

# **Choosing Standards Based on Merit**

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Liberalizing Regulation, Trade and Development

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## Liberalizing Regulation, Trade and Development

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## The purpose of this paper

The purpose of this paper is to stimulate further interest in standards originating in the United States' system of standardization and to increase awareness of the role they already play in the global marketplace.

Hopefully, it will also afford a greater awareness of the importance of freedom of choice and the ability, indeed, the *obligation* of manufacturers and governments to choose the best standards available and the standards that are most relevant to their needs.

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## The U.S.–Based Standards System: Committed to a Liberalized Trading System

International standards are the cornerstones of a liberalized trading system. When used as the basis for technical regulations and developed according to principles recommended by the WTO Committee on Technical Barriers to Trade<sup>1</sup>, they are less likely to create unnecessary barriers to trade. International standards can also increase efficiency, enhance the quality of life, and transfer technology from developed to developing countries.

The TBT Agreement delegates certain responsibilities to international standards: (1) they must function effectively and appropriately; (2) they must fulfill legitimate objectives; and (3) they must be relevant. In this context, relevance is associated with regulatory and market needs, as well as scientific and technological developments. In the global market, relevance is associated with a standard's ability to solve real problems in real time.

A standard's relevance is arguably related to the extent to which it is used. Technology that originates in standards developing organizations domiciled in the United States is used in countless measure by WTO members in the efficient production and testing of goods, in international trade, and in technical regulations. The widespread application of these standards is plainly evident from the most cursory examination of the technical regulations of member countries; and it is clear that an ample supply of effective, relevant international standards has been produced by a network of standards developing organizations, i.e., *standards used in regulation, trade, and in building the capacity of developing countries around the world emanate from multiple sources.*

Multiple sources of international standards are especially useful to WTO members. They provide regulators with choice and flexibility while reducing the need to base technical regulations on national standards.

One of the most important features of the U.S.-based standardization system is that it is open to every nationality; its technical committees abound with experts from around the globe. No less important is its commitment to the TBT principles for the development of international standards<sup>2</sup> and the Code of Good Practice.<sup>3</sup>

The U.S.–based standardization system produces many international standards that do not exist elsewhere. It produces standards and test methods that are unique and standards that have given rise and safety to many of civilization's best endeavors, from the construction of basic infrastructures to the exploration of space. These standards have become so deeply rooted in the texture of the world's economies that their absence or the lack of ongoing revisions to their technology would destabilize large areas of international trade and significantly reduce the quality of life on this planet.

This is a guide to a deeper understanding of this system, and the opportunities it offers regulators and exporters to use standards that are best suited to perform specified tasks, whether they are local or universal. A comprehensive map of the

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<sup>1</sup> Decision: G/TBT/1/Rev. 8, 23 May 2002.

<sup>2</sup> *ibid.*

<sup>3</sup> See Annex 3 of the TBT Agreement.

immense flow of technology from this system into the world at large is not practical; indeed it is not possible. This paper offers only a representational view of that flow, using examples taken from a large, diverse network of stakeholders.

The significance of the global usage of standards, whatever their origin, must be acknowledged, viewed, and weighed alongside the notion that the form taken by standardization models must take precedence over universal acceptance and relevance. The more pertinent question(s), in terms of a liberalized trading system, are (1) whether or not a standard facilitates or poses an obstacle to trade, and (2) whether or not a standard is effective and relevant to market needs and conditions.

## What Is Merit?

Merit used as a noun is defined as “worth or excellence; high quality;” defined as a verb, merit means “to earn as a reward or punishment; deserve.”<sup>4</sup>

Assigning worth, or merit, to a standard is precarious at best, for what constitutes merit in the eyes of one may not constitute it in the eyes of another. In the case of merit, one size does not fit all.

That being said, there are general, or horizontal, positive attributes that can be assigned to a standard, whatever its technical objective. The assignment of merit can begin with the process that creates it. Here, there are accepted guidelines, such as the TBT Committee’s *Decision on Principles for the Development of International Standards*.<sup>5</sup>

Other primary tests can be applied to a standard, also taken from accepted principles: the TBT Agreement, for example, requires that a standard be *effective* and *relevant*, and that it not act as a *barrier to trade*.

It can be argued that *use* is a benchmark of merit; that is, the standard has earned the confidence of a wide range of users. Users apply their own tests: Is the technology advanced? Does the standard produce highly reproducible results? Does it bring about the desired level of change or increase in quality? Is it current and updated regularly? Does it meet the user’s expectations? Will it open markets? Is it doable? A regulator might require that a standard carry a reasonable expectation of compliance, or a credible rationale for its application. While some of these values may be anticipatory or subjective, a standard, in the most practical sense, is only as good as its user deems it to be. For the user, that can only be determined when the standard is *applied* and the results are calculated. Merit is an attribute, therefore, that is *earned after the standard is in play*.

While the concept of merit is important in the context of this paper, and while the direct or implied merits of standards are imbedded in the examples herein, the *freedom to choose* a standard based on performance, suitability, effects, i.e., its *merits*, is the key to liberalized regulation, trade, and development.

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<sup>4</sup> *Standard Desk Dictionary*, Funk & Wagnalls, Harper & Row, Publishers.

<sup>5</sup> Decision of the Committee on Principles for the Development of International Standards, Guides and Recommendations with Relation to Articles 2, 5 and Annex 3 of the Agreement G/TBT/1/Rev. 8, 23 May 2002.

## WTO Technical Barriers to Trade Agreement

The TBT Committee, in its *Decision on Principles for the Development of International Standards*<sup>6</sup> notes that, “bodies operating with open, impartial and transparent procedures, that afforded an opportunity for consensus among all interested parties in the territories of at least all members, were seen as more likely to develop standards which were effective and relevant on a global basis and would thereby contribute to the goal of the Agreement to prevent unnecessary obstacles to trade.”

The U.S.–based standardization system recognizes the principles outlined in the Decision of the TBT Committee as the ultimate authority on the development of international standards. Furthermore, it recognizes that U.S.–based standards developing organizations that apply these principles to their standards-setting process are developing standards that are effective, relevant, and contribute to the goal of the Agreement.<sup>7</sup>

In addition, the American National Standards Institute (ANSI) has accepted the Code of Good Practice on behalf of more than 200 standards developing organizations in the United States.

## Relevance and Effectiveness

The TBT Agreement requires members to use relevant international standards, or the relevant parts of them, as a basis for technical regulations except when they would be ineffective or inappropriate means for the fulfillment of the legitimate objectives pursued.

The TBT Committee’s *Decision on Principles for the Development of International Standards* also states, “international standards need to be relevant and to effectively respond to regulatory and market needs, as well as scientific and technological developments in various countries.”

Ideally, industrial policy considerations, technical problem solving, and market needs converge in an international standard. When one of these elements is out of balance, the resulting standard is more likely to be irrelevant, inappropriate, and/or ineffective, i.e., it may be technically interesting or politically expedient, but it serves no real *need*. It may even act as a barrier to trade. When a standard satisfies only the objectives of a limited geographic or economic region, the *internationality* of the standard may also be called into question.

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<sup>6</sup> *ibid.*

<sup>7</sup> See the U.S. Standards Strategy at [www.ansi.org](http://www.ansi.org).

There are fields of technology and significant elements of trade where the international standardization organizations that are sometimes called *formal* or *traditional* supply only a fraction of relevant standards, and in some cases, none at all. For example, most Internet standards adopted by the Internet Engineering Task Force<sup>8</sup> or the World Wide Web Consortium<sup>9</sup> would not “qualify” (according to Waymund Werle, 2001)<sup>10</sup> as international standards on which regulations or other standards should be based. Few, however, would doubt their international application, universal acceptance, and use.

A large volume of standards and testing methods that emanate from the U.S. system are transposed into the national portfolios of WTO members and/or are used as the basis for technical regulations; i.e., they play internationally significant roles in trade, they are imbued with the qualities of relevance, appropriateness, and effectiveness, they facilitate trade, and do not act as barriers to trade (see Tables A and B, pages 26-29).

*N.B. The examples in Tables A and B (pages 26-29) exemplify standards developed in the U.S. system that are used in the technical regulations of WTO Members. The magnitude of their numbers, however, and the extent of their reach are better understood when viewed from a perspective such as that of the WTO Notification process. Please refer to the Annex, page 33.*

## **U.S. Policy: The National Technology Transfer and Advancement Act (NTTAA)**

The National Technology Transfer and Advancement Act (NTTAA) became law in the United States in March 1996.<sup>11</sup>

The thrust and intent of the NTTAA (Public Law 104-113) is congruous with the Technical Barriers to Trade Agreement in that it directs the U.S. Federal Government to: 1) *use* standards developed by private sector standards organizations, 2) *participate* in the development of standards, and 3) *notify* an appropriate government office when it does not or cannot comply with the first provision.

<sup>8</sup> The Internet Engineering Task Force (IETF) is a large, open, international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. It is open to any interested individual.

<sup>9</sup> The World Wide Web Consortium (W3C) is an international consortium where member organizations, a full-time staff, and the public work together to develop Web standards.

<sup>10</sup> Raymund Werle, Max Planck Institute for the Study of Societies, Cologne, Germany, *Standards and Standards Organizations in the International Free Trade Regime*, presented at the Workshop on Standardization Research, Universität der Bundeswehr Hamburg, September, 2001.

