

**American Nuclear Society
N16 Consensus Committee
Policy and Procedures Manual**

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**American Nuclear Society
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FOREWORD

The American Nuclear Society (ANS) is accredited by the American National Standards Institute, Inc. (ANSI), for the purpose of developing standards useful to the nuclear community.

The ANS Standards Committee supports the following consensus committees:

N16 Nuclear Criticality Safety;
N17 Research Reactors, Reactor Physics, Radiation Shielding, and Computational Methods
NFSC Nuclear Facilities Standards Committee, and
RISC Risk Informed Standards Committee.

The N16 Consensus Committee was formed in 1968 to distinguish nuclear criticality safety (NCS) of fissionable materials outside of reactors from reactor and critical experiment safety. The distinction is that

- NCS addresses safely subcritical fissionable material processing, operations, storage, transportation and the mitigation of the consequences of a nuclear criticality accident whereas
- Reactor and critical experiment safety address the safely subcritical loading, approach to and operation of fissionable material at the critical state, and unloading of a reactor or critical experiment assembly.

The purpose of this manual is to provide guidance to all members of N16, including its Subcommittee 8 and Working Groups, regarding how the Committee conducts its business. By following the policies and procedures contained herein, it is the Committee's expectations that a uniform and predictable consensus standards process can be achieved. Also, the consistent use of this manual will facilitate the timely identification, review, approval, and maintenance of those new and existing standards within the scope of the Committee.

1.0 SCOPE

The N16 Consensus Committee is responsible to oversee and provide final consensus for preparation and maintenance of standards that address the nuclear criticality safety of materials capable of supporting self-sustaining neutron chain reactions outside nuclear reactors and critical experiments. The standards prepared and maintained provide guidance for prevention and mitigation of nuclear criticality accidents during handling, storage, transportation, processing, and treatment of materials.

2.0 ORGANIZATION

The ANS Standards Board coordinates all aspects of standards activities and interests within ANS and makes recommendations to the Society on matters involving standards. The four consensus committees report directly to the Standards Board as shown in Figure 1.

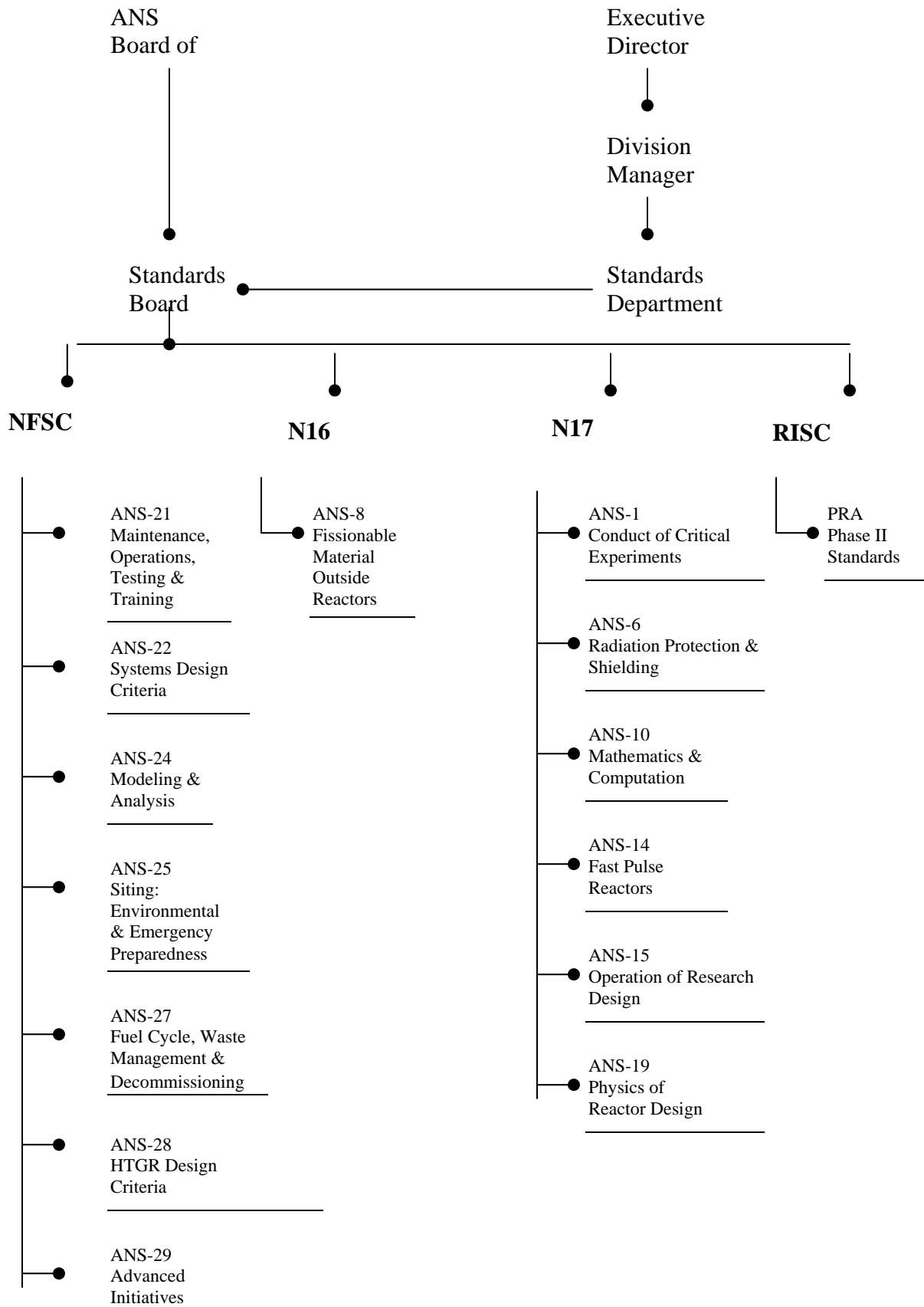
The purpose of the N16 Consensus Committee (“N16”) is to assure that a consensus process has been followed, that consensus was achieved, and that standards developed within the scope of its responsibility reflect the consensus of N16. Additionally, N16 is responsible for monitoring the activities of Subcommittee 8 and Working Groups that are needed to develop proposed standards within its scope of responsibility. Specifically, standards developed by Subcommittee 8 Working Groups for subsequent transmittal to the ANS Standards Board (ASB) are to be reviewed and approved by the N16 membership.

Subcommittee 8 was established to manage the activities of Working Groups and to perform detailed reviews of proposed standards for technical content, relevance, and acceptability. These Working Groups create the text of N16 Standards and resolve, review, and ballot comments.

Information regarding N16 and Subcommittee 8 can found on the ANS Standards Development Web site at

<http://www.ans.org/standards/committees>.

