TAPPI Useful Methods Guidelines

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Preface

This manual contains the TAPPI regulations and style guidelines for TAPPI Useful Methods. The regulations and guidelines in this manual are developed and approved by the Quality and Standards Management Committee with the advice and consent of the TAPPI Board of Directors.

Use the guidelines in this manual **only** for development and management of TAPPI Useful Methods. The TAPPI Useful Methods are **not** TAPPI Standards or TAPPI TIPs. A separate set of guidelines exists for TAPPI Standards and should be used for any documents that are to be developed as consensus standards in accordance with TAPPI regulations, which are certified by the American National Standards Institute (ANSI). A separate set of Guidelines also exists for TAPPI TIPs and it is to be followed for those TAPPI Documents.

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1. Introduction

This manual describes the procedures and policies that are used to develop and publish TAPPI Useful Methods, and the guidelines for style and format of these documents. In many ways, these elements of the Useful Methods are similar or identical to those of TAPPI Standards but permit greater flexibility in development and execution.

2. Definitions

2.1 **TAPPI Useful Method:** is a document written to describe a test, procedure, or practice which may be proposed by a Working Group of no fewer than three TAPPI members not employed by the same organization and written in the same general style as a TAPPI Standard Test Method, but with the inclusion or exclusion of certain sections as deemed appropriate by the Working Group, and with minimum precision requirements that may be expanded at the discretion of the Working Group. A UM is written with no less attention to proper use of the language to describe the procedure using essentially the same elements of a TAPPI Standard Test Method, but in a less rigorous manner. TAPPI Useful Methods do not receive the same review through a rigorous process of openness, voluntary review, and consensus as do the TAPPI Standard Test Methods, and as such, TAPPI Useful Methods are not intended to be used as referee methods as the TAPPI Standard Test Methods are.

2.2 **Working Group:** A group of persons, generally TAPPI Members, which has responsibility for a specific UM, new or existing in review. Nonmembers of TAPPI may serve in and vote within the Working Group, but do not count in the minimum requirement to have at least three TAPPI members from different companies in each Working Group.

2.3 **Working Group Chair:** A member of a Working Group who leads the activity of the Working Group.

2.4 **Working Group Member:** A person having expertise or interest in a specific UM, including new UMs and existing UMs in review.

2.5 **Work Item:** An activity undertaken by a Working Group to develop technical information of significant and timely value to the industries TAPPI serves. WIs are initiated either by a notification from the Standards Department at the time of automatic review of an existing UM. WIs that are proposals for new UMs must be accompanied by a draft before the WI is opened and a number is assigned.

2.6 **Draft:** A document which is a proposed new or revised UM, and which is reviewed by the responsible Working Group for consideration as a new UM or a revision of an existing UM.

2.7 **Reaffirmation:** An assessment that indicates no changes have been made since the previous edition following regular review of the UM.

2.8 **Revision:** An assessment that includes changes to an existing UM.

2.9 **Withdrawal:** Removal of an existing UM from the current set of UMs.

2.10 **Correction:** Correction of errors in printing, format, spelling, punctuation, as well as improvements in clarity of expression or changes to reduce or eliminate ambiguity. Often referred to as "editorial corrections," corrections may not include any changes in wording that would in any way make

substantive changes in the UM.

2.11 **Automatic Review:** An automatic process requires the responsible working group to review an existing UM and take one of the following actions: reaffirm, revise, reclassify, or withdraw the UM. UMs must be reviewed five years after their initial publication and subsequently every ten years. The goal is to complete the review and take appropriate action within one year of the review's initiation to ensure a timely publication.

3. Development and Approval of Useful Methods

3.1 To propose a TAPPI Useful Method for approval and publication requires a group of at least three persons who are members of TAPPI and are not employed by the same organization. There is no maximum number of members for a UM Working Group. However, as consensus positions are developed, voting is limited to one vote per organization represented on the WG. Consultants employed by an organization represented on the WG are considered to be members of that organization and may not have a separate vote. In many cases, the Working Group is formed from within one of the formally constituted groups in TAPPI, such as a Technical Division or a Technical Committee.

3.1.1 Any such group of three or more TAPPI members, subject to the limitations above, may draft new Useful Methods or may be called upon for expertise in reviewing or revising existing Useful Methods in accordance with these guidelines.