<sup>11</sup> <http://ts.nist.gov/Standards/Conformity/nttaa.cfm>

## The Role of U.S. and Other Governments in the Standards Development Process

In full consensus standards developing bodies and in non-traditional standards bodies, U.S. Government experts<sup>12</sup> and representatives of governments around the world are members of technical committees and serve in the same category as other technical experts, i.e., they are stakeholders. Given their interest and investment, long before the enactment of the NTTAA<sup>13</sup> and to the present day, it is not surprising that government agencies are also the greatest users of these standards, citing them in regulations and in procurement contracts.

The relationship between U.S. SDOs and governments is often characterized as a partnership. The enactment of the NTTAA, the increase in government participation, and the use of voluntary standards has made government regulation and procurement more efficient and more globally relevant, especially when U.S. government representatives serve alongside their counterparts from other WTO member countries.

The Eleventh Annual Report on Federal Agency Use of Voluntary Consensus Standards and Conformity Assessment<sup>14</sup> reports that 3,370 U.S. Government agency representatives were participating in 497 standards developing organizations in fiscal year 2007.

The report also cited measurable benefits from this collaboration, as evidenced by a reported \$1.5 million in annual savings and 25,000 pages of regulations avoided by the U.S. Coast Guard through adoption of private-sector standards; a 90 percent reduction in baby walker injuries; and savings of hundreds of thousands of dollars in the inspection and testing of fire protection systems since the 1990s when the Department of Energy adopted private-sector standards addressing this area.

One outstanding example of public-private partnering concerns the Environmental Protection Agency (EPA) and the IEEE. EPA was actively involved in the development of the Electronic Products Environmental Assessment Tool (EPEAT), a tool that helps purchasers select and buy greener computers, laptops, and monitors. The criteria were developed with input from more than 100 stakeholders and finalized through the consensus process run by IEEE into the IEEE 1680 American National Standard for the Environmental Assessment of Personal Computer Products. EPA projects that over the next five years, purchases of EPEAT-rated products will result in reductions of more than 13 million pounds of hazardous materials, 3 million pounds of non-hazardous materials, and 600,000 megawatts of energy. The EPEAT program has gained solid interest in the EU, China, and India, and is expected to have a broad international impact.

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<sup>12</sup> Federal, state, and local.

<sup>13</sup> And its predecessor, OMB Circular A-119.

<sup>14</sup> NISTIR 7413, April 2007 at [www.standards.gov](http://www.standards.gov).

## Adoption, Reference, and Use

Governments use standards developed by voluntary SDOs in several ways. Some of the most common methods are listed below and illustrate the approach taken by the United States.

### BOX 1: Adoption, Reference and Use of Standards in the United States

- **Adoption:** An agency may adopt a voluntary standard without change by incorporating the standard in an agency's regulation or by listing (or referencing) the standard by title. For example, the U.S. Occupational Safety and Health Administration (OSHA) adopted the National Electrical Code (NEC) by incorporating it into its regulations by reference.
- **Strong Deference:** An agency may grant strong deference to standards developed by a particular organization for a specific purpose. The agency will then use the standards in its regulatory program unless someone demonstrates to the agency why it should not.
- **Basis for Rulemaking:** This is the most common use of externally developed standards. The agency reviews a standard, makes appropriate changes, and then publishes the revision in the Federal Register as a proposed regulation. Comments received from the public during the rulemaking proceeding may result in changes to the proposed rule before it is instituted.
- **Regulatory Guides:** An agency may permit adherence to a specific standard as an acceptable, though not compulsory, way of complying with a regulation.
- **Guidelines:** An agency may use standards as guidelines for complying with general requirements. The guidelines are advisory only: even if a firm complies with the applicable standards, the agency may conceivably still find that the general regulation has been violated.
- **Deference in Lieu of Developing a Mandatory Standard:** An agency may decide that it does not need to issue a mandatory regulation because voluntary compliance with either an existing standard or one developed for the purpose will suffice for meeting the needs of the agency.

Source: [www.standards.gov](http://www.standards.gov)

## Toy Safety: A Federally Mandated Specification

When drafting legislation to strengthen existing consumer product safety law, for example, the U.S. Congress recognized that there was already a national consensus standard for toys that was suitable for mandatory use across the industry. Under the terms of the U.S. Consumer Product Safety Improvement Act (CPSIA) of 2008, the ASTM International standard for toy safety, ASTM F963, became a federally mandated specification on February 10, 2009. F963 is maintained by ASTM International Committee F15 on Consumer Products and its Subcommittee on Toy Safety. Updates to the standard are submitted to the U.S. Consumer Product Safety Commission for consideration. Following review by the CPSC, the new edition of the standard may become effective under the law.<sup>15</sup>

## Effectual Regulation

Ideally, international standards function as the basis of the regulations of multiple markets, facilitating trade and creating regulatory harmonization as well. In reality, the needs and capabilities of the economies of the world vary; and regulators must often improvise technical solutions to match national or local customs or capabilities. They may use standards from various sources, the relevant parts of standards, combinations of standards, or modifications of standards. In other words, regulators routinely take pragmatic paths to regulatory destinations (see Boxes 2 and 3).

The key to effectual regulation is *flexibility and freedom of choice*.

### **BOX 2: The Food and Drug Administration Modernization Act of 1997**

One example of regulatory flexibility is employed by the United States Food and Drug Administration (FDA). The Food and Drug Administration Modernization Act of 1997 authorized the FDA to recognize voluntary consensus standards developed in an open and transparent process, such as those employed by U.S. domiciled Standards Developing Organizations (SDOs) and the International Organization for Standardization (ISO). These standards can also be developed in a U.S. standards-based organization and adopted as an ISO standard. One such example, which is based on an AAMI original document, is ANSI/AAMI/ISO 11137, Sterilization of health care products – Radiation.

<sup>15</sup> U.S. toy safety standards and regulations are considered among the most stringent in the world and provide the model for many of the rules introduced in other countries. Input from the United States has also helped to shape the development of the International Organization for Standardization's family of toy safety standards, ISO 8124.

### **BOX 3: Test Method For Evaluating Coatings Used In Pressurized Water Reactor Nuclear Power Plants At Simulated Design Basis Accident (DBA) Conditions**

*Issued by the China National Nuclear Corporation and published in the Nuclear Industry Codes and Standards in the People's Republic of China*

This standard was written based on two standards, American ASTM D3911-95, Standard Test Method for Evaluating Coatings Used in Light-Water Nuclear Power Plants at Simulated Design Basis Accident (DBA) Conditions, and French standard NF T30-900-1996, Color Painting and Varnish: Test Method for Performance and Repairability of Coatings Used in Nuclear Industry at Design Basis Accident Conditions. Due to the similarities in theory and methodology of both standards and differences in characteristic test curve of temperature-pressure, spray solution and specimens, this standard combined the similarities of both above standards and listed the differences as selective choices for users.

This standard is regulated by the Institute for Standardization of the Nuclear Industry and was prepared by CHI Zhaohua, CUI Lan, TANG Meiling, and LIU Wei. Date of Issue: 10/13/98 Date of Execution: 01/01/98

## **International Participation**

The standardization system based in the United States holds to the proposition that bodies which operate with open and transparent procedures which afford an opportunity for consensus among all interested parties will result in standards which are relevant on a global basis and prevent unnecessary barriers to trade.<sup>16</sup>

International experts can and do populate the technical committees of U.S.-based standards organizations. They represent companies, consumers, government agencies, and standards bodies. They may also represent countries that do not have a standards body. International members also participate in the governance of these SDOs and serve on policy-making committees and boards of directors, expanding technical and policy perspectives beyond those held by the United States. See Table C (page 30).

<sup>16</sup> G/TBT/W/40

## The Sectoral Model

The organizational model that characterizes standardization in the United States can be referred to as the Sectoral Model. Standardization in the United States is decentralized and takes place in sector-specific bodies. While there are SDOs in the United States with unlimited scopes of interest,<sup>17</sup> most standardization is organized into groups that share common industrial or disciplinary interests.

The hallmark of the Sectoral Model is efficiency. Each sector determines what aspects of standardization are most important to it: Speed, for example, is paramount in industries where technological innovations occur in rapid succession. Broader governmental representation may be required when the aim of standardization is in the public interest, i.e., the creation of health or safety regulations. Wide international representation may be necessary to a standard intended for global use. The complexity of the product or its innovative features may require a high concentration of industry experts.

For producers, however, efficiency and time to market are the great advantages of this system, for wherever it occurs in the cycle of conception to shelf, standardization can alter production schedules and have profound effects on competition. The Sectoral Model matches standardization development with distinctive industrial, regulatory, and marketing requirements.

## A Heterogeneous Collection

The United States standardization system is a heterogeneous collection of entities that combine regulatory and market considerations with technology, housing SDOs with international standards setting capabilities and those whose interests are primarily domestic. It is a system in every sense, a whole whose parts literally define *models of standardization*.

It should be noted, however, that there are standards emanating from various models of standardization in this system, including “non-traditional” bodies, whose global significance and usage is undeniable (see Box 4).

