NORTH CAROLINA

AMERICAN WATER WORKS ASSOCIATION

AND

WATER ENVIRONMENT ASSOCIATION

MAINTENANCE TECHNOLOGIST
CERTIFICATION PROGRAM

POLICY MANUAL

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NC AWWA-WEA

MAINTENANCE TECHNOLOGIST CERTIFICATION PROGRAM

POLICY MANUAL

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NC AWWA-WEA

1.0 Introduction

1.1 Purpose

This document outlines the policies of the North Carolina American Water Works Association Water Environment Association - Water Environment Association (NC AWWA-WEA) Maintenance Technologist Certification Program.

1.2 Overview

The Maintenance Technologist Certification Program is a voluntary certification program administered by the NC AWWA-WEA. NC AWWA-WEA shall use standardized exams for the Program for Plant Maintenance Technologist Certifications of Class I, Class II, Class III and Class IV provided by a Third Party Test Provider. NC AWWA-WEA will comply with the standards governing the use of exams provided by the Third Party Test Provider. It is intended that the Maintenance Technologist Certification Program shall consist of a NC AWWA-WEA maintenance school and examination for each classification level; both elements of the Maintenance Technologist Certification Program (School and Examination) shall be administered by the Plant Operations & Maintenance Committee (PO&MC) under the authority of the NC AWWA-WEA Board of Trustees.

2.0 Program Administration

2.1 Oversight

Oversight of the Maintenance Technologist Certification Program will be provided through the PO&MC’s Policy Subcommittee. The NC AWWA-WEA Board of Trustees reserves the right to revise, change and/or interpret the Policies, Rules and Regulations of the Maintenance Technologist Certification Program and Schools at its discretion based on recommendations as made by the Plant Operations & Maintenance Committee, and its Subcommittee(s).

2.2 Organization

2.2.1 Maintenance Program Subcommittee

The PO&MC Chair shall appoint the Policy Subcommittee members. The PO&MC Vice-Chair shall serve as the Chair of the Policy Subcommittee. The Subcommittee shall consist of at least five voting members with terms such that no more than three-fifths of the members of the Subcommittee are replaced in any one year. Each Subcommittee member will serve a term of three years. Members are eligible for reappointment. The subcommittee chair shall regularly report to the PO&MC. A quorum (consisting of at least 60%) of official members should be present to conduct a meeting. Any person considered for service on the Subcommittee shall have a minimum of one year service on the PO&MC.

The Policy Subcommittee shall consist of representatives of the Subcommittees and Association members responsible for the development, execution, oversight and administration of the Maintenance Technologist Schools and Certification Examination. The Chair of the PO&MC shall appoint the following representatives to this subcommittee:
1. PO&MC Chair
2. PO&MC Vice-Chair
3. PO&MC Curriculum Subcommittee Chair
4. PO&MC Instructor Support Subcommittee Chair
5. PO&MC Representative to the Board of Trustees

The PO&MC Chair may appoint Subcommittee Advisors to assist the Policy Subcommittee. Subcommittee Advisors may be recommended by any voting member of the Policy Subcommittee.

Additional appointments may be made to the Policy Subcommittee by the PO&MC Chair based on recommendations by the Policy Subcommittee Chair and/or Board of Trustees.

2.2.2 Application Reviewers

Applications for the Maintenance Technologist School and Examination are received by the NC AWWA-WEA, and then reviewed and approved by two or more members of the Policy Subcommittee. Applicants shall be notified by the NC AWWA-WEA of the status of its application. In the case of rejected applications, appeals are reviewed by the NC AWWA-WEA Maintenance Technician Certification Program Appeals Board, and their decision shall be final.

2.2.3 School Instructors

The PO&MC shall arrange for and approve maintenance school instructors. The maintenance instructors must meet the following basic criteria:

1. Instructors will conduct classroom training in theory and practical application of equipment repair, troubleshooting, and maintenance of electrical, mechanical, electronic equipment, components, and systems.
2. Instructors should have 5-10 years of progressive experience in water/wastewater and/or plant maintenance or other comparable work experience.
3. Operations certification is preferred.

