knowledge and experience. In general, knowledge is not something that was recently learned. It is experience and training that has been applied, tested and analyzed.

Further, the Maintenance and Reliability Body of Knowledge, upon which the exam is based, is very broad. SMRPCO strongly advises that a course of one or two weeks or even months will not adequately prepare candidates to successfully complete a certification examination.

As such, SMRPCO will not develop any training courses to assist persons in successfully completing certification exams. SMRPCO’s functions are:

- development and administration of examinations that reflect, to the degree possible, the current Maintenance and Reliability Body of Knowledge, and
- administration and conveyance of results and credentials associated with certification examinations and subsequent re-certification requirements.

SMRPCO has developed and keeps current a list of publications on maintenance and reliability subjects. The list is available for downloading from the SMRP web site. See the SMRP Certification Page of the web site for information.

The web site also leads users to links which aid those interested in purchasing maintenance and reliability references to vendors that sell them. Inclusion, mention or listing of a reference on the web site does not imply an endorsement of the reference or the vendors in any way.

SMRPCO does not endorse any outside person, preparation course or product (such as a book, compact disc-based offering or other publication including those mentioned above on its web site) in connection with any certification program.

## **H. Glossary:**

1. **Associate**: Any individual Volunteer (Certificant) or Special Needs Member, Headquarters Staff employee, Consultant or Representative of Sustaining Sponsor Organizations engaged in board, committee, or working group activities of SMRPCO.
2. **Certificant**: Any person holding the designation “CMRP” or other designation established by SMRPCO who is in good standing, defined as a person who has been awarded a certificate good for an initial three (3) year period, and/or a person who has successfully completed necessary re-certification requirements prior to completion of the initial and within each three year period thereafter, shall be designated a Certificant of SMRPCO. Certificants may serve as “Volunteer Members.” Certificants may vote at the annual Meeting of SMRPCO on matters brought before it and separately for one Director of the Board. Rights and responsibilities of Certificants are provided in the SMRPCO Policies and Procedures Document
3. **Certification Cycle**: A three (3) year cycle beginning from the date of the issue of the initial certificate upon achieving a passing score on the specified certification examination and specified on the associated certificate. Subsequent cycles of three (3) years each begin at the end of the period above when re-certification requirements have been met and a new certificate is issued.
4. **Committee**: Has an assigned function for SMRPCO that is on-going.
5. **For Cause**: Failure to comply with SMRPCO’s Code of Ethics, Standards of Conduct, statements of responsibility with respect to anti-trust, confidentiality and non-disclosure and commitments to Board and committees to which assigned and good stewardship, definition of good standing, policies, procedures, bylaws, national, state, provincial and local laws.
6. **Good Standing**: Certification status is current with no disciplinary actions or outstanding financial claims by SMRPCO or SMRP affecting the Certificant’s status.
7. **Guidelines**: Approved, non-binding statements used to direct the procedures and standards.
8. **Policy**: A decision which obligates actions or subsequent decisions on similar matters.
9. **Proctor**: An individual who is approved by the SMRPCO Exam Administration Committee to oversee and/or administer a certification examination.
10. **Signatory**: An individual who commits to an agreement or certifies understanding of contents of a document by affixing his or her actual or electronic signature to it. Such documents include but are not limited to Code of Ethics, Standards of Conduct, Anti-Trust Instructions, Confidentiality and Nondisclosure Agreement, Conflict of Interest Form, Exam Registration Form and Application for Recertification Form.
11. **Sustaining Sponsor Organization**: A Sustaining Sponsor Organization may be admitted to SMRPCO for a one (1) year period, by completing the required application form and paying the required fee for that period. Its representative may participate and vote on the SMRPCO Advisory Council, but is not a voting Certificant of SMRPCO unless he/she holds that

designation in his/her own capacity. Rights and responsibilities of Sustaining Sponsor Organizations are provided in the SMRPCO Policies and Procedures Document.

12. **Volunteer Member**: A Certified Maintenance and Reliability Professional (CMRP) who, as a signatory to documents mentioned in the definition of “Signatory,” agrees to perform service without compensation on the SMRPCO Board of Directors, Committee, Exam Team or other working group.

# Candidates and Certificants

## A. Certification Examinations

The Society for Maintenance and Reliability Professionals Certifying Organization offers the following credentials: Certified Maintenance and Reliability Professional (CMRP).

### a) Eligibility for Certification.

- i There are no educational experiences or other requirements, other than completion of the application form, payment of applicable fees in advance and time since taking a previous certification exam for candidates who wish to take an examination for Certification of Maintenance and Reliability Professional – CMRP, and no conviction of a felony or other crime of moral turpitude under international, national, federal or state law in any matter related to the practice of or qualification for professional activity.
- ii Candidates who are unable to comply with the eligibility requirements will not be allowed to sit for the exam at that time.

### b) Examination Process Security Requirements

- i SMRPCO includes a statement in the instructions preceding an exam which states that any violation of testing policies and procedures may result in dismissal from the exam venue, cancellation of exam scores and forfeiture of eligibility for exam fee refund.
- ii SMRPCO requires that identification presented at the test site contain a valid photograph and signature. Appropriate forms of identification may include the following:
- iii A passport, driver's license, other federal, national, provincial, territory or state government issued identification document or card.
- iv Candidates testing outside their country of citizenship must present a valid passport.
- v Candidates who are unable to comply with the identification requirements will not be allowed to sit for the exam at that time.

### c. Denial of Eligibility:

- i. In the interest of serving the public trust, SMRPCO shall review all applicants' self-reported past and present criminal activities. SMRPCO reserves the right to perform a criminal history background check on applicants. Failure to provide accurate, true and correct information shall constitute grounds for denial of an application or removal of a credential. SMRPCO shall deny access to the certification examination from applicants who have pled guilty to, nolo contender or have received

- deferred adjudication or are found guilty of charges of moral turpitude.
- ii. When any application for eligibility into a certification examination is denied, the applicant will be notified in writing (including e-mail), and the application fee, less a 10% processing fee, will be returned.
  - iii. Denied applications may be appealed or resubmitted, with full fees, upon completion of all eligibility criteria.
  - iv. Eligibility for entry into the certification examination for the maintenance and reliability (M & R) profession may be denied when:
    - Any part of the application is incomplete.
    - Any part of the application is illegible.
    - The application is not accompanied with the correct fees (in acceptable currency with an acceptable payment vehicle
    - An application and its supporting documentation do not adequately substantiate or properly demonstrate that the applicant has met the minimum eligibility criteria. Application must be organized according to the specified format.
  - v. When an application for eligibility into a certification examination is denied, the applicant will be notified in writing (including e-mail) and the application fee, less a processing fee of 10%, will be returned.
  - vi. Denied applications may be appealed or resubmitted with full fees upon completion of all eligibility criteria.