One such “non-traditional” model is the consortium. A consortium is a group of companies formed to create a standard to address a single commercial need. In today’s technology world, this generic term has taken on a secondary meaning, defining any collection of companies (and...sometimes, universities and government agencies as well) which for a finite time period work together to promote the commercial success of a new technology-based product or service. Frequently, although not always, the central activity of the consortium is agreement upon, and promotion of, a technical standard (or standards) which is necessary to permit the products of multiple vendors to work together. (*Andrew Updegrave, Gesmer Updegrave, LLP Copyright 2007*)<sup>18</sup>

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<sup>17</sup> ASTM International is one such organization.

<sup>18</sup> Structurally, a consortium can be anything from a loose, unincorporated affiliation of companies, to an incorporated entity with offices, marketing, technical and administrative staff and a multi-million dollar budget. In between, the most common structure is as a joint venture, under a joint venture agreement. Often, this structure involves two classes of participants: “Promoters” and “Adopters.” The former are full members and co-owners of any jointly developed technology. As such, they have sole control over any standards or specifications developed. The latter can receive license rights from any Promoter to the specifications developed by the Promoters in order to create products or provide services based on the specifications, but have no control over the specifications themselves (see <http://www.consortiuminfo.org/what/>).

**BOX 4: ANSI Accredited SDOs****Accredited Standards Committee X9, Financial Industry Standards**

In the financial services industry sector, two examples demonstrate U.S. technology moving into the global sector. ASC X9 developed the Personal Identification Numbering Standard more than a quarter of a century ago. Known today as ISO 9564, the PIN is built into thousands of ATM machines around the globe and in software to backroom operating systems.

Committee X9 originated the formats in the United States which became ISO 8583, a standard bit map messaging format that drives credit and debit card transactions globally and is built into all software and banking systems and networks. The standard, more than three decades in use, continues to be a viable and appropriate option for the financial services industry due to its speed of use and reliability.

**Telecommunications Industry Association (TIA)**

TIA, with partners in China, Korea, and Japan, has developed one of the most successful standards to date for Third Generation (“3G”) wireless communications, the cdma2000® standard. The CDMA Development Group (“CDG”), which tracks deployment of this standard ([www.cdg.org](http://www.cdg.org)), notes that as of May 2009, cdma2000 technology is being used in over 100 countries/territories, by 280 operators, and serving over 450 million subscribers.

**The American National Standards Institute (ANSI)**

The U.S.–based system of voluntary standards bodies is coordinated by the American National Standards Institute (ANSI). ANSI accredits the procedures of many standards developing organizations in the United States.<sup>19</sup> and is the official U.S. representative to the International Organization for Standardization (ISO) and, via the U.S. National Committee, the International Electrotechnical Commission (IEC).

It is estimated that in the United States today there are hundreds of “traditional” standards developing organizations—with the 20 largest SDOs producing 90% of the standards—and hundreds more “non-traditional” standards development bodies, such as consortia. This means that the level of U.S. participation is quite expansive as the groups themselves are comprised of individual committees made up of experts addressing the technical requirements of standards within their specific area of expertise. At year-end 2008, about 200 of these standards developers were accredited by ANSI; there were close to 10,000 American National Standards (ANS) ([www.ansi.org](http://www.ansi.org)).

<sup>19</sup> Accreditation by ANSI signifies that the procedures used by the standards body in connection with the development of American National Standards meet the Institute’s essential requirements for openness, balance, consensus and due process.

## The International Organization for Standardization (ISO)

The United States participates actively in ISO standardization activities through the American National Standards Institute (ANSI).<sup>20</sup> The ANSI Annual Report of 2008-2009 has tabulated these activities (and those of the IEC<sup>21</sup>) as follows:

### BOX 5: ANSI Participation in ISO

Participating "P" Memberships	553
Technical Advisory Groups	201
U.S. Administered TC Secretariats	31
U.S. Administered SC Secretariats	92
U.S. Held Chairmanships	116

### BOX 6: ANSI Participation in IEC

Participating "P" Memberships	155
U.S. Technical Advisory Groups	155
U.S. Administered TC Secretariats	13
U.S. Administered SC Secretariats	11
U.S. Held Chairmanships	28

Through these activities, technology developed in U.S. domiciled standards organizations provides the bases for many ISO standards. U.S. SDOs also provide technology and intellectual property that result in *mirror image* standards, i.e., standards whose contents have not been changed or affected by the ISO process.<sup>22</sup>

## Tools of Trade

Global industries often describe standards as *tools*. The selection of a standard, as the selection of a tool, is based on whether or not the tool can be used to complete a task, or whether or not the standard can be used to solve a problem. A task-oriented approach to the selection of international standards is tantamount to the use of a toolbox, from which standards are chosen for their ability to solve specific problems. The standards' origins, or the process by which they are developed, may be less important to the manufacturer than the quality, technical merit, and the standard's applicability to the problem at hand.

<sup>20</sup> ANSI accredits U.S. TAGS.

<sup>21</sup> International Electrotechnical Commission.

<sup>22</sup> Example: ASTM D7136, D7137 as ISO/DIS 18352.

## Aerospace: A Global Industry's Position

The Strategic Standardization Forum for Aerospace (a broad stakeholder group which includes industry, government, regulatory agencies and standards developers)<sup>23</sup>, has issued a position paper that urges governments, legislatures and contractors to avoid imposing laws or policies mandating the use of certain standards based on which organization developed them and inhibiting the selection of the best standards based on technical merit.<sup>24</sup> The following is an excerpt:

“The aerospace industry is dedicated to producing safe, reliable, and technically excellent products. In order to do so, the industry will select and use standards based on their suitability to meet safety, regulatory, and other technical needs appropriate to their products. This principle is critical and essential to ensure safe and efficient design, build, operation and maintenance of the products of our industry. This requires selecting and using standards based on technical merit, which contain the data necessary to ensure quality aircraft. The aerospace industry urges governments, legislators, and contractors to avoid arbitrarily imposing laws or policies that mandate the use of certain standards based on which organization developed them, and inhibiting the selection of the best standards based on technical merit. Actions taken or advocated to limit or influence selection based on any factor other than suitability for the purpose potentially incur grave risks to the safety and public confidence in the aerospace industry.” (Publication date: March 2006)

The industry also states:

“The standards of choice for the global aerospace industry must be recognized internationally without bias towards the process for development or for the label of the developing organization. Where applicable, those standards need to be made the basis for national, foreign, regional, and international regulation and law. Global standards should be open for input from all stakeholders in the industry in accordance with standards development principles set forth by the World Trade Organization.”<sup>25</sup>

## Unique Standards

From time to time, a standard is developed that virtually defines the product, i.e., only one standard or one set of standards exists that provides the characteristics of the product and/or its production or testing methods. Such a standard, by virtue of its matchless technology or universal applicability, may also act as the ideal international standard so often called for by global traders and governments alike: *the one standard that is accepted everywhere*.

Three such sets of standards that have emanated from the U.S.–based system (plus one from the U.K.) are described in Boxes 7, 8, and 9: the NEMA standards for PET Scanners, the ASTM and UK DEF standards for aviation fuel, and the NFPA standards for aviation life safety and transportation.

<sup>23</sup> Example: The Boeing Company, a major stakeholder in the Strategic Standardization Forum for Aerospace, is the world's leading aerospace company and the largest manufacturer of commercial jetliners and military aircraft combined. It also operates the Space Shuttle and International Space Station for NASA.

<sup>24</sup> The full text of the SSFA Position Paper can be found at [www.ssf-aerospace.org](http://www.ssf-aerospace.org).

<sup>25</sup> *The Future of Aerospace Standardization*, a publication of The Future of Aerospace Standardization Working Group, Aerospace Industries Association of America, Inc., January, 2005).

### **BOX 7: NEMA NU 1, NU 2 Standards For Pet Scanners**

**Positron emission tomography (PET)** is a nuclear medicine medical imaging technique which produces a three-dimensional image or map of functional processes in the body.

The system detects pairs of gamma rays emitted indirectly by a positron-emitting radioisotope, which is introduced into the body on a metabolically active molecule. Images of metabolic activity in space are then reconstructed by computer analysis, often in modern scanners aided by results from a CT X-ray scan performed on the patient at the same time, in the same machine.

**PET scanners are produced in the main by four global enterprises: Siemens, headquartered in Germany; Hitachi, Japan; Philips, the Netherlands; and GE in the United States. All four manufacture to the NEMA specifications.**

NEMA Performance Standards: The NEMA standards NU 1 and NU 2 are recognized by the U.S. FDA's CDRH and thus may be used in Abbreviated 510(k)s for emission tomographic diagnostic devices. They provide standardized methods for measuring performance parameters for gamma cameras (SPECT) and positron cameras (PET). To the extent possible, these methods should be utilized in traditional as well as abbreviated 510(k)s. The NEMA standards are:

NU 1 – Performance Measurements of Gamma Cameras (2007), and  
NU 2 – Performance Measurements of Positron Emission Tomographs (2007).

It is important to recognize that the NEMA standards only prescribe standard measurement methods. They do not specify acceptable levels of performance or safety. Acceptable levels of performance are assessed by a comparison to previously cleared devices, on a case-by-case basis, depending upon intended use, and the substantial equivalence criterion. Levels of electrical and mechanical safety parameters for PET Scanners are addressed by other standards discussed below. These standards are also recognized by CDRH: IEC 60601-1, International Electrotechnical Commission, Medical Electrical Equipment, Part 1: General Requirements for Safety.