2.2.4 Exam Proctors

Exam proctors shall be authorized by the Third Party Test Provider. The Policy Subcommittee Chair, PO&MC Chair or Vice-Chair shall be designated as the Program Coordinator and point of contact to the Third Party Test Providers for administration of the certification program. More than one Coordinator may be named but the primary Program Coordinator shall serve as examination proctor. For electronic examinations, proctors and monitors shall be provided by the exam contractor.

2.2.5 Changes to the Policy

A change to the policy must be sponsored by a motion and a second from subcommittee members and passes by a vote of not less than three members.
NC AWWA-WEA

After a change has been made, it shall be presented to the full PO&MC. Policy changes become effective with the approval of the Board of Trustees.

2.3 Activities and Duties

2.3.1 Third Party Test Provider

The Third Party Test Provider will provide the following services in support of the Program including but not limited to the following:

1. Exam development
2. Individual exam grading
3. Statistical analysis of the entire examination class
4. Evaluating test appeals and making any necessary scoring adjustments
5. Provide examination records to the offices of the NC AWWA-WEA Executive Director

2.3.2 Policy Subcommittee

On behalf of NC AWWA-WEA, the Policy Subcommittee shall have the following primary activities:

1. The Policy Subcommittee Chair shall designate a member of the Policy Subcommittee as the primary Program Coordinator and primary point of contact to the Third Party Test Providers for the administration of the certification program. More than one Coordinator may be named.

2. Development and administration of the certification program

   a. Provide direction and oversight to the PO&MC Curriculum Subcommittee in development and maintenance of curriculums that are consistent with the needs of maintenance professionals, NC AWWA-WEA, and Third Party Test Provider guidelines as to the Knowledge, Skills, abilities and Essential Duties for each certification level.
   b. The Subcommittee shall be responsible for the review of Maintenance Technologist School and Examination applications for compliance with the policies of the Program.
   c. Conduct and proctor certification examinations as per section 2.2.4 of this policy.
   d. Review Reciprocity applications for eligibility.
   e. Develop and administer Maintenance Technologist certification policies for the NC AWWA-WEA.

3. Development and administration of the Maintenance Technologist School

   a. Provide direction and oversight to the PO&MC Instructor Support Subcommittee in the Coordination and conduct of Maintenance Technologist Schools.
   b. Audit Maintenance Technologist School classes to determine that the appropriate material level and content is being taught.
   c. Secure proctors for the administration of the written exams.
2.3.3 NC AWWA-WEA Executive Director and Staff

On behalf of NC AWWA-WEA, the Executive Director and Staff shall have the following primary activities related to the Program:

1. Receive applications, disseminate them to the Policy Subcommittee for review and provide notification of the application acceptability.
2. Maintain records relative to the administration of the maintenance technologist school attendance, payment, and Certification Certificates of Completion in compliance with NC AWWA-WEA Records Retention Policy.
3. Issuance of exam results.
4. Creation and issuance of Certification Certificates of Completion to applicants.
5. Collection of school and exam fees and notification of applicant eligibility.
6. Administration of renewal applications and fee payment.

2.3.4 Maintenance Technologist Certification Program Appeals Board

NC AWWA-WEA Board of Trustees shall convene a Maintenance Technologist Certification Program Appeals Board, whose membership shall comprise the Chairs of the Water and Wastewater Boards of Education and Examiners and the two members of the Board of Trustees representing Water and Wastewater Operators. The Maintenance Technologist Certification Program Appeals Board shall have the following primary activities related to the Program:

1. Review appeals of rejected applications requested by applicants.
2. Review appeals to violations of exam security and rules.

All Maintenance Technologist Certification Program Appeals Board rulings on appeals shall be considered final.

2.4 Financials

A fee schedule for the school, exam, and other fees shall be developed for and approved by the NC AWWA-WEA Board of Trustees.