3.2 *New Useful Methods.*

3.2.1 Any group within TAPPI may form a Working Group which shall follow the format and style guidelines in these guidelines to prepare a draft of a new UM. Each Working Group formed must select one of these individuals as Working Group Chair (WGC). The WGC must submit a description of the project to the Standards Manager. At this time, the WGC is to work with the Standards Manager to see whether the proposed procedure duplicates or relates to any existing TAPPI Standards or Technical Information Papers. If it duplicates any existing document within TAPPI, the WGC is to work with the Standards Manager, who will coordinate the decision as to whether the work on drafting the new UM should continue, be revised or discontinued accordingly.

3.2.2 Once the decision is made to proceed, the Standards Manager shall post the information in the TAPPI Standards and TIPs Action Report (STAR), and any other media deemed necessary for review by any members of TAPPI. The Standards Manager shall also distribute the information to any chairmen of any working technical committees or groups within TAPPI that would have an interest in the subject matter in the UM. The announcement in STAR and the distribution to interested technical groups shall include a deadline for response to the Standards Manager. Any objection to proceeding with the development of a new UM from distribution(s) by the Standards Manager or from an announcement in STAR must be accompanied by detailed reasons for not proceeding. The Standards Manager shall attempt to resolve objections. If the Standards Manager is unable to resolve an objection, the Quality and Standards Management Committee (Q&SMC) shall resolve the issue(s).

3.2.3 Any interested parties who respond to the announcement for a new UM shall be added to the working group for the UM, and their contact information shall be provided to the UM working group Chair. No application to join the working group by the posted deadline shall be refused.

3.2.4 The WGC should reach consensus within the Working Group on all debateable points prior to finalizing the draft.

3.2.5 The UM, as developed and approved by the Working Group, is submitted for official publication through the Standards Manager, who must determine if the document follows proper format and style as outlined in these guidelines and must consult with the WGC with changes that need to be made to conform to proper style before the document is processed for publication.

3.2.6 After following the procedure outlined above and after determining that all necessary changes have been made so that the draft conforms to proper format and style, the Standards Manager will prepare the document for publication and will publish a notice of availability in the TAPPI Standards and TIPs Action Report (STAR) and other media as deemed necessary. The WGC will be sent a proof copy of the UM for review prior to publication. The published version shall include a list of the names and organizations of the Working Group members.

3.2.7 Any matters regarding the technical content of a UM not covered or resolvable under these guidelines shall be referred in writing to Q&SMC which shall consider the issue at its next meeting.

3.3 *Periodic review of UMs.*

3.3.1 All UMs shall be reviewed five years after initial publication and then every ten years thereafter. The Standards Manager shall contact the Working Group listed on the UM and ask them to review and respond with any changes within six months. If the former WGC or none of the former WG members is available or willing to perform this task or if this task is not accomplished within this time period, the Standards Manager shall contact leadership of the TAPPI Technical Committee most closely related to the subject matter of the UM for assistance in finding a different TAPPI member experienced in the UM's subject matter to assemble a Working Group to conduct the review. If this step fails, the situation with the UM should be referred to the Q&SMC for resolution, with withdrawal of the UM being an option.

3.4 *Revisions.*

3.4.1 A UM may be revised at any time. Any group of three or more TAPPI members not employed by the same organization and subject to the limitations described in the Development and Approval of Useful Methods section of this Guideline, that feels a revision is needed for a published UM shall contact the Standards Manager and submit the proposed revisions. Revisions shall be developed, written and approved in the same manner as a new UM, including the announcement in STAR and the notice to technical groups within TAPPI that may have an interest in the subject matter of the UM. Note: The word "revision" as used in this paragraph shall include the option for the Working Group to agree to a "withdrawal" of the UM.

3.5 *Withdrawals.*

3.5.1 If a Working Group decides to withdraw a Useful Method during a regular review or at any other time, the Chair must notify the TAPPI Standards Manager. The withdrawal, along with the reasons, will be announced in the next STAR newsletter. This announcement will invite anyone who objects to the withdrawal to respond with their reasons. If anyone wishes to reinstate the Useful Method, they may contact the Standards Department to form a new Working Group. Any comments received will be forwarded to the Working Group for consideration in working toward reinstatement. The Working Group Chair will make the final decision on whether the method will be reinstated.

3.5.2 Useful Methods withdrawn due to technical or safety concerns will no longer be available for distribution. The Working Group Chair will determine whether a withdrawn method remains suitable for distribution.