IEC 60601-1-2, Requirements for Safety; Electromagnetic Compatibility - Requirements and Tests,

ISO 14971:2007, Medical Devices - Application of Risk Management to Medical Devices,

UL 544, Standards for Medical, Dental Equipment, 3rd edition,

UL 2601-1, Medical Electrical Equipment, Part 1: General Requirements for Safety (this is the UL version of IEC 60601-1).

NEMA PS3, DICOM (Digital Imaging and Communications in Medicine) (set includes PS3-1 through PS3-13) – This standard specifies formats for the exchange of radiology and other medical images.

*N.B. The standards listed above, as other standards in this paper, were current at the writing of this paper. They are intended primarily for purposes of example and some will undoubtedly be updated or superseded at time of publication.*

### BOX 8: Aviation Fuels

Aviation turbine fuels are used for powering jet and turbo-prop engined aircraft and helicopters. These jet fuels are made by refining crude petroleum and inspected to meet stringent standards and specifications. Two organizations have taken the lead role in setting and maintaining specifications for civilian and military aviation turbine fuel: ASTM International (ASTM) and the United Kingdom Ministry of Defence (MOD). The fuel standards that virtually define aviation turbine fuels are ASTM D1655 and the British Standard DEF STAN 91-91. There are minor differences between the two specifications.

Outside former USSR areas, there are currently two main grades of turbine fuel in use in commercial aviation: Jet A-1 and Jet A. The Jet A grade has a 7°C higher freezing point relative to Jet A-1 (maximum – 47°C) and is used only in the United States. **The Jet A-1 grade is used in all other countries.** Both are kerosine type fuels.

There is another grade of jet fuel, Jet B, which is a wide cut (a blend of gasoline and kerosine), rarely used except in very cold climates. Jet B fuel is made to ASTM D6615.

Military fuel, JP-8 or NATO F34, is manufactured according to military specification MIL-DTL-83133. The major difference between military fuels and commercial fuels is military fuels use additives. Otherwise, JP-8 and Jet A-1 are the same fuel.

#### Sources:

Chevron Aviation Report: *Aviation Fuels Technical Review*, 2006. [http://www.chevronglobalaviation.com/docs/aviation\\_tech\\_review.pdf](http://www.chevronglobalaviation.com/docs/aviation_tech_review.pdf)

Shell Aviation: *World-Wide Civil Jet Fuel Grades*. [http://www.shell.com/home/content/aviation-en/productservice/aviationfuels/detail/worldwideciviljet\\_10081004.html](http://www.shell.com/home/content/aviation-en/productservice/aviationfuels/detail/worldwideciviljet_10081004.html)

Mr. Stanford P. Seto, Belcan Corp., Mr. Fred E. Barnes, ASTM Technical Committee D02, Mr. David Bradley, ASTM International

### **BOX 9: Aviation Life Safety And Transportation**

NFPA codes and standards are recognized worldwide in establishing fire safety standards. Although many countries may not have officially adopted some of the NFPA standards, governments are typically open to their use for special applications when local documents are silent on the subject. Many NFPA documents are applied in this manner, particularly in the transportation sector. NFPA produces and regularly updates more than a dozen standards and codes of practice dealing with aviation life safety and interrelated fire protection issues. These address aircraft rescue and fire fighting, fire protection for aircraft related property and buildings, aircraft fuel servicing, and other topics. Some examples follow:

- NFPA 402, Aircraft Rescue and Fire-Fighting Operations
- NFPA 403, Aircraft Rescue and Fire-Fighting Services at Airports
- NFPA 405, Recurring Proficiency of Airport Fire Fighters
- NFPA 407, Aircraft Fuel Servicing
- NFPA 408, Aircraft Hand Portable Fire Extinguishers
- NFPA 409, Aircraft Hangars
- NFPA 410, Aircraft Maintenance
- NFPA 412, Evaluating Aircraft Rescue and Fire-Fighting Foam Equipment
- NFPA 414, Aircraft Rescue and Fire-Fighting Vehicles
- NFPA 415, Airport Terminal Buildings, Fueling Ramp Drainage, and Loading
- NFPA 418, Heliports
- NFPA 422, Aircraft Accident/Incident Response Assessment
- NFPA 423, Construction and Protection of Aircraft Engine Test Facilities
- NFPA 424, Guide for Airport/Community Emergency Planning

Other documents within the transportation infrastructure addressing various roadway, rail, or maritime applications include:

- NFPA 30A, Motor Fuel Dispensing Facilities and Repair Garages
- NFPA 52, Vehicular Gaseous Fuel Systems
- NFPA 130, Fixed Guideway Transit and Passenger Rail Systems
- NFPA 301, Safety to Life from Fire on Merchant Vessels
- NFPA 302, Pleasure and Commercial Motor Craft
- NFPA 303, Marinas and Boatyards
- NFPA 306, Control of Gas Hazards on Vessels
- NFPA 307, Marine Terminals, Piers, and Wharves
- NFPA 312, Vessels During Construction, Conversion, Repair, and Lay-Up
- NFPA 385, Tank Vehicles for Flammable and Combustible Liquids
- NFPA 502, Road Tunnels, Bridges, and Other Limited Access Highways
- NFPA 513, Motor Freight Terminals
- NFPA 610, Emergency and Safety Operations at Motorsports Venues
- NFPA 1192, Recreational Vehicles
- NFPA 1901, Automotive Fire Apparatus
- NFPA 1925, Marine Fire-Fighting Vessels.

The codes and standards mentioned above are a small sample of NFPA documents accepted as international recognized practice.

## Technical Assistance

In keeping with Article 11 of the TBT Agreement, Technical Assistance to Other Members, the United States Government, alone or in partnership with the voluntary standards community, provides numerous programs of technical assistance to developing countries. U.S.-based voluntary standards organizations provide standards documents, educational programs and training as well to these WTO members.

### The NIST Standards in Trade Program

One example of government-private sector cooperation is the Standards in Trade Program offered by the National Institute for Standards and Technology (NIST).

Since 1995, more than 1,000 attendees from more than 35 countries have taken part in this program. The NIST program provides the opportunity to identify technical issues in standards and conformity assessment that might be considered technical barriers to trade, and sets the stage for future collaborative efforts. Expenses are paid by NIST with support from United States and visiting stakeholders for developing country participants.

U.S. stakeholders include:

- Government agencies both within the U.S., and sometimes in-region
- Private sector
- Trade associations
- Standards Developing Organizations
- Testing and certification laboratories
- Industry
- Professional societies
- Academia

*See Table D (page 31) for examples of workshops held in 2006 and 2007.*

These workshops have had major impacts on the economies of developing countries and have resulted in the additional application of standards developed in U.S. domiciled organizations: For example:

- The India Oil Industry Safety Directorate (OISD) has announced that approximately 8000 km of new oil pipelines will be built to ASME's pipeline standards and codes. The initial connection between ASME and OISD was made at the SIT workshop for the Oil and Gas Sector in India, 2005.<sup>26</sup>
- Iraq's Ministry of Construction and Housing (MOCH) is establishing a technical team to study the international codes and standards developed by a U.S. domiciled organization for adoption and use, with appropriate technical revisions, in an Iraqi National Building Code. The proposal came from the SIT workshop for Iraq on Standards and Codes for the Building and Construction Sector held in 2006.
- ASTM International is gaining considerable acceptance in the Latin American concrete market through its partnership with ASOCRETO, the Colombian trade association for concrete, which started at the SIT Workshop on Concrete and Cement for the Americas, December 9-13, 2002.
- Underwriters Laboratories is working with the National Fire Protection Association to provide the 2005 National Electrical Code to the Central America region in Spanish. The NEC 2005 will be used as the basis for national electrical codes in these countries. Collaboration started at the SIT workshop on Electrical Safety for Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua and Panama, March 27-31, 2006.

### **The ASME MOU Program**

ASME has Memorandums of Understanding (MOUs) in place with the following organizations for the purpose of cooperation and information exchange regarding standards:

IBNORCA, Bolivia,  
Shanghai Power Equipment Research Institute (SPERI),  
China Special Equipment Inspection and Research Center (CSEI),  
China Petroleum and Chemical Corporation (SINOPEC),  
Quality Council of India (QCI),  
Standards Organization of Nigeria (SON),  
Palestinian Standards Authority, Palestinian Territories,  
SASO, Saudi Arabia.

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<sup>26</sup> Various Indian government standards development and regulatory organizations including the Bureau of Indian Standards (BIS), the Oil Industry Safety Directorate (OISD) and the Petroleum and Natural Gas Regulatory Board (PNGRB) have recently referenced several ASME standards, including: ASME B31.4 Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids, ASME B31.8 Gas Transmission and Distribution Piping Systems, ASME Boiler and Pressure Vessel Code Section VIII, Division 1; Pressure Vessels, ASME Boiler and Pressure Vessel Code Section IX; Welding Qualifications, ASME B16.5, B16.20, B16.34, B16.36, B16.40; Standards for Valves and Fittings, ASME B18.2.1 and B18.2.2, Standards for Screws, Bolts and Nuts.

