Report of the National Type Evaluation Program (NTEP) Committee

Steve Malone, Chairman Director Nebraska Weights and Measures Division

Reference Key Number

500 INTRODUCTION

The National Type Evaluation Program (NTEP) Committee (hereinafter referred to as "Committee") submits its report for consideration by the 93rd National Conference on Weights and Measures (NCWM). This consists of the Interim Report presented in NCWM Publication 16 as amended in the Addendum Sheets issued during the Annual Meeting that was held July 13 - 17, 2008, in Burlington, Vermont. The Committee considered communications received prior to and during the 93rd Annual Meeting that are noted in this report.

Table A identifies the agenda items in the report by Reference Key Number, Item Title, and Page Number. The item numbers are those assigned in the Committee's Interim Meeting Agenda. A voting item is indicated with a "V" after the item number or, if the item was part of the consent calendar, by the suffix "VC." An item marked with an "T" after the reference key number is an information item. An item marked with a "W" was withdrawn by the Committee and generally will be referred to the regional weights and measures associations because it either needs additional development, analysis, and input or does not have sufficient Committee support to bring it before the NCWM. Table B lists the appendices to the report, and Table C provides a summary of the results of the voting on the Committee's items and the report in entirety.

This report contains many recommendations to revise or amend National Conference on Weights and Measures (NCWM) Publication 14, Administrative Procedures, Technical Policy, Checklists, and Test Procedures or other documents. Proposed revisions to the publication(s) are shown in **bold face print** by striking out information to be deleted, and <u>underlining</u> information to be added. Requirements that are proposed to be nonretroactive are printed in *italics*.

Note: The policy of NIST is to use metric units of measurement in all of its publications; however, recommendations received by the NCWM technical committees have been printed in this publication as they were submitted and may, therefore, contain references to inch-pound units.

Table AIndex to Reference Key Items

Re	ference	
Ke	y Number Title of Item	Page
INľ	TRODUCTION	1
	Mutual Recognition Arrangement (MRA)	
2.	Mutual Acceptance Arrangement (MAA)	
3.	NTEP Participating Laboratories and Evaluations Reports	
4.	NTETC Sector Reports	5
5.	NTEP Participation in U.S. National Work Group (USNWG) on Harmonization of NIST Handbook 44,	
	NCWM Publication 14 and OIML R 76 and R 60	
6.	Conformity Assessment Program	7
7.	Conformity Assessment Program Use of NTEP Logo	8
8.	NTEP Policy for Issuing Certificates of Conformance for Software	8
9.	Update to NCWM Publication 14 Administrative Policy	

	Table B Appendices				
Ap	pendix	Title	Page		
A		feeting Summary			
B C		ng Summary g Summary			
-		g Summary			

Table CVoting Results

Reference	House of State Representatives		House of Delegates		Results
Key Number	Yeas	Nays	Yeas	Nays	
500 (In its entirety) voice vote	All Yeas	No Nays	All Yeas	No Nays	Passed

Glossary of Acronyms*					
В	Basic Publications	IR	International Recommendation		
BIML	Bureau of International Legal Metrology	IWG	International Work Group		
CD	Committee Draft ¹	MAA	Mutual Acceptance Arrangement		
CIML	International Committee of Legal Metrology	MC	Measurement Canada		
CPR	Committee on Participation Review	R	Recommendation		
D	Document	OIML	International Organization of Legal Metrology		
DD	Draft Document ²	SC	Subcommittee		
DR	Draft Recommendation ²	TC	Technical Committee		
DV	Draft Vocabulary ²	WD	Working Document ³		
DoMC	Declarations of Mutual Confidence	USNWG	U.S. National Work Group		
ILMG	International Legal Metrology Group				

Table DGlossary of Acronyms*

¹ CD: a draft at the stage of development within a technical committee or subcommittee; in this document, successive drafts are numbered 1 CD, 2 CD, etc.

² DD, DR, DV: draft documents approved at the level of the technical committee or subcommittee concerned and sent to BIML for approval by CIML.

³ WD: precedes the development of a CD; in this document, successive drafts are number 1 WD, 2 WD, etc.

* Explanation of acronyms provided by OIML.