**a) Appeal of Denial of Eligibility**

- i. The SMRPCO grants certification status to individuals in the maintenance and reliability profession who complete the application procedure, ascribe to and abide by the SMRPCO Code of Ethics for candidates and certificants that is included as part of the application, successfully pass the applicable certification exam and pay all registration fees within established deadlines.
- ii. Applicants who have been denied eligibility may appeal the decision in the following manner:
  - The applicant submits a written (including e-mail) or faxed notice of appeal to the SMRPCO Staff who will forward it to the Certification Committee Chairman. The notice shall include the name, current address (including e-mail address), phone numbers and fax number (if applicable) of the applicant.

- The applicant submits additional written, (including by e-mail) factual documentation to support their appeal with an explanation of why he/she believes the decision is erroneous. The applicant shall bear the burden of proving the denial of eligibility was based on erroneous factual determination of the SMRPCO Staff.

iii. An initial review of an appeal is conducted by the Certification Committee Chair to ensure the applicant has met the above conditions. If the Certification Committee Chair determines that the appeal meets the above conditions and the denial of eligibility was due to prior criminal history or misconduct, the case will be referred to the Executive Committee of SMRPCO. If the denial of eligibility was due to other circumstances the case will be referred to the Certification Committee. If the Certification Committee Chair determines that the appeal has not met the above conditions, the applicant will be notified that the appeal is disallowed and forward the record to the Executive Committee of SMRPCO for final determination.

iv. The decision of the Executive Committee of SMRPCO is final and will be communicated to the Certification Committee Chair in writing. The Certification Committee Chair will notify the applicant of the decision in writing.

v. There is no appeal allowed on the basis of incomplete applications.

vi. This policy does not apply to certificants who have their certification or re-certification denied, suspended or revoked for fraud, misrepresentation, violation of testing procedures or other conduct in violation of the SMRPCO Code of Ethics, Standards of Conduct, Rules, Policies and Procedures.

#### **b) Testing in Languages Other than English**

SMRPCO offers the certification examination in English. Other languages may be added. The use of translators during the examination will not be permitted.

#### **c) Policies for Applicants with English as a Second Language**

Candidates, whose primary language is not English, may use a strict translation dictionary developed for common use during a certification examination. Candidates must bring their own dictionary to the testing center. Any dictionary that has definitions, any written notes, or additional text will not be allowed. Electronic dictionaries are not

allowed. Dictionaries will be inspected by the exam proctor and those violating this policy will be seized. Candidates who refuse to allow the proctor to inspect the dictionaries will not be admitted to the testing area with the dictionary and will be allowed to test without the dictionary at that time or to reschedule.

**d) Examination Accommodations for Candidates with Physical Disabilities**

Special arrangements are made available to applicants with physical disabilities when requested in writing at the time the application is submitted or before, if the arrangements require longer time, subject to the following:

- If added expense is involved in accommodating the person with a physical disability, such expense (beyond requirements of law such as contained in the Americans with Disabilities Act) is borne by the candidate or the candidate's sponsor (e.g., employer or foundation providing support for persons with specific disabilities).
- If accommodation requires the presence of one or more persons to support the candidate because of the disability, they may not assist the candidate in any way in understanding exam content in such a way so as to give the candidate an unfair advantage over candidates without disabilities.
- Supporting personnel must sign a SMRPCO non-disclosure agreement and agree not to sit for the certification exam for that designation for a period of five (5) years.

**e) Examination Statistics**

- i Official statistics regarding any certification examination for the M & R profession, including all item performance data, individual and demographic group data will be considered confidential unless officially released by the Society for Maintenance and Reliability Professionals Certifying Organization. Candidates' scores will always remain confidential unless released with the express written permission of a candidate to an authorized agency in response to legal requirements.
- ii Statistics will be stored at the SMRPCO office headquarters by the SMRPCO Certification Administrative Manager or other authorized staff member. The Exam Director will be provided with copies of statistics for review purposes and for purposes of reporting to the Certification Committee or Board of Directors. Exam Team and Certification Committee members

will have access to such statistics as required to fulfill their duties, but shall keep them under strict control to prevent release to unauthorized persons. Statistics may be maintained by any authorized testing company for the duration of any contract with SMRPCO. In the event that a contract is not renewed, any and all copies of statistical information shall be returned to the SMRPCO offices. Statistics remain property of SMRPCO.

- iii Yearly, SMRPCO will release, at a minimum, statistics regarding the total number of candidates tested and the percent of candidates passing. The Board will release additional information at its own discretion.

**f) Candidate Confidentiality**

A candidate's application and performance on any certification examination shall remain confidential unless otherwise stipulated by the examinee. Requests for score transfers to state licensing boards, regulatory commissions or government legal officials in pursuit of their duties and authority prescribed on law, must be made in writing (not by e-mail) by the candidate and submitted directly to SMRPCO. Scores will be sent directly to the state licensing/credentialing board or legal authority in the form of either a sealed transcript or a password protected electronic file.

**g) Release of Certificant Information**

- i The Society for Maintenance and Reliability Professionals Certifying Organization maintains a registry of Certificants at its headquarters.
- ii Unless specifically indicated that recognition is not desired by checking the appropriate block on the initial application for an examination or after becoming certified, notifying SMRPCO in writing (including e-mail) that recognition is desired, the Certificant's name, country and expiration date of certification will be listed on the SMRP/SMRPCO Website.
- iii Upon written approval (including by e-mail) by a Certificant, the SMRPCO staff will release the name and country of certificants free of charge in response to a telephonic, faxed, or written (including e-mail) request from an officer, publicity chair, or media representative within the field of M & R Profession for purposes of acknowledgement and recognition.
- iv Upon written approval (including by e-mail) by a Certificant, the SMRPCO staff will release the name, addresses, office

telephone number, and the certification or recertification status of subject Certificant in good standing for the purpose of responding to referrals.