### The ASTM International MOU Program

A unique program of technical assistance is offered by ASTM International. Initiated in 2001, ASTM International's MOU program promotes communication between ASTM International and national standards bodies worldwide, fostering awareness of the standardization systems of all parties involved. The program also facilitates the development of national standards that will aid each country's health, safety, environmental, and economic conditions. These agreements help avoid duplication of effort where possible and mutually promote the standards development activities of ASTM International and the national standards bodies participating in the program.

MOUs are designed to encourage, increase, and facilitate the participation of technical experts from around the world in the ASTM standards development process and broaden the global acceptance and use of ASTM International standards.

As a benefit of the MOU program, technical experts from any of the countries where MOUs have been signed can participate freely as full voting members in the ASTM standards development process.<sup>27</sup> As of the writing of this paper, ASTM International had completed MOUs with 69 developing countries.

### The NFPA MOU Program

The NFPA MOU program sets in place mechanisms to strengthen new and existing collaborations to promote the knowledge of fire, electrical and life safety standards and related activities of each organization. An essential component of the MOU program is the adoption or reference of NFPA standards where possible as the basis of the MOU partner's standard.

In many cases, a separately agreed upon translation or license agreement will follow the MOU to better facilitate the adoption of NFPA standards in the local language. This is accomplished through open communication where both parties provide access to each others' informational resources, identify specific industry leaders and stakeholders, and encourage participation in both organizations' code development processes.

The activities carried out by the MOU program are reviewed periodically in an effort to provide full reporting of progress. As of December 2009, NFPA has signed MOUs with six organizations in Latin America, four in Asia/Pacific, and three in the Middle East. For a full list of MOU partnerships, visit [www.nfpa.org/international](http://www.nfpa.org/international).

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<sup>27</sup> Those wishing to know more should contact their national standards body for information on how to participate in ASTM International technical committees or visit [http://www.astm.org/GLOBAL/index\\_mou.html](http://www.astm.org/GLOBAL/index_mou.html).

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### **Underwriters Laboratories MOU Program**

Underwriters Laboratories Inc. has instituted a MOU program whose purpose is to strengthen the relationship between UL and the accredited standards development organization of the country involved. As part of the MOU, UL:

- Provides the national standards body with electronic access to UL's Standards Library for internal use;
- Considers negotiation of terms that would allow the other organization to adopt and distribute UL standards in the country (if this is desired by the national standards body);
- Encourages the national standards body designees to apply for membership on relevant UL standards technical panels ("STPs") so they may contribute to the development of UL standards.

Since the institution of its program in 2006, UL has signed agreements with Israel, Saudi Arabia, Trinidad and Tobago, Costa Rica, Bolivia, Jamaica, and Peru.

*N.B. As in the case of standards referenced in this paper, the number of MOU partners of the organizations cited above are captured in time. As this paper goes to publication, these numbers will have undoubtedly increased.*

### **Education and Training Programs in the Private Sector**

Standards Developing Organizations in the private sector also offer numerous educational and training programs to developing countries.

### BOX 10: Education and Training Programs in the Private Sector

**ASME** ASME brings courses to countries in their native languages. In-company training is also available. There are also opportunities for professionals to become authorized instructors.

View a complete list of ASME scholarships available to International students, GMET Global Training Program—a unique and globally collaborated training initiative of ASME on global management of engineering and technology, and other programs at [www.asme.org](http://www.asme.org).

**ASTM International** The ASTM Technical and Professional Training (TPT) program provides courses in the use of ASTM standards that impact a variety of technical areas. Not only are courses offered in a wide range of cities around the world, but they can also be brought on-site to business locations around the world. ASTM also provides full funding TPT Courses for MOU partners. ASTM's Standards Expert Exchange Program hosts experts from at least three MOU partners each year at ASTM headquarters for one month of training.

**IEEE** The IEEE is divided into ten geographic regions worldwide. Within those regions are 330 local sections and 1,788 technical chapters that unite local members with similar technical interests. A chapter is the technical subunit of one or more IEEE sections. Society chapters are the local link to the valuable resources available from the IEEE and its 39 technical societies. Chapter activities may include guest speakers, workshops, and seminars. Chapters provide society members with valuable opportunities to network at a local level, enabling both personal and professional growth.

**NFPA** NFPA offers open registration and on-site seminars throughout the world that familiarize professionals with specific NFPA standards and their applications. In partnership with International Fire Safety Training (IFST), NFPA-approved instructors deliver seminars in the Spanish language on the most popular NFPA standards throughout Latin America and Spain. NFPA-IFST also offers CEPI certification similar to the CFPS (Certified Fire Protection Specialist) in the United States, for fire protection specialists in Latin America based on NFPA's Fire Protection Handbook in Spanish.

In addition, NFPA has partnered with local experts in bringing NFPA 101, Life Safety Code® to Thailand in its native language. NFPA's on-site seminars are expanding throughout the Middle East, Asia, and into Europe as demand grows.

For more information on NFPA's training and seminar offerings, visit [www.nfpa.org/seminars](http://www.nfpa.org/seminars).

**SAE International** The new Automotive Supplier Excellence Program was launched in China in 2006. The program assists companies by enhancing product innovation and design capabilities, reducing costs, improving quality and facilitating product development by identifying specific organizational practices, processes and procedures that can be improved. This program is one of several that constitutes SAE's Corporate Technologies portfolio. Suppliers may engage in Standards Application Assistance, Targeted Technical Assistance, and other programs, all of which call upon SAE International resources to help solve the problems of both U.S.-based companies with plants in China as well as Chinese companies. Throughout China and Korea, SAE continued to invest heavily in individual learning through professional development seminars and special learning events, such as customized symposia.

## Remote Participation

Developing countries, through the marvels of electronic achievement, are participating in the U.S. system of standardization at rates never before believed possible. Web casts and seminars, online participation in technical committees, and electronic balloting are just some of the methods used by SDOs to bring these members into the process of standardization and technology transfer.

## Progress and Development

The needs and capabilities of developing and emerging economies vary; and initiators of development projects must often improvise technical solutions to match national or local customs, resources, and capabilities. Using the same creativity employed by regulators, they may use standards from various sources, the relevant parts of standards, combinations of standards, or modifications of standards. As in regulation, the key to progress and development is *flexibility* and *freedom of choice*.

### **BOX 11: The National Standards Body of Zimbabwe**

#### **The National Standards Body of Zimbabwe, the Standards Association of Zimbabwe (SAZ), Technical Committee CH20 on Petroleum Products and Lubricants Extends Its Scope to Include Biodiesel and Adopts ASTM D6751**

In 2002, Zimbabwe began to promote research to extract biodiesel from seeds of a locally grown *Jatropha curcas* plant, a hearty succulent that can grow in the harshest of conditions. *Jatropha* has also been planted in Swaziland, Zambia, Madagascar, and Malawi for this purpose, creating thousands of jobs and improving rural employment in these countries. Zimbabwe's CH20 Committee adopted ASTM standard D6751, Specification for Biodiesel Fuel Blend Stock B100 for Middle Distillate Fuels. This biodiesel fuel blend stock uses soybean as feedstock. D6751 also references 22 ASTM test methods that have been tried successfully in Zimbabwean laboratories. A Zimbabwean research team has been established to characterize biodiesel blends made from *Jatropha*, using the ASTM specification and test methods as the technical base. Similar projects are underway for the production of ethanol from sugarcane. Again, ASTM standards will be used.

## Conclusion

The ability to choose a standard based on its merits is inherent to progress, innovation, and trade.

The relative merit of a standard may be determined by the quality of its technical content and how it affects the flow of international trade.

Technical merit is the key to health, safety, workable infrastructures, effectual regulation, and the integrity of goods. In this regard, a standard may be judged by the quality of the technical reality it imparts to a product or process. The level of technical merit will be in direct proportion to the level of performance or reliability of the product or process in use.

Fairness is also a mark of merit. Technical excellence notwithstanding, a standard cannot be applied without effect or consequence. Standards, most especially international standards, must also be judged in the light of their intent, i.e., they must not be developed with the aim of purposefully disadvantaging competitors or economies.

Perhaps the greatest test of a standard's merit, however, is the extent to which it is accepted and used. Despite the absence of a body of empirical knowledge, there is abundant evidence that the use of international standards from multiple sources is widespread and increasing.

Many regulators in nations that are in stages of development or emergence are keenly aware that the ability to choose the standard that can best bring about needed change is crucial, whether or not that standard is applied in its original form or modified to suit local conditions and capabilities. Many are choosing standards from the U.S.-based system and applying them with great success and enormous rewards.

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The United States-based standards system represents, above all else, opportunity. Its dedication to inclusiveness accounts for the wealth of international talent and the universality of ideas that make its standards so often the choice of regulators and manufacturers around the world.

The standards strategy of the United States acknowledges the value of other systems, and the value of any standard that has been produced in accordance with principles of international standardization as set forth by the World Trade Organization Technical Barriers to Trade Committee. In principle and in practice, it espouses flexibility, creativity, and freedom of choice. The choice of standards based on merit is its watchword, as it has become for nations around the world.