3.0 Certification

3.1 Levels

3.1.1 Certified Maintenance Technologist Class I

Certified Plant Maintenance Technologist I Certification is designed to demonstrate competency at the entry and basic working level. More specifically, Class I certification implies competence in the knowledge, skills and abilities required to perform the job requirements of an entry level Maintenance Technologist. Eligibility Criteria for Examination Qualification are illustrated in Table 3-1 and described as follows:
1. High school diploma, GED, or equivalent; and
2. Successful completion of an NC AWWA-WEA Class I Maintenance Technologist School, and
3. One year of acceptable maintenance experience. Acceptable maintenance experience and duties for Class I includes lubricating, performing readings, conducting rounds, and performing routine preventive maintenance on equipment or systems.
4. Substitution of education for experience shall be permitted, but shall not exceed fifty percent of the stated maintenance experience requirement for Class I.

<table>
<thead>
<tr>
<th>Table 3-1</th>
<th>ELIGIBILITY &amp; EXPERIENCE DETAILS</th>
<th>CLASS I</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREREQUISITES</td>
<td>1 YEAR TOTAL EXPERIENCE REQUIRED</td>
<td>RELATED</td>
</tr>
<tr>
<td></td>
<td>REQUIRED WATER/WW MAINT.</td>
<td>MAINT. EDUCATION</td>
</tr>
<tr>
<td>None</td>
<td>None</td>
<td>Up to 1.0 Year</td>
</tr>
</tbody>
</table>

### 3.1.2 Certified Maintenance Technologist Class II

Certified Maintenance Technologist II Certification is designed to demonstrate competency at the skilled working level. More specifically, Class II certification implies competence in the knowledge, skills and abilities required to perform the job requirements of a skilled Maintenance Technologist. Eligibility Criteria for Examination Qualification are illustrated in Table 3-2 and described as follows:

1. Hold an active Class I maintenance technologist certificate, and
2. Successful completion of an NC AWWA-WEA Class II Maintenance Technologist School, and
3. A minimum of three years of acceptable maintenance experience in a water or wastewater system. Acceptable, related maintenance experience may be used for the balance of the three year requirement, but in any case such experience shall include a minimum of two years performing Class II duties. Acceptable maintenance experience and duties for Class II include tearing down equipment, performing repairs, installing and reinstalling equipment.
4. Substitution of related education for experience shall be permitted but shall not exceed fifty percent of the stated maintenance experience requirement for Class II.
Certified Maintenance Technologist III Certification is designed to demonstrate competency at the advanced skilled working level. More specifically, Class III certification implies competence in the knowledge, skills and abilities required to perform the job requirements of an advanced skilled working level Maintenance Technologist. Eligibility Criteria for Examination Qualification are illustrated in Table 3-3 and described as follows:

1. Hold an active Class II maintenance technologist certificate, and
2. Successful completion of an NC AWWA-WEA Class III Maintenance Technologist School, and
3. A minimum of five years of acceptable maintenance experience, including a minimum of one year of acceptable maintenance experience in water or wastewater systems. Acceptable, related maintenance experience may be used for the balance of the five year requirement, but in any case such experience shall include a minimum of two years performing Class III duties. Acceptable maintenance experience and duties for Class III include inspecting or supervising Class I and II duties, performing predictive maintenance tasks and analyzing the results of such tasks.
4. Substitution of related education for experience shall be permitted but shall not exceed fifty percent of the stated maintenance experience requirement for Class III.
3.1.4 Certified Maintenance Technologist Class IV

Certified Maintenance Technologist IV Certification is designed to demonstrate competency at the Program Manager level whether as a Supervisor or Lead Person. More specifically, Class IV certification implies competence in the knowledge, skills and abilities required to perform the job duties of a supervisory working and management level Maintenance Technologist. Eligibility Criteria for Examination Qualification are illustrated in Table 3-4 and described as follows:

1. Hold an active Class III maintenance technologist certificate, and
2. Successful completion of an NC AWWA-WEA Class IV Maintenance Technologist School, and
3. A minimum of seven years of acceptable maintenance experience, including a minimum of 1.5 years of acceptable maintenance experience in water or wastewater systems. Acceptable, related maintenance experience may be used for the balance of the seven year requirement, but in any case such experience shall include a minimum of two years performing Class III duties and one year of supervising others.

