

**Cooling Technology Institute
Technical Committee**

Standards, Codes, & Guidelines Manual



FOREWORD

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This guideline document summarizes the best current state of knowledge regarding the specific subject. This document represents a consensus of those individual members who have reviewed this document, its scope and provisions. It is intended to aid all users or potential users of cooling towers.

Approved by the CTI Executive Board.



This document has been reviewed and approved as part of CTI's Five Year Review Cycle. This document is again subject to review in 2007.

Approved by the
CTI Executive Board

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Standards, Codes,
& Guidelines Manual

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Cooling Technology Institute Technical Committee Standards, Codes, & Guidelines Manual

Introduction

The purpose of the ***CTI Technical Committee Standards, Codes, and Guidelines Manual*** outlines the Institute's philosophy concerning the technical committee standards, codes, and guidelines (herein after called Standards); and to outline procedures that must be followed in the preparation, approval, reaffirmation, revision, or withdrawal of all technical committee Standards.

1.0 Scope

1.1. This manual provides the method by which all Standards promulgated by the Cooling Technology Institute (CTI) shall be followed to obtain approval from concept through adoption.

1.2. All Standards initiated after the date of this manual's adoption shall use this manual's described methodology.

1.3. All existing Standards that are reaffirmed, revised, or withdrawn after adoption of this manual shall follow the methodology described in this manual.

2.0 Guidelines for Technical Committee Publications

2.1. This manual shall be used by all technical committees of CTI that are writing Standards.

2.2. These publications may embrace all phases of heat transfer including cooling towers, cooling tower components, air cooled condensers, components of air cooled condensers, water treatment of these systems, and related subjects.

2.3. CTI Standards are meant as guides for industry and may not encompass every situation that may occur. Good engineering practices should always be used in conjunction with CTI Standards.

2.4. The CTI Office shall have administrative charge of all drafts of documents.

2.5. Any questions concerning a Standard should be directed to the CTI Office staff who can properly direct the inquiry.

3.0 Definitions and Abbreviations used in this Manual

3.1. For purposes of this manual, the following terms and abbreviations shall apply unless otherwise indicated.

3.1.1. **Ballot** refers to the form upon which a vote is cast.

3.1.2. **Board of Directors (Board)** is elected by the membership of CTI, and is balanced between those generally considered to be a mix of the CTI: Manufacturers (of cooling towers and air coolers), Suppliers (to the manufacturers and users), and Owner/Operators.

3.1.3. **Consensus** indicates substantial agreement, but not necessarily unanimity. Percentages required for achieving consensus are given where appropriate.

3.1.4. **Cooling Technology Institute (CTI)** is a not for profit technical organization formed to promote the use of cooling devices using water as the substrate for cooling. It also embraces

other forms of heat transfer equipment when a need arises for the betterment of the industry.

3.1.5. **CTI Office** refers to the personnel employed by the membership of CTI to administer the day-to-day operation of the Institute, maintain records of the Institute, and generally oversee the operation of the Institute.

3.1.6. **Document** refers to an approved CTI technical committee publication such as a standard, test code, or guideline.

3.1.7. **Member** is a company or individual in good standing with CTI that has an interest in heat transfer equipment and systems. A member may be a manufacturer, a supplier, or owner/operators of cooling systems and related equipment along with consultants, engineers, and builders related to the cooling industry.

3.1.8. **Proposed Standard** refers to a draft document that has been approved by a task group for review ballot by the technical committee and other interested parties.

3.1.9. A **Task Group** is a group established by a technical committee for the purpose of writing a CTI Standard or for other administrative duties.

3.1.10. **Technical Committees** are standing committees as established by the bylaws to issue standards, codes, guidelines, committee reports, provide technology exchange to anyone interested in the overall industry, and provide technology exchange in all phases of the cooling industry. There may be any number of technical committees.

3.1.11. **Technical Committee Chair** is a person appointed by the president to oversee the operation of one of the

technical committees established by the Board.

3.1.12. The **Technical Review Committee** is a subcommittee of each standing technical committee which reviews existing documents to determine whether the document needs reaffirmation, revision, or withdrawal.

3.1.13. **Vote** refers to the completed ballot form that is returned to the CTI Office from a voter following a letter ballot distribution, a voice vote, roll call, or show of hands that is taken in a meeting.

3.1.14. **Work Group(s)** may be established by a task group to write or review subsections of a proposed Standard.

3.1.15. **Working Draft** refers to a draft document in the early stages of development that has not been approved by the task group.

