

**96<sup>th</sup> Annual Meeting of the  
National Conference on Weights and Measures**

**July 17 – 21, 2011  
Missoula, Montana**

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**Addendum Sheets to the Interim Report of the  
Professional Development Committee**

Reference  
Key Number

**400 INTRODUCTION**

The Professional Development Committee (hereinafter referred to as “Committee”) submits its Interim Report to the National Conference on Weights and Measures. The Report consists of the Interim Report offered in Publication 16, “NCWM Committee Reports,” and this Addendum. Page numbers in tables below refer to pages in Publication 16.

Presented below is a list of voting and information items. Voting items are indicated by the suffice **V** or, if the voting item is part of the Consent calendar, by the suffix **VC**. If the item is informational, it is indicated by the suffix **I**; if the item is withdrawn, it is indicated by the suffix **W**. Items marked with a **D** after the key numbers are developing issues. The developing designation indicates an item has merit; however, the item is returned to the submitter for further development before any action at the national level. The Committee’s Final Report is proposed to be grouped in the following order:

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**Index to Reference Key Items**

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| <b>Reference<br/>Key Number</b> | <b>Title of Item</b>                               | <b>Publication 16 Page No. PDC -</b> |
|---------------------------------|----------------------------------------------------|--------------------------------------|
| <b>400</b>                      | <b>INTRODUCTION.....</b>                           | <b>1</b>                             |
| <b>401</b>                      | <b>EDUCATION .....</b>                             | <b>2</b>                             |
| 401-1                           | I National Certification Program (NCP).....        | 2                                    |
| 401-2                           | I Instructor Improvement.....                      | 7                                    |
| 401-3                           | I Recommended Topics for Conference Training ..... | 9                                    |
| <b>402</b>                      | <b>PROGRAM MANAGEMENT.....</b>                     | <b>10</b>                            |
| 402-1                           | I Safety Awareness.....                            | 10                                   |
| 402-2                           | I PDC Publication.....                             | 11                                   |

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**Appendices**

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|   |                                                         |    |
|---|---------------------------------------------------------|----|
| A | NCWM Curriculum Work Plan.....                          | A1 |
| B | Package Checking Segments (Draft).....                  | B1 |
| C | Converting Technical Content to Training Material ..... | C1 |

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**Voting Items**

Separate vote of the NCWM is being requested on the following items:

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| Reference<br>Key Number | Title of Item | Publication 16 Page No. PDC – |
|-------------------------|---------------|-------------------------------|
|-------------------------|---------------|-------------------------------|

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No voting items.

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**Withdrawn Items**

The following items are withdrawn (W) and require no formal action of the NCWM:

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| Reference<br>Key Number | Title of Item | Publication 16 Page No. PDC – |
|-------------------------|---------------|-------------------------------|
|-------------------------|---------------|-------------------------------|

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No withdrawn items.

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**Informational and Developing Items**

The following items are informational (I) or under development (D) and require no action of the NCWM:

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| Reference<br>Key Number | Title of Item                                      | Publication 16 Page No. PDC – |
|-------------------------|----------------------------------------------------|-------------------------------|
| <b>401</b>              | <b>EDUCATION .....</b>                             | <b>2</b>                      |
| 401-1                   | I National Certification Program (NCP).....        | 2                             |
| 401-2                   | I Instructor Improvement.....                      | 7                             |
| 401-3                   | I Recommended Topics for Conference Training ..... | 9                             |
| <b>402</b>              | <b>PROGRAM MANAGEMENT.....</b>                     | <b>10</b>                     |
| 402-1                   | I Safety Awareness.....                            | 10                            |
| 402-2                   | I PDC Publication.....                             | 11                            |