Figure 1: ANS Standards Committee Organization



3.0 MEMBERSHIP

3.1 N16 Committee

The N16 Chair shall appoint each member of the Committee. Members are selected to provide a broad spectrum of experience and expertise to the Committee. Opportunity for membership is provided to individuals and organizational representatives willing to participate and to technically and administratively contribute to supporting standards activities. The N16 membership shall have a representative membership balance of interests in the areas of:

- **OWNERS**
Any organization (including utilities) that owns a nuclear power facility. Includes operators of such facilities where the operator and owner are different companies. Includes national or international organizations established to represent or work on behalf of owners (e.g., NEI, INPO, EPRI, and WANO).
- **VENDORS**
Any organization that provides equipment (including fuel) to an owner, the government, or to another vendor. Includes organizations that also provide services to owners. (Vendors are also called suppliers or manufacturers.)
- **ARCHITECT-ENGINEERS**
Any organization that provides services (but not equipment) to an owner, the government, or a vendor. Includes organizations that provide design work (including architectural services), planning, and construction management.
- **CONSULTANTS**
Any organization whose mission is to provide professional services (but not equipment) for addressing technical, research, development, safety, and regulatory issues among Owners, Vendors, Government, Universities, and National Laboratories.
- **GOVERNMENT AGENCIES**
Any federal or state agency (such as departments, administrations, commissions, and boards) with missions to regulate use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, to protect the environment, and to advance the national, economic, and energy security of the United States.
- **NATIONAL LABORATORIES**
Organizations managing and operating government owned facilities for the purpose of basic and applied research and development for industry or government.

- **UNIVERSITIES**
Any recognized institute of higher learning whose mission is to educate and to provide research through an environment of open and interactive collaboration with industry and government.
- **SOCIETIES**
Standards developing organizations, including insurance and nuclear inspection, whose mission is to develop standards, consensus or otherwise, that have potential relevance to ANS standards (ANS representation is not allowed).
- **INDIVIDUALS**
A person who is nationally recognized for expertise within the scope of the assigned consensus committee and whose services or travel are not paid for by any other organization defined herein (with the exception of grants administered by ANS or a similar organization).

Representation on N16 is kept as broad as possible, including having a representative from each type of organization (to the extent possible) and other nuclear related standards developing organizations. Multiple representations from a single organization is discouraged. To ensure a proper balance of interests, not more than one-third of the membership shall be drawn from any particular interest group.

The N16 Chair's organization plan and Subcommittee appointments shall be with the concurrence of the Committee.

3.2 Subcommittees

The N16 Chair shall establish Subcommittees as needed to accomplish Committee objectives. A Chair for each Subcommittee is appointed for a renewable term of three years. Each Subcommittee Chair shall also be an *ad hoc* member of the N16.

Each member of a Subcommittee shall have experience and competence in the areas for which the Subcommittee is responsible. Multiple representation from a single organization is discouraged and an effort shall be made to include a representative from each type of organization that has a material interest in the standards that are within the scope of the Subcommittee. To ensure a proper balance of interests, not more than 40% of the Subcommittee membership should be from any particular interest group.

The Subcommittee Chair's organization plan and Working Group appointments shall be with the concurrence of the Subcommittee.

3.3 Working Groups

Subcommittee Chairs shall establish Working Groups as needed to discharge Subcommittee responsibilities. A Chair for each Working Group is appointed for a renewable term of three years. Each Working Group Chair should be a member of the Subcommittee.

The Working Group Chair shall be responsible for the selection of its members. The Chair should request assistance in this selection from the responsible Subcommittee. The composition of the Working Group should include a balanced representation from the principal designers of the system or technology that is the subject of the standard and from the user community. Each member should have a direct interest and expertise in the area under consideration.

The size and diversity of the Working Group shall be flexible, consistent with the goals of efficiency, user interest, and useful technical content of the proposed standard. Although members should be drawn from a spectrum of involved interests, the total membership should be kept as small as possible to enhance close working relationships and good communication (four to eight people, including a member of the responsible regulatory agency). This balanced representation is different from the concept of balance used in establishing consensus bodies, which involves representation from all interested parties.

4.0 N16 OFFICERS

The officers of N16 shall consist of a Chair, Vice-Chair, and Secretary. The Chair and Vice-Chair shall be members of the Committee and be elected by the Committee for renewable terms of three years.

The Chair shall preside at all meetings of the Committee and perform such duties as are customarily required by this office.

Duties of the Vice-Chair are to conduct Committee meetings in the absence of the Chair and to serve as the N16 Standards Coordinator. The N16 Standards Coordinator shall assist the N16 Secretary in maintaining the current status of all N16 standards and also assist the Subcommittee 8 Chair with issues related to standards development and maintenance. As requested, the Vice-Chair shall also serve as Chair of Special Committees.

The ANS Standards Administrator serves on the Committee as its Secretary and assists in administrative matters. The Secretary is responsible for required notification of the consensus balloting process, including the distribution of drafts of proposed standards and ballot forms and collection and documentation of balloting results.

5.0 N16 BUSINESS CONDUCT

5.1 Quorum and Meeting Requirements

The Committee shall communicate business at least once in each calendar year, and members are expected to participate. When it is not possible for a member to participate, the member is expected to be represented by a designated alternate, who shall have all the privileges and obligations of the member during the period of service in this capacity.

A quorum must be present for the Committee to conduct a formal vote. A quorum consists of over 50% of the voting membership of the Committee.

When discussion indicates a pronounced difference of opinion on any question, the N16 Chair shall call for a formal vote and that vote shall be recorded in the minutes. An affirmative vote requires a majority of those present at a meeting voting in favor. A simple majority of those present applies to all official actions except the consensus balloting on standards.

The N16 Chair periodically reviews the effectiveness of each member's participation, including voting records and attendance at meetings, and has the authority and obligation to adjust the Committee membership as deemed necessary to ensure the continued effectiveness of N16.

5.2 Schedule for Review of Proposed Standards

The time provided to N16 members for review or to ballot a proposed standard should be at least six weeks prior to the meeting at which the comments are scheduled to be discussed or the ballot closing date, as appropriate. The N16 Chair may, if necessary, shorten the period for the ballot

review if the Committee had recently reviewed an earlier draft and there is a substantial demand for the standard by the user community.

Every effort should be made by the Working Group Chair, Subcommittee Chair, N16 Chair, and Secretary to expedite the process so that review or ballot comments can be made available to the Working Group at least ten days prior to the Committee meeting at which the comments are scheduled to be discussed.

5.3 Balloting Process

Proposed revisions, reaffirmations, new standards and responses to inquiries shall be submitted to the members of the Committee for letter ballot approval by the members of the Committee. Unless considered inappropriate by the Chair, concurrent public review procedures, through the Board of Standards Review of the American National Standards Institute, shall be employed

The N16 Ballot Form shall be used to record the vote of each voting member. This form is available electronically on the ANS Standards Development Web site (see Section 8.0 of this manual). Completed (signed) ballots may be returned to the Secretary either by mail, fax, or electronically. As shown on the Ballot Form, Committee members shall use one of the following categories to record their vote:

Approved.

The balloter marking this choice is declaring satisfaction with the draft as written.

Approved with Comments.

The balloter marking this choice is declaring acceptability of the draft and is requesting that the Working Group consider the balloter's written comments and proposed solutions, which shall be appended to the ballot.

Not Approved.

The balloter marking this choice is declaring the unacceptability of the draft as written. The balloter shall append written comments and proposed solutions. The balloter shall also clearly identify those contingent comments, the satisfactory resolution of which would elevate the ballot to "Approved with Comments," or if not resolved to the balloter's satisfaction, would permit the balloter the right to submit, for the final record, the "Not Approved" status.

Not Voting.

The balloter marking this choice is declaring that, upon due consideration, no other ballot choice is appropriate. The reason for this choice shall be appended (e.g., lack of necessary expertise). Lack of time to review the draft is not an acceptable reason. Ballots marked "Not Voting" are included in the ballot tally for determining whether consensus has been achieved.