Acceptable maintenance experience and duties for Class IV include: Inspecting and supervising Class I, II and III duties, recommending purchases, developing work and maintenance schedules and evaluating personnel performance. Participate in establishment of goals, objectives, policies and priorities. Preparation and presentation of staff reports and budgets. Design and administration of safety programs.

4. Substitution of related education for experience shall be permitted but shall not exceed fifty percent of the stated maintenance experience requirement for Class IV.

<table>
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<tr>
<th>Table 3-4</th>
<th>ELIGIBILITY &amp; EXPERIENCE DETAILS MAINTENANCE TECHNOLOGIST</th>
<th>CLASS IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREREQUISITES</td>
<td>7 YEARS TOTAL EXPERIENCE REQUIRED</td>
<td>RELATED MAINT. EXPERIENCE</td>
</tr>
<tr>
<td>Candidate must hold a current Class III Maintenance Technologist Certification and complete a Class IV MT School</td>
<td>1.5 Year</td>
<td>Up to 5.5 Yrs.</td>
</tr>
<tr>
<td>Candidate must also have a minimum of 1 year experience supervising others*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Supervisory experience requirement is not intended to disqualify a candidate who has not held a management position. Supervisory experience requirement may be met by a candidate who has satisfactorily demonstrated leadership abilities in roles such as Lead Person, Team Leader, or Project Coordinator in which the candidate has held a position of responsible charge for at least two others.
3.2 Applications

3.2.1 Definitions

1. Work Year: One “work year” is defined as 1800 hours of acceptable maintenance experience. Operations experience is not considered acceptable maintenance experience. (For example, if in your current job, 75% of your time is devoted to operations and 25% to maintenance then only 450 hours may be counted toward certification experience requirements.)

2. Related Education: Acceptable related education shall be any recognized two-year or four-year college or technical degree from an accredited College or University. A copy of an official transcript shall be provided with an application for all post-high school education if eligibility for the examination is based on that education.

3. Related Experience: Related experience may be considered acceptable at each class level which meets the description of Acceptable Maintenance Experience and Duties as described for each Certification level.

3.2.2 Renewal Application

Annual renewal is required for all certificates issued.

1. Renewal shall be required by December 31st of each year, with the first renewal required by December 31st of the year following the date of initial examination for the Grade Level for which the renewal is applicable. (e.g. If the exam was taken September 2009, renewal is due December 31st, 2010.)

2. A minimum of six (6) hours per year of continuing education shall be required for each renewal.
   a. Evidence of completion of the six hours of continuing education must accompany the renewal application.
   b. Documented completion of any training approved by the North Carolina Department of Environment and Natural Resources water OR wastewater continuing education credits shall be acceptable for purposes of demonstrating completion of the continuing education requirements for renewal of Maintenance Technologist Certificates.
   c. While every effort is made by NC AWWA-WEA to remind certificate holders of renewal deadlines for certificates, it is the sole responsibility of the certificate holder to ensure that renewal applications are completed with documentation of continuing education and submitted by the deadline.

3. There shall be a late fee for renewals submitted after the deadline and within the twelve months following the initial renewal deadline.

4. No renewal shall be permitted for certificates with an expiration date more than twelve months prior. Re-examination shall be required to reinstate such certificates.

3.2.3 Submission

1. Application forms and deadlines are to be posted on the NC AWWA-WEA website www.nccwaters.org.

2. Applications may be submitted in person, by mail or by fax such that the application is received by the NC AWWA-WEA office not later than the posted deadline.
3.2.4 Appeals

1. Rejected applications may be appealed by mail or fax to the NC AWWA-WEA offices. The application shall accompany the appeal.
2. Appeals shall be reviewed by the Maintenance Certification Program Appeals Board.
3. An Applicant wishing to appeal a rejected application must state in writing the justification for the appeal, provide factual reasons for the appeal and provide the necessary documentation for consideration.