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**Details of All Items**

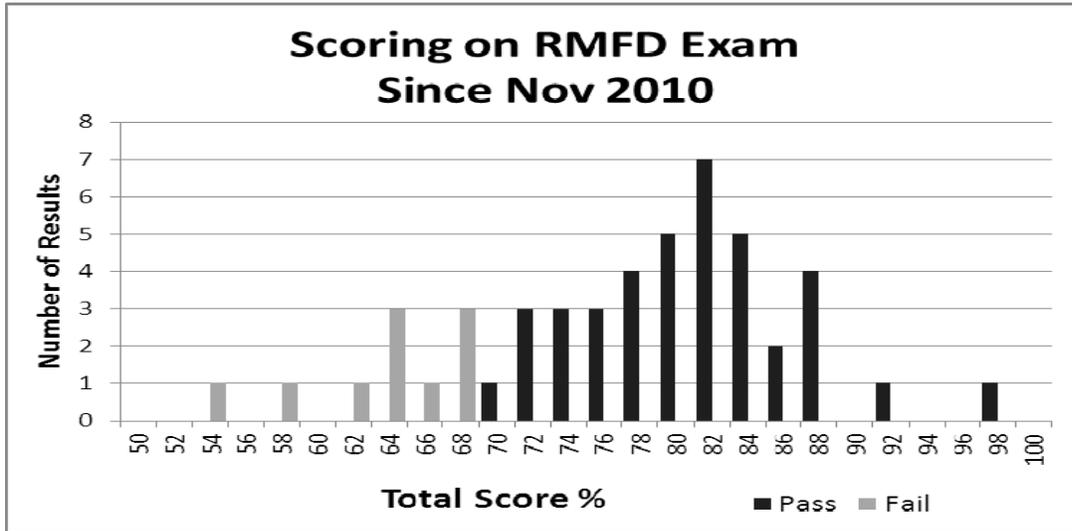
**In Order by Reference Key Number**

**401 EDUCATION**

**401-1 I National Certification Program (NCP)**

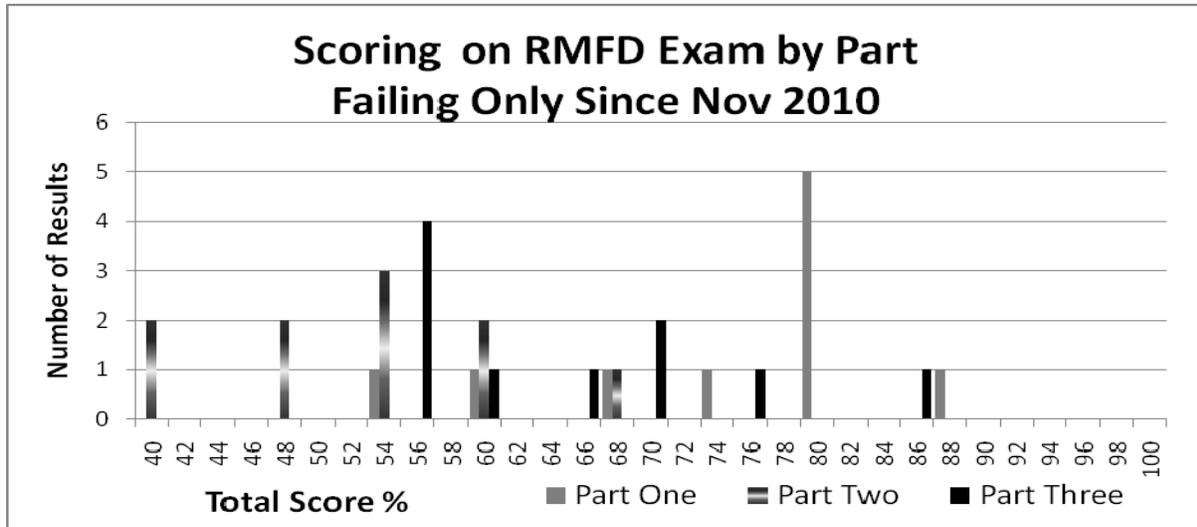
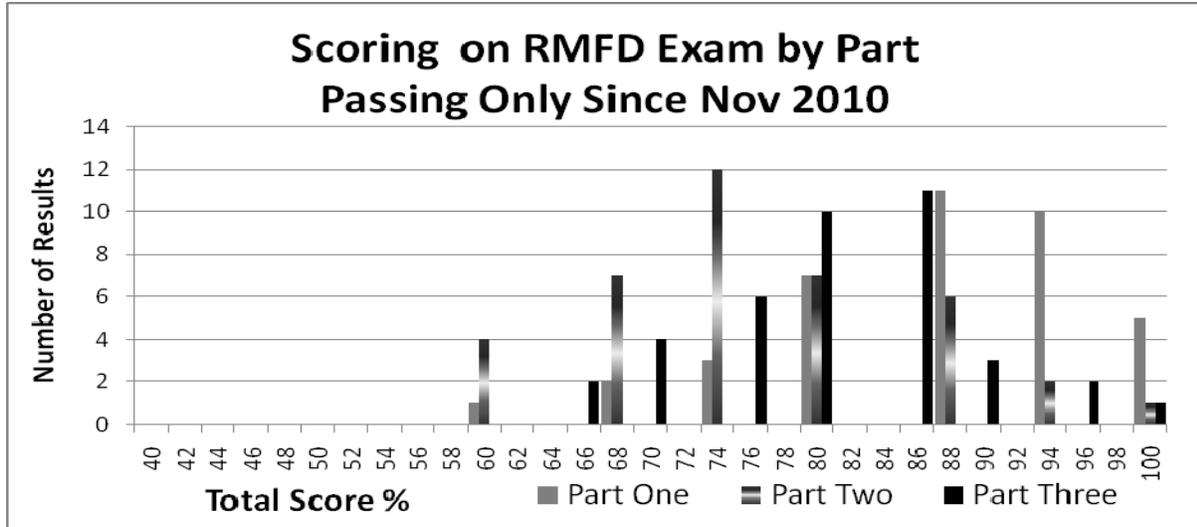
Add new text after the last paragraph on PDC-3:

