Module B - Process
### REVISIONS

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<td>7</td>
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B8. International Standards Development
Objectives

With constant advancements in technology and the continuing explosion of the Web, the world seems smaller. With these changes, and with many industries becoming more global in nature, the importance of participating in international standardization and preparing harmonized standards becomes more important.

In many forums, ASME has been promoting the concept of multiple paths to international standardization and the need for each industry sector to select the most appropriate path to meet its safety and marketplace needs.

This submodule will describe the various paths to international standardization.

In the end, however, each sector must select the path that best meets its safety and marketplace needs.
AGENDA

I. ASME International Standards
II. Normative References
III. U.S. National Adoption of ISO Standards
IV. ISO Adoption of ASME Standards
V. ISO Standards Development
Part I – ASME International Standards
What Makes a Standard “International?”

Clearly, there are international standards other than ISO standards. Not all ISO developed standards are internationally accepted and used, and conversely, there are numerous standards accepted and used internationally, including some ASME codes and standards, that are not ISO standards.

In fact, in some countries where there is a perception that international standards equate to ISO standards, the standards that are being used in the sectors in which ASME operates, are actually ASME standards.

What makes a good international standard?
A standards development process that provides fair and open access and international participation. These are essentially the principles for international standards development, as established by the World Trade Organization (WTO) in the Technical Barriers to Trade (TBT) Agreement. A record of success in meeting or a potential to meet international market and safety needs. The ability to maintain technical relevance.

Each sector must determine the most appropriate path to international standardization in order to meet its needs.
INTERNATIONAL STANDARDIZATION

- ASME develops standards intended to meet needs of industries and governments on global basis
- ASME standards developed under process that meets WTO principles for international standards development
- To address global relevance, an ASME committee may take various approaches, including:
  - development of performance based and prescriptive standards as means of compliance with regulations or essential safety requirements;
  - normative or informative references to non-ASME international, regional, or national standards; and
  - national adoptions of non-ASME international standards

International Standardization

ASME develops standards intended to meet needs of industries and governments on global basis. ASME standards developed under process that meets WTO principles for international standards development defined in WTO/G/TBT/1/Rev.8, 23 May 2002, (02-2849), “Decisions and Recommendations Adopted by the Committee Since 1 January 1995”, Section IX – http://www.wto.org/english/tratop_e/tbt_e/tbt_e.htm

To address global relevance, an ASME committee may take various approaches, including: development of performance based and prescriptive standards as means of compliance with regulations or essential safety requirements; normative or informative references to non-ASME international, regional, or national standards; and national adoptions of non-ASME international standards. In this case, specific action by the cognizant board and the Codes and Standards Board of Directors is necessary.
ASME International Standards:

Examples of ASME codes and standards which meet the criteria for an international standard and which are recognized and used in countries around the world are:

- The Boiler and Pressure Vessel Code, used in over 100 countries around the world and identified as “An International Code” on the cover
- The B31 Piping Codes
- The B16 Standards on Valves, Flanges, Fittings, and Gaskets
- The Bioprocessing Equipment Standard, which is identified as “An International Standard” on the cover

This approach usually makes the most sense:

- When committees of experts are already established
- For existing standards, when users of the standard can continue to reference the familiar standard
- For new standards, when the standard is strongly related to existing ASME standards
- For new standards, when prospective users of the standard want ASME to be the responsible standards development organization (SDO)
- When it is desirable for ASME to have control of the content of the standard
- When a standard requires continuous revision
- When the one-country-one-vote principle makes it difficult to achieve technical consensus
International acceptance and use of ASME standards can be enhanced if those standards truly include consideration of the viewpoints of interested parties outside of the U.S. and Canada. International participation on ASME committees is encouraged; membership is open to qualified individuals from all countries.

Recognizing the existing barriers to international participation (e.g., attending meetings in U.S., communicating in English language), ASME created the position of delegate on its committees as a means to enhance meaningful international participation in ASME standards development activities. A delegate represents an organization located outside of the U.S. and Canada, which is recognized within its country.