Details of All Items (In Order by Reference Key Number)

1. Mutual Recognition Arrangement (MRA)

Background: Both Measurement Canada (MC) and the NTEP labs are engaged in continuing dialog to improve the data exchange under the Mutual Recognition Arrangement (MRA). Over the past several months, NTEP and Measurement Canada have been in continuous contact regarding the flow of information related to the MRA. Measurement Canada has also supplied the U.S. NTEP labs with several updated versions of an Excel spreadsheet program to standardize the test report forms for devices that fall under the MRA. This updated version of the spreadsheet has been well received by the labs. There is also continued dialog between the labs and the NTEP Director.

Steve Patoray, NTEP Director, reported that the NTEP labs met in April 2008 in Ottawa, Canada. The main topic of the Weighing labs was improvements to the MRA for Weighing Devices. Measurement Canada provided an updated Excel spreadsheet checklist, which included all updated criteria for both Measurement Canada and NTEP. The NTEP labs are now using this checklist for all devices evaluated by the labs.

Gilles Vinet, Measurement Canada, provided comments on how important the MRA is to Measurement Canada, and that they intend to continue to support and improve the MRA process.

2. Mutual Acceptance Arrangement (MAA)

Background: Information regarding the OIML MAA can be found at http://www.oiml.org/maa. NCWM has signed the OIML DoMC for R 60 Load Cells as a utilizing participant.

A meeting was held in May 2008 of the OIML Technical Subcommittee TC 3/SC 5 on Conformity assessment. The main focus of this meeting was revision of the following OIML B documents that are classified as Basic Publications:

- OIML B 3 OIML Certificate System for Measuring Instruments, identified as project p7,
- OIML B 10-1 Framework for a Mutual Acceptance Arrangement on OIML Type Evaluations, identified as project p8, and
- OIML B 10-2 Checklists for Issuing Authorities and Testing Laboratories carrying out OIML Type Evaluations, identified as project p9.

Additionally, there were presentations and discussions on TC 3/SC 5 project p2 - Expression on uncertainty in measurement in legal metrology applications related to drawing up a horizontal document to implement uncertainties in conformity assessment in legal metrology.

NCWM participated in this meeting through written correspondence only. The correspondence was addressed to the secretariat of TC 3/SC 5 indicating NCWM's continued support of the MAA and also indicating its opposition to the use of manufacturers' data for type evaluation.

Dr. Charles Ehrlich, NIST, provided comments on the recent meetings related to the MAA and the OIML Certificate system.

Regine Gaucher, BIML, provided comments on the status of activities at the BIML related to the MAA.

3. NTEP Participating Laboratories and Evaluations Reports

Background: At the 2008 NCWM Interim Meeting, the NTEP Director updated the Committee on NTEP laboratory and administrative activities since October 1, 2007.

Steve Patoray, NTEP Director reported the backlog at the NTEP labs has gone up slightly higher than historical levels over the past two months. These values will continue to be monitored.

Upcoming meetings:

Grain Analyzer Sector Weighing Sector Measuring Sector August 2008 September 2008 October 2008 Kansas City, Missouri St. Louis, Missouri Atlanta, Georgia

NTEP Application Statistics 10/01/06 to 06/18/08				
	Previous Quarter	Current Quarter	Total To Date	
	<u>2006 - 2007</u> 10/1/06 - 6/18/07	<u>2007 - 2008</u> 10/1/07 - 6/18/08	<u>Grand Total</u> 10/1/00 - 6/18/08	
Applications Processed	246	158	1900	
Applications Completed	198	52	1538	
New Certificates Issued	245	129	1636	
Certificates Distributed to State Directors	247	118	1735	
Certificates Posted to Website	246	126	4282	
Current Active NTEP Certificates (12/31/2006)			1669	
	Average		Median	
Time for NCWM to Assign an Evaluation	14 days	8 days		
Time for NCWM to Review a Draft Certificate	8.5 days	8.5 days 8 days		
Time for Complete Evaluation (Completed NCWM Assignments)	188 days	133 days		

4. NTETC Sector Reports

Background:

Grain Moisture Meter and NIR Protein Analyzer Sectors: The NTETC Grain Moisture Meter and NIR Protein Analyzer Sectors held a joint meeting in Kansas City, Missouri, August 22 and 23, 2007. A draft of the final summary was provided to the Committee prior to the 2008 NCWM Interim Meeting for review and approval.