## Tables

**Table A: Examples of U.S. System Standards Referenced in Regulations: Codes**

<p><b>American Society of Mechanical Engineers (ASME International)</b></p> <p>A 2001 survey by the British Standards Institution on the acceptance of foreign design codes showed that the <i>ASME Boiler and Vessel Code</i> was accepted in the following countries: Albania, Algeria, Argentina, Australia, Austria, Bahamas, Bangladesh, Bermuda, Bolivia, Burma, Canada, Chile, China, People's Republic of, Colombia, Costa Rica, Cuba, Cyprus, Denmark, Djibouti, Dominican Republic, Ecuador, Egypt, Ethiopia, Fiji, Gambia, Ghana, Republic of, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Ivory Coast, Jamaica, Jordan, Kenya, Kuwait, Lebanon, Libya, Malawi, Malaysia, Mauritius, Mexico, Morocco, New Zealand, Nigeria, Norway, Oman, Pakistan, Peru, Philippines, Poland, Portugal, Puerto Rico, Qatar, Saint Lucia, Saudi Arabia, Singapore, Republic of, South Africa, Sri Lanka, Sudan, Swaziland, Taiwan (Republic of China), Tanzania, Thailand, Trinidad and Tobago, Tunisia, United Arab Emirates, Venezuela, Yemen, Republic of Zambia, and Zimbabwe.</p>
<p><b>National Fire Protection Association (NFPA)</b></p> <p>NFPA publishes the National Electrical Code and the National Fire Codes. They are developed by NFPA technical committees and are adopted and enforced throughout the world.</p>
<p><b>International Code Council (ICC)</b></p> <p>The Uniform Building Code (UBC) developed by ICBO<sup>28</sup> is adopted in the Middle East, a region also prone to earthquakes; this includes Saudi Arabia in the Royal Commission of Jubail and Yanbu and at ARAMCO. In the last few years, the Kingdom of Saudi Arabia has worked with ICC to adapt the <b>2003 and 2006 editions of the ICC Codes</b> in their development of the Saudi Building Code (SBC) and will soon release and distribute the SBC in the Kingdom for building designs, first on a voluntary basis before making it mandatory. The Code Council has ongoing programs in Afghanistan, Pakistan and Egypt to improve these countries' building regulatory systems. The United Arab Emirates (UAE) is studying the establishment of a building regulatory system. Europe and Central Asian countries have also expressed interest in the ICC's comprehensive building safety system.</p> <p>All U.S. territories have previously adopted the UBC such as Guam, American Samoa, and Northern Mariana Islands. Other U.S. territories in the Caribbean, such as U.S. Virgin Islands, have officially transitioned from the UBC and adopted the I-Codes in 2006 and Puerto Rico will soon transition from the UBC to the IBC. Non-U.S. territories such as the Bahamas have currently adopted the Florida Building Code which is directly based on ICC Codes. The Cayman Islands adopted the Standard Building Codes by SBCCI years ago and are in the process of transitioning to the I-Codes.</p> <p>The ICC staff has been working with Mexico on the development of Mexico's Residential Building Code which is based on the ICC's <i>International Residential Code</i> (IRC). The IRC will be customized broadly to meet the needs of Mexico's individual states.</p> <p>Since the issuance of the first edition in 2000, several countries, including Jamaica, have obtained copies of the I- Codes and are reviewing and studying them for consideration to enhance their system, through a process of information exchange.</p>
<p><b>The International Association of Plumbing and Mechanical Officials (IAPMO)</b> has gained significant recognition for its Uniform Codes. Published by IAPMO, the Uniform Plumbing Code (UPC), Uniform Mechanical Code, Uniform Solar Energy Code and Uniform Swimming Pool, Spa and Hot Tub Code are all developed under an ANSI consensus process.</p> <p>Much of the UPC is utilized by the Philippines, Indonesia, Colombia, Venezuela, China, Vietnam and Taiwan, among others. Although these countries have not formally adopted IAPMO's UPC Plumbing Code in its entirety, the essential aspects of the UPC were utilized and then tailored to fit the nations' particular needs rather than adopting the ANS verbatim.</p> <p>Conversely, in India, the Kingdom of Jordan, Kuwait and Abu Dhabi of the United Arab Emirates, there was an enhanced interest in utilizing the UPC mostly as written, amending it only slightly to address geopolitical and religious issues. As a result of these adoptions and the ongoing application of the UPC worldwide, more than half of the world's population is protected by the health and safety provisions of IAPMO's UPC, an American National Standard.</p>

<sup>28</sup> Beginning in 1915, code enforcement officials, or those municipal officials charged with the responsibility of enforcing building code laws, began regular regional and national meetings to discuss their common problems and concerns. From these meetings came the formation of three organizations of code enforcement officials: Building Officials Conference of America, later known as Building Officials and Code Administrators (BOCA) International, Inc; International Conference of Building Officials (ICBO); and Southern Building Code Congress International, Inc. (SBCCI). In 1994 these three organizations created the **International Code Council** (Code Council) with the intent of eventually providing one set of unified and correlated construction model codes. In 2000 the Code Council issued the first set of the **International Codes**, a complete family of codes covering both commercial as well as residential construction. Familiarly known as I-Codes, they are now used and implemented in all fifty states and by many Federal agencies including the Department of Defense, the State Department, the Architect of the U.S. Capitol, National Park Service, the Veterans Administration and the U.S. Forest Service, as well as internationally.

**Table B: Examples of U.S. System Standards Referenced in Regulations**

Country	National Mandatory Standard or Technical Regulation	Standards Developing Organization of Origin
<b>Brazil</b>	NBR 9378, Arc welding electric equipment – power sources of constant current and power sources of constant voltage – specification, 1986	ISO, NEMA, VDE, AFNOR
	NBR 10614 (Classification) NBR 10615 (Specification) NBR 10616 (Tests), Carbon-Steel covered electrodes for arc welding, 1989	AWS AWS/ASTM
	NBR 10617, Flux and Wire for Sub Arc Welding, 1989	AWS
	NBR 7565, Rotating Electrical Machines – Noise Limits, 1982	ANSI C93.1
	NBR 5597, Steel rigid conduit and electrical metallic tubing with protective coating thread, 2006	ANSI/ASME B1.20.1
	NBR 5370 copper connectors, splices, terminals, separable connectors and ground rods for electrical conductors in power systems, 1990	NEMA CC-1 NEMA CC-3
	NBR 13571 Ground Rods and Accessories, 1996	UL 467
	NBR 9513 Splices for insulated cables up to 750 volts, 1986	ANSI C119.1
	NBR 540 Distribution transformers for overhead lines, 1999	ASTM D1535
<b>China</b>	GB 13296-2007 Seamless stainless steel tubes for boiler and heat exchanger	ASME SA-213/213M: 2001
	GB 5310-1995 Seamless steel tubes and pipes for high pressure boiler	ASTM A335:1990
	GB 9052.1-1998 Liquefied petroleum gas of oil and gas field	ASTM D1835:1991
	GB 6245-2006 Fire Pumps	NFPA20-2003 UL 448-1994 UL 1247-1995
	GB 17840-1999	UL 752:1995

**Table B: Examples of U.S. System Standards Referenced in Regulations** continued

Country	National Mandatory Standard or Technical Regulation	Standards Developing Organization of Origin
<b>Jordan</b>	JS 1060, Lighters – Safety specification for lighters, 1999	ASTM F400
	JS 118, Cement – Sulfate-resisting Portland cement, 2005	ASTM C150
	JS 1192, Insulating Materials – Bitumen saturated woven burlap fabrics used in roofing, 1998	ASTM D1327
	JS 1193, Insulating material – emulsified asphalt used as a protective coating for roofing, 1998	ASTM D1227
	JS 1710, Standard practice for evaluating the imaging performance of security X-Ray systems, 2005	ASTM F792
	JS 1711, Standard practice for performance evaluation of In-Plant Walk-through metal detectors	ASTM C1309
<b>Vietnam</b>	TCVN 2693: 2007 Standard Test Method for Flash Point by Pensky-Martens Closed Cup Tester	ASTM D93-06
	TCVN 4354: 2007 Standard Test Method for Saybolt Color of Petroleum Products (Saybolt Chromometer Method)	ASTM D156-02e1
	TCVN 6325: 2007S Standard Test Method for Acid Number of Petroleum Products by Potentiometric Titration	ASTM D664-06a
	TCVN 6777: 2007 Standard Practice for Manual Sampling of Petroleum and Petroleum Products	ASTM D4057-06
	TCVN 7023: 2007 Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method).	ASTM D4953-06
	TCVN 7330: 2007 Standard Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption.	ASTM D1319-03e1
	TCVN 7757: 2007 Standard Test Method for Water and Sediment in Middle Distillate Fuels by Centrifuge.	ASTM D2709-06