3.3 Schools and Exams

3.3.1 Schedule and Locations

School/exam schedules and exam sites are determined in advance, and are posted on the NC AWWA-WEA website www.ncsafewater.org. Schedules for Schools will be established at least once each year. Applicants who are eligible for the exam will be mailed a confirmation letter and information packet.

3.3.2 Attendance and Admission

Completion of the appropriate level maintenance school is required for exam admission. Attendance confirmation will be verified at least twice every morning and afternoon session of each day. Students are required to maintain 80% attendance of a maintenance school to qualify for an exam. Certification exam candidates are required to show at least one valid government issued photo identification (State issued photo identification or passport). Only after positive identification has been made by the proctor or exam administrator may a candidate’s exam booklet be distributed. Candidates are not required to show their confirmation letters to enter the exam site.

3.3.3 Accommodations for Those with Physical or Learning Disabilities

In compliance with the Americans with Disabilities Act, reasonable accommodations will be provided for those individuals who provide NC AWWA-WEA with a physician’s certificate, or its equivalent, documenting a physical or psychological disability that may affect the individual’s ability to successfully complete the certification exam. Written requests for reasonable accommodations must accompany applications. Language barriers and lack of familiarity with computers are not covered under ADA laws.

3.3.4 Exam Security

All exams are closed-book. No reference material may be used. No devices capable of either recording images or storing text are allowed in the exam site. Candidates should only bring a photo identification, non-programmable calculator and No.2 lead pencils. Candidates who violate exam site rules may be asked to leave the site and may be disqualified from that exam. Written appeals to violations of exam security and rules may be heard by the NC AWWA-WEA Maintenance Certification Program Appeals Board, and their decision is final.
3.3.5 Exam Design

All certification exams are provided by a THIRD PARTY TEST PROVIDER. The NC AWWA-WEA does not edit or modify THIRD PARTY TEST PARTY exams.

3.3.6 Exam Format

All exams are given in a format determined by THIRD PARTY TEST PROVIDER.

3.3.7 Exam Grading

All exams are scored by the THIRD PARTY TEST PROVIDER. The overall exam score will determine if you pass or fail the exam.

3.3.8 Exam Item Appeals

Candidates who wish to appeal a specific exam item must do so during the exam by completing an Item Appeal form available from the exam proctor. Items appealed will be evaluated by the THIRD PARTY TEST PROVIDER and appropriate adjustments made during the scoring process, not at the exam site.

3.3.9 Result Notification

Exam results are mailed to certificate candidates after the exam date by the NC AWWA-WEA. No results are given by phone, fax or email. All results are confidential and are only released to the certificate candidate. Each candidate, regardless of score, will receive a Diagnostic Profile document through the THIRD PARTY TEST PROVIDER, which will indicate scoring in each Technical Subject Matter Area. This information is provided by THIRD PARTY TEST PROVIDER to assist candidates in further developing their subject matter knowledge for use in certification level exam preparation. Results and certificates for successfully passing examination will be mailed by the NC AWWA-WEA.

A list of all those holding certification as NC AWWA-WEA Certified Maintenance Technologists will be maintained on the NC AWWA-WEA web site. This list will be updated within 60 days following each exam.

3.4 Refunds, Switches, & Substitutions

Please refer to the NC AWWA-WEA for information regarding refunds, switches, and substitutions for Maintenance Schools and attendees.

3.5 Successful School Completion & Certificates of Attendance

3.5.1 Certificates

Successful completion of the Maintenance Technologist School constitutes attendance at a minimum of 80% of the school’s total class hours (not including the exam). Participants who attend 80% of the school, but do not take or do not pass the certification exam will receive a Certificate of Attendance.
This certificate will document attendance for use in demonstrating contact hours for professional growth requirements for certified Water and/or Wastewater Operators, as well as PDHs for Professional Engineers.

Participants who attend 80% of the school AND pass the certification exam will receive a Maintenance Technologist Certificate including their new certification number.

All certificates and/or exam results will be mailed after the certification exams have been graded by THIRD PARTY TEST PROVIDER and the results have been received by NC AWWA-WEA, a process that takes approximately 8-12 weeks.