4. Format and style of TAPPI Useful Methods

4.1 *Terminology*

4.1.1 Write the Useful Method in plain, simple language that can easily be understood by production level employees. Do not use jargon, ambiguous statements, or undefined abbreviations. Consult a standard unabridged dictionary, e.g., the current editions of Webster's International Dictionary or the Oxford English Dictionary, for general terms or The Dictionary of Paper, latest edition, for papermaking terms. Use the present tense and active voice throughout, and use either indicative mood (for declarative statements) or imperative mood (for command statements instructing the user how to perform the test).

4.2 *Units*

4.2.1 The International System of Units (SI) is the preferred system of measurement for use in TAPPI Useful Methods. Use SI units or other units recommended in T 1210 and UM 0800-01 "Units of Measurement and Conversion Factors" in all UMs as the primary means of expressing quantities, dimensions, tolerances, and results. English units or commonly used units may be given immediately following in parentheses. Exceptions to this requirement are permitted in cases where UMs were originally developed using the English system of measurement units, or where the majority of instruments in current use are designed to English unit specifications, or for which there is such a considerable body of existing measurement data within the industry that conversion to SI units for reporting results would cause considerable confusion, or for any combination of the above. The responsible Working Group must develop the rationale to support the use of this exception.

4.3 *Trade names*

4.3.1 Avoid the use of trade names unless the instrument name is needed to differentiate the Useful Method from another TAPPI Useful Method or Standard Method purported to measure the same property. Use generic descriptions of equipment and materials which are sufficiently complete to allow the user of the equipment to locate the needed item using readily available supplier catalogs and buyer's guides. In these descriptions state the required properties of the material or apparatus in performance or characteristic based terms, rather than trade names or trademarks. [For example, "...chemically and thermally resistant borosilicate glass..." rather than KimaxTM or PyrexTM.]

NOTE 1: In no case may materials or apparatus be cited in a Useful Method in a manner that appears exclusionary or inconsistent with the TAPPI Antitrust Policy.

4.4 *Descriptions of chemicals and reagents*

4.4.1 Use generic descriptions of chemicals and reagents which are sufficiently complete to allow the user of the equipment to locate the needed item using readily available supplier catalogs and buyer's guides. In these descriptions state the required properties of the material or apparatus in performance or characteristic based terms, rather than trade names or trademarks. [For example, "...petrolatum or petroleum jelly..." rather than VaselineTM.]

4.4.2 In cases where a Working Group finds that a chemical or reagent from a specific source is required for satisfactory performance of a procedure, or is aware of only a single chemical or reagent that permits the procedure to be performed, this fact should be indicated in the Useful Method. In cases where this is done, however, the phrase "...other chemicals or reagents complying with the description of (item required) may work equally well..." should be placed immediately following the chemical or reagent description. (For example, "...indicator solution, a 0.5% (w/v) of [state the exact chemical name here] in distilled water.

Keystone RediPuRTM [chemical name] was used for the studies reported in the precision section and found satisfactory. Other sources of [chemical name] may be available and may work equally well.")

NOTE 2: In no cases may chemicals or reagents be cited in a Useful Method in a manner that appears exclusionary or inconsistent with TAPPI's Antitrust Policy.

4.5 *Sections*

4.5.1 The following is a list of sections that may be used in writing a UM, omitting inapplicable sections and adding appropriate ones where needed. Not all of these headings may be required for a particular UM. Additional headings which are included to cover specialized subjects should appear in the most appropriate place, depending on their relation to the sections listed above. The headings listed as "mandatory" are required:

Title (mandatory)
Scope (mandatory)
Summary
Significance
Safety Precautions (mandatory)
Applicable Standards
Definitions
Apparatus
    Preparation (may be a separate section or included under Apparatus)
    Calibration (may be a separate section or included under Apparatus; extended calibration or maintenance procedures are best placed in an Appendix)
    Maintenance (may be a separate section or included under Apparatus)
    Reagents and materials
Sampling, Test Specimens and Test Units (may be combined in one or included as separate sections)
Conditioning
Procedure (mandatory)
Calculations (or Interpretations of the Observations) (mandatory for quantitative methods)
Report Precision Statement- must contain repeatability statement at a minimum (mandatory)
Keywords (mandatory)
Literature cited
References
Additional Information
    Date of issue (mandatory)
    Brief description of significant changes since last revision
    Working Group Member names and organization affiliations (mandatory)
Appendixes

4.6 *Section Description Details*

4.6.1 **Title (mandatory):** The title should be concise but complete enough to identify the nature of the Standard, the material to which it is applicable, and to distinguish it from other similar titles. Titles are used frequently in lists, tables of contents, indexes, tabulating card systems, etc., and therefore should be brief but inclusive. Select words that lend themselves to indexing. The essential features of a title are the particular property or constituent being determined, the material to which the Standard is applicable, and, when pertinent, the technique or instrumentation.