The organization represented can be a group of individuals from a jurisdiction, a professional society, a trade organization, a users group, and other group with a meaningful interest in the work of the committee.

The group being represented will review and comment on committee’s proposals, or submit new proposals for committee consideration. Group can meet in their own country and communicate in their own language.

Delegate serves as link between group and committee, therefore, should have proficiency in English. Delegate on standards committee is afforded first consideration voting rights on standards actions of that committee.
II. Normative References

Part II – Normative References
Normative References
Approach:
Another approach to international standardization is to incorporate a normative reference to related ASME Standard(s) from within standards developed by other SDO’s such as ISO and IEC. This approach is appropriate when an existing ASME Standard is a de facto international standard.

Example:
An example of this approach came with the publication of ISO 15649:2001, which contained a normative reference to the ASME B31.3 Code on Process Piping, thus making compliance with B31.3 essential in order to comply with the ISO Standard.

As stated in the introduction to ISO 15649, the B31.3 Code “… is presently the worldwide basis for current standards and practices for piping systems for the petroleum and natural gas industries.”

Advantage:
Unlike some of the other approaches to international standardization, this option allows ASME to maintain control of the technical content of the key document. If an ASME document were submitted to another SDO as the basis for a standard, ASME would have no control over the technical content of the eventual standard, other than participation, as in the ISO example, through the U.S. TAG as one member body of the ISO Technical Committee.

Similarly, there would be limitations on what changes could be made by ASME to an ISO Standard that had been nationally adopted without jeopardizing that standard’s status as a U.S. national adoption.

This option also precludes the need for potentially extensive effort to create a new standard

Additionally, this approach would allow users of the referenced standard to continue to use familiar requirements
Part III – U.S. National Adoption of ISO Standards
U.S. National Adoption

Definition:
Another path to international standardization is **U.S. National Adoption**, that is, the adoption and publication by ASME of an ISO standard as an American National Standard.

Reasons for U.S. National Adoption:
U.S. National adoption is desirable when no ASME standard exists and when the ISO standard is the preferred or industry-recognized standard.
U.S. National Adoption (cont’d)

Procedure:
To process an ISO standard for adoption as an American National standard:
Process the standard according to ASME’s standards development procedures and ANSI procedures (i.e., consensus body approval).
If there is an existing ASME standard covering the same area, it would normally be withdrawn or modified to act as a supplement.
ANSI procedures for U.S. national adoptions allow for two forms of adoption: Identical and Modified.

**Identical adoption** is adoption without changes to the wording of the standard. Identical adoption procedures include a special expedited procedure for use in cases where the TAG has voted or plans to vote approval of the draft ISO standard.

**Modified adoption** is adoption with changes to the wording. Modified adoption procedures require that a listing of the technical deviations be included in the nationally adopted standard.

ASME procedures require that recommendations for U.S. national adoptions be approved by the appropriate Board and the Codes and Standards Board of Directors.
Modified U.S. National Adoption

Approaches and rationales:
If the U.S. implementation of an ISO standard requires additional information, but no change to the wording of the ISO standard, an approach to consider is to process a modified U.S. national adoption and add the special U.S. requirements in an appendix. This allows companies to use the ISO standard for their foreign business and use the ISO standard supplemented by the additional appendix requirements in the U.S. and elsewhere when required by contract or law. Having an ISO standard for foreign use and a separate U.S. standard for U.S. use can be confusing as the two are often formatted quite differently and may be based on different concepts.

A modified adoption could also be appropriate, if the ISO standard will require technical changes for U.S. use.
Pop Quiz #1

A new ISO standard covering an area already covered in the U.S. by an existing ASME standard has rapidly become the standard of preference in much of the industry. The new standard does not address a couple of issues important in the U.S., but otherwise meets all U.S. needs.