### 3.5.2 Duplicate Certificates

There is a fee to order duplicate certificates and they cannot be faxed or emailed. Information for requesting a duplicate certificate may be obtained by calling the NC AWWA-WEA office at (919) 784-9030 or downloaded from the Frequently Asked Questions (FAQ) page of www.ncsafeewater.org.

### 3.5.3 Re-Examination

Applicants who fail to achieve a passing score on a Maintenance Technologist exam may be permitted to pay the appropriate re-examination fee and retake the same certification level exam up to two (2) additional times without retaking that level certification school. An applicant MUST attend another appropriate level school prior to retaking an exam after three (3) failures.

Re-examination will only take place during a proctored Maintenance Technologist School exam.

An applicant in the process of retaking an exam may attend a NC AWWA-WEA Maintenance Technologist School, but will not be permitted to sit for the higher certification examination.

### 3.5.4 Renewal

Renewals of valid certificates are required on an annual calendar year basis following the successful completion of the examination. Certifications must be renewed every year by December 31, with the first renewal required by December 31st of the year following the date of initial certification for the Grade Level for which the renewal is applicable (e.g. If the exam was taken September 2009, renewal is due December 31st, 2010).

Renewal is accomplished either by applying for renewal and paying the renewal fee, or by successful completion of the next certification level exam. Re-examination at the level that is being maintained is not necessary for renewal.

Continuing education is required to maintain valid Certificates. Any Continuing education that is approved by NC DENR for water OR wastewater shall be accepted as meeting the requirements for Continuing Education for the purpose of this policy (refer to Section 3.2.2 Renewal Application). A notice will be sent as a reminder that renewal is required; however, timely renewal is the sole responsibility of the certificate holder.
3.5.5 Revocation of Certification

A Maintenance Technologist Certification may be revoked for any of the following reasons:

1. Failure to submit the renewal paperwork or renewal fees, or
2. Failure to submit proof of compliance with the continuing education requirements, or

Appeals to the ruling of the Policy Subcommittee can be made to the Maintenance Technologist Certification Program Appeals Board. Their decision is final.

3.5.6 Reciprocity

A reciprocity certificate of the appropriate type and grade may be issued that meets all other requirements of the rules governing certification.

The application for certification will be used as the application for reciprocity. Application for reciprocity must be submitted and will be considered by the Policy Subcommittee.

3.6 Code of Ethics

The Code of Ethics reflects the standards and behavior that the NC AWWA-WEA certificate holders and applicants expect of each other as they perform their work protecting public health and the environment, and that they affirm the value of holding a NC AWWA-WEA Maintenance Technologist certificate. The Code of Ethics also helps to ensure public confidence in the integrity and service of safe water professionals while performing their assigned duties. Certificate holders and applicants are expected to meet the following standards of professional conduct and ethics:

1. To protect public health, themselves, their co-workers, property, and the environment by performing the knowledge, skills, and abilities of the certificate safely and effectively, and complying with all applicable federal, state and local regulations.
2. To represent themselves truthfully and honestly throughout the entire certification process.
3. To adhere to all test site rules.
4. To refrain from activities that may jeopardize the integrity of the Maintenance Technologist Certification Program.

The application for each exam and for renewal of each certificate shall contain a statement of the individuals’ voluntary adherence to the Code of Ethics. Documented failure to conform to the Code of Ethics shall constitute sufficient reason for revocation of certification.
4.0 Reference Documents

The Maintenance Technologist Certification Program Policy Manual is appended by the following documents which may also be found on the NC AWWA-WEA web site at www.ncsafewater.org.

1. Maintenance Technologist School Needs-to-Know
2. Maintenance Technologist Class Core Competencies
3. Maintenance School Examination Application

5.0 Glossary

Acceptable Maintenance Experience:
Experience of the type and kind described for each level of certification.

Advanced Skilled Working Level:
The demonstrated personal mastery of maintenance tasks and duties required of a skilled maintenance technologist as well as the capacity to lead, instruct, or inspect the work of, other maintenance workers. Advanced Skilled Working Level also implies familiarity with and the ability to perform predictive maintenance tasks and to analyze the results of such tasks.