4.6.2 **Scope (mandatory):** Include here the value, purpose and application of the Standard. State the

recommended range of application as completely as possible, as to types of materials and to limiting values of the properties or constituents.

4.6.3 **Summary:** Outline briefly the essential features of the Test Method in sufficient detail for general understanding. Include a brief statement of the principles involved; e.g., for chemical methods, state the type of procedure, as colorimetric, electrometric, volumetric, etc., major reactions, etc.

4.6.4 **Significance:** Provide in this section information on the importance of the Test Method, avoiding repetition of information included in the "Scope." State first the most significant features in a concise manner without sacrificing important ideas or completeness in order to provide the user an understanding of: (a) the meaning of the test as related to the manufacture and end use of the material; (b) the suitability of the test for specification acceptance, design purposes, service evaluation, regulatory statutes, manufacturing control, development, and research; (c) the fundamental assumptions inherent in the method that may affect the usefulness of the results. Include any warning needed in the interpretation of the results of the test.

4.6.5 **Safety precautions (mandatory, when applicable):** In many cases with UMs if there is a potential hazard it will involve operating test equipment and/or in sample collection and preparation. In these cases, address the hazard in practical plain language.

4.6.5.1 If there is a hazard in performing the test such as explosion, fire, or toxicity, include a warning of the dangerous step. Repeat the warning in the text at the appropriate point and include the word "CAUTION." Note safety equipment required and refer user to SDS sheets when applicable. Avoid specific statements for protective devices or chemical disposal that may be subject to change due to regulations or current safety practices.

4.6.5.2 The accepted TAPPI Caution Statement shall appear in a box on page 1 of the Useful Method. The statement is:

This Useful Method may include safety precautions which are believed to be appropriate at the time of publication of the method. The intent of these is to alert the user of the method to safety issues related to such use. The user is responsible for determining that the safety precautions are complete and are appropriate to their use of the method, and for ensuring that suitable safety practices have not changed since publication of the method. This method may require the use, disposal, or both, of chemicals which may present serious health hazards to humans. Procedures for the handling of such substances are set forth on Safety Data Sheets which must be developed by all manufacturers and importers of potentially hazardous chemicals and maintained by all distributors of potentially hazardous chemicals. Prior to the use of this method, the user must determine whether any of the chemicals to be used or disposed of are potentially hazardous and, if so, must follow strictly the procedures specified by both the manufacturer, as well as local, state, and federal authorities for safe use and disposal of these chemicals. If there are no particular safety precautions, this shall be stated under this section's heading.

4.6.6 **Applicable Standards:** List the title of any commercial or legal regulations and any Standards, including other TAPPI Standards or Standards from other societies, which may be useful or necessary (or are referenced) in the understanding of the Test Method. Do not include the year of designation on a referenced Standard unless there is a technical reason for requiring a particular revision as a reference.

4.6.7 **Definitions:** Include only definitions or descriptions of terms which are required for the correct interpretation of the Test Method. Include definitions that are not given in standard dictionaries. State

definitions in short form which does not repeat the term being defined, e.g., Sample: a specified number of test units selected according to a prescribed procedure to represent the lot.

4.6.8 **Apparatus**

4.6.9 **Sampling, Test Specimens, and Test Units (may be combined into one section or included as separate sections)**

4.6.9.1 List instructions for taking the sample from the lot or shipment. This will usually be a reference to TAPPI T 400 "Sampling and Accepting a Single Lot of Paper, Paperboard, Containerboard, or Related Product," T 657 "Sampling of Fillers and Pigments," T 257 "Sampling and Preparing Wood for Analysis," T 605 "Reducing a Gross Sample of Granular or Aggregate Material to Testing Size," or T 210 "Weighing, Sampling and Testing Pulp for Moisture." State also any special precautions in handling or storing the sample in order to preserve its properties, and any special treatment or preparation of the sample required before specimens may be taken from it. For chemical tests and where a special problem for other tests exists, list the amount of material to be taken for each test unit.