3.2. For purposes of categorizing voters the following definitions shall be used:

3.2.1. **User** is a person who purchases or uses materials, products, or services addressed in the proposed document shall be classified as a user.

3.2.2. A **Producer** is a person who produces or sells materials, products, systems, or services addressed in the document. Any person who is a consultant under contract to a producer or acts as an agent or distributor to a producer and provides services related to the scope of the document shall be classified as a producer for that document.

3.2.3. **General Interest** is a person who does not fit the definitions of user or producer shall be classified as general interest.

3.3. For purposes of determining the type of revision made to a document or draft

document, and thereby determining whether a revision requires ballot, reaffirmation, etc. the following definitions shall be used:

3.3.1. **Technical Revision** impacts the systematic procedure by which a complex or scientific task is accomplished using the document or the conclusions reached after using the document.

3.3.2. **Editorial Revision** is intended to make the document suitable for publication without altering the technical intent of any portion of the document (usually grammar or typographical).

3.3.3. **Major Revisions** (technical or editorial) are extensive, numerous, or any revision(s) that alter the substance or intent of a document.

3.3.4. **Minor Revisions** (technical or editorial) are a few specific revisions that do not alter the substance or intent of a document.

4.0 Standards, Codes, & Guidelines

4.1. CTI defines **Standards** as a document that specifies the minimum requirements for the performance of a component, equipment, or system.

4.2. CTI defines **Codes** as a document that specifies the equipment and/or procedures required to evaluate the properties or performance of a material, component, or system. Where possible, the details should be explicit enough so that similar results would be produced by any qualified person or agency.

4.3. CTI defines **Guidelines** (sometimes referred to as recommended practices) as a document that identifies a procedure for design, testing, application or evaluation of a specific product, concept, or practice. A guideline is not definitive, but encompasses areas where there may be a variety of approaches to provide an end result.

4.4. CTI standards, codes, and guidelines (Standards) are prepared by CTI technical committees to serve as voluntary guidelines in the cooling system field.

4.5. All interested parties are intended to be represented in Standards development, with voting groups having a balanced membership of users, producers and general interest members. These Standards are based on the experience of the industrial, scientific, and academic communities, and on the collective best thinking that can be achieved by a group of knowledgeable persons. These Standards are issued as minimum requirements that are not intended to restrict or discourage the use of additional requirements.

4.6. When developing a proposed Standard, the sponsoring technical committee shall make every effort to prepare a standard that will set minimum recommended conditions or requirements for equipment, systems, methods, materials, or procedures to perform adequately in specific applications or conditions. Such conditions or requirements shall not impose limitations on the use of procedures, materials, or equipment not listed in a Standard that can also be determined to work as successfully as those included in the standard.

4.7. CTI provides its Standards as voluntary standards, codes, and guidelines to be used by any person, company, or organization.

4.8. The objective of CTI Standards:

4.8.1. To promote safety of industrial, public, and private installations.

4.8.2. To provide an authoritative statement on a specific subject.

4.8.3. To reduce the economic losses resulting from poor performance.

4.8.4. To protect the environment.

4.8.5. To provide a specific reference that can be used for discussion, purchase, or other interchange between parties.

4.8.6. To provide a source of consensus information and guidance in the field of heat transfer, namely cooling tower and cooling system performance.

5.0 Technical Committee Responsibilities

5.1. The technical committees have primary responsibility to develop new Standards as well as revising, reaffirming or withdrawing existing Standards. This includes establishing the task group, defining its assignment, proposed timetable, the scope of the proposed Standard, review and approval of the draft Standard, and to review the technology developed and approved by the task group casting a vote on the proposal.

5.2. A Standard may be developed by a task group sponsored by more than one technical committee. For jointly sponsored task groups the sponsoring technical committee chairs shall agree on the chair for the task group, membership, and assignment. All sponsoring technical committee members shall have the opportunity to vote on the draft Standard and be involved in its development. If more than one technical committee sponsors a task group the technical committee chairs shall determine which one will have administrative control of the task group.

5.3. The administrative technical committee chair shall have the responsibility to replace a task group chair who is not providing adequate leadership or who has resigned.

5.4. The task group shall be composed of at least 5 members and no more than 18 members who will be taken from the membership of the sponsoring technical committee(s). Task Group members shall be selected by the task group chair in conjunction with the technical committee

chair(s). If more than one technical committee is sponsoring the task group, both technical committees shall be represented on the task group.