Copies of ballots containing comments shall be sent to the Subcommittee and Working Group for action and resolution (see Section 6.4 of this manual). The Working Group must attempt to resolve all "Not Approved" (negative) ballots and adverse comments. Other comments may be grouped and responded to collectively. A summary of these communications shall be retained as a part of the consensus-forming history of the proposed standard.

If a substantive change is made to a document to resolve a negative vote, the proposed standard shall be resubmitted to the N16 for either formal (i.e., written) vote or letter ballot. The N16 Chair, in consultation with the Subcommittee Chair, shall determine if the change is substantive. Final determinations shall be made by the N16 Chair.

Each negative balloter shall review the resolutions proposed by the Working Group and, if acceptable, change the ballot to an "Approved" or "Approved with Comments" status. The balloter shall do so in writing to the Secretary, with a copy to the Subcommittee and Working

Group Chair. If not acceptable, the balloter should notify the Subcommittee and Working Group Chair in writing of the basis for this decision. The balloter and the Subcommittee and/or Working Group Chair shall make a reasonable attempt to resolve any such issues. If, in the opinion of the Subcommittee and Working Group Chair, the issues cannot be resolved, they shall notify the Secretary in writing and provide copies of relevant materials. The Secretary shall inform all of the members of the Committee in writing, including supporting materials for reconsideration. The Committee members shall be given a reasonable opportunity to revise their ballots in light of the disagreement existing on the proposed standard.

The N16 Chair shall use the formula shown below, in conjunction with the definitions provided in this section, to determine if consensus has been reached.

- a. Consensus for approval is permitted if the following equation is satisfied and if the vote count represents a reasonable balance of interests of the entire committee:

$$\frac{A}{A+D+B+N} > 1/2.$$

- b. Consensus for approval is dictated if the following equation is satisfied:

$$\frac{A}{A+D+B+N} \geq 2/3,$$

where

A - Approved, including approved with comments
 D - Not Approved
 B - Not Voting
 N - Ballots not received.

Thus, if, in the final ballot tally, a majority of all ballots received are affirmative, and if these ballots represent a reasonable balance of interests of the entire Committee, the N16 Chair may determine that consensus for approval exists. If two-thirds or more of all eligible balloters have balloted affirmatively, it is mandatory that consensus for approval be declared by the N16 Chair.

After Committee approval, proposed standards, revisions, and reaffirmations are submitted to the Standards Board. The Standards Board shall certify that the governing procedures have been followed and that consensus has been achieved. The Standards Administrator then submits the proposed standards, revisions and reaffirmations to the Board of Standards Review of ANSI for approval as American National Standards. The steps in the development of a standard identifying how consensus is achieved are illustrated in Figure 2.

5.4 Preparation of Review and Ballot Comments

The N16 Standards Comments and Resolutions Form shall be used to document comments and their resolution during review and balloting of proposed new, revised, or reaffirmed Standards. This form is to accompany the Ballot Form when members record their votes as either "Approved with Comments" or "Not Approved." The form is available electronically on the ANS Standards Development Web site (see Section 8.0 of this manual).

When using this form, the balloter should perform all of the following steps:

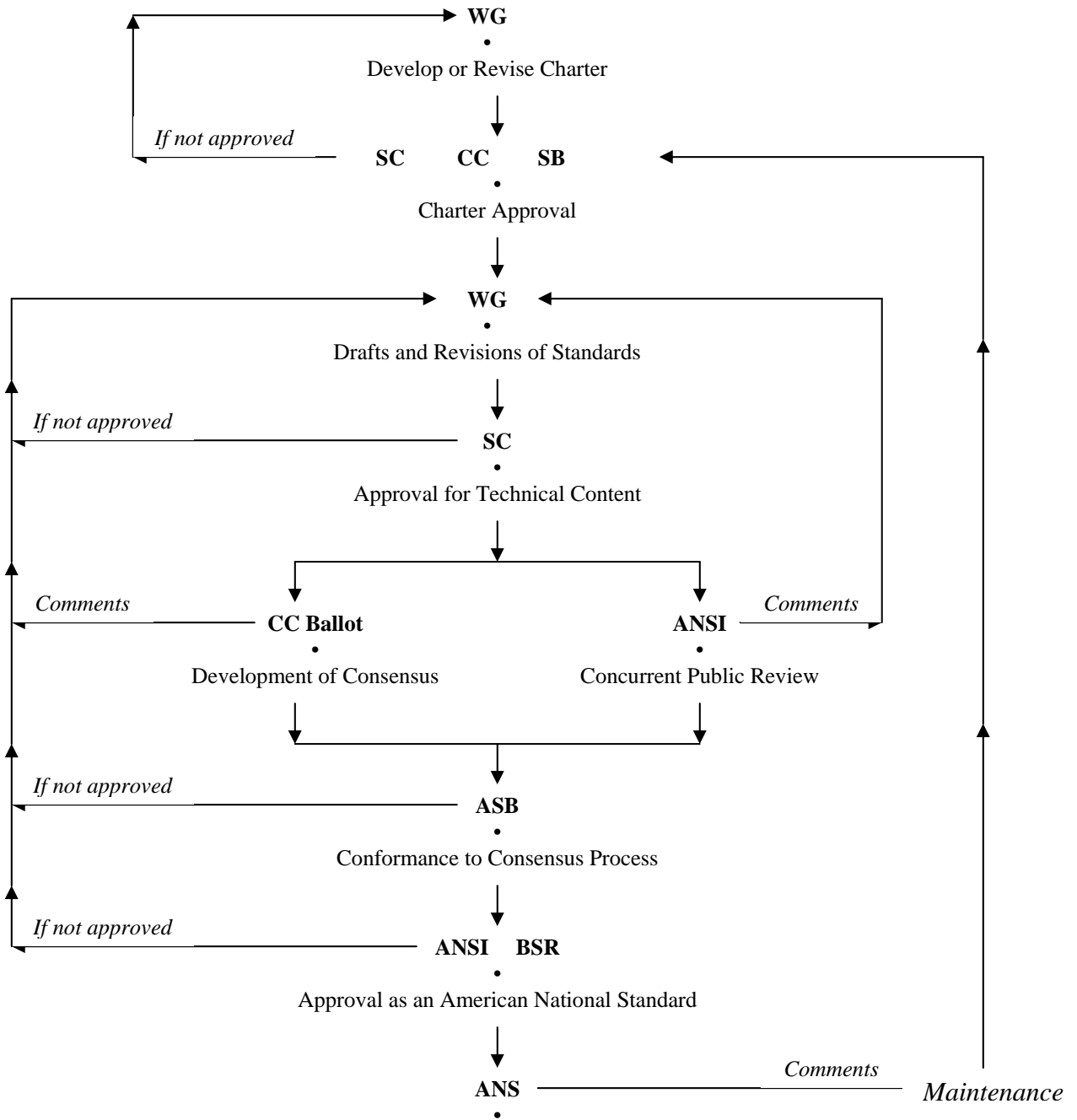
- a. Enter the title of the standard on the first line, including personal data (name, phone number, organization, and address). To guard against the sheets getting separated, show

at least the ballot's name and the standard number on each successive sheet. Indicate sheet number of each sheet.

- b. Consolidate the comments received from within the ballot's organization and record these comments on the form. Clearly identify and articulate the basis for all "Not Approved" (negative) ballot comments and what must be done to correct the standard. Offer a suggested solution (i.e., recommendation) for each comment.
- c. Indicate each separate comment with a sequential number in the first column. Identify a page number reference for each comment in the second column. Where no page number exists in a draft standard, use Roman lower case numerals for all preliminaries from the title sheet to the body and Arabic numbers for the text of the standard itself.
- d. Indicate the location of the comment in the third column (Sec/Para) to identify more narrowly than can be done with a page number. When considered necessary, use the first part of the comment to refine further the exact location of a given comment.