- v SMRPCO will never loan, rent or sell candidate or Certificant information.
- vi The names of failed candidates are confidential and will not be released.
- vii Except as provided for by paragraph **II.A.f)** above, no score reports of any candidate or Certificant will be released to anyone outside of SMRPCO Staff, Volunteer or Special Needs Members or SMRPCO consultants who need the information to perform their authorized duties.

**k) Examination Score Reports**

The examination score reports will reflect only PASS or FAIL. Failing candidates and Certificants will be given diagnostic, non-numerical information indicating their overall performance for each section of the exam.

**l) Length of time to Schedule and Take the Examination**

Candidates must schedule and take an examination within six months of the date they make application and are made eligible to sit for it. Failure to do so within the time specified will result in forfeiture of all examination fees and the application will be considered void and returned to the candidate.

**m) Time Allowed to Sit for the Examination**

Candidates will be allowed a period of up to 2 hours to take the CMRP exam.

**n) Examination Security**

i. The Society for Maintenance and Reliability Professionals Certifying Organization maintains strict policies to insure the security of the examination.

- Candidates or Certificants who apply to take the test for reasons other than for initial certification or recertification, will be considered in violation of the SMRPCO Code of Ethics and will be subject to disciplinary procedures and/or legal action to mitigate the harm done to the certification process. Sanctions for Certificants could result in the termination of certification.
- Any individual who removes or attempts to remove exam materials from the testing site, including memorizing exam questions, will be prosecuted. Any Certificant who

removes or attempts to remove examination materials, including memorizing exam questions, will be subject to disciplinary procedures in addition to legal action. Sanctions for Certificants could result in the removal of certification.

- Any unauthorized individual found in possession of exam materials will be prosecuted. Any unauthorized Certificant who is found in possession of exam materials will be subject to disciplinary procedures in addition to legal action. Sanctions for Certificants could result in the removal of certification.

ii. Appropriate and specific test information will be provided to our stakeholders, if and when any are identified and verified to the satisfaction of the SMRPCO Board to have such an interest based on law of state, territory or country or Sustaining Sponsorship.

**o) Number of Times and Intervals Candidates May Take the Examination**

Candidates who fail a certification examination will be permitted to retake the examination as many times as necessary to achieve a passing score. Candidates who do not achieve a passing score will be required to wait for a six month period from the date of their last exam prior to retaking an exam. Application may be made in advance of the end of the time, up to 90 days as specified below.

**p) Appeals Concerning Items on Exams and Scoring of Exams**

i. Following completion of the examination and prior to receipt of the examination (Pass/Fail) results, candidates may comment in writing on any question(s) they believe contain errors in content. Comments will be forwarded to the Exam Director of SMRPCO. If the Exam Director judges that an item(s) should not be scored, all exams score-sheets that reflect lower than the passing score by an amount equal to the sum of the values of the item(s) being challenged shall be re-scored by hand. Candidates, whose status changes from fail to pass as a result of the re-scoring, shall be issued a certificate.

ii.. Candidates who fail the examination and believe this was due to an error in scoring may have their examination results hand scored by submitting a request in writing (including e-mail) to SMRPCO. Candidates have (7) days to request a hand score from the time of receipt of notification that they failed. Candidates may **not** have access to the answer key. Candidates, whose status changes as a result of hand scoring from fail to pass, shall be issued a certificate. All similarly affected candidates shall have their exams rescored and acted upon accordingly.

## **B. Incomplete Candidate Applications**

If an applicant submits an incomplete application for a certification examination, the Society for Maintenance and Reliability Professionals Certifying Organization (SMRPCO) will retain the application for a period of 90 days from the date that SMRPCO provides the applicant with the “Incomplete Application Notice” described below. If the applicant fails to submit the required documentation and/or appropriate payment(s) and therefore, does not complete his/her application, within the 90-day period, SMRPCO shall return all the applicant’s application materials to the applicant and the application process shall be deemed to be terminated. At such time, the applicant’s application fees and associated other application processing payment(s) shall be forfeited by the applicant.

During the 90-day period aforesaid, the applicant shall be permitted to cancel his/her application and receive a refund of the application fee. If the applicant wishes to extend the 90-day period in order to allow enough time to tender the requisite documentation and/or payment(s), then he/she must submit a written request to such effect to SMRPCO which request must be postmarked prior to the expiration of the aforesaid 90-day period. SMRPCO, in its sole discretion, shall consider all such requests. All decisions made by SMRPCO are final.

If the applicant’s application is not complete, SMRPCO shall provide notifications to the applicant pursuant to the following notification schedule. The applicant solely shall be responsible for ensuring that his/her address in the SMRPCO database remains current and up-to-date.

### **Notification Schedule:**

1st Letter or e-mail notification (Incomplete Application Notice) - SMRPCO shall deliver an Incomplete Application Notice to the applicant at the time the applicant’s application is reviewed and denied, based, at least in part, on the failure of the applicant to submit the appropriate supporting documentation and/or application fee. The applicant will be informed of SMRPCO’s policy that governs incomplete applications, as well as the fact that he/she has a period of 90 days to submit all of the requisite materials and/or necessary payment(s) in full.

2nd Letter or e-mail notification (Denial Notice) - SMRPCO shall deliver a Denial Notice to the applicant if the applicant has not timely completed and submitted the application and application fee to SMRPCO within the 90 day period specified. The Denial Notice shall be sent to the applicant subsequent to the expiration of the 90-day period. The applicant will be notified that his/her application has been denied and his/her application fee is forfeited. The applicant’s application and associated materials, less the application fee, will accompany Denial Notice.

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## **C. Code of Ethics for Candidates and Certificants**

The Code of Ethics of the Society for Maintenance and Reliability Professionals Certifying Organization (SMRPCO) requires those who sit for the certification examination (Candidates), Certificants, Special Members, Staff, and Consultants to uphold professional standards that allow for the proper discharge of their responsibilities to those served, protect the integrity of the profession, and safeguard the interest of individual clients.