Conducting Rounds:
The routine monitoring of plant equipment while walking through an area, and may include taking measurements or readings.

Core Competencies:

Diagnostic Profile Document:
Test results report categorized by core competency. The report is very useful in that it shows areas of strength and weakness in the knowledge, skills and abilities required of an individual to meet the requirements of certification. The core competencies are: Preventive Maintenance, Corrective Maintenance, Predictive Maintenance, Equipment Operations, Administrative Duties, Electrical/Instrumentation, Security/Safety Procedures, and Math Skills.

Knowledge, Skills & Abilities (KSA):
A term used to describe the overall level of competency for a maintenance technologist.

Knowledge is information that can be learned from reading, listening to an expert, or keenly observing a situation; often a prerequisite to skill development.

Skill is the capacity to perform a job related action by blending relevant knowledge and physical or perceptual ability.

Ability is the quality of being able to perform; a natural or acquired skill or talent.
Lead Person:
An individual, who plans, organizes, directs or otherwise controls the work of a group that is responsible for a project or task; also used to describe the leader of a maintenance craft.

Maintenance Schedule:
A documented plan that defines maintenance related activities for equipment and facilities with the goal of keeping them in peak operating condition. Parameters such as the type and frequency of maintenance, as well as required skill sets and man-hours to accomplish these activities can be components of such a plan.

Needs to Know (NTK):
A list of subjects that a candidate should have mastered, prior to taking an exam for certification.

Non Programmable Calculator:
A digital calculator that is incapable of either graphing or direct formula entry.

Operations Certification:
Any certification issued by the North Carolina Water Treatment Facility Operators Certification Board or the North Carolina Water Pollution Control System Operators Certification Commission.

PDH:
Professional Development Hour.

Performing Readings:
To record measurements such as temperature, pressure, and amperage with various devices designed to measure specific quantities on varying equipment.

Predictive Maintenance (PDM):
Monitoring wear conditions and equipment operation characteristics for comparison against a predetermined tolerance to predict potential malfunctions or failures. EXAMPLES: Thermography, Vibration Analysis, Oil Analysis, Ultrasonic Analysis, Power Monitoring, Efficiency Testing, Corrosion Monitoring.

Preventive Maintenance (PM):
Regularly scheduled servicing of machinery or other equipment using appropriate tools, tests, and lubricants.

Project Coordinator:
The individual responsible for efficient coordination of tasks and personnel, which often involving multiple crafts, within the scope of a maintenance project. Other duties may include creation/maintenance of a project schedule, processing of project documentation, creating reports on project progress, and resolution of conflicts which threaten the integrity or timeline of the project.

Program Manager:
An individual, who plans, organizes, directs, and controls work of others within defined boundaries in an organization.

Related Maintenance Experience:
Maintenance skills and experience an individual has acquired by performing hands-on work on equipment or systems. It is acknowledged that most of the knowledge, skills and abilities an individual requires to be a competent maintenance technologist in the water/wastewater industry can be learned in other industries. Therefore, a documented work history that includes the experience and duties as described for each certification level shall qualify as Related Maintenance Experience.

Skilled Working Level:
The demonstrated capacity to perform maintenance tasks through a blending of relevant knowledge with physical or perceptual ability.

Supervisor:
A person who is responsible for managing the performance of an employee.

Supervisory Experience:
Experience consistent with acting as a supervisor, managing the performance of subordinate employees.

Team Leader:
The person on a team who has supervisory control, often considered a subject matter expert for accomplishing the task at hand.

Test Proctor:
A person responsible for administering the exam and watching test-takers in an effort to prevent cheating.

Third Party Test Provider:
A professional agency under contract with the NCAWWA to provide testing services for the Maintenance Technologist program.

Voting Member:
A Policy Subcommittee member with the authority to make motions, second motions, and cast a vote to enact changes in the policy.

Water or Wastewater Systems:
Any water or wastewater system classified by either a North Carolina ID number for public water supplies or by a NPDES permit.