Copies of the completed forms should be attached to the Ballot Form and sent to the Secretary prior to the consensus ballot closing date. These forms may be returned either by mail, fax, or electronically.

Figure 2: Steps in the Development of a Standard



- WG** - Working Group
- SC** - Subcommittee
- CC** - Consensus Committee
- SB** - American Nuclear Society Standards Board
- ANSI** - American National Standards Institute
- BSR** - Board of Standards Review
- ANS** - American Nuclear Society

6.0 SUBCOMMITTEE AND WORKING GROUP CONDUCT

6.1 Identification of Need and Approval to Develop a New Standard

Proposals for the writing of a new standard may be made by any individual and should be made to N16 or one of its Subcommittees. The first detailed discussion of the need for and feasibility of a proposed standard should take place in the appropriate Subcommittee. If the discussion results in a positive decision by the Subcommittee, the proposal is presented to N16 for its consideration. The proposals should reflect a desire to standardize something, that is, to provide an objective method for accomplishing something and the expected content of the standard. If the Committee is also favorable toward proceeding with the development of a new standard, the responsible Subcommittee Chair shall be directed to identify and select a Working Group Chair and request that the selected Chair prepare a project charter and initiate preparation of a Project Initiation Notification System (PINS) Form. The PINS Form is available electronically on the ANS Standards Development Web site (see Section 8.0 of this manual).

Detailed instructions for properly completing the PINS Form are provided below. If requested by the Working Group Chair, the N16 Secretary and/or responsible Subcommittee Chair shall provide assistance in the timely completion of the PINS Form.

Top of Form

Enter the date that the form was completed for transmittal to ANSI.

1. Designation of Proposed Standard:
This is the unique alphanumeric code used by the standards developer to refer to the project. It is the reference usually used when inquiries are received. "ANSI" should not be included in this designation as the pending project is not yet an American National Standard.
2. Title of Standard:
This is the full title of the standard that is the subject of the form.
3. Project Intent:
Check the line that corresponds to the type of action intended. The project intent relates to the status of the standard within the American National Standards process only. Note that a PINS Form is required only for a new ANS Standard or a revision to an existing ANS Standard. Include the designation of the standard being acted upon. If an International Standard is to be adopted as an American National Standard, please indicate the designation of the International Standard on the appropriate line and be sure that your organization is eligible to adopt the standard in compliance with applicable policies approved by the ANSI Board of Directors.
4. This standard contains excerpted text from an international standard but is not an ISO or IEC adoption.

Check here if this standard includes excerpted text from an ISO (International Organization for Standardization) or IEC (International Electro-technical Commission) standard but is not an identical or modified adoption of an international standard.
5. Provide an explanation of the need for the project:
State the need and benefits of developing the standard for the industry.
6. Identify the stakeholders likely to be directly impacted by the standard:
State those likely to be directly impacted by the standard (e.g., nuclear utilities, federal and/or state agencies, reactor designer, regulatory agencies, environmental, etc.).

7. Scope Summary (Description of Contents of Standard):
For the purpose of coordination of standards activity, this section of the form is a key element. The information should clearly indicate what is covered by the standard in order to differentiate it from similar standards on file at ANSI. (680 character maximum)
8. Consumer Product or Service:
Check the box provided if the project covers a consumer product or service
9. Units of Measurement:^{*}
Check the unit of measure used in the project (i.e., metric units, English, both). If no measurements are included in the project, select "NA."
10. Accredited Standards Developer Acronym:
The acronym of the standards developer having responsibility for the project should be entered here. If the project is a joint project, the standards developer assuming administrative responsibility for the project should be entered.
11. Submitter:
This is typically the ANS Standards Administrator who will be contacted should there be a need for additional information or consideration with regard to the project.

When completed, the PINS Form should be reviewed by all Working Group members to the extent practical. The form should then be reviewed by the responsible Subcommittee. The Subcommittee Chair shall also ensure that the instructions for completing the PINS Form have been appropriately followed. Following Subcommittee Chair review, the PINS Form is submitted for approval to N16, the Standards Board, and ANSI. During this review period, the Working Group shall proceed with preparation of the draft standard unless directed otherwise by N16.

6.2 Standards Development Activities

After the selection of the Working Group membership and the preparation of a draft project charter, the Working Group Chair should hold a group meeting to complete and agree on the final project charter. A membership list is prepared, including name, affiliation, address, and telephone number. This list is then sent to the N16 Secretary and the responsible Subcommittee Chair.

The content of the standard should be set at the first meeting of the Working Group and a tentative schedule established. This does not preclude preliminary conference telecons. A standard format guide shall be used where available in establishing the projected content. The Subcommittee Chair shall attend this first meeting to explain to the Working Group how N16 conducts its business and all related policies. The Subcommittee Chair will also instruct that a copy of all correspondence prepared by the Working Group in the development of the proposed standard is sent directly to the N16 Chair, Vice-Chair, and Secretary and that all correspondence to N16 be sent through the Subcommittee Chair. Lastly, the Subcommittee Chair shall encourage the Working Group to establish a schedule that results in a draft standard ready for review within 18 to 24 months, or sooner, from the date of this kickoff meeting.

^{*}A "soft" conversion is the change in the description, but not in the dimension, of an existing measurement to express it in metric terms. A soft conversion results from the mathematical conversion of inch-pound units to SI.

A "hard" conversion is the change of dimensions and/or properties of a product into new sizes that may not be interchangeable with the sizes of the existing measurement specifications.

For metric usage, please refer to ANSI/ASTM/IEEE SI-10.

Members of the Working Group should leave the first meeting with an in-depth understanding of the project, its expected end use, and a specific assignment for preparing a portion of the standard. A tentative general outline of the draft standard and schedule for completion shall be developed and provided to the responsible Subcommittee Chair who, in turn, shall inform N16 at its next scheduled meeting. The outline and schedule for developing the standard is expected to be detailed and should be reviewed at each Working Group meeting or teleconference. Significant changes to the schedule shall be promptly communicated to the Subcommittee Chair who shall keep N16 apprised of the most realistic schedule.

At this initial meeting, the Working Group shall evaluate whether or not a performance-based approach lends itself to the development of the draft standard. The adoption of a performance-based standard may help make the ANS standards effort more effective and efficient. A performance-based standard focuses on attaining specific objectives. Identifying these objectives clearly is one of the most important functions of the Working Group. Hence, a performance-based standard can be expected to be valid for long periods of time. A structured approach for developing a performance-based standard is presented in Appendix A. Should the Working Group elect to develop a performance-based standard, the Subcommittee Chair shall be notified and the PINS Form modified accordingly.

The Working Group should meet until a thorough draft is prepared, consistent with the format and style guides provided by ANS. The group may include more material in this draft than is realistically expected to be contained in the final document. The group should consider use of a value-impact assessment in preparing the standard and in responding to the comments received. The assessment should be reserved for consideration of the major problem areas and major topics of controversy. It consists of the following five steps:

- a. Define the problem to be solved. Designs, methods, and tests called for by a standard can usually be specified in more than one acceptable way, and it is not always clear which choice is preferred.
- b. Identify the different approaches that can be taken to solve the problem.
- c. Attempt to determine the impact of each approach on safety and other safety systems, cost, schedule, regulatory acceptance, and engineering feasibility. Care should be taken not to become too involved or detailed in this process or the technique will lose its effectiveness. It is more important to assess the relative importance of these factors for the problems being considered.
- d. Determine the relative effectiveness of each alternative considering the potential impact and priority of each factor identified in step (c) above.
- e. Make a selection based on step (d) and by comparing the overall impact of each proposed solution to the importance of the problem itself.