The next meeting of the Grain Moisture Meter and NIR Protein Analyzer Sectors is scheduled for August 2008 in Kansas City, Missouri. For questions on the current status of Sector work or to propose items for a future meeting, please contact the Sector technical advisors:

Diane Lee NIST WMD 100 Bureau Drive, Stop 2600 Gaithersburg, MD 20899-2600 Phone: (301) 975-4405 Fax: (301) 975-8091 E-mail: diane.lee@nist.gov Jack Barber J.B. Associates 10349 Old Indian Trail Glenarm, IL 62536 Phone: (217) 483-4232 E-mail: jbarber@motion.net

Measuring Sector: The NTETC Measuring Sector met October 19 and 20, 2007, in Little Rock, Arkansas. A draft of the final summary was provided to the NTEP Committee prior to the 2008 NCWM Interim Meeting for review and approval.

The next meeting of the Measuring Sector is scheduled for October 2008 in Atlanta, Georgia, in conjunction with the Southern Weights and Measures Association's Annual Meeting. For questions on the current status of Sector work or to propose items for a future meeting, please contact the Sector technical advisor:

Tina Butcher	Phone: (301) 975-2196
NIST WMD	Fax: (301) 975-8091
100 Bureau Drive, Stop 2600	E-mail: tina.butcher@nist.gov
Gaithersburg, MD 20899-2600	

Weighing Sector: The NTETC Weighing Sector met September 6 - 8, 2007, in Sacramento, California. A final draft of the meeting summary was provided to the Committee prior to the 2008 NCWM Interim Meeting for review and approval.

The next Weighing Sector meeting is scheduled for September 2008 at a location to be determined and announced. For questions on the current status of Sector work or to propose items for a future meeting, please contact the Sector technical advisor:

Steven Cook	Phone: (301) 975-4003
NIST WMD	Fax: (301) 975-8091
100 Bureau Drive, Stop 2600	E-mail: steven.cook@nist.gov
Gaithersburg, MD 20899-2600	

Software Sector: The NTETC Software Sector met October 17 - 18, 2007, in Little Rock, Arkansas. A final draft of the meeting summary was provided to the Committee prior to the 2008 NCWM Interim Meeting for review and approval.

The Software Sector met May 20 - 21, 2008 in Columbus, Ohio.

There has been a change to the Sector Chair and Technical Advisor positions.

Documentation	Teri Gulke,
Tech Advisor	Doug Bliss,

Co-Sector Chairs Norm Ingram and Jim Pettinato.

The date of the next Software Sector meeting has not been scheduled although it is anticipated the meeting will be scheduled for spring of 2009. For questions on the current status of Sector work or to propose items for a future meeting, please contact the Sector technical advisor:

Doug Bliss	Phone: (614) 438-4307
Mettler Toledo	E-mail: doug.bliss@mt.com
1150 Dearborn Drive	
Worthington, OH 43085	

The NTEP Committee reviewed all of the recommendations of the NTETC Sectors for change to the technical policies of NCWM Publication 14. All technical recommendations were accepted by the NTEP Committee with the exception of item 4(d) of the Weighing Sector (sleep/screen saver mode). The appropriate sections of NCWM Publication 14 will be updated per those recommendations.

In addition to the technical recommendations of the Sector, the NTEP Director made a technical recommendation to the NTEP Committee to update NCWM Publication 14, Force Transducers, Section L. Subsection II. Determination of Creep to include all information found in NIST Handbook 44. The NTEP Committee agreed to these changes.

The NTEP Director also requested that information found in a previous version of NCWM Publication 14 Administrative Policy on Appeals, Section T., which had been inadvertently removed during a previous revision, be reinstated. During open hearings of the Interim Meeting, the NTEP Committee invited public comment on this recommendation. The NCWM Board reviewed this administrative policy recommendation from the NTEP Committee and agreed to place the removed information back into NCWM Publication 14, *Administrative Policy*.

5. NTEP Participation in U.S. National Work Group (USNWG) on Harmonization of NIST Handbook 44, NCWM Publication 14 and OIML R 76 and R 60

Background: At its October 2006 meeting in Cape Town, South Africa, the 41st CIML approved DR 7: R 76-1 Non-automatic weighing instruments. Part 1: Metrological and technical requirements – Tests. The DoMC for R 76 will need to be updated to reflect the changes included in the new revision of R 76. Further updates on the current status of this project will be provided by Steve Cook.