- If a person desires to be a member of the task group after its formation, he must seek the approval of the task group chair. The task group chair shall also obtain the approval of the technical committee chair(s). The CTI office shall be notified by the task group chair of the addition to the task group in writing by the task group chair as well as the new member's work orientation (producer, user, general interest). If the new member moves the producer's percentage over 49%, the CTI Office will notify the task group chair. The chair will rectify this condition.
- If a task group member resigns from his position or is removed for cause, the task group chair may select a replacement from the sponsoring technical committee(s) with the approval of the technical committee chair(s).

6.0 Task Group and Work Group Responsibilities

6.1. The technical committee(s), task group, and work group chairs should work together to cooperatively fulfill their assignment. The task group shall be charged by the technical committee(s) with writing, reviewing, or revising a Standard. The task group chair shall provide the sponsoring technical committee chair and the CTI Office with a copy of all correspondence, meeting notices, agendas, minutes, and other data pertinent to the technical content of the draft Standard.

6.2. The task group chair will ensure that minutes are taken and other pertinent records maintained and distributed as appropriate. A secretary may be selected from the task group membership to assist in record keeping. The task group chair shall report on the progress of the draft

Standard at each technical committee meeting and indicate how the original timetable of the task group is being met.

6.3. Task groups developing Standards shall consist of no more than 49% in the producer category. Every effort shall be made to maintain a reasonable balance between producers and the user/ general interest categories. There can be only one task group member from any one company (including subsidiaries, agents, or consultants to the company).

6.4. Upon completion of the assignment or disbandment of the task group, the task group chair shall forward originals of all files to the CTI Office for appropriate record retention through one development cycle, in accordance with ANSI procedures for standards.

7.0 CTI Office Administrative Responsibilities

7.1. The CTI Office shall maintain appropriate records of actions taken by a task group and technical committee in the Standard development process through one development cycle.

7.2. The CTI Office shall provide timely and adequate public notice of the intent to prepare a Standard as well as the time and place of task group meetings to provide an opportunity for all interested parties to participate.

7.3. The CTI Office shall notify responsible individuals of the schedule for reviewing existing Standards. The schedule shall be published semi-annually in the *CTI Journal*, the *CTI News*, and the CTI website.

8.0 Board of Directors Responsibilities

8.1. The Board shall have final ratification of all Standards.

8.2. The Board shall review an arbitration appeal in accordance with the section titled *Recourse for Appeals Procedure*.

8.3. The Board shall review and act on proposed amendments to this manual.

9.0 Voter Responsibility

9.1. Eligible voters shall return completed, signed or e-mailed ballots to the CTI Office by the stated deadlines and indicate whether they fall into the user, producer, or general interest category for the document being balloted.

9.2. When sent written notice that seeks action on the status of a negative vote, the voter should respond in writing within 30 days of the distribution date of the notice. The task group may not change a vote unless instructed in writing (including electronic communications) to do so by the voter.

9.3. All negative votes that are unresolved shall be reported as outstanding negatives, and recorded as such. These votes shall be circulated to members on the distribution list for the prior ballot, who shall be given an opportunity to respond, reaffirm, or change their votes with a response deadline of six weeks. The task group shall also include their rationale for rejecting the negative as well as the technical justification for their position.

9.4. All distribution of negatives outside the task group shall not include the name of the negative voter or his affiliation.

10.0 Standards Writing Task Group Operations

10.1. Formation of task groups to write Standards shall be proposed by one or more technical committee members and accepted by the technical committee(s). Requests for Standards may also be submitted to the CTI Office by parties interested in the heat transfer field. The CTI Office shall notify the appropriate technical committee chair who shall inform the technical committee of the proposal. The technical committee chair shall notify the party submitting the recommendation of its disposition.

10.2. Proposals for new task groups shall include a proposed title, assignment, urgency, time line, and officers. The proposal shall be authored by the technical committee chair or his designee.

10.3. The vice president shall determine if the scope of the proposed assignment requires assistance from another technical committee. If so, he shall advise the chair of the other technical committee.

10.4. Task Group Meetings

10.4.1. Task Groups shall meet as often as necessary to meet the task group's goal.

10.4.2. Agenda's will be prepared and sent to the sponsoring technical committee members and other parties who have expressed their interest in the task group's proposed Standard in writing to the CTI Office at least four weeks prior to all task group meetings.

10.4.3. The CTI Office shall be notified of all task group meetings, including those not held at the Annual Meeting and Summer Workshop Meeting.