What action might ASME take to update its U.S. standard in a way that meets the needs of both domestic and multi-national companies? ____

Answer: It could process a modified U.S. national adoption, which includes an appendix containing the needed additional U.S. requirements.
IV. ISO Adoption of ASME Standards

Part I – ISO Adoption of ASME Standards
Submission of ASME Standards to ISO

There may be instances where an ASME Standards Committee or U.S. TAG would like to submit an ASME published standard or draft standard to ISO. This might be desirable, for example, where no ISO standard covers the area as it would tend to make the ASME standard the industry’s internationally recognized standard. It also may be desirable when the ISO Technical Committee (TC) has a stronger technical base than the ASME committee.

The Y14 Committee on Engineering Drawing and Related Documentation Practices has voted to submit two Y14 standards and a draft standard to ISO as the bases for an ISO standard.

To submit an ASME standard to ISO, a TAG must obtain the approval of the appropriate ASME Consensus Committee, Board and Codes and Standards Board of Directors; format the standard in the ISO format (using the ISO Template); and submit the proposed standard as a New Work Item.

NOTE: With this option the U.S. would lose control over the technical content in the resulting ISO Standard. There is also no guarantee that the final ISO standard will look anything like the ASME standard.
Pop Quiz #2

Answer: False. A number of ASME standards are recognized and used throughout the world.
Part V - ISO Standards Development

ASME currently participates in approximately 40 ISO standards development activities, so this part of the submodule will focus on the path dealing with participation in the activities of the International Organization for Standardization, or ISO, and will explain:

How an ISO International Standard is developed
How ASME participates in the ISO standards development process
International Organization for Standardization (ISO)

ISO is a private European based standards development organization (SDO) created to facilitate the internationalization and unification of standards and related activities. It is made up of 140 member countries, each represented by a national standards body from that country and each having one vote. The one country-one vote principle sometimes causes problems as small, less industrial countries have the same vote as larger industrialized nations and, occasionally, countries may vote as a bloc to advance specific regional positions.

ANSI, the American National Standards Institute, is the U.S. member body. The official languages are English, French and Russian, but ISO documents are published only in French and English.

ISO develops international standards, technical reports and other documents. Participation in the ISO process is important as it may help to maintain or increase foreign market access.
ISO Organization

Overview:
The technical work of ISO is carried out by the Technical Management Board and the various Technical Committees that report to it.
This chart shows the various groups involved and their reporting structure.

Let’s take a closer look at each one of these.
ISO Organization (cont’d)

Technical Management Board (TMB):
Manages ISO’s technical activities and sets policy regarding these activities
Has 12 member countries. Four of these members are permanent members reflecting those member bodies evaluated as having the most significant responsibility and productivity within the technical committee structure. The other eight members are appointed according to a ranking scheme based on a set of criteria established by the ISO Council.

The four permanent members of TMB are:
- U.S.
- Germany
- United Kingdom
- France

The other eight current members are:
- Japan
- Spain
- China
- Brazil
- Netherlands
- South Africa
- Canada
- Norway
The U.S. member is ANSI.
ISO Organization (cont’d)

Technical Committee:
A Technical Committee is responsible for a particular technical area, such as Pipe Fittings. Technical Committees and their scopes are established by the TMB. All countries may participate in a Technical Committee, but ISO provides three categories of membership to allow different degrees of participation. A country may select the category that best suits its needs and may select different categories of participation for different committees. The membership categories are: Participating, Observer and Liaison.

A Participating (P) member is obliged to vote on draft International Standards and, whenever possible, to participate in meetings. If a P-member consistently misses votes, it may be asked to change its category of participation to O-member.

An Observer (O) member attends meetings and receives and comments on drafts. An O member also has the right to vote, but no obligation to do so. O-member votes do not carry the same weight as P-member votes when evaluating criteria for approval of a proposed standard.

Liaison (L) members attend meetings and receive documents, but do not vote.

The TMB appoints a national body to provide a Chair and Secretariat (administrative group) for the committee. The appointed National Body may designate another organization to serve as Administrative Secretariat.