The Committee received an update on the RMFD Certification exam covering results from November 2010 to July 1, 2011. Since the NCWM Certification Program went active on the Retail Motor Fuel Device exam in November 2010, there have been 49 completed exams. The overall results appear below. The median score for passing candidates was 82% (with 70% minimum score to pass). The high score thus far was 98%. The Committee is pleased to see these results as they support our expectations based on the analysis of the beta exam. Most important we can see the separation between those that passed and those that failed.



The critical role of the certification exam is not to showcase your successful candidates, but rather to separate the “minimally qualified candidate” from those that are not qualified. Our focus has to remain on the 70% dividing line to see if we can see the formation of two distributions; one for the passing candidates and one for the failing candidates. While we only have 10 failing candidates, it does appear that we are getting that separation.

The analysis also looked at scoring on each of the three parts of the exam. The two parallel graphs below present a comparison of the scoring by the passing candidates versus the failing candidates. The Committee sees the clear separation of those two categories in our exam. We see a normal bell curve appearing for the passing candidates but see scoring well below the 70% passing score and wide variation with the failing candidates.



Replace the first paragraph and bullet list on page PDC-5 with the following text:

The Committee has described this work in a number of documents. Carol Hockert, NIST WMD has indicated that the partnership between NCWM, the States and NIST WMD will benefit from consistency in the terms we use in our training/certification programs and that the terms we are using are not consistent with current usage in the education field. Therefore, the Committee has resolved to revise some of the terminology we use in our program. These changes to terminology are listed below:

**Body of Knowledge** (replaces “curriculum”) – refers broadly to the knowledge and skills required to function as a W&M Professional. The term or its acronym “BOK” may refer broadly to the entire scope of knowledge and skills required within the profession or in a more directed manner to any selected subset for which the particular person is responsible. The BOK describes *what* you expect the W&M Professional to achieve as opposed to *how* he/she will achieve it. To make the BOK more manageable in administration of the National Certification Program, it will be subdivided into Modules in a tree-like structure moving from general knowledge and skills to more specific.