10.4.4. Task group meetings are open meetings i.e. any interested party may attend and participate in the discussions. However, task group members are the only participants eligible to vote and to set or modify the agenda of the meeting. The task group chair or the chair's designee determines the agenda and organization of the meeting.

10.4.5. Task groups may meet in executive session only for the purpose of determining procedural matters and policy questions. No votes concerning any part or completed documents may be taken in executive session.

10.4.6. Task groups must meet at least once per year, either at the Annual Meeting or Summer Workshop.

Additional meetings may be held as deemed necessary by the task group. Meeting minutes shall be taken and distributed to task group members and other meeting attendees within 60 days after the meeting.

10.5. Work Group

10.5.1. Work groups may be formed by the task group chair to accomplish specific parts of the task group's assignment.

10.5.2. Work group chairs and members shall be appointed by the task group chair. Members of the work group must be members of the sponsoring task group.

10.5.3. Work group shall meet as often as necessary to meet their goals. Electronic communications may be used if found feasible.

10.5.4. Work group meetings are open meetings i.e. any interested party may attend and participate in the discussions. However, task group members are the only participants eligible to vote and to set or modify the agenda of the meeting. The work group chair or the work group chair's designee determines the organization of the meeting. Only work group members are eligible to vote.

11.0 Preparation of a Standard, Code, or Guideline

11.1. Preparation of the manuscript: Working Drafts.

11.1.1. Working drafts that are shared prior to being submitted to the CTI Office shall contain the following statement on each page:

WORKING DRAFT - THIS DRAFT OF A PROPOSED CTI STANDARD (OR CODE, OR GUIDELINE) IS FOR USE BY THE TASK GROUP ONLY AND SHALL NOT BE DISTRIBUTED OUTSIDE THE TASK

GROUP AND MEETING ATTENDEES WITHOUT APPROVAL OF THE TASK GROUP CHAIR. THIS DRAFT HAS NOT BEEN REVIEWED AND APPROVED. THIS DRAFT STANDARD (OR CODE OR GUIDELINE) IS THE PROPERTY OF CTI AND IS COPYRIGHTED BY CTI FROM ITS INCEPTION IN DRAFT FORM.

11.2. Under no circumstances shall the working draft be circulated outside the task group, meeting attendees, approved technical advisors, or the sponsoring technical committee officers unless authorized by the task group chair.

11.3. When a draft is completed, all members of the task group shall vote on the proposed Standard. The vote may be taken in any scheduled task group meeting or by written ballot.

11.3.1. All task group members shall have a vote.

11.3.2. A two-thirds majority shall be required to proceed to review committee.

11.3.3. A task group member who holds a written ballot for more than 30 days shall be considered abstaining from the vote on the proposed Standard and shall not be counted to satisfy the previous paragraph.

11.4. The technical committee chair shall appoint a review committee to make a preliminary review the proposed Standard prior to submitting it for technical committee review. The review committee shall be comprised of three people who are familiar with the technology being considered who are not members of the task group, although they may have participated in task group meetings.

11.4.1. The review committee shall review the draft Standard and make any comments concerning the overall content of the document and submit them to the technical committee chair and the task group chair. The review

committee is also responsible to review the document for editorial content.

11.4.2. The task group must address all comments by the review committee although they are not required to incorporate them into the document.

12.0 Technical Committee Public Review Ballot

12.1. Upon receiving authorization from the administrative technical committee chair for public review of the proposed Standard by letter ballot distribution, the CTI Office shall send the ballot to the following people for voting with a six-week deadline for response:

12.1.1. the technical committee list,

12.1.2. the Board,

12.1.3. the other technical committee chairs,

12.1.4. other interested parties who have been identified by the task group chair, and/or persons with a legitimate, interest who have expressed in writing to the CTI Office a desire to vote on the proposed Standard.

12.2. When a proposed Standard is sponsored by more than one technical committee, both technical committees shall have the opportunity to vote on the proposed Standard.

12.3. Votes returned by persons not included in the official distribution shall be forwarded to the task group for information purposes only.

12.4. The letter ballot shall provide for three types of votes:

12.4.1. Affirmative: The voter may note perceived editorial errors and their corrections.

12.4.2. Negative: The voter should show a perceived technical inaccuracy or omission in the proposed Standard or address points dealing with perceived ambiguity or lack of clarity

that results in perception of a technical inaccuracy.

- A negative must be accompanied by a written comment (relevant to the portion of the document being balloted), preferably including a technical explanation and justification.
- A negative must include a suggested revision or action that would serve to solve the negative. Negative ballots without suggested revision or actions will be considered as abstaining.