6.3 Subcommittee Review of Draft Standards

When the Working Group has reached agreement that a draft standard is ready for external review and comment, the draft shall be sent to the responsible Subcommittee Chair for Subcommittee review. The review by the Subcommittee shall use the guidance for developing performance-based standards (see Appendix A). Technical comments are provided back to the Working Group for resolution. At this time, the Subcommittee Chair may elect to send the draft standard to the N16 Secretary for an editorial review, as appropriate. When the Working Group has satisfactorily addressed Subcommittee comments, the draft standard is considered ready for N16 review.

6.4 Review and Approval Process

Depending on its workload and member availability, N16 may elect to perform two reviews:

- a. A technical review in parallel with or following the Subcommittee review and
- b. A review to form the basis for the consensus ballot. Note that a public review is held by ANSI in parallel with or following this ballot.

When the results of an N16 review or ballot are to be discussed at a scheduled Committee meeting, the Working Group Chair (or designated alternate) shall be present to clarify the intent of the draft standard and help resolve the comments. The Working Group shall respond to all ballot comments within 90 days after ballot closure.

When a draft standard is submitted for ballot, all technical changes made from the previously reviewed draft shall be clearly indicated (e.g., by sidebars and showing any deleted or inserted text). In the case of a consensus ballot, it is necessary to respond to each negative comment, but other comments may be consolidated into a single reply for the purpose of responding to all commenters.

In the case of "Not Approved" (negative) ballots from the consensus ballot, the Working Group shall write to each negative balloter and request that the ballot be reconsidered based on the new draft prepared in response to all comments. If this process results in one or more negative ballots being retained, all N16 members shall be given an opportunity to reconsider their ballots, taking into account the negative ballots and the reasons therefore.

In the case of comments received from the ANSI public review, the Working Group shall respond to each commenter with a copy to ANSI, the Secretary, and the Subcommittee and N16 Chairs. The letter of response shall include notification that the commenter has 15 working days in which to reply if not satisfied with the attempted resolution of the comments.

Utilization of the Standards Comments and Resolutions Form (see Section 6.5 of this manual) eliminates having to write individual letters of response. The Working Group should prepare a general cover letter, a copy of the comment resolution forms, and a copy of the revised draft standard to send to each commenter. As a minimum, the Working Group shall include the rewritten portion of the standard when a substantial change has been made to resolve one or more comments.

After completion of the consensus ballot, completion of the required response to each commenter (with formal requests for withdrawal of any negative ballots), and reconsideration of ballots has been permitted (if needed because of outstanding negative ballots), the N16 Chair shall determine if consensus has been achieved (see Section 5.3 of this manual).

Upon determination of consensus, the Standards Board shall be requested to certify that all consensus procedures have been followed. ANSI is then notified that consensus for approval has been achieved, and approval by the ANSI Board of Standards Review is requested.

The Working Group Chair assists the ANS staff with editing and publication details, as necessary, and shall have the opportunity to review the document prior to release for printing. ANS staff then proceeds with final publication of the standard. All Working Group members receive a copy of the printed standard. In addition, members of N16 may request a copy.

6.5 Resolution of Review and Ballot Comments

As stated earlier in Section 6.4, the N16 Standards Comments and Resolutions Form is used to document comments and their resolution during review and balloting of proposed new, revised, or reaffirmed Standards. This form is to accompany the Ballot Form when members record their votes as either "Approved with Comments" or "Not Approved."

In responding to comments, the Working Group shall take the following steps:

- a. Enter personal data (i.e., name, phone number, organization, Email address) in the spaces provided at the right side of the form.
- b. Clearly indicate in the box provided where acceptance of the comment is essentially total. For such cases, no explanation is needed, although explanations are welcomed.
- c. Where comments are accepted in part or not accepted, use the space under "Resolution of Comments" to set forth the rationale for nonacceptance of all or part of the comment. Do not simply indicate disagreement or the fact that such suggestions were previously considered. Offer a technical basis for not being able to accept the comment.
- d. Upon satisfactory completion of the individual forms, the Working Group Chair or other designated individual shall forward copies to the commenter and to the N16 Secretary.

Both responses and comments may be consolidated by subject or location, if the Working Group believes this is more efficient. It is helpful to supply portions of the text that have had substantive revisions made along with comment responses. Responses other than acceptance should include a rationale, such as the technical basis, a compromise among conflicting expert opinion, or specific reference to a governing authority.

The Working Group shall send copies of all comment responses, accompanying letters, and responses back from balloters to the N16 Secretary. Upon receipt of replies from each negative balloter, the Working Group Chair and the N16 Secretary shall discuss the final ballot tally and agree on the results.

Frequently, a Working Group carefully addresses the comments forming the basis of a negative ballot but essentially ignores other comments offered by the balloter. It is acceptable to give priority to negative comments, but it is unacceptable to dismiss other comments as insignificant.

The responsible Subcommittee Chair carefully reviews all comment responses to ensure that the replies are impassionate, responsive, and include a logical rationale for decision. The N16 Chair performs a similar review emphasizing controversial and negative comments prior to releasing each standard for final certification.

The types of comment responses to be avoided:

"This was discussed by the Working Group during preparation of the draft standard and was

- a. not used,
- b. decided against, or
- c. found not practical, etc."

"Not accepted"

"This comment disagreed with

- a. someone else's comment, or
- b. a comment made during the Subcommittee review, etc."

Appropriate replies include a technical basis for the decision, a reason for deciding on a particular phrasing, a rationale for compromising among conflicting requests, or the fact that specific direction was given by the Committee regarding scope or content.

Each balloter has an obligation to make substantial, technically based comments and to include alternate words or adequate discussion upon which new words can be logically included. Both the balloter and the Working Group shall adhere to technical issues and avoid frivolous and unsubstantiated comments.

The Working Group shall provide a written response to each negative balloter individually. This letter shall request that the balloter upgrade the "Not Approved" (negative) ballot to indicate "Approved" or "Approved with Comments" based on the Working Group's responses to the negative comments. A review period of 30 days shall be indicated for the balloter to respond. The letter shall also request that specific reasons be provided if the balloter disagrees with the Working Group's attempted resolution of the negative comments.

Any difficulty in getting timely responses from negative balloters shall be brought to the attention of the responsible Subcommittee Chair, the N16 Secretary, and the N16 Chair in that order and to the extent necessary.

If one or more negative ballots remain unresolved, the N16 Secretary shall ask those Committee members who originally voted to reconsider their position in view of the outstanding negative ballots. Appropriate background material pertaining to those negative ballots shall also be sent. A review period of 30 days is set, during which members may change their votes. No response is necessary unless a balloter decides to change the initial ballot and submit supporting technical reasons. When all negative ballots have been cleared or reconsideration has been completed, the responsible Subcommittee Chair and the N16 Chair shall review the documentation and the revised standard.

In the event major changes have been made in the standard, a rebalot shall take place and the above procedure repeated. The N16 Chair in consultation with the cognizant Subcommittee Chair and Working Group Chair shall determine the need for rebalot with possible consultation with the ANS Standards Administrator.