### **All persons who sit for any SMRPCO examination shall:**

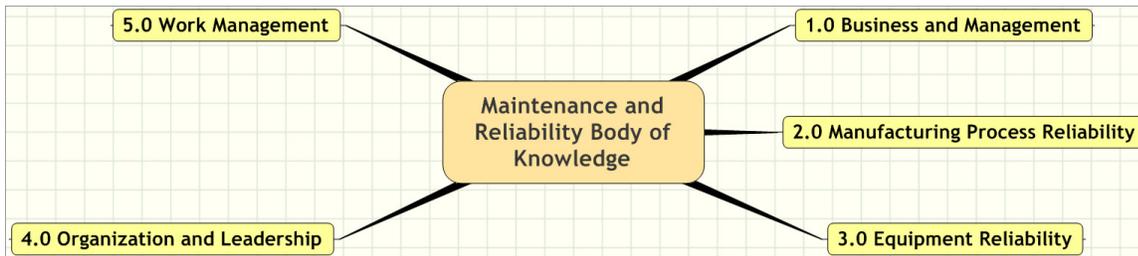
- Agree to maintain the confidentiality of the examination content and to never disclose examination content to others. Prohibited conduct includes disclosure of exam content, removal of exam materials from the examination room, copying by photography, use of audio recording equipment, or any other means that could be used to transfer the content to others.
- Attest to their identity as the registered examinee, and not represent anyone other than themselves in the taking of the exam.
- Attest that the work and selections made on the subject examination are theirs and theirs alone.

### **Those examinees that pass a SMRPCO examination (hereafter known as Certificants):**

- Pledge to represent their profession ethically and honorably. Conduct by a Certificant that is detrimental to the SMRPCO Certification program may result in revocation of said Certification. Examples of detrimental conduct include but are not limited to dishonesty, misrepresentation of professional qualifications, and certain illegal acts leading to felony conviction. Certificants have the right to appeal revocations of Certification through due process that as is described in the SMRPCO Policies and Procedures Document.
- Represent their qualifications honestly, including their educational achievements and professional affiliations, and provide only those services which they are qualified to perform.
- Consistently maintain and improve professional knowledge and competence, striving for professional excellence through regular assessment of personal and professional strengths and weaknesses and through continued education training.
- Conduct their business and professional activities with honesty and integrity, and respect the inherent worth of all persons.
- Refuse to unjustly discriminate against clients.
- Safeguard the confidentiality of all client information, unless disclosure is required by law, court order, or is absolutely necessary for the protection of the public.
- Refrain, under all circumstances, from initiating or engaging in any act of moral turpitude
- Avoid any interest, activity or influence which might be in conflict with the Certificant's obligation to act in the best interests of the client or the profession.
- Follow all policies, procedures, guidelines and requirements promulgated by the Society for Maintenance and Reliability Professionals Certifying Organization

### **III. Subject Areas Addressed by the Certification Exam**

The Society for Maintenance and Reliability Professionals (SMRP) has created the Maintenance and Reliability Body of Knowledge. The foundation of the Maintenance and Reliability Body of Knowledge is the five pillars of knowledge: Business and Management, Manufacturing Process Reliability, Equipment Reliability, Organization and Leadership, and Work Management. The Maintenance and Reliability Body of Knowledge was developed by SMRP's Maintenance and Reliability Knowledge Committee using a rigorous development process. The current Maintenance and Reliability Body of Knowledge extends to level 2, the function level. Additional levels are under development and will be published periodically.



#### **1.0 Business and Management**

This subject area describes the skills used to translate an organization's business goals into appropriate maintenance and reliability goals that support and contribute to the organization's business results.

##### **1.1 Create Strategic direction and plan for M&R operations**

- Provide vision and direction
- Provide clear and measurable goals

##### **1.2 Administer Strategic plan**

- Develop support
- Obtain approval and resources
- Implement plans

##### **1.3 Measure Performance**

- Select key performance indicators
- Track and report

##### **1.4 Manage organizational plan**

- Develop change management process
- Communicate benefits

##### **1.5 Communicate with stake holders**

- Provide management reports

Inform staff  
Coordinate with operations

### **1.6 Manage environmental-health-safety risk**

Support community EHS goals  
Support security goals  
Conform to applicable regulations  
Provide EHS training

## **2.0 Manufacturing Process Reliability**

This subject area relates maintenance and reliability activities to the manufacturing process of the organization to ensure that maintenance and reliability activities improve the manufacturing process.

### **2.1 Understand the applicable processes**

Document process flow  
Understand process parameters  
Understand quality specifications

### **2.2 Apply process improvement techniques**

Identify production losses  
Establish continuous improvement process

### **2.3 Manage effects of change to processes and equipment**

Establish change protocol  
Update documentation  
Update procedures

### **2.4 Maintain processes in accordance with applicable standards and regulations**

Understand industry standards  
Understand regulatory requirements  
Ensure compliance

## **3.0 Equipment Reliability**

This subject area describes two kinds of activities that apply to the equipment and processes for which the maintenance and reliability professional is accountable. First are those activities used to assess the current capabilities of the equipment and processes in terms of their reliability, availability, maintainability, and criticality. Second are the activities used to select and apply the most appropriate maintenance practices, so that the equipment and processes continue to deliver their intended capabilities in the safest and most cost-effective manner.

### **3.1 Determine equipment reliability expectations**

- Identify reliability goals
- Identify process expectations

### **3.2 Evaluate equipment reliability and identify improvement opportunities**

- Measure and track performance
- Determine best demonstrated performance
- Analyze gaps

### **3.3 Establish a strategic plan to assure reliability of existing equipment**

- Identify appropriate analysis techniques
- Develop maintenance strategy and tactics

### **3.4 Establish a strategic plan to assure reliability of new equipment**

- Establish reliability specifications
- Establish acceptance criteria
- Obtain complete documentation

### **3.5 Cost-justify selected plans for implementation**

- Conduct cost benefit analysis
- Communicate benefits
- Obtain approval

### **3.6 Implement selected plans to assure equipment reliability**

- Apply reliability strategies
- Establish organization structure
- Provide resources

### **3.7 Review reliability of equipment and adjust reliability strategy**

- Assess key performance indicators
- Analysis deviations
- Identify relevant best practices
- Implement continuous improvement

## **4.0 Organization & Leadership**

This subject area describes processes for assuring that the maintenance and reliability staff is the most qualified and best assigned to achieve the maintenance and reliability organization goals.

### **4.1 Determine organizational requirements**

- Review strategic plan
- Determine required skills
- Determine required staffing levels

### **4.2 Analyze organizational capability**

- Inventory staff skills
- Determine performance gaps

#### **4.3 Develop the organization structure**

- Establish reporting channels
- Determine roles
- Determine responsibilities
- Manage reorganization

#### **4.4 Develop personnel**

- Provide training
- Obtain needed expertise
- Delineate career paths

#### **4.5 Lead and manage people**

- Develop leadership skills
- Assess performance
- Promote cooperative work environment
- Facilitate communication

### **5.0 Work Management**

This subject area focuses on the skills used to get the maintenance and reliability work done. It includes planning and scheduling activities, quality assurance of maintenance activities, stores and inventory management.