12.4.3. Abstaining: The voter may note perceived editorial errors and a recommended correction.

12.5. Voters not meeting any one of the following criteria shall be recorded as abstaining:

- The vote must be signed; however, if the ballot was sent to the voter via a personal e-mail address, or if the voter has a personal e-mail address registered with the CTI Office, the vote may be submitted and accepted via e-mail for that e-mail address. A personal e-mail address is one that is accessible to only an identified individual.
- The vote must indicate if the voter falls into the user, producer, or general interest category for the proposed document. The voter should also include his affiliation.
- The vote must be returned by the deadline stated on the ballot, or in the case of a CTI Office issued deadline extension, for the extended deadline.
- The vote must be recorded on an official CTI ballot form. Ballots that are distributed electronically by e-mail and returned by e-mail shall be considered official CTI ballot forms.

12.6. The letter ballot shall be considered officially closed when a majority of the ballots mailed to the technical committee(s) list are received by the established deadline.

12.6.1. The CTI Office may extend the deadline for responses if these criteria are not met. CTI Office extensions are for 3 weeks.

13.0 Results

13.1. The CTI Office shall advise the chairs of the technical committee(s) and task group of the letter ballot results, providing the results of the letter ballot as well as copies of all negatives and other votes with comments within three weeks after the ballot has closed. A copy of the report shall be distributed to all task group members.

13.2. At least two thirds (2/3) of all ballots returned, excluding abstentions, must be affirmative for the proposed Standard to proceed.

13.3. When more than one-third (1/3) of all ballots, excluding abstentions, returned from the technical committee are negative, the proposed Standard shall be returned to the task group for further review and revision. After this revision a second technical committee review ballot shall occur.

13.4. The task group may proceed to the section titled Approval and Publication in cases which:

- No negatives were received or the negatives that were received are withdrawn by the voter; and
- No revisions or only minor editorial revisions were made to the document.

14.0 Addressing of Votes on Letter Ballots

14.1. The technical committee chair must ensure that the task group demonstrates due diligence in addressing votes on which

comments were registered, giving consideration to the alternatives outlined by the voters.

14.1.1. When resolution of negatives is assigned to a single task group member, conflicts of interest shall be avoided.

14.1.2. The task group chair must provide evidence that the task group has attempted to resolve all negatives.

14.1.3. If negatives are not withdrawn prior to a task group meeting, they shall be reviewed in an open task group meeting. The task group chairman shall invite the negative voter(s) in writing to the task group meeting when the negatives will be discussed. Copies of this letter or e-mail must be sent to the CTI Office. However, negative voters do not have to be present for the negative to be discussed. The task group meeting where the negatives are to be discussed must be held within 8 months of the ballot closeout.

14.2. The task group may meet as often as necessary to address ballot results. However, these meetings must have public notification to all technical committee members, with an agenda included indicating what issues will be discussed.

14.3. Resolution of all negatives must be documented in writing, signed by the negative voter, and on file at the CTI Office. Negatives may be resolved via mail, fax, or e-mail.

14.3.1. A negative that is withdrawn shall be categorized as affirmative unless the voter specifically requests that the vote be categorized as abstaining.

14.3.2. When sent written notification that seeks action by a negative voter on the status of a negative, the negative voter should respond in writing within 30 days of the distribution date or the

issued addressed will be assumed resolved and the vote considered an abstention. The task group may not change a vote unless instructed in writing (including e-mail) to do so by the voter.

14.3.3. All negative votes that are unresolved shall be circulated to members on the original distribution list for the ballot. All indications of the voters name and affiliation shall be removed from the negative ballot. They shall be given an opportunity to respond, reaffirm or change their vote based on the information in the negative ballot within six weeks.

14.3.4. Documents distributed in support of the negative votes shall:

- Speak only to the specific point(s) that remain unresolved.
- Be generic and not contain any commercial materials, and
- Be free of any information not directly related to the ballot item.

15.0 Open Review at a Technical Committee Meeting Following Review Letter Ballot

15.1. If no technical changes have been made to the draft Standard since the ballot, the draft Standard may proceed to Board approval without an open review.

15.2. The chair of the technical committee is responsible for scheduling the open review and for including the notice of the review in the agendas for all sponsoring technical committees.

15.3. The chair of the technical committee or designee (who shall not be the task group chair) shall conduct the meeting and outline the purpose of the discussion.