**Module** (formerly “curriculum segment”) – refers to a group of related subject materials within the BOK. The module contains the articulated learning objectives for the subject area. Each module can be thought of as a single, self-contained course of study. However a broader course may span multiple modules and refreshers, seminars, etc may include only part of a module or parts of multiple modules. The PDC Committee has

created a standard format to create modules for the NCWM National Certification Program. The Committee has also created the Curriculum Outline and Workplans to help manage the work activities within the program to create the many modules necessary to cover the entire profession.

**Learning Objective** (formerly “outcome” or “milestone”) – refers to the articulation of expectations of performance in measureable terms. Learning objectives are stated using active terms so as to be precise and measureable. There are two types of learning objectives, a Terminal Objective and an Enabling Objective. Terminal learning objectives state broadly the expectation of performance. The enabling objectives state the specific parts or steps required to demonstrate competence. The PDC Committee has developed a guide to writing learning objectives of both parts and this includes the active verbs associated with the cognitive levels in Bloom’s Taxonomy. In training, the instructor will typically choose learning activities to explore each of the enabling objectives in an attempt to reach the terminal objective. In assessment, the questions will typically test for competence in each of enabling objectives to demonstrate that the terminal objective has been met.

**Certification** – refers verification of competence relative to all or part of the body of knowledge for the profession as designated by the PDC Committee for inclusion in a certification exam. The selected body of knowledge using modules is documented in a test description. Each of the modules, or combinations, is given a specific weighting in the design of the test. After obtaining a passing score on the exam the candidate is issued a certificate stating he/she has met the competency standard.

**Curriculum** – refers to the list of Modules that are used to document the Body of Knowledge

**Bloom’s Taxonomy** – refers to a classification of higher levels of cognitive leaning widely used in education in many fields. The levels are knowledge, understanding, application, analysis, integration, and evaluation. The active verbs used in the articulation of learning objectives define the cognitive level. In training, the learning activities are matched to the cognitive level. In assessment, the form of the question is also matched to the cognitive level. The use of Bloom’s Taxonomy is described in detail in the

The Committee has prepared program documents that are available on the NCWM website. These documents will be revised where required to reflect the terminology changes in the near future and updated on the website.

- the Curriculum Outline, which breaks the profession of Weights and Measures into component parts called Modules.
- the Body of Knowledge Model (formerly Core Curriculum Model), which explains how to create Modules to document the learning objectives.
- the Modules developed thus far (formerly Curriculum Segments).
- the Certifications developed thus far (formerly Certification Disciplines)

Add the following text after the first paragraph and bullets on page PDC-6:

With regard to the first bullet above, the Committee is pleased to now have a staff person working for NCWM to coordinate the National Certification Program. Ross Andersen, New York State retired, has been hired on a parttime basis by the Board to coordinate activities within the program in cooperation with the PDC. The following is an excerpt from the NCWM Certification Coordinator contract listing the duties:

- a. Act out the duties defined in this contract, the direction of the NCWM Board of Directors, and the work of the Professional Development Committee (PDC) in the development of examination and certification of weights and measures professionals in the areas of small capacity scales, package checking, and vehicle tank meters and other areas as work progresses through the term of this contract.
- b. Communicate effectively with the NCWM Executive Director, his staff, the PDC and others toward the successful coordination of efforts.
- c. Participate in meetings and work sessions of the PDC when necessary to the development of examinations for certification.

- d. Identify an appropriate number of qualified Subject Matter Experts (SME's) who will serve as volunteers to NCWM in developing certification exam questions, reviewing questions, and improving questions as necessary. Provide assistance and training to SME's in performance of their activities.
- e. Coordinate the efforts of the PDC, SME's and NCWM staff as outlined in Appendix A to this agreement.
- f. Establish deadlines for each phase of the project and communicate those deadlines to volunteer leadership.
- g. Provide curriculum segments, exam question banks, and beta analysis of test results in an expeditious manner to facilitate growth of the National Certification Program.
- h. Provide maintenance analysis of existing exams upon request of the Executive Director.
- i. Provide monthly status reports to the Executive Director on progress on each exam that is under development.