#### **5.1 Identify, validate, and approve work**

- Establish work identification processes
- Select and approve viable work

#### **5.2 Prioritize work**

- Develop formal prioritizing system
- Implement formal prioritizing system

#### **5.3 Plan work**

- Develop job package
- Including scope and procedures
- Including materials and tools
- Including testing

#### **5.4 Schedule work**

- Develop scheduling process
- Produce work schedule
- Balance resources
- Monitor backlog

Manage break-in work  
Coordinate equipment access

#### **5.5 Execute work**

Manage labor  
Manage material and services  
Control productivity  
Ensure EHS compliance

#### **5.6 Document work**

Create post work document process  
Record failure events and failure modes

#### **5.7 Analyze work and follow-up**

Compare actual work with plan  
Identify variances

#### **5.8 Measure work management performance**

Establish performance indicators  
Report schedule compliance and rework

#### **5.9 Plan and execute projects**

Define scope  
Estimate project and life cycle costs  
Apply critical path methods  
Track progress  
Coordinate staffing

#### **5.10 Use information technologies effectively**

Leverage capabilities of data historian  
Process control systems  
Condition monitoring software  
EAM,CMMS systems functionality

#### **5.11 Manage resources and materials**

Control materials inventory  
Manage spares and equipment  
Establish MRO procurement process  
Manage contractors

The SMRP Maintenance and Reliability Knowledge Committee has published the *Guide to the Maintenance and Reliability Body of Knowledge*. This publication includes additional details regarding the Maintenance and Reliability Body of Knowledge and is recommended reading in preparation for the CMRP exam. The guide can be purchased at the SMRP on-line store at [www.SMRP.org](http://www.SMRP.org).

## **IV. Re-certification**

### **A. Re-certification Purpose, Philosophy and Requirements**

Re-certification assures the public that the Certificant is adhering to the SMRPCO Code of Ethics, and Policies and Procedures concerning re-certification.

#### **a) Philosophy of the CMRP Recertification Program**

(i) Re-certification is defined as a process designed to facilitate continued competence including ethics and practice in the M & R profession through participation in a learning process that enhances the Certificant's knowledge, skills and abilities.

(ii) Upholding high standards of ethical and generally accepted maintenance and reliability practices is the foundation of certification.

(iii) Certificants need to continue to learn throughout their professional lives to remain up-to-date in their areas of work.

(iv) Maintaining "hands-on" experience in the M & R profession is essential to maintaining skills.

(v) Learning occurs in multiple ways beyond the formal educational setting and includes learning through professional and life experiences.

(vi) Self-assessment can be a valuable strategy for identifying some of the Certificant's needs, but is not mandatory.

#### **b) Notification and Certificant Responsibility**

Each Certificant will be notified by email on a monthly basis starting one year out and via surface mail one time in that year. It is the responsibility of each Certificant to notify the SMRPCO office of address and name changes in writing to be aware of the expiration date of their certification, and to know when to apply for recertification. A copy of the current verification form may be downloaded from the SMRP/SMRPCO website, [www.SMRP.org](http://www.SMRP.org) at any time following initial certification. A copy is also attached as an Appendix to this guide.

#### **c) Requirements for Recertification**

(i) Certificants must meet recertification requirements during the current three (3) year certification cycle to retain certified status for each subsequent three (3) year cycle. This requires ongoing personal and professional development in the area of M & R profession. The process is also designed to facilitate and recognize contributions to the profession. Recertification candidates must strictly comply with all requirements contained in the recertification

(ii) Individuals can recertify under the recertification program which requires 50 recertification credits (e.g., 1 hour = 1 credit) from a combination 2 or more activities (Options) described below.

- Option 1 – Continuing professional education in areas relevant to the five (5) skill sets described in the Body of Knowledge (BoK) – Actual hours spent in the classroom are counted.
- Option 2 - Complete educational workshops or seminars relevant to subject areas in the BoK – Actual hours spent in the workshop or seminar
- Option 3 – Participate as an active member of an SMRP or SMRPCO Board or Committee – Actual hours spent in such meeting activity.
- Option 4 – Attend annual/executive/chapter meetings at organizations relevant to subject areas of the BoK – (e.g., SMRP, ASQC, ASNT, CSNDT, NGLI, CMVA, STLE, IIE, IMC, etc.,) - Actual hours spent in such activities
- Option 5 – Attend Conferences relevant to the subject areas in the BoK – (e.g., SMRP, ASQC, ASNT, CSNDT, NGLI, CMVA, STLE, IIE, IMC, RCM, PdM Vendor Sponsored Conferences etc.,) - Actual hours spent in conference sessions up to six hours for each day of attendance.
- Option 6 – Give presentations at conference or seminar relevant to subject areas in the BoK. Up to 40 hours to develop and deliver a paper.
- Option 7 – Publish articles or papers in publications to subject areas of the BoK – 40 hours for writing an article
- Option 8 - Author a book or a significant chapter of a book relevant to subject areas in the BoK – Actual hours spent writing the book
- Option 9 - Provide instruction for a course or workshop relevant to subject areas in the BoK – 3 hours for development and delivery for each classroom hour ( i.e., 6 hour course = 18 hours)
- Option 10 – Participate in development of questions for the CMRP Exam - 8 hours per question submitted or worked on.
- Option 11 – Other activity or learning experience in subject areas of the BoK - Submit hours for approval (by SMRPCO Certification Committee).

**d) Certificant Preparation for Audit of Recertification Claims**

Although the SMRPCO’s recertification program is conducted on an honor system of reporting, measures need to be in place to verify the accuracy of reporting. The audit process requires five (5)

percent of applicants to furnish additional documentation that supports compliance with recertification requirements. Examples are given in paragraphs **IV.A.e)** through **o)** below of the type of documentation that is acceptable. It behooves candidates to collect and retain such documentation as the requirements for recertification are met so as to enable prompt response when requested. Failure to respond in timely fashion (to be specified in the request for verification) may be grounds for denying recertification. This obligation rests with the certificants who seek recertification.