15.4. The task group chair shall review the latest revision of the draft Standard and note significant changes that were made to address comments and negatives.

15.5. Negative voters who are present shall be given the opportunity to explain the rationale behind their negative(s).

15.6. Within two weeks of the meeting, the chair of the technical committee shall assure that meeting minutes are distributed to all those on the distribution list. These minutes shall document the open review and report on the status of the negatives.

16.0 Reballot

16.1. Reballot is required when there are unresolved negatives or if technical changes were made to the proposed Standard to resolve negatives.

16.2. Only those paragraphs of the proposed Standard that have been technically altered since the last ballot and those portions of unresolved negatives shall be distributed together with the task group's rationale for disagreeing with the negative voters' position shall be included with the reballot.

16.2.1. If necessary, additional paragraphs may be included to provide continuity, but there can be no comments on these paragraphs; only the paragraphs that is in question.

16.3. The CTI Office will distribute the reballot to the same group of people outlined in the section on original ballots. The letter ballot shall provide for three types of votes: affirmative, negative, and abstaining as previously described. The letter reballot shall be considered official when the criteria are met as described before.

16.4. Report of Reballot Results

16.4.1. The CTI Office shall advise the sponsoring technical committee and task group chairs of the ballot results, providing copies of all negatives and other votes with comments within two weeks after the letter ballot is closed. A

copy of the ballot results will be mailed to all task group members.

16.4.2. Negative votes must be addressed, but they do not have to be resolved at this point if 90% of the votes from the technical committee list, excluding abstentions, are affirmative.

16.4.3. In cases where an affirmative vote is less than 90% the proposed Standard shall be returned to the task group for additional review and revision.

16.4.4. If technical changes are made to the proposed Standard, it must be submitted for another reballot.

17.0 Approval and Publication

17.1. Negative voters whose votes remain unresolved shall be notified by the CTI Office that the proposed Standard is proceeding toward final approval.

17.2. The CTI Office staff with the assistance of the Publications Committee will review the document for editorial content. If any editorial changes are recommended they must be approved by the task group chair to be sure these changes do not affect the technical content or meaning of the document.

17.3. After the editorial review the CTI Office shall forward the proposed Standard to the technical committee chair with a brief review of the approval history and ask that the draft be approved for publication.

17.4. The technical committee chair must agree that proper procedures were followed in developing and balloting the proposed document.

17.4.1. Approval of the proposed Standard may be withheld only for improper methodology of Standard advancement or breach of CTI policy.

17.4.2. Failure of the technical committee chair to respond in writing

within 30 days to a request for approval to advance the proposed Standard at any stage of development shall constitute approval to proceed.

17.5. After approval by the technical committee chair, the proposed Standard shall be forwarded to the vice president who will submit it to the Board for their approval.

17.6. Since the Board has had the opportunity to vote on the technical issues in the Standard, they must approve a Standard unless:

- They perceive that proper procedures have not been followed,
- They perceive a breach of CTI policy, or
- They find a significant editorial error in the document.

18.0 ANSI Standards Publication

18.1. If a Standard is expected to be an American National Standard and has been developed or revised, notification shall be transmitted to ANSI using the Project Initiation Notification System (PINS) form, or its equivalent for listing in *Standards Action*. In addition, proposals for new or revised American National Standards shall be transmitted to ANSI for listing in *Standards Action* to provide an opportunity for public comment. The comment period shall be a minimum of 60 days unless the full text of the revision(s) can be published in *Standards Action* in which case the comment period may be a minimum of 30 days. The same comment periods shall apply whenever listing for comment in *Standards Action* is required by these procedures.

18.2. Prompt consideration shall be given to the written views and objections of those commenting on the listing in *Standards Action*. An effort to resolve all expressed objections shall be made, and each objector shall be advised in writing (including electronic communications) of the disposition of the objection and the

reasons therefor. In addition, each objector shall be informed that an appeals process exists within CTI's procedures.

19.0 Recourse for Appeals Procedure

19.1. Persons whose interests are directly and materially affected, and who have been or may be adversely affected by a substantive or procedural action or inaction of CTI shall have the right to appeal.

19.1.1. Appeals shall be made to the CTI Administrator at the CTI Office who shall notify the vice-president, technical committee chair, and task group chair of the pending appeal.

19.2. The task group chair shall place the appeal on the agenda of the next task group meeting and specifically notify the person making the appeal of the pending agenda item, inviting him to the meeting to make a verbal presentation of the appeal. However, it is not necessary for the person making the appeal to attend the meeting for the appeal to be resolved.