During the 2008 NCWM Annual Meeting, Steve Cook, NIST WMD, provided comments regarding the current status of activities in these areas.

6. Conformity Assessment Program

Background: The Conformity Assessment Program was established to ensure devices produced after the device has been type evaluated and certified by NTEP continue to meet the same requirements. This program has three major elements: (1) Certificate Review (administrative); (2) Initial Verification (inspection and performance testing); and (3) Verified Conformity Assessment (influence factors). This item is included on the Committee's agenda to provide an update on these elements.

The Conformity Assessment Program consists of the following components:

- 1. Certificate Review
- 2. Initial Verification
- 3. Verified Conformity Assessment Program (VCAP)

A conference call for the VCAP work group was held in early January. It was determined at that time that sufficient development has taken place to initiate a pilot VCAP program for load cells. Don Onwiler indicated that with the changes in the NCWM management, the implementation of a pilot of VCAP on load cells will be reevaluated by the NCWM Board at their spring Board meeting.

Lou Straub, Chair of the Initial Verification (IV) working group, expressed concern over the direction and implementation of the Initial Verification Program. Don Onwiler thanked Lou for all of his work in this area and indicated that NCWM still intends to implement IV as soon as possible.

During the NCWM Annual Meeting, Jim Truex, NTEP Administrator, reported that a notice had gone out to all holders of active NTEP Certificates of Conformance (CC) for load cells regarding a VCAP Pilot. In addition, Jim presented the NCWM members with a timetable for implementation.

NTEP VCAP Timeline – Load Cells						
Jul 2008 - Dec 2008	Jan 2009 - Dec 2009	Jan 2010 - Mar 2010	Apr 2010 - Nov 2010	Nov 2010		
 Refine VCAP Procedures. Answer incoming questions. Refine/develop 	 LC Manufacturers to put VCAP QM system in place. Conduct audit by Certified 	NTEP to evaluate incoming Certification Body reports.	NTEP to contact manufacturers not meeting VCAP and encourage compliance before annual maintenance fee	CCs declared inactive if CC holders fail to meet VCAP.		
 Notify all CC holders of updated plan, Q&A, etc. 	 Submit audit report to NCWM/NTEP. 		 Continue to evaluate incoming reports. 			

7. Use of NTEP Logo

Background: Information on the NTEP logo policy can be found by selecting "Logo" on the NCWM/NTEP homepage (www.ncwm.net/ntep/) or at the following URL:

http://www.ncwm.net/ntep/index.cfm?fuseaction=logo

Steve Patoray, NTEP Director, reported to the NCWM members that the NTEP logo policy has been fully implemented, and currently there are no open issues regarding NTEP Logo misuse.

8. NTEP Policy for Issuing Certificates of Conformance for Software

Source: NTETC Software Sector

This item has been moved under Item 4 above and will no longer be a standalone item on the Committee's agenda. For additional information, refer to the Committee's 2007 Annual Report found in Appendix D.

During the NCWM Interim Meeting, the NTEP Committee heard comments from the floor regarding the recommendation by the NTETC Software Sector that NCWM reconsider its decision on issuing Certificates of Conformance on software. Both support and opposition were heard from various NCWM members. One concern was that NTEP might be overwhelmed with new applications for various types of periphery software packages. Don Onwiler attempted to answer this concern by indicating that there would be no fundamental change in what NTEP is currently evaluating and certifying. This would mainly be better identification of the device type as software on NTEP Certificates of Conformance.

9. Update to NCWM Publication 14 Administrative Policy

The NTEP Committee recommended the changes below to the NCWM Board of Directors. The NTEP Committee also received comments from the NCWM members during an open hearing on these items. No negative comments were received. The Board approved these changes to the NCWM Publication 14 Administrative Policy.

ITEM A. Clarification of Appendix B and Fees

Page: Administrative Policy, AP - 8

E. TYPE EVALUATION PROCESS

The type evaluation process follows a sequence of steps. These are explained further in sections F and G. *Refer* also to Section S, Conformity Assessment.