A computerized log, a logbook, or an appointment book can provide documentation by certificants who are self-employed. Certificants who are contracted by an employer may submit a letter from an employer, conference, chapter, committee or board chairman, workshop or course sponsor on official letterhead verifying the number of hours engaged. The documentation must include the date and length of participation. Conference brochures listing papers given or copies of actual pages containing articles from publications will be accepted. Pay stubs or tax forms are **not** acceptable documentation for work experience hours for recertification.

The SMRPCO recognizes that many certificants are involved in the teaching aspect of the profession. Therefore, Certificants may claim hours for hands-on teaching. Hands-on teaching is defined as imparting of knowledge from teacher of a formal course or workshop facilitator to students or workshop participants of some aspect related to the M & R BoK

The SMRPCO recognizes that many certificants also provide hands-on work as volunteers of one or more professional societies. Therefore, certificants may claim hours for hands-on volunteer service in support of the M & R Profession.

**e) Continuing Education (Option 1)**

Continuing professional education hours must meet the following definition:

- Learning experiences in a formal school setting that are designed to facilitate continued or improved competency, including ethical and legal practice in the M & R Profession through participation in a learning process that enhances the Certificant's knowledge, skills and abilities in the profession. Audited courses are not awarded recertification credit hours. A certificate of completion or other document attesting to the Certificant's presence at

such school should be held for verification in the event of audit. The courses must be completed by dates that are within the current certification cycle and prior to submission of the application for recertification to SMRPCO

**f) Complete educational workshops or seminars relevant to subject areas in the BoK (Option 2)**

In order to meet the requirements for attaining recertification credit hours through this option, the following criteria and conditions must be met:

- Workshops and seminars must have been formally organized and scheduled in advance by a competent provider of such services and completed within the current three (3) year cycle of the certificants and prior to submission of the application for recertification to SMRPCO.
- Recertification credits hours may be claimed based on hours actually spent in the seminar or workshop.
- A certificate of completion or other documentation attesting to the Certificant's presence at such event should be held for verification in the event of audit.

**g) Participate as an active member of a SMRP or SMRPCO Board or Committee (Option 3)**

In order to meet the requirements for attaining recertification credit hours through this option, the following criteria and conditions must be met:

- Must be satisfactorily completed within the current three (3) year certification cycle and prior to submission of the recertification application to the SMRPCO.
- Name must appear in the minutes of any activity of SMRP or SMRPCO in which the Certificant participates.
- Copies of such minutes should be retained by the certificants for presentation in the event of audit.
  - (i) Must have served at least one year in the position
- Actual hours spent working on activities may be claimed for re-certification credit

**h) Attend annual/executive/chapter meetings relevant to subject areas of the M & R BoK (Option 4)**

In order to meet the requirements for attaining recertification credits through this option, the following criteria and conditions must be met:

- Must be satisfactorily completed within the current three (3) year certification cycle and prior to submission of the recertification application to SMRPCO.
- Name must appear in the minutes or attendance list of any activity in which the Certificant participates.
- Copies of such minutes or attendance list should be retained by the certificants for presentation in the event of audit.

**i) Attend conferences relevant to the subject areas of the BoK (Option 5)**

In order to meet the requirements for attaining recertification credits through this option, the following criteria and conditions must be met:

- Attendance must be completed within the current three (3) year recertification cycle and prior to submission of the recertification application to SMRPCO.
- Name must appear in the attendance list of any activity in which the Certificant participates.
- Copies of receipt for fees paid for conference and/or attendance list marked to show the Certificant's name should be retained by the certificants for presentation in the event of audit
- Six (6) hours credit may be claimed for each day of attendance.

**j) Give presentation at a conference or seminar relevant to subject areas of the BoK (Option 6)**

In order to meet the requirements for attaining recertification credits through this option, the following criteria and conditions must be met:

- Presentations may be at a conference, workshop or seminar of any organization that supports the M & R Profession.
- Must be pertinent, current and applicable to the scope of practice of the M & R Profession.
- The presentation must be at least 40 minutes in length.
- Presentation cannot be part of a panel.
- Copy of event program, workshop or seminar marked to show the Certificant's contribution to it should be retained by the Certificant for presentation in the event of audit. It must also show that the presentation was made during the current three (3) year certification cycle and before submission of the application for re-verification.

**k) Publish articles or papers in publications relevant to the subject area of the BoK (Option 7)**

In order to meet the requirements for attaining recertification credit hours through this option, the following criteria and conditions must be met.

- The article or paper must appear in a recognized periodical publication aimed at members of the M & R Profession
- The article or paper must have been published or accepted for publication within the current three (3) year certification cycle and prior to submission of the application for recertification to SMRPCO.
- A copy of the article or paper with the title page or table of contents should be retained by the certificants for presentation in the event of audit. In the event publication has not yet occurred, a letter of acceptance from the publication may be submitted that indicates the date the article will be published.
- Not to exceed forty (40) hours for writing the article.

**l) Author a book or significant chapter of a book relevant to the subject areas of the BoK (Option 8)**

In order to meet the requirements for attaining recertification credits through this option, the following criteria and conditions must be met:

- The book or significant chapter must relate directly to the practice of the M & R Profession
- Must meet one or more of the following criteria:
  - (i) Contributes to the understanding of the value of use of some M & R technique, methodology or skill.
  - (ii) Relates to the practice in the M & R Profession:
    - (a) Contributes to understanding of the profession and practice of Maintenance and Reliability
    - (b) Research or case studies on M & R practices
    - (c) Statistical research – such as trends and growth of the M & R Profession.
- The Certificant must be a principal author or contributor of a chapter of a book.
- The book must have been published or accepted for publication during the certificants current three (3) year certification period and prior to the submission of the application for recertification.

- Actual hours spent writing may be claimed, in conjunction with hours in any other option for re-certification.
- A copy of the book cover, title page and/or page upon which the ISBN data book title and author and contributors names appear may be submitted to SMRPCO for verification in the event of audit. For a book accepted for publication but not yet in print, copy of a letter of acceptance from the publisher may be submitted that includes the date the book was/will be published.