7.0 POLICY STATEMENTS

The policies of N16 are presented in this section. In addition, the American Nuclear Society Standards Board (ASB) has issued a separate set of policies, some of which directly relate to the way N16, its Subcommittees, and Working Groups conduct business. The current ASB policies can be obtained directly from the N16 Secretary.

7.1 Referencing of Regulatory Guidance Documents

The purpose of this policy statement is to provide an acceptable method to Working Groups for addressing the content of existing regulatory guidance documents in the creation of standards that (a) cover essentially the same scope or requirements, (b) have requirements that overlap, or (c) have interfacing requirements.

Any criteria or passages from regulatory guidance documents should be used, either verbatim or paraphrased, that are deemed to adequately express the intent of the Working Group. There are no copyrights on regulatory guidance documents and such practice is generally acceptable to the various regulatory agencies. The content of such criteria shall be subjected to the consensus process along with the rest of the standard. The test of such a criterion is its survival in this process.

Direct referencing of regulatory guidance documents is not permitted within the text of a standard. Where the above practice is not suitable, citation of a specific regulatory guidance document shall be presented in a footnote and shall include the revision number and date of issue.

7.2 Referencing of Industry Standards and Government Regulations

The purpose of this policy statement is to provide an acceptable method to the Working Groups for referencing industry standards and government regulations. The methods outlined herein accommodate approved standards and regulations, draft standards, and proposed regulations.

Section 6.6 of the ANSI Style Manual for Preparation of Proposed American National Standards sets forth criteria for referencing American National Standards and articles in periodicals and books, but does not address draft standards, trial-use standards, proposed regulations, or approved (codified) regulations.

For the purposes of this policy, any standard not yet officially designated as an American National Standard is considered a draft or a trial-use standard. Working Groups that find it expeditious to cite in-process standards need to exercise care in this regard. Working Groups shall not make direct reference to draft or trial-use standards in the text of their standard because this has the effect of incorporating unapproved standards. Quoting or paraphrasing from a draft or trial-use standard within the text is also discouraged but such information may be located, as are direct references, in a footnote or an appendix. Information in the text of the standard shall be for guidance only, never a requirement, since the referenced draft or trial-use standard has not yet achieved consensus. The footnote or appendix note shall give complete information on the draft or trial-use standard. The note shall include the title, the proposed ANSI number or the Working Group number, the status (draft number or trial-use status, revision number, and date), and the Working Group Chair's name and contact information.

Proposed regulations (or regulation revisions) are published in the Federal Register together with a preamble that gives background information and solicits comments from interested parties within designated time limits. After that publication, the consideration of comments and clearance through the responsible regulatory organization usually takes many months before a final codified version of the regulation is issued. As with draft standards, Working Groups must recognize that substantive changes may be introduced into a proposed regulation before it becomes effective.

Thus, Working Groups finding it expeditious to reference proposed regulations must be very careful about the process of referencing. The options available to the Working Group to cite proposed regulations are parallel to those for draft standards. Information in the text of the standard shall be for guidance only, never a requirement, since the regulation has not yet achieved final approval. The footnote or appendix note shall give complete information on the proposed regulation. The note shall include the title of the proposed rulemaking or rulemaking revision, the Federal Register volume number, issue number, date, and the page numbers on which the proposed regulation can be located.

Referencing of codified regulations in the text of the standard is always acceptable, and, when used, must be in terms of the mandatory verb "shall." Specific references shall give the Title, Code of Federal Regulations, and Part and may be written out in full at the initial reference and abbreviated thereafter (e.g., 10 CFR 50). If the reference is to part of the regulation, the section, subsection, etc., should be specifically designated. There is no need to specify time of codification, as the latest version is applicable.

7.3 Specifying Requirements in a Standard (Shall, Should, and May)

Much discussion has taken place regarding the proper use of the verbs "shall," "should," and "may." The purpose of this policy statement is to explicitly define the use of these three terms and how they are to be used in the development of a standard.

Standards prepared under the cognizance of N16 shall be written to avoid ambiguity among those actions that are mandatory, recommended, or permissive. The text shall be clear in purpose and maintain technical continuity. For example, where acceptable practice includes two or more options, these options shall be clearly stated as such in the body. The number of appendices shall be kept small and shall be used to either illustrate possible approaches or to discuss known problems when clearly acceptable practice has not been widely adopted or defined.

Direction given in a standard shall be stated using one of the following verb forms:

- a. Shall, to designate a mandatory action. It is not sufficient to simply use a "shall" statement. Each requirement must be specific, unambiguous, and within the ability of a qualified auditor to determine by a qualified individual that the requirement has been met. This means avoiding "shall consider," "shall, if possible," and similar phrases that are not quantitative. Terms like "evaluate" and "demonstrate" carry more weight, but could still be difficult to assess.

This policy requires the use of "shall" when there is an expectation of an action. This policy also requires the use of "shall" when a selection is required from a list. A non-exhaustive list, from which a selection is required, must use a "shall."

This policy requires the use of "shall" when a requirement does not apply to all conditions. In this situation, a description of the conditions to which the requirement applies or does not apply must be used in conjunction with the "shall" statement. The use of "shall" is not automatically negated just because a requirement does not apply to all conditions.

- b. Should, to designate a recommended action.

A "should" statement must not be used as a crutch in those cases where the Working Group is unwilling to exercise the needed unequivocal direction.

This policy prohibits the use of a "should" statement when there is an expectation of action. "Should" must not be a substitute for a "shall" in these cases. If the standard describes all

known acceptable actions of which one is required, then "shall" is to be used (in the context of "one of the following shall be done") instead of "should."

This policy prohibits the use of a "should" statement when only a subset of actions is defined but for which there may be more options, any one of which is acceptable and one of which is required. Even when all options are not explicitly defined, if a selection is mandatory, "shall" must be used. This policy also prohibits the use of a "should" statement when a requirement applies to only a subset of conditions. The subset must be defined and the "shall" appropriately applied.

The decision to require justification for not taking a recommended action and the extent of the justification required are between the user of the standard and its regulator.

- c. May, to designate a permissive action.

The uses of the verb forms "shall," "should," and "may" are to be avoided in the Foreword, Introduction, Scope, Definitions, and Appendices sections of a standard unless used referentially. The use of the verb form "shall" is to be avoided in the Appendices unless used referentially. Use of "should" and "may" is sometimes necessary in an appendix in order to convey necessary information.

7.4 Use of SI Units

The use of SI units shall follow the requirements set forth in National Institute of Standards and Technology Special Publication 330, 2001 Edition, 75 pages (July 2001) CODEN: NSPUE2

SI units shall be used in all N16-sponsored standards in one of two ways:

- a. SI units shall be provided parenthetically alongside conventional English units, or
- b. SI units shall be used exclusively.

Conversion of values from conventional to SI units shall be the responsibility of the Working Group.

8.0 FORMS AND SUPPORTING DOCUMENTS

8.1 ANS Glossary of Definitions and Terminology

The Los Alamos Glossary of Nuclear Criticality Terms, LA-11627-MS (<http://www.csirc.net/docs/reports/la11627.pdf>) shall be used as the primary source of terms in the development of N16 Standards. For terms not described in LA-11627-MS, the ANS *Glossary of Terms in Nuclear Science and Technology* that was prepared by ANS-9 and copyrighted in 1986 shall be used (<http://www.new.ans.org/store/search/?q=Glossary+of+terms+in+nuclear+science+and+technology>), The intent of the Glossaries is to provide a consistent set of definitions, to minimize the time-consuming task of developing unique definitions and to avoid unnecessary duplication and/or potential conflict.

