

# Problem Areas Identified during Recent Ballots of New Standards

## 1.1. Introduction

During the June 17, 2014, Standards Board meeting, six generic issues resulting from comments submitted on the ballot of draft standard ANS-56.18, "Safety Categorization and Design Criteria for Nonreactor Nuclear Facilities," were discussed. This has been expanded to the following eight issues:

1. Content and Use of Appendices
2. Different Technical Criteria for the Same Type of Facilities
3. Classification Systems
4. Use of "shall be evaluated"
5. Specification of Design Codes and Standards
6. Referencing other Standards Development Organizations (SDO) Standards
7. Degree of Specificity
8. Use of Copyrighted Materials in Standards

Steven Stamm was assigned the task of providing guidance covering these points. This guidance has been reviewed and approved by the Standards Board for dissemination to all Standards Committee members.

The goal of this effort is to provide feedback on problem areas and improve direction to working groups (WGs). Each Standards Committee member is requested to review this summary. Any questions should be directed to the ANS Standards Manager (Pat Schroeder).

Each item includes the following, as applicable:

General Requirements - overview of the issue and recommended approach

Examples - where needed to provide better understanding of the issue

References - ANS policies that should be reviewed for further information on the issue

Disposition actions to be taken by the Standards Board to provide further permanent guidance

### ***Purpose***

The purpose of this document is to quickly highlight and disseminate guidance related to the identified problem areas in draft standards to standards preparers so such problems can be avoided in the future. The Standards Committee policies and procedures will be revised as indicated in this document to provide a more permanent solution.

## 1.2. Issues

### 1.2.1. Content and Use of Appendices

General Requirements - Appendices may be provided for the purposes of clarification, illustration, general information and similar non-mandatory purposes in respect to a standard. Appendices shall be within the scope of the project under which the standard is being developed and they shall not be inconsistent with the standard. Appendices shall not contain requirements and thus shall not contain "shall" statements. The fact that an appendix is provided for clarification, illustration, general information or similar non-mandatory purposes shall be made clear by the way that it is referenced in the text, by a statement to this effect in the foreword and by indication in the title of the appendix.

### ***Example Acceptable Uses for Appendices in ANS Standards***

- Provide backup information on the development of one or more of the requirements in the main body of the standard
- Provide an example of an approach which can be used to meet one or more of the requirements in a standard where there are a large number of acceptable potential approaches
- Provide historical information regarding the scope of the standard which is too voluminous to include in the foreword
- Provide industry experience related to some aspect of the scope of the standard

***Example Unacceptable Uses for Appendices***

- Move what should be requirements from the standard to an appendix to make them non-requirements
- Provide amplifying information on a requirement in the standard that is necessary to be able to meet the requirement
- Provide alternatives to the requirements in the body of the standard
- If there are a limited number of acceptable approaches to meeting a standard's requirement, these should be included in the body of the standard as part of the requirement and not in an appendix.

***Reference***

The ANS Standards Committee policy, "POLICY FOR SPECIFYING REQUIREMENTS, RECOMMENDATIONS, AND PERMISSIONS IN A STANDARD ("SHALL," "SHOULD," AND "MAY")," specifies that "The number of appendices should be kept to a minimum and used to either illustrate possible approaches or to discuss known problems when clearly acceptable practices have not been widely adopted or defined."

***Disposition***

The above concepts of this section will be added to the Policy Manual for the ANS Standards Committee.

**1.2.2. Different Technical Criteria for the Same Type of Facilities**

This issue needs further discussion by the Standards Board to reach a resolution.

***Issue***

How should ANS standards address a case where potential regulators or users have adopted different approaches? The most recent cast was ANSI/ANS-58.16-2014 where the U.S. Department of Energy (DOE) and the U.S. Nuclear Regulatory Commission (NRC) have very different approaches to safety classification for nonreactor nuclear facilities. This applies where there are differing requirements used by industry companies, national laboratories, universities and the DOE. The scope of the standard needs to consider whether it can provide a single set of requirements that will cover that scope and still be meaningful. If not, the Standards Board should provide guidance that can be used by the WGs to proceed.