4.6.9.2 Do not use the word "representative" as applied to the sample, because it is seldom possible to obtain a sample which is representative of the lot in the statistical sense of having been selected "at random." The best that can be said is that a sample is one or more portions of a lot, i.e., test units selected according to a prescribed procedure.

4.6.9.3 For a small lot, one test unit may be sufficient. For a large lot, an adequate sampling may require several test units (see TAPPI T 400 "Sampling a Single Lot of Paper, Paperboard, Linerboard, or Related Material"). If in the latter case only a lot average will be required, include instructions for combining the several test units into a single composite sample (composite test unit) from which the test specimens will be drawn.

4.6.9.4 A test unit is an area of paper or amount of material sufficient to obtain a single set of test results for all the properties to be measured.

4.6.9.5 A "test result" refers to the value obtained for a given property from one test unit. Specify the amount of material required to obtain a test result in accordance with that Test Method, the test being as specified in the Test Method, a single test determination or the average or other specified combination of test determinations on a specified number of test specimens.

4.6.9.6 A "test specimen" is a test unit or portion of a test unit upon which a single or multiple observation is to be made. If more than one test specimen is required per test unit, use the plural title for this section. Follow the general form: "From each test unit of the sample, select (take, cut, weigh, prepare) test specimens *in each principal direction*." Omit the italicized words if not applicable. In the blank insert the required number of test specimens. Prepare sufficient specimens to perform the number of tests required for the procedure.

NOTE 3:The term "test specimen" as used in the United States is equivalent in ISO/TC6 Standards to the term "test piece."

4.6.9.7 If it is not possible to select the test specimens "at random" from a sample, or in some other manner to assure statistical representativeness, specify how the specimens are to be taken from a test unit.

4.6.9.8 If the sample is to be conditioned prior to cutting the test specimens, state this in the beginning of this section (see 3.4.10). Also state if conditioning is not required.

4.6.9.9 A practice may be written to cover a common operation prior to performing various specific testing procedures, where the absence of that practice would require incorporation of the sample preparation procedure in multiple Test Methods. TAPPI T 205 "Forming Handsheets for Physical Tests of Pulp" is an example of a practice required prior to doing various types of testing.

4.6.10 **Conditioning:** When the standard atmospheres are required for preconditioning, conditioning, and testing, insert here: Precondition, condition, and test the specimens in atmospheres in accordance with TAPPI 402 "Standard Conditioning and Testing Atmospheres for Paper, Board, Pulp Handsheets and Related Products."

4.6.11 **Procedure (mandatory):**Describe in proper sequence the procedure to be followed in such detail that it can be performed independently by a technician trained in testing and laboratory work, but who may be unfamiliar with the test. Description of the testing procedure should also be useful to the "line operator" or person of similar organizational responsibility who has limited if any formal testing or laboratory training, but who will be expected to perform the test. Subheadings may be used if they will help the organization of the material.

4.6.12 **Calculations and interpretations of the results:** Give directions for calculating the test result, i.e., value for the test unit, from the observations on the specimens of the test unit. For Useful Methods whose results are obtained directly from a measurement, then include a statement that no calculations are necessary.

4.6.13 **Report:** State the suggested form of reporting the test result for each test unit, including the number of significant figures and the units in which the result is to be expressed. Report any deviations from any section of the Test Method or other factors that may have influenced reported results. Exact form of the test report may be determined by the user of the method (verbal, hand-written, entry into data system, etc.)

4.6.14 **Precision Statement:** The minimum required precision data for Useful Methods shall be at least a simple statement of repeatability in a single location which may be developed by a statistically recognized process of choice by a Working Group" but might include performance of the test on a series of samples by different technicians or by different persons or the same person on different days in a single location. That data could then be used, only by way of example, to calculate a within laboratory standard deviation for the procedure. Other protocols for doing testing and calculating a statement of precision may be devised by Working Groups developing UMs. In such cases, a simple statement of the precision process used and the data obtained shall be included in the Useful Method.

4.6.14.1For qualitative Useful Methods or Useful Methods where the results are in descriptive form, a precision statement is inapplicable. The precision section must still be included with a statement explaining the inapplicability of a true precision statement.