ISO has more than 180 Technical Committees.
The Technical Committee Secretariat

Responsibilities:
A Technical Committee Secretariat provides administrative services for a particular Technical Committee in accordance with ISO Directives (procedures). This includes working with a host country on meeting arrangements, distributing agendas, taking minutes and conducting letter ballots.

A Secretariat must work closely with ISO Central Secretariat and must be strictly neutral in its dealings.

ASME is the Secretariat for TC 192 on Gas Turbines which relates to the ASME B133 Committee on Gas Turbine Procurement; TC 5/SC 10 on Flanges which relates to the ASME B16 Committee; and TC 96/SC 6 on Mobile Cranes which relates to the ASME B30 Committee.
ISO Organization (cont’d)

Subcommittee:
A Technical Committee may create Subcommittees to deal with specific aspects of its work. A Subcommittees consists of P or O members only, but a country’s subcommittee membership category need not be the same as its TC membership category. In other words, a country that has chosen to be an Observer at the TC level may choose to be an active Participant at the Subcommittee level. The parent TC appoints a national body to act as Secretariat for the Subcommittee. If more than one national body applies for the position, the Technical Management Board will decide the appointment. ISO has close to 600 Subcommittees.
ISO Organization (cont’d)

Working Groups and Ad Hoc Groups:
Working Groups and Ad Hoc Groups are created by the Technical Committee or Subcommittee, if necessary, and are usually responsible for a single project or a set of related projects. They are disbanded upon completion of those projects. Membership categories do not apply in a Working Group or Ad Hoc Group.
ISO Normative Publications

ISO publishes three types of documents which set international standards or norms. These documents reflect different levels of international support for the norms they describe and therefore carry different weights in the international community.

An **International Standard** is ISO’s primary product. In order for a proposed standard to be accepted as an International Standard it must be approved by at least two-thirds of the P-members of the relevant Technical Committee and disapproved by less than one quarter of all voting members. International Standards must be reviewed at least every five years.

A **Technical Specification** is also a normative document, but does not enjoy the status of an International Standard as it requires the approval of only 2/3 of the P-members voting and must be reviewed after three years. Normally, Technical Specifications are issued when the original intent was to produce an ISO Standard but, subsequently, it was discovered that there was insufficient support for the publication of a standard.

A **Publicly Available Specification** requires even less support for approval—requiring only a simple majority—and must also be reviewed after three years.
Other ISO Publications

ISO also publishes informational documents:
A **Technical Report (TR)** provides technical information on a particular topic. It is not normative.
An **Industry Technical Agreement (ITA)** is a document resulting from an international workshop held outside the technical structure of ISO but administered by a designated ISO national body. An ITA will always include a list of the participating organizations.
Pop Quiz #3

Answer: b. Technical Committee
Pop Quiz #4

Which of the following ISO publications define standards or norms? ____

a. International Standard  
b. Industry Technical Agreement  
c. Publicly Available Specification  
d. Technical Report  
e. Technical Specification

ISO Standards Development

The stages of ISO standards development are as follows:
Proposal
Preparatory
Committee
Enquiry
Approval
Publication

We will discuss each in turn.
ISO Standards Development (cont’d)

Stage 1 - Proposal (NP to approved NP):
A new work item proposal (NP) is submitted for vote by members of relevant TC/SC. The proposal proceeds upon approval by majority of P members and if at least 5 P members commit to participate in the project. If approved, a project leader responsible for the work item is normally appointed to serve as the Convener (Chairman) of a working group of experts.
ISO Standards Development (cont’d)

Stage 2 - Preparatory (WD):
The working group prepares a draft (WD) to address the new work item. Sometimes it will take several drafts until the working group is satisfied with the technical content. This draft is then forwarded to the working group’s parent committee and becomes the CD (Committee Draft). (See next slide.)
ISO Standards Development (cont’d)