8.2 PINS: Project Initiation Notification System Form

The PINS Form is available on the ANS Standards Development and Maintenance Toolkit Web site at the address provided above.

8.3 Ballot Form

The N16 Ballot Form is also available on the ANS Standards Development and Maintenance Toolkit Web site provided above.

8.4 Standards Comments and Resolutions Form

The N16 Standards Comments and Resolutions Form is also available on the ANS Standards Development and Maintenance Toolkit Web site provided above.

8.5 Statement for Inclusion in the Foreword of New or Revised N16 Standards

The following statement shall be included in the Foreword of new or revised N16 standards:

“This standard has been approved by the ANS Nuclear Criticality Safety Consensus Committee N16 with the recognition that it may reference other standards and documents that may have been superseded or withdrawn. The requirements of this document will be met by using the version of the standards and documents referenced herein. It is the responsibility of the user to review each of the references and to determine whether the use of the original references or the use of more recent versions is appropriate. Variations from the standards and documents referenced in this standard should be evaluated and documented.

“This standard does not necessarily reflect recent industry initiatives for risk informed decision-making or a graded approach to quality assurance. Users should consider the use of these industry initiatives in the application of this standard.”

8.6 Statement for Inclusion in the Foreword of Reaffirmed N16 Standards

The following statement shall be included in the Foreword of reaffirmed N16 standards:

“This standard has been reviewed and reaffirmed by the ANS Nuclear Criticality Safety Consensus Committee N16 with the recognition that it may reference other standards and documents that may have been superseded or withdrawn. The requirements of this document will be met by using the version of the standards and documents referenced herein. It is the responsibility of the user to review each of the references and to determine whether the use of the original references or the use of more recent versions is appropriate for the facility. Variations from the standards and documents referenced in this standard should be evaluated and documented.

This standard does not necessarily reflect recent industry initiatives for risk informed decision-making or a graded approach to quality assurance. Users should consider the use of these industry initiatives in the application of this standard.”

APPENDIX A GUIDANCE FOR DEVELOPING A PERFORMANCE-BASED STANDARD

N16 is committed to maximizing the effectiveness of its standards program so that the hard work of its many volunteers will provide the best possible standards for the user community. One measure of effectiveness is the degree to which goals and objectives defined for each standard are accomplished. A performance-based approach is a systematic way to structure the development of a standard so that goals and objectives are more readily attained. A standard that clarifies its goals and objectives in a structured manner also offers a basis for determining whether it is effective because to be effective, a standard must achieve its desired outcomes. As outcomes are generally stable over time, an effective standard is unlikely to need frequent maintenance.

In this sense, performance is the attribute that reflects accomplishment of specified goals and objectives. Most existing standards may be considered quite effective even if they do not explicitly identify and structure goals and objectives. The standard's contents should avoid the need for individuals with requisite background and experience to provide guidance on the application of the standard. The long-term interest of the standards program may be better served by incorporating more transparency in the standards themselves so that reliance on individual interpretations is minimized.

A structured approach is proposed to revise an existing standard to be performance-based and to develop a new performance-based standard.

1.0 Review of Existing Standards

For the revision of an existing standard, questions need to be answered by the Working Group in order to clarify what perceived weaknesses in the existing standard would be better addressed by a performance-based approach. There are two broad categories of issues that are likely to characterize weaknesses in existing standards as follows:

- a. Issues relating to overly prescriptive requirements:
 - What requirements are identified using “shall” statements?
 - Taking each “shall” statement individually, does meeting the requirement assure that an objective of the standard is met?
 - Meeting an objective should be a means to support a higher-level goal because higher-level goals are broad and qualitative, as well as difficult to achieve directly. Hence, if the “shall” statement does accomplish an objective, is the related goal easily identified? For example, if the standard requires a system response within a specified time, is safety dependent on that specified time? In this case, safety is the goal and the objective is an appropriate system response. If the specification of the time is overly narrow, a performance-based approach using a concept of temporal margin may be considered.
 - Even if such overly prescriptive requirements exist, is it worthwhile to pursue a performance-based revision? The key consideration here may be the compounding effects of inter-related “shall” statements without a clear structure of objectives fulfilled that support goals. Whether a revised standard is worthwhile should depend on the value to the user.

- b. Issues relating to overly general requirements:
- Is a requirement likely to be interpreted in the same way by a diverse set of users who do not necessarily communicate with each other? If the answer is in the negative, such requirements should usually be treated as desirable outcomes or goals that may not be easily achieved just by employing a “shall” statement.
 - If a user asserts that a requirement has been met, does the standard provide a sufficient basis for an independent knowledgeable reviewer to verify this assertion? An example of such an overly general requirement may be “Systems interactions shall be considered.”
 - Even if such overly general requirements exist, is it worthwhile to pursue a performance-based revision, recognizing that the value added is likely to be consistency and transparency? In the above example, the question would be “How important is systems interaction for the standard?”

The Working Group should determine if a performance-based approach has merit based on potential benefits to the user of the flexibility that might be available. Sometimes flexibility translates to cost savings, and, at other times, it may permit easier use of newer technologies. Consideration should also be given to the possible avoided costs of inconsistent applications. These factors should be balanced against the need for more discussion and deliberation that may be necessary to implement the structured and disciplined process. These efforts may be viewed as investments for longer-term benefits.

For both new and existing standards, a set of five activities has been proposed, with steps within each activity. The activities are (1) Classify the issue; (2) Define the goals and objectives; (3) Identify the framework; (4) Apply the framework; and (5) Document performance-based components of the standard. Following these activities, the Working Group may then proceed to prepare the standard in the appropriate format and implement the consensus process.

It is extremely important to consider iteration as a key element of implementing this guidance. Each activity and each step should not be viewed as something to be completed once and for all. Iteration should occur within each activity, and then among the activities. In general, information developed the first time through is more wide-ranging, with increasing specificity as issues are addressed again. It is always beneficial to have more people from the Subcommittee or Working Group involved as the information becomes more specific to a standard. Lastly, the results of the analysis for Activities 1 and 2 should be reviewed with the responsible Subcommittee before significant development of a new standard.

2.0 Structured Standard Development and Review Process

Activity 1 - Classify the Issue

Step 1:

- Identify whether a new standard or revision to an existing standard is needed.
- Identify the following external factors:
 - applicable field experience that can be drawn on.
 - relationship to regulatory framework.
 - “political and other” sensitivities.
 - resource (budget) constraints.
 - time constraints including approximate milestones.
 - urgency factors.

Step 2:

- Identify nature of standard:
 - administrative versus technical.
 - guidance versus definition of limits.
- Classify standard by need:
 - safety (scope, technical requirements, quality, resources).
 - efficiency (scope, quality, resources, schedule).
- Evaluate expertise of Working Group:
 - consider expertise of volunteers.
 - consider balance of interests.

Activity 2 - Define Goals and Objectives

[DO NOT IGNORE QUALITATIVE ATTRIBUTES.]

Step 1:

- Identify goals (noncontroversial).
 - “Support safe design, operation, installation, etc.”
 - “Conduct efficient activity to....”
- Identify high-level (fundamental) objectives (valuable in their own right), which directly support the goals
 - “consistent with 10 CFR....”
 - “consistent with ANSI accreditation requirement....”
- Identify lower-level (means) objectives (which lead directly to attaining fundamental objective)
 - “Assure safe functioning of....”
 - “Assure reliable operation of....”
 - “Assure timely startup of....”