4.6.14.2A spreadsheet is available from TAPPI to assist in calculating precision data.

4.6.15 **Keywords (mandatory):** List appropriate terms for indexing, selected from both the title and body of the Useful Method and including general, vernacular, and trade terms. These terms are the basis for preparing index terms.

4.6.15.1To assure consistency in selecting keywords for indexing purposes and in selecting the proper form of a keyword, use the Thesaurus of Pulp and Paper Terminology, formerly published by the Institute of Paper Science and Technology, and currently published by Elsevier. Terms that appear in this thesaurus are

preferred keywords and shall be used in the majority of cases. However, the Q&SMC and the TAPPI Standards Department shall maintain a supplemental keyword list. Included on this list will be terms that the Q&SMC has chosen as part of the supplement to the Thesaurus.

4.6.15.2The Working Group Chair should select keywords, but these keywords must be reviewed by the Standards Manager for their acceptability in accordance with the Thesaurus and the supplemental list. If the Working Group Chair and/or the Standards Manager determine that, for ease of use or clarity, additional terms need to be included in a particular Useful Method, then these terms shall be approved by the Q&SMC. When a majority of the members of the Q&SMC approve the inclusion of a new keyword, the new keyword shall be added to the supplemental list and to the Useful Method for which it was proposed.

4.6.16 **Literature Cited:** Include in this section a listing of any document, including other TAPPI documents or documents from other societies or sources, which may be useful or necessary (or are referenced) in the understanding of the Useful Method. Works that are specifically cited in the text of the method should be listed under "Literature Cited," in the order of their appearance in the text. Numeric sequenced footnotes should be used in the text for each first appearance of a cited document and the list of cited documents must correspond to the cited document footnote.

4.6.17 **References:** Other references of a general nature shall be listed under "References." Do not include restricted publications that are not generally accessible. Do not reference private communication. It is the responsibility of the Working Group Chair to make sure that references are complete and accurate.

4.6.18 **Additional information (mandatory)**

4.6.18.1 The first paragraph shall state, "Effective date of issue: (to be assigned)." TAPPI Standards Department will insert the effective date of issue upon publication.

4.6.18.2 For reviews following the initial publication of a UM, the second paragraph shall include a brief description of significant changes made to the UM as a result of the current review. Changes noted for prior reviews should also be retained.

4.6.18.3 The third paragraph shall include a listing of the Working Group Chair, the Working Group members, and their organization affiliation, with the WCG name listed first, then all other members of the Working Group listed alphabetically.

4.6.18.4 Subsequent paragraphs may be added to this section to include any other information that would be helpful or useful for the user of the UM.

5. Publication and Distribution

5.1 Approved Useful Methods shall be numbered using the same category scheme as is used for TAPPI Standards. UMs are to be numbered sequentially, however the UM number may bear no relationship to a previously deleted TAPPI Standard.

5.2 Approved Useful Methods shall be added to the existing electronic library of UMs and made available for purchase by TAPPI members and non-members under arrangements published by TAPPI for such transactions.

Appendix A – History of Useful Methods

At one time, TAPPI published a set of Routine Control Methods. These test procedures were designed to be easily understood laboratory or plant floor methods for quick determination of certain properties of pulp, paper, raw materials, or related products. They were never intended to be used as referee methods in commerce, as the TAPPI Standard Test Methods are. Over the years, Routine Control Methods evolved into documents called Useful Methods (UMs). New Useful Methods were added to the set by TAPPI members who submitted methods to TAPPI PRESS. There were never any written guidelines developed to ensure consistency of quality or content of either the Routine Control or Useful Methods.

In 1991, A TAPPI Board committee recommended that the set of Useful Methods be reviewed by a panel of experts in order to delete or edit methods that were technically unsound or used materials deemed to be hazardous. This resulting set of UMs was published in book form in 1991 and continued to be sold in this fashion until the issuance of the current set of Guidelines in 2014. The primary reason for maintaining this set of UMs is because, over time, many of the UMs were referenced in other technical literature, so it was believed that their preservation as a reference was important. Discussions between 2009 to 2014 led to additional reviews of the existing UMs for technical correctness and relevancy and the deletion of additional UMs. Also, part of the discussions addressed the need to include to newly proposed “Plant Floor Methods” that would also be called Useful Methods. The 2014 set of UMs allows for this sub-category of methods.