Stage 3 - Committee (CD):
The Committee Draft (CD) is distributed for comments or voting by the P members of TC or SC. Comments are considered and successive committee drafts may be considered until consensus on the technical content has been reached. Then, the text is finalized and submitted as a draft International Standard (DIS).
ISO Standards Development (cont’d)

Stage 4 - Enquiry (DIS):
The draft International Standard (DIS) is then circulated to all ISO member bodies for letter ballot vote. This is the last opportunity for technical comments to be submitted. National bodies’ comments are considered by the originating TC/SC and successive drafts may be reviewed until consensus is achieved. A DIS is approved for submission as a final draft International Standard (FDIS) if two thirds of the P members of the TC are in favor and not more than one quarter of the total number of votes cast are negative.
ISO Standards Development (cont’d)

Stage 5 - Approval (FDIS to approved FDIS):
The final draft International Standard (FDIS) is then circulated to all ISO member bodies for a final Yes/No vote. Technical comments are not considered at this stage, but they are held for consideration for a future revision. The FDIS is approved if two thirds of the P members of the TC are in favor, and not more than one quarter of the total number of votes cast are negative.
ISO Standards Development (cont’d)

Stage 6 - Publication (IS):
Once the FDIS is approved, it is published as an International Standard (IS) by the ISO Central Secretariat.
Pop Quiz #5

Answer: New Work Item Proposal
Fast Track Development

ISO does have a fast track processing procedure for use when an existing non-ISO standard is to be adopted as an ISO standard. During Stage 1 (new work item), a draft of the existing standard is attached to the NWI proposal with a request to fast track the standard directly to the Draft International Standard (DIS) stage. If accepted for fast track, the existing standard moves through the Enquiry and Approval stages just like a normal DIS.
Fast Track Development (cont'd)
Technical Advisory Group

Role:
All U.S. participation in ISO Technical Committees is through Technical Advisory Groups, or TAGs. ANSI accredits the U.S. TAG for a specific technical area of responsibility. The scope of the U.S. TAG typically matches the area of responsibility of a particular ISO committee or subcommittee. A TAG prepares the U.S. position on issues handled by its corresponding ISO committee or subcommittee and represents the U.S. at committee meetings.
**TECHNICAL ADVISORY GROUP (TAG)**

- **Specific Responsibilities**
  - Determines the U.S. position on
    - ISO drafts out for ballot
    - ISO Technical Committee agenda items
  - Designates U.S. delegations
  - Initiates and approves U.S. proposals to TC for new work
  - Recommends the TAG membership

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**Technical Advisory Group (cont’d)**

Specific Responsibilities:
Specifically, a TAG:
Determines the U.S. position on ISO drafts out for ballot and ISO Technical Committee agenda items
Designates the head and members of any delegation that will represent the U.S. at committee meetings
Initiates and approves U.S. proposals for new work
Makes recommendations regarding TAG membership
Technical Advisory Group (cont’d)

Membership:
Membership in a TAG is:
Open to all U.S. national interested parties who are directly and materially affected by the activity of the TAG. This includes technical experts from companies, technical and trade organizations, government agencies and individuals. TAG members are not required to be U.S. citizens.
Membership of the TAG is balanced, that is, no single interest category should have a majority.

NOTE: Having the Standards Committee taking actions as the TAG is not acceptable. Although the actual membership comprising the TAG and the Standards Committee might be the same, the TAG must have a separate roster. Some Standards Committee members may not be interested in ISO activities and not want to receive ballots on ISO drafts. Others may be interested in joining the TAG, but may not be interested in or able to, because of balance requirements or other reasons, join the Standards Committee as well.
TAG Administration

TAG Administrator:
ANSI accredits an organization to administer each TAG. ASME is currently the Administrator for over forty TAGs, for example, to TC 2 on Fasteners, to TC 10 on Technical Drawings and to TC 11 on Boilers and Pressure Vessels. The Administrator provides a Chairman and administrative services for the TAG in accordance with ANSI and ISO procedures.