19.3. If, after the appeal is made, the task group agrees with the position of the appeal the proposed Standard shall be revised to accommodate the appeal.

19.4. If the task group determines that its original position is proper, the appeal is denied. The task group chair shall notify the person making the appeal in writing that the appeal has been denied. Copies of this letter shall also be sent to the technical committee chair, the vice president, and the CTI Administrator. The letter shall also state that the person making the appeal may further appeal to the Board by notifying the CTI Administrator of those intentions.

19.5. The CTI Administrator shall notify the task group chair, the technical committee chair, and the vice president of the continuation of the appeal.

19.5.1. The vice president shall notify the Board of the appeal and present

them with the written rationale of the negative as well as the rationale of the task group.

19.5.2. The Board will meet in executive session to review the negative voter's appeal and the task group's rationale. The negative voter and task group members shall be invited to the meeting, but do not have to be in attendance for a decision to be reached. This notification must be made at least 30 days prior to the meeting date. The negative voter and the task group chair (or his designee) shall be given the opportunity to further explain their respective positions. The Board may request others with expertise in the particular field of interest to provide technical information which might help in making a decision.

19.5.3. The Board will decide whether the negative has merit or uphold the task group's position. If the Board decides in favor of the negative voter, the task group must resolve the negative to the satisfaction of the negative voter.

19.5.4. The proposed changes must be submitted to the voters in the same manner as any rebalot following the section on rebalot.

19.5.5. If the Board decides in favor of the task group, the proposed document shall continue following the section on approval and publication.

20.0 Publication

20.1. The CTI Office will publish the standard, code, or guideline within two months of Board approval and announce the approval of the new standard, code, or guideline in the next *CTI Journal*, and CTI website. The office shall assign publication numbers, the core number of which shall be retained through all revisions.

20.2. ANSI standards shall be published within two months of the close of the ANSI

public notice and review process, including completion of any process required by this manual if revisions are required.

20.3. CTI shall have the right to withdraw a document from the ANSI process if CTI decides that to proceed would compromise the technical content of the document or the integrity of the Institute. Any decision to withdraw a document from the ANSI process shall be proposed by the sponsoring technical committee and task group chairs and voted on by the Board.

21.0 Review, Reaffirmation, Revision, or Withdrawal of Standards or Codes

21.1. Mandatory Standards Review

21.1.1. Review of CTI standards, codes, and guidelines shall be completed within five years following initial publication and every five years thereafter. The technical committee chairs shall have the responsibility to see this is accomplished.

21.1.2. The CTI Office shall be responsible for notifying the technical committee chairs that a review is needed.

21.1.3. The CTI Office will also be responsible for publishing a notice concerning Standards up for review in the *CTI Journal*, the *CTI News*, and the CTI website.

21.1.4. If the technical committee no longer exists, the vice president will assign document review to another technical committee that he deems to have the necessary expertise.

21.2. The appropriate technical committee's standing committee on document review will review the Standard and recommend to the chair the action (revision, reaffirmation or withdrawal) that should be taken.

21.2.1. If the Technical Review Committee recommends revision, the

technical committee chair will appoint a task group (unless one already exists) to make this revision.

21.3. Reaffirmation

21.3.1. If a standard, code, or guideline is to be reaffirmed in its existing form, or requires only minor editorial changes, the proposal to reaffirm (or reaffirm with editorial changes) shall be distributed to the technical committee members at least 30 days prior to the meeting where the reaffirmation will take place (either during the Annual Meeting or Summer Workshop).

21.3.2. A Standard may be distributed for letter reaffirmation, if desired, in the same manner as a new Standard. The vote for reaffirmation will be approved or disapproved. The vote for approval must be at least 2/3 the ballots returned, not including any abstentions.

21.3.3. If the technical committee chair believes that reaffirmation in a technical committee meeting would accurately reflect the disposition of the sponsoring technical committee on reaffirmation, he may add the reaffirmation vote to an agenda during either the Annual Meeting or Summer Workshop. If the vote at this meeting is at least 2/3 for reaffirmation, the Standard will be considered reaffirmed.

21.3.4. If the Standard is not reaffirmed by the 2/3 majority needed, a task group shall be appointed by the technical committee chair to revise the document. This shall be handled in the same manner as any revision of a document.