E.1. Steps for Type Evaluation

- a. Request for type evaluation (usually by the manufacturer) to NCWM or to Measurement Canada.* <u>This request will include a completed NTEP application for the correct device type, an</u> <u>application fee and a processing fee.</u> Refer to Appendix B. for additional information on <u>fees.</u>
- **b.** Decision by NCWM to accept (or reject) the request. A decision to reject an application is based solely upon the inability of NTEP to perform an evaluation on the device due to lack of procedures in NCWM Publication 14 "Weighing Devices," "Measuring Devices," or "Grain Analyzers."
- c. Assignment by the NCWM to a Participating Laboratory.*

Page: Administrative Policy, AP - 16

N. STATUS OF CERTIFICATE OF CONFORMANCE MAINTENANCE FEE

Except for Grain Analyzers, a Certificate of Conformance (CC) does not have an expiration date; however, the device manufacturer must update the design of a device to meet new or modified requirements adopted by the NCWM. The NCWM charges an annual maintenance fee for active Certificates to support the technical and administrative activities of the NCWM for NTEP. <u>Refer to Appendix B for additional information on this annual fee.</u>

Page: Administrative Policy, AP - 32

APPENDIX B

AUTHORIZED AREAS AND OTHER SERVICES

1. Authorized Areas of Evaluation by U.S. Participating Laboratories

Refer to NCWM website: www.ncwm.net http://www.ncwm.net/ntep/pdf/authorizedareas.pdf

2. Administrative Fees

Application and Certificate Processing Fee:

A nonrefundable application fee* and a certificate processing fee* are due at the time the application is submitted to NTEP. The application will not be processed or entered into the system until these fees are received. If an open file remains inactive for a period of more than 90 days (for example, if the application is assigned to the laboratory and the equipment is not received from the manufacturer within 90 days), the application request will be closed. Once an application request is closed, the manufacturer must reapply and submit another application and certificate processing fee in order to pursue a CC for the device.

Drafting Fee:

A drafting fee* is charged for management, certificate preparation, duplication, and distribution of the **NTEP Certificates of Conformance**. This charge is in addition to the application fee and certificate processing fee. The certificate preparation may be completed by the NTEP authorized laboratory, or by **NTEP**.

Annual Fees:

The NCWM charges an annual maintenance fee* for active Certificates to support the technical and administrative activities of the NCWM for NTEP. The Certificate holder, usually the manufacturer or re-manufacturer, declares intent to continue to manufacture or remanufacture the device by paying the NCWM an annual maintenance fee for the Certificate.

<u>In addition to the above, Grain Moisture Meter manufacturers must pay an annual participation fee for</u> <u>the NTEP Laboratory On-Going Calibration Program (OCP) Phase II in order to maintain their</u> <u>Certificate in an active status.</u>

NTEP Logo Usage Fee:

<u>A one time license fee is charged to non-holders of NTEP CCs for use of the NTEP Logo. No license fee is charged to current holders of active NTEP CCs.</u>

*Please contact the NCWM Headquarters or check the NCWM website for the latest fee structure. <u>See</u> <u>http://www.ncwm.net/ntep/index.cfm?fuseaction=fees</u>

The manufacturer must indicate on the application at the time of submission all the parameters (capacity, size, features) that are being requested for inclusion on any CC resulting from the NTEP evaluation. Once testing is completed, according to the parameters listed in the application, a draft certificate will be prepared.

The following applies:

- If a request is made to add parameters to the CC and such parameters would require additional testing or reanalysis, the manufacturer must either: (1) approve the draft CC which covers the parameters originally requested, at which time the CC will be processed and issued. Then submit a new application requesting an addendum to the certificate that includes the additional parameters. A new application and processing fee must be submitted with the application; OR (2) abandon the draft CC based on the original request and await completion of the testing required to evaluate the additional parameters.
- For requests to add parameters which do not require additional testing and which are allowed within the NTEP technical policies, the additional parameters can be included on the CC only during the time the draft CC is being reviewed.

3. World Wide Web – NCWM Home Page

The NCWM home page on the World Wide Web is: www.ncwm.net

Information may be printed or downloaded to individual personal computers, NTEP related information available includes:

- Active and Inactive CCs issued from January 1, 1986, to present
- List of NTEP Participating Laboratories
- Authorized Areas of Evaluation for Participating Laboratories (see above)
- U.S./ Canadian MRA- Frequently Asked Questions (FAQs)

- NTEP Applications
- NTEP Fees
- <u>NTEP Logo</u>

For additional information, please refer to http://www.ncwm.net/ntep.