TAG Secretary:
The TAG Administrator provides the actual administrative staff of the TAG. In an ASME TAG, they are usually ASME staff persons, who serve as TAG Secretaries. The Secretaries make arrangements for meetings, prepare and distribute documents related to the work of the TAG, and maintain appropriate records (including minutes of meetings and results of letter ballots). They also transmit proposals and positions developed and approved by the TAG to ANSI.
TAG Procedures

Requirements:
Technical Advisory Groups operate in accordance with their own TAG procedures. These must be based on the ANSI Model Operating Procedures but may include changes and additions.

Possible additions to the ANSI procedures include:
Use of the ASME categories of interest
Things to consider when thinking of hosting an ISO meeting (e.g., support for meeting, need for interpreter, etc.)
ASME is developing a set of generic procedures for use by all U.S. TAG’s administered by ASME, instead of each TAG developing its own procedures or using the ANSI model procedures. The TAG’s will also create a supplement to the generic procedures that may contain additional requirements unique to the specific TAG operation, but not to conflict with the generic TAG procedures.
TAG Procedures (cont’d)

Basic concepts:
ANSI Model procedures contain the same basic concepts as the ASME Standards Development Committee Procedures. These are:
- Openness
- One member, one vote
- Balance
- All negatives considered
- Appeals process
POP QUIZ #6

Which of the following apply? U.S. Technical Advisory Groups administered by ASME shall:

a. Be balanced
b. Be a Standards Committee
c. Have a scope the same as the ISO activity
d. Be accredited by ANSI

Pop Quiz #6

Answer: a, c and d.
Submitting a U.S. Position

Step 1 - Determining the position:
The first step in stating a U.S. position to ISO is determining what the position is. The appropriate TAG is responsible for developing a consensus position, but there are two ways it can do this.

Option 1: In the first option, the draft is sent to the TAG for ballot. A group or individual then consolidates and refines the TAG comments into a position, which is then balloted by the TAG.

Option 2: In the second option, a Project Team Leader is designated. The draft is distributed to the TAG and members are requested to send their comments to the Project Team Leader by a specific date. The Project Team Leader and team then consolidate and refine the TAG comments into a proposed position, which is then balloted by the TAG.

Since the first option is more time consuming and often the letter ballot results are poor, strong consideration should be given to the second option. When using the Project Team Leader approach, try to have the Project Team Leader established early and/or participate in the early development stages.

If possible, do not submit individual comments from a review of the draft. First have a volunteer review the comments and refine them. In the past, a listing of various members’ comments were sent to ISO. Since these were individual comments, they often were not consistent with each other.
Submitting a U.S. Position (cont’d)

Step 2 - Submitting the position to ISO:
Once the TAG approves a position, it is sent to ANSI. ANSI then forwards the U.S. ballot to the appropriate place (e.g., ISO Central Secretariat, TC or SC Secretariat).
Effective ISO Participation

To make your participation in ISO as effective as possible, we recommend that you follow these guidelines:

Begin your participation in the early stages of draft development. As in any standards development project, the earlier you suggest changes, the more likely they are to be accepted.

Consider being a Convener. The convener functions as the chairman of a working group.

Study the ISO Directives and become familiar with the ISO Template for submitting new work items.


NOTE: Links to the ISO Directives, ISO Template, and ANSI Guide for U.S. Delegates to ISO Meetings can be found on the ASME Web page under C&S Links
SUMMARY

I. ASME International Standards
II. Normative References
III. U.S. National Adoption of ISO Standards
IV. ISO Adoption of ASME Standards
V. ISO Standards Development

Summary
REFERENCES

- Codes and Standards Policy CSP-4, International Standardization
  • http://cstools.asme.org/csconnect/CommitteePages.cfm?
    Committee=A01000000&Action=7609
- ANSI Procedures for U.S. Participation in the International Standards Activities of the ISO
- ANSI Guide for U.S. Delegates to IEC and ISO Meetings*
- ISO Directives*
- ISO Templates*
- Vienna Agreement*

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