**m) Provide instruction for a course/workshop relevant to the subject areas of the BoK (Option 9)**

In order to meet the requirements for attaining re-certification credit hours through this option, the following criteria and conditions must be met:

- A course or workshop that qualifies for recertification credit must relate to the practice of M & R Profession and have been conducted within the re-certification cycle of the Certificant.
- The Certificant must be the primary instructor, co-instructor, workshop facilitator or co-facilitator.
- Course or workshop must have been formally scheduled, conducted and documented on behalf of participants within the current three (3) year certification cycle and before submission of the application for recertification.
- Certificants may claim 3 hours for development and delivery of each classroom or workshop hour (e.g., 6 hours in class or workshop = 18 hours).
- Certificants should retain and may submit any formal documentation concerning having scheduled, conducted or completed the course or workshop, in the event of audit.

**n) Participate in the development of questions for the CMRP exam (Option 10)**

The following requirements must be met in order for the Certificant to be awarded recertification credit hours under this option:

- The CMRP Question Data bank must contain the name of the Certificant as an originator and date entered into the bank of any questions submitted that have been accepted as candidate questions and claimed for recertification credit. The dates must fall within the Certificant's current three (3) year certification cycle and prior to submission of the application for recertification.

- The Exam Director, who maintains the Exam Data bank, must verify that the Certificant has been given credit for questions accepted as candidate questions.
- Certificants will be given eight (8) hours credit for each candidate question in the bank accepted within the Certificant's re-certification cycle.

**o) Other activity or learning experience related to subject areas in the BoK (Option 11)**

The following requirements must be met in order for the Certificant to be awarded recertification credit hours under this option:

- The activity or learning experience that qualifies for recertification credit hours must relate to the practice of M & R Profession and have been conducted within the current certification cycle of the Certificant and prior to the submission of the application for recertification.
- The certificants **must** submit supporting documentation with the completed for Application for Recertification Form consideration of the hours claimed.
- The SMRPCO Staff must gain the approval of the Certification Committee Chairperson to give credit for the hours claimed in each case under this option.

**p) Application Process**

Within the period from six (6) months to one (1) year before the end of their current certification cycle, applicants may submit a completed Application for Recertification form along with a non-refundable fee. The SMRPCO staff will review each application for re-certification to determine whether the applicant has met the re-certification requirements. SMRPCO staff will contact the applicant if further information is needed and a deadline will be given for submitting the additional materials. If the application is incomplete, the applicant will receive a letter specifically detailing the items that are missing. He/she will have up to 90 days from the date of the expiration of their certification to submit the missing items. If the applicant does not submit the missing items within this period, the SMRPCO will send a second letter informing the applicant that the applicant's certification status has expired. The applicant's certification status will also be terminated. If the Certificant requests to cancel the application within the period after submittal up to 90 days of certification expiration, the application and documentation will be returned and the Certificant will forfeit all fees.

**q) Auditing Process**

As stated in paragraph **IV.A.d**, above, SMRPCO's re-certification program is conducted on an honor system of reporting. However best certification practices specified by the American National Standards Institute, require measures in place to verify the accuracy of reporting. Therefore, each year the SMRPCO randomly selects certificants who apply for re-certification to be audited. The audit process currently requires five (5) percent of applicants to further verify the claims that have been submitted to the recertification committee. Verification may be requested as far back as the beginning of the latest certification cycle during which the Certificant has applied for re-certification. Certificants will be requested to submit additional documentation within 60 days. Failure to provide documentation will result in recertification being denied. Once the additional documentation is received, it will be reviewed by the Certification and Education Director and if acceptable, placed in the Certificant's file at SMRPCO Headquarters. If the documentation does not fulfill the requirements as specified in paragraphs **IV.A.e**) through **o**) above or is not received within the time frame specified, the applicant will be notified of the problem and provided with a second opportunity and a 30 day deadline to comply. A separate "Recertification Audit File" shall be kept by the Certification and Education Director indicating which applicants' requests were subjected to audit, significant dates (of request for documentation, its receipt and the results).

**r) Actions Taken Regarding Re-certification Applications**

Once an application has been reviewed, the following actions can be taken:

- **Approved** - When the application has been reviewed and it is determined that all requirements for recertification have been met, the application will be approved. Upon approval, a certificate for another three (3) year period will be issued to the applicant within 30 days.
- **Deferred** - If a recertification application is deferred (e.g., because it was chosen for audit), the specific reason(s) for that action will be made available to the Certificant in writing. Certificants who have their recertification deferred will be given the opportunity to submit additional requested materials.
- **Denied** - If a Certificant has not met the requirements for recertification, the application will be denied. In addition, should it be determined that the applicant has provided false or misleading information when applying for recertification, the Chairperson of the Certification

Committee may deny recertification and begin disciplinary proceedings in accordance with the SMRPCO's established Rules and Procedures Regarding Ethical and Professional Complaints..

**s) Appeals Process**

A Certificant who disagrees with a ruling regarding their specific re-certification status may ask for review by the Certification Committee members who did not review the initial application. This must be accomplished within 30 days of the initial ruling and the request must be made in writing (including e-mail) to the Certification Committee Chair along with reasons for requesting the appeal stating the reasons for the disagreement.

If the Certificant does not agree with the subsequent ruling, the applicant may appeal that decision in writing to the Executive Committee of SMRPCO within 30 days. The Executive Committee of SMRPCO has the final authority in ruling on all appeals.

Communications sent to the applicants during the appeals process will include instructions for or have attached a means to substantiate proof of response to an appeal request.

**t) Extension Requests**

An extension of the recertification deadline, for extenuating circumstances, may be granted for up to six months beyond the expiration date. The Certificant must submit the following information in writing before the expiration date: a statement of the extenuating circumstances, the number of completed recertification credits, the number of work hours completed and a detailed plan stating how all requirements will be fulfilled by the requested extended deadline. The Certification Committee Chair reserves the right to modify the extension. If an extension is granted, the original expiration date will remain constant. During this extension period, the individual is not certified, cannot claim to be, nor use the CMRP or other credential issued by SMRPCO. Should re-certification ultimately be granted, the original expiration date shall be the date of the beginning of the new certification cycle.

**u) Waiver of Recertification Requirement**

(i) The Recertification requirement may be temporarily waived by the Certification Committee under either of the following circumstances:

- The individual has experienced catastrophic health or medical problems or has been caring for someone with catastrophic health or medical problems
- The individual has been called to active military duty.

(ii) The Certification Committee will review all requests to waive the recertification requirements meeting the criteria above, but all requests must be in writing.

(iii) If the Certification Committee approves the Recertification Waiver request, the individual must meet requirements for recertification when either of the following occurs:

- When the catastrophic health or medical issue has been resolved
- The individual has returned from active military duty

(iv) Once the conditions upon which the recertification waiver was approved no longer exist, the individual must complete the recertification process in the time that the recertification was required prior to the request for the waiver.