ITEM B. Proposed Language Changes Related to Provisional NTEP CCs

Page: Administrative Policy, AP - 12

I.2. Provisional Certificate of Conformance

The NCWM may issue a Provisional Certificate of Conformance under some circumstances without full evaluation. This must be reviewed and authorized by the NTEP Committee.

In accepting a Provisional Certificate of Conformance, the manufacturer shall agree in writing that:

- **a**. Further evaluation will take place before a full Certificate of Conformance can be issued, and
- **b.** Existing copies of the type will be modified or retrofitted if required.

As an example, a Provisional Certificate of Conformance may be issued after partial or limited evaluation, if **there is** an urgent need for use of the type **exists within the marketplace** and NTEP is temporarily unable to carry out a complete evaluation **due to an absence of evaluation criteria and/or procedures and/or appropriate equipment**. See also Section K.

- **j.** If the changes ultimately incorporated into NCWM Publication 14 are more demanding and require additional evaluation, the type will be tested under those criteria. The applicant will be notified that the type must be submitted for evaluation against the new policies and/or procedures within a ninety (90) day period for the Provisional Certificate to remain active. The Provisional Certificate will be given a withdrawn status if the type has not been submitted within the ninety (90) day period or if the type fails the additional evaluation. If the type is submitted and successfully evaluated using the more demanding criteria, a full Certificate of Conformance will be issued.
- **k.** Modifications made to the type as a result of the additional requirements may not be required retroactively to existing devices unless applicable retroactive requirements are incorporated into NIST Handbook 44.

The NTEP Director will re-evaluate Provisional Certificates of Conformance every two (2) years to determine if the situation or conditions necessitating the provisional status of the Certificate continue to exist. When these conditions no longer exist and an appropriate testing procedure and/or equipment become available to conduct a full NTEP evaluation of a device covered under a Provisional Certificate of Conformance, the NTEP Director will notify the device manufacturer giving the manufacturer a maximum of ninety (90) days in which to submit the required device(s) for NTEP evaluation. On successful completion of the evaluation, the Provisional Certificate of Conformance will be upgraded to a full NTEP Certificate of Conformance. If the device manufacturer finds it necessary to make a modification or change in the construction of the device, the devices manufactured under the Provisional Certificate of Conformance must receive the same change in order to be covered under the new Certificate.

Should the device manufacturer fail to submit the required device(s) for evaluation within the ninety (90) day time limit or if the device(s) fail to successfully complete the NTEP evaluation after the allowed number of attempts, the Provisional Certificate of Conformance covering the device(s) will be withdrawn. In such a case, devices manufactured under the Provisional Certificate of Conformance will no longer be suitable for commercial service.

Page: Administrative Policy, AP - 16

N.3. Inactive Status

An inactive Certificate of Conformance is a Certificate which was previously active, but the devices are no longer being manufactured or remanufactured for commercial applications <u>subject to local</u> <u>regulations or laws</u>; however, devices already manufactured, installed or in inventory, but not yet sold, may be used, sold, repaired and resold under inactive Certificates of Conformance.

Page: Administrative Policy, AP - 16

N.5. Withdrawn Status

The Certificate of Conformance remains valid unless withdrawn as the result of a specific determination by NTEP.

a. Reasons for Withdrawal

- (1) Deficiencies in the type;
- (2) Production devices do not meet type;
- (3) Failure to pay costs incurred during the evaluation:
- (4) Use of the NTEP certification mark without a license from NCWM;
- (5) Misuse of the NTEP certification mark; or
- (6) Failure to convert a Provisional Certificate of Conformance to a full NTEP Certificate of Conformance. (See also Section K.)

ITEM C. Clarification of Section L

Page: Administrative Policy, AP – 15

L. WHAT CONSTITUTES A "DIFFERENT" TYPE

With two similar types from a single manufacturer, a decision must be made whether to conduct one or two separate evaluation processes <u>and a decision must be made on one or multiple NTEP Certificates of</u> <u>Conformance.</u> The following guidelines should be followed:

Steve Malone, Nebraska, NTEP Committee Chair Judy Cardin, Wisconsin, NCWM Chair Jack Kane, Montana, NCWM Chair-Elect Charles Carroll, Massachusetts Randy Jennings, Tennessee

NTEP Technical Advisor: S. Patoray, NTEP Director

National Type Evaluation Program Committee