Step 2:

- Structure objectives in a chart.
 - Organize goals and fundamental objectives:
 - Test for adequacy of coverage regarding scope.
 - Test for adequacy of coverage regarding technical requirements, if applicable.
 - Test for adequacy of coverage regarding other “Activity 1” factors.

- Organize fundamental objectives and means objectives:
 - o Test for adequacy of coverage regarding schedule, resources, and quality.
 - o Test for adequacy of coverage regarding other "Activity 1" factors.
- Organize means objectives and functional systems:
 - o What has to work to limit radiation exposure?
 - o What has to work to have key barrier systems in place?
 - o What functional system has to work to prevent a postulated event from progressing to its next level of severity?
 - o What is the scope of the effort?
 - o Which subcommittee has the right jurisdiction?
 - o Who are the right people to make the important decisions?

[THE RESULT IS AN OBJECTIVES HIERARCHY.]

Activity 3 - Identify the Framework

Step 1:

- Examine choice of frameworks:
 - If the need is safety, the framework involves, in order: margin, performance parameter, objective criteria, and flexibility.
 - If the need is efficiency, the framework involves, in order: flexibility, performance parameter, objective criteria, and margin.
- Select framework based on need:
 - For safety, focus is on margin.
 - For efficiency, focus is on flexibility.

[THE GUIDANCE, HEREAFTER, WILL CONCENTRATE ON SAFETY STANDARDS. ANALOGOUS STEPS CAN BE DEVELOPED FOR EFFICIENCY STANDARDS.]

Step 2:

- Identify the safety functions/concepts that can impact the objectives in the objectives hierarchy:
 - Include qualitative factors.
 - Level of detail commensurate with scope and quality of standard.
- Identify equipment/systems/procedures necessary to satisfy the safety functions or concepts:
 - This may require detailed knowledge and understanding of the systems involved.
 - Analysts may wish to run analytical computer models or have access to detailed analytical reports.

- Identify appropriate metrics that will enable an answer to the question, “How much is enough?”
 - Given the importance of this step, a separate consensus process may be helpful within the Subcommittee or Working Group to reach a common understanding on this question.
 - To the extent possible, the metrics should be applicable at the higher levels of the objectives hierarchy.

Activity 4 - Apply the Framework

Step 1:

- Assess margins. A generalized definition of margin is that it represents the difference between some limiting condition and a nominal or normal operating condition. For accident considerations, the accident condition is substituted for normal operating condition:
 - Use realistic estimates (best estimate calculations) to assess margin at first.
 - Use PRA and appropriate metrics wherever possible.
 - Include qualitative attributes.
 - Consider each means objective first and then aggregate into the fundamental objective.
- Assess robustness of margin:
 - Consider operational and analytical experience.
 - Consider sensitivity studies.
 - Consider expert judgment.
- Assess consequences of reduced margin:
 - Consider rate of change of margin.
 - Consider perceptions associated with reduced margins.
- Assess possibility of restoring margin:
 - Consider how rapidly restoration must happen by, for example, taking corrective action.
 - Consider the capabilities of the user of the system for which the standard is being developed as well as the capabilities of the standards developer to assess the dynamics of the margin.
- Assess time available for restoring margin:
 - Consider manual and automatic functions.
 - Consider operator safety.

Step 2:

- Evaluate observable performance characteristics, both qualitative and quantitative, to monitor attainment of objectives. Qualitative observations present special challenges but should not be ignored. For example, quality of housekeeping in a non-reactor nuclear facility is an important aspect of preventing fire hazards. Qualitative observations can be quite effective in assessing such a characteristic. A linguistically defined measure, which

represents a level of impact or significance, called a constructed measure, is a way to represent qualitative observations. Quantitative parameters, which are observed directly, such as pressure, temperature, flow, incurred cost, radiation exposure, etc., are called natural measures. Some natural measures require simple calculation, such as reliability, percentage, concentration, etc.

- Consider relationship of characteristics to margin as well as flexibility. The principle involved is that more flexibility can be given in the standard for greater levels of margin, provided the observable characteristics relate closely to both.
- Consider human factors such as capabilities of the operator or user.
- For qualitative performance characteristics, evaluate whether constructed measures can be developed that provide qualitative expressions capable of observation with reasonable objectivity. Constructed measures become necessary when natural measures do not exist or are too difficult to use. It is used to describe performance needed to satisfy higher-level objectives. Examples are (a) impact on public confidence is high, medium, or low; (b) environmental significance is high, medium, or low. The terms high, medium, and low constitute a constructed scale because they linguistically express a clearly distinguished relationship among themselves.
- Evaluate whether the identified observable characteristics, together with objective criteria, provide measures of performance and the opportunity to take corrective action if performance is lacking.
- Evaluate objective criteria indicative of performance, which also permits corrective action. If margin is sufficient for timely corrective action flexibility may be justified.
- Evaluate the level of flexibility to the user of the standard and its relationship to the level of margin to determine whether the flexibility is technically and practically justified. If the margin is not sufficient to justify flexibility, a prescriptive approach is better. In such cases, the standards document can justify use of the word “shall” so as to meet the goal. When flexibility is justified, the statements in the standard would use the word “should.” When flexibility is conditional, the operative word is “may” when conditions specified are fulfilled.

THE RESULTS OF THE ACTIVITIES THUS FAR HAVE PROVIDED A LIST OF OBJECTIVES THAT CAN BE ATTAINED USING A PERFORMANCE-BASED APPROACH AND A LIST OF OBJECTIVES THAT JUSTIFY A PRESCRIPTIVE APPROACH USING “SHALL” STATEMENTS IN THE STANDARD. IF THE OBJECTIVE OF THE STANDARD IS TO IMPLEMENT A PERFORMANCE-BASED APPROACH, THE DIRECT IMPLICATION IS THAT “SHALLS” WILL BE MINIMIZED, AND THE “SHOULDs” AND “MAYs” WILL BE MAXIMIZED.

Activity 5 - Document Performance-Based Components of the Standard

IT IS IMPORTANT THAT A PERFORMANCE-BASED STANDARD PROVE ITSELF BY ATTAINING ITS OWN OBJECTIVES. ONE OF ITS OBJECTIVES IS TO DECREASE THE MAINTENANCE EFFORT ON STANDARDS. A PERFORMANCE-BASED STANDARD WOULD NEED TO BE CHANGED ONLY IF THE OBJECTIVES HIERARCHY CHANGES, OR IF NEW INFORMATION ALTERS THE ESTIMATE OF MARGIN. PROPER DOCUMENTATION IS MOST IMPORTANT TO PRESERVE CONFIDENCE IN A STANDARD OVER LONG PERIODS.

- Identify the objectives that require a prescriptive approach:
 - Consider what can happen to change the margin assessment, and document it.
 - Consider effects of introduction of new technology.
- Identify objectives that are to be performance-based:
 - Document details of margin assessment.
 - Document details of flexibility monitoring.
- Document elements of oversight that may be needed to deal with deviations from approved use of flexibility.

Activity 6 - Document References

References shall be listed in a separate section of the document in the order in which they appear in the text. State the document identifier, complete title, publisher of the document, and where the document can be acquired. A footnote shall be placed following the first reference in the text to direct the user to the reference section.