With regard to the second bullet, the Committee has developed a guide for Subject Matter Experts (SME's) to help describe the activities we need them to provide. This document is under final review and will be posted soon on the NCWM website. The Certification Coordinator has enlisted a good number of SME's to begin work on certification exam questions for the Small Capacity Scales Class III and Basic Package Checking certifications. We are also working to expand our list of State Training coordinators which we use to recruit SME's to assist us in the program.

In open hearings the Committee heard comments that local jurisdictions also be asked to provide SME volunteers. The Committee agrees and will consider avenues to reach out to local jurisdictions. If experts from any jurisdiction or business are interested in volunteering, they can contact the Committee Chair through the PDC page on NCWM website.

Add additional text to the first paragraph on page PDC-7:

No feedback was received at the Interim Meeting. Since then, the Committee has received comments from a state police agency in Oregon asking if the NCWM could create a certification exam for police that use highway weight scales, i.e. wheel-load weighers and portable axle-load scales. The Committee also got a request from the Central Association to consider creating NCWM certification exams for registered service persons. The problem noted is that our basic competence level in the exams thus far has been stated at the expectation of an employee with one year experience. The CWMA believes that may not be reasonable for a registered service person. Industries with numerous service agents working across state lines told the Committee that they saw great benefit in the development of a single exam that would eliminate duplication in testing on technical issues. It was recognized that agents would still have to apply to individual states administratively to get the license but without the need for additional testing. The Committee also sees the benefit of a single technical exam but this will require that we get buy-in from the states to accept the NCWM certification. It also means possibly administering individual state specific exams covering laws and regulations directed at service agents. We can consider moving down this path if we get some positive feedback from states with registered service persons. The Committee is planning to conduct a survey of the NCWM members on future priorities as we develop future certifications and will include the issue of registered service agents.

#### **401-2 I Instructor Improvement**

No change.

#### **401-3 I Recommended Topics for Conference Training**

Remove item (k) from the list of topics in the middle of page PDC-9 and renumber the remaining items in the list.

Add additional items to the list beginning near bottom of page PDC-9 and renumber the remaining items in the list.:

(a) Grocery Unit Pricing in the United States (David Sefcik, NIST WMD and Ian Jarratt, Queensland Consumer Association, Australia 2011)

(b) Hydrogen Measuring Systems: The Turning Point? (Kristen Macey 2011).

## **402 PROGRAM MANAGEMENT**

### **402-1 I Safety Awareness**

The Committee has not received any reports of safety incidents in the last six months. The Committee would like to thank those persons who submitted safety related articles to the NCWM Newsletter. In particular, the Committee recognizes the three contributors thus far for the 2011 NCWM Newsletters.

Consumer Tips for Proper Gasoline Handling, 2011 Issue 1 (Steve Haddar, FL)

Vehicle Safety Issues for Weights and Measures Inspector, 2011 Issue 2 (Douglas Deiman, AK)

Controlling the risk of Solitary Workers, 2011 Issue 2 (Brett Gurney, UT).

### **402-2 I PDC Publication**

Add the following text at the end of the section:

The Committee is in the process of revising its pages on the NCWM website. Some of this revision will also include revisions to use new terminology (see item 401-1). In addition, the Committee believes it is vital to move forward with a more formal set of administrative procedures for running a credible certification program. The Committee will be making efforts to continue work done by Michael Sikula, NY, at the request of the Board, to document our procedures following ISO 17024 guidelines for Certification Bodies.



Mr. Stacy Carlsen, Chair, Marin County, California

Ms. Julie Quinn, Minnesota

Mr. Dale Saunders, Virginia

Ms. Cheryl Ayer, New Hampshire

Mr. Steven Grabski, Walmart

Tina Butcher, Technical Advisor, NIST WMD

Ross Andersen, NCWM Certification Coordinator, NY Retired

## **Professional Development Committee**