21.4. Revision of an Existing Standard, Code. Or Guideline

21.4.1. A proposed revision to an existing CTI standard, code, or guideline shall be by letter ballot to the technical committee list as described in

the section on new Standards. A task group must be formed in the same manner as for new standard unless the task group that wrote the existing Standard still exists.

21.4.2. If technical changes are made to a Standard being revised these changes must be substantiated with technical justification by the task group. Such documentation should be retained in the task group files and must be noted in their minutes.

21.4.3. To proceed toward publication, the proposed revised Standard shall complete final review and approval procedures as defined in the section titled *Approval and Publication*.

21.5. Withdrawal

21.5.1. If an existing Standard is to be considered for withdrawal, the technical committee chair shall advise the CTI Office to issue a special letter ballot to the technical committee membership and others as defined in the section on letter ballots.

21.5.2. Review committee that recommends withdrawal shall prepare justification for the withdrawal for to be included with the letter ballot.

21.5.3. The ballot shall be distributed and completed in the same manner as any technical committee letter ballot.

21.5.4. Approval of the withdrawal shall require 2/3 affirmative vote, excluding abstentions, with a minimum return of 50% of the ballots from the ballot list and the number of voting members categorizing themselves as producers less than 50%.

21.6. If the proposal to withdraw is approved, the CTI Office will forward the Standard to the vice president with a brief description of the review and withdrawal history. The vice president shall ensure that proper procedures were followed and

inform the CTI Office that they have approval to proceed toward withdrawing the Standard.

21.7. After approval is received from the vice president shall submit this recommendation to the Board for approval.

21.8. If the Standard is also an ANSI standard, the proposal must be submitted to ANSI for listing in *Standards Action* for public comment.

21.8.1. Prompt consideration must be given to the written views and objections on the listing in *Standards Action*. An effort to resolve all expressed objections shall be made, and each objector shall be advised in writing of the disposition of the objection and the reasons thereof. In addition, each objector shall be informed that an appeals process exists within CTI's procedures.

21.9. Automatic Withdrawal

21.9.1. Standard that is not reaffirmed or revised within two years of the mandatory date of review shall be administratively withdrawn as a CTI Standard if a committee is not showing due diligence in reviewing the Standard.

- The vice president shall determine whether the Standard is to be withdrawn. The vice president's recommendation shall be forwarded to the Board for approval.
- The CTI Office shall provide adequate notification of the pending automatic withdrawal to the technical committee membership and publish the notice in the *CTI Journal* and the CTI website.

- If the document is an ANSI-approved standard, the CTI Office shall notify ANSI of the pending action in accordance with ANSI procedures.

21.9.2. The CTI Office shall announce the reaffirmation, withdrawal, or revision of a Standard in the next issue of the *CTI Journal* and *CTI News*.

21.9.3. Anyone may submit a written recommendation that a Standard be reviewed, revised or withdrawn to the CTI Office. The Office shall forward the request to the appropriate technical committee chair.

21.9.4. The Board may administratively withdraw an existing Standard for due cause such as when committee activity to revise, reaffirm, or withdraw a standard, code, or guideline has reached an impasse.

22.0 Amendments and Interpretations of this Manual

22.1. The CTI Standards Manual must be reviewed at least once every five years.

22.2. The CTI Standards Manual can be amended by letter ballot or the Board members present at any official meeting of the Board if notice of the proposed amendment was included in the agenda of the meeting. A 2/3 vote is required to approve the amendment.

22.3. Amendments approved by the Board shall become effective at the time of approval.

22.4. A committee of the technical committee chairs and vice president shall be responsible for providing interpretations of this manual when necessary

ADDENDUM TO CTI STANDARDS MANUAL

This addendum provides a transition from the current Standards approval process to the process outlined in this manual. The life of this addendum shall be three years unless specifically extended by the Board for a proposed Standard that is very close to final approval. After three years, extensions to the addendum for specific task groups must be made by the Board each year for a total of two additional years, if required. The technical committee chair must provide a report each time an extension is requested showing the progress that has been made since the previous extension was granted. The Board may choose to provide the extension or they may deny the extension depending upon the circumstances outlined in the report. The proposed Standard must be completed, including all approvals within five years of adoption of this manual by the Board.

To qualify to operate under this transition method the task group has made significant progress as determined by the technical committee chair in completion of its document.

Any task group may disqualify themselves from the transition method if they so desire. The request for disqualification must be made in writing to the sponsoring technical committee chair. Once this disqualification notice has been received by the technical committee chair, it cannot be rescinded.

This addendum will automatically be canceled five years after adoption of the manual by the Board.

Notes



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