***Options***

Several options that have been discussed by standards commenters and should be considered by the Standards Board include:

- Working with the parties to reach agreement on a single standard approach
- Including multiple approaches in a single standard
- Developing separate standards for each approach
- Limiting the body of the standard to high-level requirements and providing details in appendices

### **Considerations**

The following should be considered in the Standard Board's evaluation of the above options:

- The concept of standardization is the development of a single set of requirements that will result in an acceptable product.
- Should the standards committee try to negotiate a single approach? The political reality may be that NRC and DOE are too set in their ways to change their current approaches.
- Use of appendices to differentiate approaches is contrary to ANS Standards Committee policies.
- Historically this issue was addressed and resolved for light water reactor standards that addressed requirements that were applicable to both pressurized water reactor (PWR) and boiling water reactor plants. It was also addressed for standards applicable to PWRs designed by different reactor vendors.

### **Example**

An example where a single standard with a single set of requirements should be applied is a standard that relate to both U.S. Department of Energy (DOE) and the U.S. Nuclear Regulatory Commission (NRC) licensed facilities of the same types where DOE and NRC have different guidelines.

### **Reference**

ANS Standards Committee "POLICY FOR SPECIFYING REQUIREMENTS, RECOMMENDATIONS, AND PERMISSIONS IN A STANDARD ("SHALL," "SHOULD," AND "MAY")

### **Disposition**

The above issue needs to be addressed by the Standards Board and guidance developed. It is suggested that if the WG is facing a related issue prior to further guidance being issued that it be brought to the attention of the consensus committee chair.

## **1.2.3. Classification Systems**

### **General Requirements**

At this time there are several different classification systems in ANS standards. The goal of the ANS Standards Committee is to have a logically based classification hierarchy that would apply classification systems in all ANS standards and be used as the basis for standards of other standard development organizations (SDOs). While not all of the classes would apply to every standard, those that did apply would be consistent with this logically based hierarchy. This would apply to both safety and seismic classification systems. An effort is being initiated by the ANS Standards Board to create a high-level, multi-SDO Task Group to develop recommendations for this approach. In the interim, WGs should minimize the development of new independent classification approaches and use existing classification approaches where possible.

### **Disposition**

The above concepts of this section will be added to ANS standards toolkit document: "An Introduction to the Preparation of ANSI/ANS Standards and Their Role in the Licensing Process" written by William Reuland in 2009. When the results from the multi-SDO task group are available, they will be incorporated into a new ANS standard.

## **1.2.4. Use of "shall be evaluated"**

### **General Requirements**

ANS Standards Committee policy states that "terms like "shall/should evaluate" and "shall/should demonstrate," if found to be necessary, shall be supported with clear guidance

and supporting requirements for documentation.” Thus use of such terms in a standard shall be accompanied with the acceptability requirements for such guidance and documentation. This should include acceptable methodologies, approaches, and acceptance criteria.

**Reference**

ANS Standards Committee “POLICY FOR SPECIFYING REQUIREMENTS, RECOMMENDATIONS, AND PERMISSIONS IN A STANDARD (“SHALL,” “SHOULD,” AND “MAY”)

**Example**

Section 5.5 of ANSI/ANS-58.16-2014 states that “The following consensus codes and standards shall be evaluated for applicability.” This statement is not acceptable since it leaves the selection of the design codes and standards to the user of the standard. This means that there is NO standard.

**Disposition**

None - The existing statement in “POLICY FOR SPECIFYING REQUIREMENTS, RECOMMENDATIONS, AND PERMISSIONS IN A STANDARD (“SHALL,” “SHOULD,” AND “MAY”) adequately defines what is required to be provided in standards that use “shall be evaluated.”

**1.2.5. Specification of Design Codes and Standards**

**General Requirements**

Requirements to apply specific design codes and standards shall be made using clear shall statements in the body of the standard. The WG shall identify the specific codes or standards that will result in an acceptable product in its standard. A user may opt to use a different code or standard by taking exception to the ANS standard. However, the requirements in our standards need to be guided by the principal that “If a user claims to have applied an ANS standard, it is a meaningful statement and provides a clear basis for acceptability.”

**Examples**

The June 2014 Draft of ANS-54.1, Section 3.2, states “Where generally recognized codes and standards are used, they shall be identified and evaluated to determine their applicability adequacy and sufficiency and shall be supplemented or modified as necessary to assure a quality product in keeping with the required nuclear safety function.”