**Table B: Examples of U.S. System Standards Referenced in Regulations** continued

Country	National Mandatory Standard or Technical Regulation	Standards Developing Organization of Origin
Vietnam	TCVN 7758: 2007 Standard Test Method for Evaluating lubricity of Diesel Fuels by the High-Frequency Reciprocating Rig (HFRR).	ASTM D6079-04e1
	TCVN 2695: 2007 Standard Test Method for Acid and Base Number by Color - Indicator Titration	ASTM D974-06
	TCVN 2706: 2007 Standard Test Method for Particulate Contamination in Middle Distillate Fuels by Laboratory Filtration	ASTM D6217-03e1
	TCVN 3166: 2007 Standard Test Method for Determination of Benzene, Toluene, Ethylbenzene, p/m-Xylene, o-Xylene, C9 and Heavier Aromatics, and Total Aromatics in Finished Gasoline by Gas Chromatography	ASTM D5580-02
	TCVN 3172: 2007 Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry	ASTM D4294-06
	TCVN 3182: 2007 Standard Test Method for Determination of water in Petroleum Products, Lubricating Oils, and Additives by Coulometric Karl Fischer Titration	ASTM D6304-04e1
	TCVN 6704: 2007 Standard Test Method for Lead in Gasoline by X-Ray Spectroscopy	ASTM D5059-03e1
	TCVN 7759: 2007 Standard Test Method for Free Water and Particulate Contamination in Distillate Fuels (Visual Inspection Procedure)	ASTM D4176-04e1
	TCVN 7760: 2007 Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Spark Ignition Engine Fuel, Diesel Engine Fuel, Engine Oil by Ultraviolet Fluorescence	ASTM D5453-06
	TCVN 3180: 2007 Standard Test Method for Alculated Cetane Index by Four Variable Equation	ASTM D4737-04
	TCVN 6702: 2007 Standard Practice for Utilization of Test Data to Determine Conformance with Specifications	ASTM D3144-02
	TCVN 7248 : 2007 Standard Practice for Dosimetry in Gamma Irradiation Facilities for Food Processing	ISO/ASTM51204-04
	TCVN 7249: 2007 Standard Practice for Dosimetry in Electron Beam and X-ray (Bremsstrahlung) Irradiation Facilities for Food Processing	ISO/ASTM51431-05

**Table C: Examples of International Participation and Presence**

<b>ASTM International</b>	135 countries are represented in ASTM committees. Its Board of Directors is also internationally integrated, and at any time may include the heads of standards developing organizations from countries other than the United States.
<b>ASME</b>	More than 385 out of about 4000 technical expert volunteers serving on ASME standards committees are from outside the United States.
<b>IEEE</b>	IEEE has more than 370,000 members, including more than 80,000 students, in over 160 countries; 319 sections in 10 geographic regions worldwide; 1,676 chapters that unite local members with similar technical interests; and more than 1,526 student branches at colleges and universities in 80 countries.
<b>NFPA</b>	NFPA has more than 81,000 members representing nearly 100 nations and 320 employees around the world.
<b>SAE International</b>	SAE International has more than 90,000 members - engineers, business executives, educators, and students from more than 97 countries - who share information and exchange ideas for advancing the engineering of mobility systems
<b>UL</b>	Underwriters Laboratories, Inc. works with more than 71,000 customers in 98 countries, helping to enhance safety and quality on a global scale. UL has 64 laboratories, testing and certification facilities worldwide.

**Table D: SIT Workshops in 2006 and 2007**

2006	SIT Workshop on Electrical Safety for Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama	Objective: The workshop addressed the development and implementation of the safety of electrical systems in the United States and the participating countries; namely in the areas of the electrical installation code, electrical product standards, product testing and certification, and inspection and enforcement.
	SIT Workshop on Standards and Codes for the Iraqi Construction Sector	Objective: The workshop addressed the role of standards, codes and best practices that address fire protection, physical vulnerability and mitigation while contributing to enhanced trade of associated goods and services; and ways to identify current and future technical areas in which the United States and Iraq could cooperate.
	SIT Workshop for the Middle East, North Africa, and Pakistan on Standards, Codes, and Conformity Assessment for Life Safety and Building	Objective: The workshop provided a forum for the discussion of standards and codes, their development, conformity assessment and regulation in the United States and the invited countries as they relate to life safety in the building constructor sector.
2007	SIT Workshop on Oil and Gas for South America	Objective: The workshop facilitated an information exchange on the regulatory framework pertaining to the oil and gas sector in the United States and invited countries and identified existing and emerging trends in oil and gas standards; oil and gas pipelines; petroleum and petroleum products for transportation.
	U.S. – China Standards in Trade Workshop for Intelligent Transportation Systems – held in Beijing, China First SIT Workshop held outside of the United States.	Objective: This workshop provided a forum for the discussion of standards and codes, their development, conformity assessment and regulation in the United States and China as they relate to intelligent transportation systems and their components.
	SIT Workshop in Support of the Asia Pacific Partnership (APP) on Harmonization of Test Procedures	Objective: This workshop provided a forum for the discussion of standardization issues, in particular, as related to the harmonization of test procedures for electronics and Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R) systems, being addressed within the Asia Pacific Partnership (APP) on Clean Development and Climate

## List Of Abbreviations

<b>ANSI</b>	.....	American National Standards Institute
<b>ASME</b>	.....	American Society of Mechanical Engineers
<b>ASTM International</b>	.....	American Society for Testing and Materials (Formerly)
<b>AWS</b>	.....	American Welding Society
<b>CDRH</b>	.....	U.S. FDA Center for Devices and Radiological Health
<b>EN</b>	.....	European Norm/European Standard
<b>ICC</b>	.....	International Code Council
<b>IEC</b>	.....	International Electrotechnical Commission
<b>IEEE</b>	.....	Institute of Electrical and Electronics Engineers, Inc.
<b>IP</b>	.....	Institute of Petroleum, UK, now called the Institute of Energy
<b>ISO</b>	.....	International Organization for Standardization
<b>NEMA</b>	.....	National Electrical Manufacturers Association
<b>NF</b>	.....	Norme Française/French Standard
<b>NFPA</b>	.....	National Fire Protection Association
<b>NIST</b>	.....	National Institute of Standards and Technology
<b>NTTAA</b>	.....	National Technology Transfer Advancement Act
<b>SAE International</b>	.....	Society of Automotive Engineers
<b>SPS</b>	.....	Sanitary and Phytosanitary
<b>SDO</b>	.....	Standards Developing Organization
<b>SSFA</b>	.....	Strategic Standardization Forum for Aerospace
<b>TBT</b>	.....	Technical Barriers to Trade
<b>TAG</b>	.....	Technical Advisory Group
<b>UL</b>	.....	Underwriters Laboratories, Inc.
<b>WTO</b>	.....	World Trade Organization

**Annex: WTO Notifications Referencing U.S. Domiciled SDOs - ASTM International**

<b>WTO Member</b>	<b>Symbol</b>	<b>Title - HTML format</b>	<b>Date (Day/ Month/Year)</b>
<b>Philippines</b>	G/TBT/N/ PHL/90	Committee on Technical Barriers to Trade - Notification - Philippines - Steel Products	18/10/2007
<b>Peru</b>	G/TBT/N/ PER/15	Committee on Technical Barriers to Trade - Notification - Peru - Toys	03/09/2007
<b>Costa Rica</b>	G/TBT/N/ CRI/66	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Anhydrous fuel ethanol and denatured anhydrous fuel ethanol and blends thereof with gasoline	24/08/2007
<b>Honduras</b>	G/TBT/N/ HND/45	Committee on Technical Barriers to Trade - Notification - Republic of Honduras - Anhydrous fuel ethanol and denatured anhydrous fuel ethanol and its mixtures with gasoline	25/07/2007
<b>Guatemala</b>	G/TBT/N/ GTM/57	Committee on Technical Barriers to Trade - Notification - Guatemala - Anhydrous fuel ethanol and denatured anhydrous fuel ethanol and its mixtures with gasoline	23/07/2007
<b>El Salvador</b>	G/TBT/N/ SLV/107	Committee on Technical Barriers to Trade - Notification - El Salvador - Ethanol carburante	20/07/2007
<b>Nicaragua</b>	G/TBT/N/ NIC/85	Committee on Technical Barriers to Trade - Notification - Nicaragua - Anhydrous fuel ethanol and denatured anhydrous fuel ethanol and its mixtures with gasoline	19/07/2007
<b>Kenya</b>	G/TBT/N/ KEN/106	Committee on Technical Barriers to Trade - Notification - Kenya - Fabric softeners	13/07/2007
<b>Netherlands</b>	G/TBT/N/ NLD/75	Committee on Technical Barriers to Trade - Notification - The Netherlands - Clothing	24/05/2007
<b>Philippines</b>	G/TBT/N/ PHL/79	Committee on Technical Barriers to Trade - Notification - Philippines - Electric wires and cables	16/04/2007
<b>Philippines</b>	G/TBT/N/ PHL/81	Committee on Technical Barriers to Trade - Notification - Philippines - Electric wires and cables	16/04/2007
<b>Philippines</b>	G/TBT/N/ PHL/83	Committee on Technical Barriers to Trade - Notification - Philippines - Flat glass	16/04/2007
<b>Philippines</b>	G/TBT/N/ PHL/85	Committee on Technical Barriers to Trade - Notification - Philippines - Silvered flat glass mirror	16/04/2007
<b>Philippines</b>	G/TBT/N/ PHL/77	Committee on Technical Barriers to Trade - Notification - Philippines - Ceramic wall and floor tiles	09/02/2007
<b>Costa Rica</b>	G/TBT/N/ CRI/57	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Biodiesel	20/12/2006
<b>Guatemala</b>	G/TBT/N/ GTM/52	Committee on Technical Barriers to Trade - Notification - Guatemala - Biodiesel	20/12/2006