- As an example, if an individual's recertification is due within three months and the individual's request for a recertification waiver is approved, the requirement to recertify is temporarily suspended. When the relevant conditions no longer exist, the individual must notify SMRPCO and the individual will have three months to complete the recertification process.

## **B. Inactive Status**

Inactive status can be granted to candidates on a case-by-case basis for special circumstances. A Certificant's request for inactive status will be reviewed and granted at the discretion of the Certification Committee. Examples of conditions that might necessitate inactive status include: pregnancy, illness, injury, military duties or personal hardship. An inactive status may be granted to a Certificant for up to a maximum of three years. During this time, the individual is not certified, cannot claim to be, nor use the CMRP or other credential issued by SMRPCO. However, any recertification credit hours taken during this period will count toward recertification. Once an applicant applies to reactivate their status, the Certification Committee will determine the length of time that the applicant has to meet the recertification requirements. If the inactive status goes beyond three years after the expiration date of the original certification or subsequent recertification, the individual's record will be annotated as certification having expired. If within this three year time frame, the individual desires to recertify, pay current recertification fee, and meet all current recertification requirements with appropriate documentation. Furthermore, the original expiration date will remain valid. If nothing has occurred within those three years, the individual's record will be identified in the SMRPCO's files as not certified.

## **C. Lapsed Status**

Certification will enter "lapsed" status for up to three months (90 days) after the expiration date of the original certification or subsequent recertification period. If within this time frame the lapsed Certificant wishes to recertify, he/she must pay the current recertification fee and meet all current recertification requirements

with appropriate documentation. The Certificant's original date of expiration will remain valid as the starting point for the new certification period when the new certificate is issued. If the individual who's certification has lapsed takes no action within the 90 day time frame, that person's record will be annotated in the SMRPCO's files as not being certified and, if recognition is authorized, the listing will be removed from the SMRP website. If at a future time the formerly certified applicant wishes to become certified, they must register as a candidate, meet all eligibility requirements, and successfully complete a current form of the certification examination.

**Persons Responsible (by Title) for maintenance and explaining the contents of this document: Examination Director and Certification and Education Director (Jointly)**

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## APPENDIX A

### Sample Examination Questions

1. Which one of the following is generally true?
  - a. Construction contractors are usually equally skilled at performing all maintenance tasks
  - b. Maintenance is often reduced through project designs that provide in-place spares for all rotating equipment and heat exchangers
  - c. Reliability Centered Maintenance can be applied on capital projects in the pre-construction stage to determine the maintenance plan
  - d. Most mechanics can easily alternate between doing capital project work and doing equipment diagnosis and repair work
  
2. What is the best criterion for changing a known and controlled variable to meet a new customer requirement?
  - a. Engineering analysis
  - b. Operator and maintainer experience
  - c. Senior management directive
  - d. Reliability and maintainability analysis
  
3. Weibull (life data) analysis is primarily used for:
  - a. Maintainability analysis
  - b. Probability of failure determination
  - c. Life-cycle cost analysis
  - d. On time ratio calculations
  
4. The air supply to a pneumatic drill stamping center sometimes fails to meet requirements which lead to costly process interruptions. Three solutions have been proposed;
  - a) buy a larger new air compressor for \$40,000.
  - b) Overhaul the existing compressor for \$10,000;
  - c) Investigate the performance of the current air supply system.
  - d) Slow down the process to meet compressor ability
  
5. If a machine is run for 500 hours and five failures are observed during this period, what is the Mean Time Between Failure?
  - a. 500 hours
  - b. 0.01 hours
  - c. 2500 hours
  - d. 100 hours
  
6. Which of the following most effectively makes up the members of a Manufacturing Team?
  - a. Sales/Customer/Production/Supplier/Senior Management
  - b. Maintenance/Engineering/Production/Human Resources
  - c. Production/Maintenance/Supplier/Engineering
  - d. Senior Management/Production/Human Resources
  
7. What is the most important purpose of performing risk evaluations?
  - a. To determine what level of response is cost justified
  - b. To clearly define activities required to contain risks
  - c. To identify what events may have major impact on the business
  - d. To assure compliance with company policies

8. Of the following, what is the best method for measuring employee skills and training?
- a. Maintain a training and qualification database
  - b. Ask employees to keep a training notebook
  - c. Keep records of all formal training courses taken
  - d. Have employees complete annual self-evaluations
9. When training maintenance workers, it is best to first:
- a. List all the tasks the workers need to perform
  - b. Check the budget to set how much to spend per worker
  - c. Review the list of classes already taken by the workers
  - d. Give classes to all workers on basic skills
10. What relationship should Maintenance and Reliability Teams have with customers and suppliers for optimum effectiveness?
- a. Purchasing should be the only communicators with suppliers
  - b. Supervision should be the only communicators with customers and suppliers
  - c. Team members should be involved in communicating with customers and suppliers
  - d. Sales should be the only department communicating with customers

11. Which of the following metrics definitions is not accurate?
- Uptime - % of time you run producing quality product at design rate
  - Schedule compliance - how often mechanics are pulled off their current work to another task
  - MTBF - a measure or indicator of equipment life expectancy
  - Backlog - how long it takes to fix broken equipment
12. Which of the following does not support people development?
- Providing feedback only when asked
  - Defining result areas, goals, and measurements
  - Coaching, feedback, and encouragement
  - Defining training and skills goals
13. From the following list, which is not a critical structural element of a strategic plan for maintenance and reliability?
- Current levels of performance
  - Benefits available through implementation
  - Historical direction of the business
  - Vision of the future state
14. Which performance result best shows a maintenance and reliability manager that the scheduled maintenance activities being implemented are effective?
- Hours spent on unscheduled maintenance have decreased
  - Maintenance cost per unit of production has decreased
  - Total annual maintenance cost has decreased
  - Production rate has increased
15. When the time period between the testing which detects a failure, for failures with significant economic consequences, and when life expectancy is highly variable, a good approach is:
- More frequent periodic predictive testing
  - Structured preventive maintenance
  - On-line condition monitoring
  - Time based rebuild or change out

Item	Key
1	C
2	A
3	B
4	C
5	D
6	C
7	A
8	A
9	A
10	C
11	D
12	A
13	C
14	A
15	C