**Reference**

ANS Standards Committee “POLICY FOR SPECIFYING REQUIREMENTS, RECOMMENDATIONS, AND PERMISSIONS IN A STANDARD (“SHALL,” “SHOULD,” AND “MAY”)

**Disposition**

The ANS policy, “POLICY FOR SPECIFYING REQUIREMENTS, RECOMMENDATIONS, AND PERMISSIONS IN A STANDARD (“SHALL,” “SHOULD,” AND “MAY”) will be modified to specifically mention this item.

**1.2.6. Referencing other SDO Standards**

**General Requirements**

Where related requirements are covered by other ANS standards, only those ANS standards shall be referenced. If not covered by another ANS standard, another SDO’s standard may be referenced...

**Example**

ANS-58.16 draft, section 5.1.1 references both IEEE 379-2000 and ANSI/ANS-58.9 for single failure criteria. ANSI/ANS-58.9-2002 (R2009) addresses the entire issue of single failure and includes an appropriate reference to IEEE 379. The correct approach would have been to reference only the ANS standard.

**Reference**

ANS Standards Committee "POLICY ON HANDLING REFERENCES IN STANDARDS"

**Disposition**

This item will be added to the ANS Standards Committee policy, "POLICY ON HANDLING REFERENCES IN STANDARDS."

**1.2.7. Degree of Specificity****General Requirements**

The minimum level of requirements acceptable in an ANS standard is that which is sufficient to provide assurance that multiple independent persons using the same standard will have a common understanding of the requirements and the products produced through the implementation of the standard will have the intended capabilities and quality.

**Reference**

The ANS "POLICY FOR SPECIFYING REQUIREMENTS, RECOMMENDATIONS, AND PERMISSIONS IN A STANDARD ("SHALL," "SHOULD," AND "MAY")" specifies that, "voluntary consensus standards (VCS) prepared under the cognizance of the ANS Standards Committee shall be clear and concise, avoiding ambiguity. It must be very clear that when a standards user claims that actions are in accordance with the requirements of an ANS standard, the meaning of such a claim is well understood by all parties and can be verified by an independent second party. Standards writers and reviewers shall recognize that they are not directly setting requirements for the industry because all VCS are intended for voluntary use, and it is the prerogative of the user to determine its level of implementation. It is not sufficient to simply use a "shall" statement to specify a requirement. Our goal is that each "shall" statement, if effectively implemented, provides an acceptable product. However, "should" statements should be used very sparingly as they compromise the specificity of a standard. "Should" may be used to indicate a preference among two or more acceptable actions that describe some but not all of the acceptable actions. If the standard describes all known acceptable actions, then "shall" shall be used (in the context of "one of the following shall be done") instead of "should." "Should" statements shall not be used to avoid those cases where the WG is unable to provide the needed clarity.

**Example**

ANS-58.16 draft, Section 3.6 stated: "The hazard controls that implement the required safety function shall be designed to appropriate design requirements, based on their safety categorization, to ensure a reliable and effective protection strategy." While this statement would be acceptable as a lead in statement to providing further specifics, it does not provide adequate specificity by itself. It leaves the user to determine what is appropriate.

**Disposition**

Specificity requirements for ANS standards are already adequately covered in the ANS STANDARDS COMMITTEE Policy Manual.

**1.2.8. Use of Copyrighted Materials in Standards**

WGs should avoid using materials from copyrighted sources. If the use of copyrighted material is unavoidable then material excerpted from copyrighted sources shall only be

included in published ANS standards if documented approval from the controlling entity for that copyright (normally the publisher) has been obtained.

***Examples***

A working group asked if they can use a figure from a published book. They were directed to identify this to the standards administrator during the ballot process so that ANS publishing can obtain required approvals.

Pictures originally proposed for use in the ANS standards sale brochure could not be accepted as ANS did not have authorization from the photographer and owner.

***Reference***

ANS Standards Committee "POLICY ON HANDLING REFERENCES IN STANDARDS"

***Disposition***

The STANDARDS COMMITTEE policy, "POLICY ON HANDLING REFERENCES IN STANDARDS," was revised to clarify the requirements and responsibilities for obtaining the requisite copyright approvals.