**Annex: WTO Notifications Referencing U.S. Domiciled SDOs - ASTM continued**

<b>WTO Member</b>	<b>Symbol</b>	<b>Title - HTML format</b>	<b>Date (Day/ Month/Year)</b>
<b>Nicaragua</b>	G/TBT/N/ NIC/82	Committee on Technical Barriers to Trade - Notification - Nicaragua - Biodiesel (B 100) and biodiesel blend	18/12/2006
<b>El Salvador</b>	G/TBT/N/ SLV/101	Committee on Technical Barriers to Trade - Notification - El Salvador - Biofuels	18/12/2006
<b>Honduras</b>	G/TBT/N/ HND/40	Committee on Technical Barriers to Trade - Notification - Republic of Honduras - Biofuels	28/11/2006
<b>Kenya</b>	G/TBT/N/ KEN/75	Committee on Technical Barriers to Trade - Notification - Kenya - Paints and varnishes	28/11/2006
<b>El Salvador</b>	G/TBT/N/ SLV/97	Committee on Technical Barriers to Trade - Notification - El Salvador - Plain and deformed steel bars for concrete reinforcement	22/09/2006
<b>Kenya</b>	G/TBT/N/ KEN/56	Committee on Technical Barriers to Trade - Notification - Kenya - Carbon Black used in rubber products	15/09/2006
<b>Kenya</b>	G/TBT/N/ KEN/57	Committee on Technical Barriers to Trade - Notification - Kenya - Carbon Black used in rubber products	15/09/2006
<b>Kenya</b>	G/TBT/N/ KEN/58	Committee on Technical Barriers to Trade - Notification - Kenya - Carbon Black used in rubber products	15/09/2006
<b>Kenya</b>	G/TBT/N/ KEN/59	Committee on Technical Barriers to Trade - Notification - Kenya - Carbon Black used in rubber products	15/09/2006
<b>Kenya</b>	G/TBT/N/ KEN/60	Committee on Technical Barriers to Trade - Notification - Kenya - Carbon Black used in rubber products	15/09/2006
<b>Kenya</b>	G/TBT/N/ KEN/61	Committee on Technical Barriers to Trade - Notification - Kenya - Carbon Black used in rubber products	15/09/2006
<b>Philippines</b>	G/TBT/N/ PHL/60	Committee on Technical Barriers to Trade - Notification - Philippines - Ceramic wall and floor tiles	13/09/2006
<b>Honduras</b>	G/TBT/N/ HND/33	Committee on Technical Barriers to Trade - Notification - Republic of Honduras - Diesel fuel oil	02/08/2006
<b>El Salvador</b>	G/TBT/N/ SLV/94	Committee on Technical Barriers to Trade - Notification - El Salvador - Petroleum products	02/08/2006
<b>Costa Rica</b>	G/TBT/N/ CRI/50	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Diesel	31/07/2006
<b>Nicaragua</b>	G/TBT/N/ NIC/73	Committee on Technical Barriers to Trade - Notification - Nicaragua - Diesel fuel oil	28/07/2006

**Annex: WTO Notifications Referencing U.S. Domiciled SDOs - ASTM** *continued*

<b>WTO Member</b>	<b>Symbol</b>	<b>Title - HTML format</b>	<b>Date (Day/ Month/Year)</b>
<b>Kenya</b>	G/TBT/N/ KEN/41	Committee on Technical Barriers to Trade - Notification - Kenya - Microwave ovens	10/07/2006
<b>Kenya</b>	G/TBT/N/ KEN/31	Committee on Technical Barriers to Trade - Notification - Kenya - Liquefied Petroleum Gas	14/06/2006
<b>Philippines</b>	G/TBT/N/ PHL/49	Committee on Technical Barriers to Trade - Notification - Philippines - Portland cement	17/02/2006
<b>Philippines</b>	G/TBT/N/ PHL/50	Committee on Technical Barriers to Trade - Notification - Philippines - Cement	17/02/2006
<b>Colombia</b>	G/TBT/N/ COL/77	Committee on Technical Barriers to Trade - Notification - Colombia - Pipes for water supply, sewerage systems, sanitary use and stormwater runoff and the fittings	27/01/2006
<b>Brazil</b>	G/TBT/N/ BRA/199	Committee on Technical Barriers to Trade - Notification - Brazil - Ethyl anhydrous alcohol fuel and ethyl hydrous alcohol fuel	20/01/2006
<b>Brazil</b>	G/TBT/N/ BRA/200	Committee on Technical Barriers to Trade - Notification - Brazil - Bitumen and asphalt	20/01/2006
<b>Kenya</b>	G/TBT/N/ KEN/22	Committee on Technical Barriers to Trade - Notification - Kenya - Marine Paints	07/12/2005
<b>Guatemala</b>	G/TBT/N/ GTM/36	Committee on Technical Barriers to Trade - Notification - Guatemala - Steel bars	07/11/2005
<b>Trinidad and Tobago</b>	G/TBT/N/ TTO/25	Committee on Technical Barriers to Trade - Notification - Trinidad and Tobago - Plastic chairs	07/11/2005
<b>Saint Lucia</b>	G/TBT/N/ LCA/37	Committee on Technical Barriers to Trade - Notification - Saint Lucia - Aggregates for Concrete	26/09/2005
<b>Philippines</b>	G/TBT/N/ PHL/45	Committee on Technical Barriers to Trade - Notification - Philippines - Porcelain Dinnerware	05/09/2005
<b>Guatemala</b>	G/TBT/N/ GTM/31	Committee on Technical Barriers to Trade - Notification - Guatemala - Threaded (POL-type) connection valves	21/07/2005
<b>Guatemala</b>	G/TBT/N/ GTM/32	Committee on Technical Barriers to Trade - Notification - Guatemala - Quick coupling valve	21/07/2005
<b>Guatemala</b>	G/TBT/N/ GTM/27	Committee on Technical Barriers to Trade - Notification - Guatemala - Regular Petrol	15/07/2005
<b>Guatemala</b>	G/TBT/N/ GTM/28	Committee on Technical Barriers to Trade - Notification - Guatemala - Liquefied Petroleum Gases: Commercial Propane, Commercial Butane and Mixtures Thereof	15/07/2005

**Annex: WTO Notifications Referencing U.S. Domiciled SDOs - ASTM continued**

<b>WTO Member</b>	<b>Symbol</b>	<b>Title - HTML format</b>	<b>Date (Day/ Month/Year)</b>
<b>Guatemala</b>	G/TBT/N/ GTM/29	Committee on Technical Barriers to Trade - Notification - Guatemala - Vehicles used for the land transport of liquid hydrocarbons	15/07/2005
<b>Honduras</b>	G/TBT/N/ HND/14	Committee on Technical Barriers to Trade - Notification - Republic of Honduras - Land transport of liquid hydrocarbons	01/07/2005
<b>Honduras</b>	G/TBT/N/ HND/17	Committee on Technical Barriers to Trade - Notification - Republic of Honduras - Threaded (POL-type) connection valves	01/07/2005
<b>Honduras</b>	G/TBT/N/ HND/18	Committee on Technical Barriers to Trade - Notification - Republic of Honduras - Pressure Vessels, Portable Liquefied Petroleum Gas Cylinders, Quick Coupling Valve	01/07/2005
<b>Honduras</b>	G/TBT/N/ HND/20	Committee on Technical Barriers to Trade - Notification - Republic of Honduras - Petroleum products	01/07/2005
<b>Honduras</b>	G/TBT/N/ HND/21	Committee on Technical Barriers to Trade - Notification - Republic of Honduras - Liquefied Petroleum Gases: Commercial Propane, Commercial Butane and Mixtures	01/07/2005
<b>El Salvador</b>	G/TBT/N/ SLV/70	Committee on Technical Barriers to Trade - Notification - El Salvador - Land transport of liquefied petroleum gas (LPG)	01/07/2005
<b>El Salvador</b>	G/TBT/N/ SLV/71	Committee on Technical Barriers to Trade - Notification - El Salvador - Regular Petrol	01/07/2005
<b>El Salvador</b>	G/TBT/N/ SLV/73	Committee on Technical Barriers to Trade - Notification - El Salvador - Valves for Portable Liquefied Petroleum Gas (LPG) Containers	01/07/2005
<b>El Salvador</b>	G/TBT/N/ SLV/74	Committee on Technical Barriers to Trade - Notification - El Salvador - Quick coupling valve for portable liquefied petroleum gas cylinders	01/07/2005
<b>El Salvador</b>	G/TBT/N/ SLV/75	Committee on Technical Barriers to Trade - Notification - El Salvador - Liquefied petroleum gases: Commercial Propane, Commercial Butane and Mixtures Thereof	01/07/2005
<b>El Salvador</b>	G/TBT/N/ SLV/76	Committee on Technical Barriers to Trade - Notification - El Salvador - Land Transport of Liquid Hydrocarbons	01/07/2005
<b>Nicaragua</b>	G/TBT/N/ NIC/60	Committee on Technical Barriers to Trade - Notification - Nicaragua - Quick Coupling Valve	27/06/2005
<b>Nicaragua</b>	G/TBT/N/ NIC/62	Committee on Technical Barriers to Trade - Notification - Nicaragua - Land Transport of Liquid Hydrocarbons (Other than Liquefied Petroleum Gas)	27/06/2005
<b>Costa Rica</b>	G/TBT/N/ CRI/26	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Threaded (POL-Type) Connection Valves	24/06/2005
<b>Costa Rica</b>	G/TBT/N/ CRI/27	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Liquefied Petroleum Gases	24/06/2005

Annex: WTO Notifications Referencing U.S. Domiciled SDOs - ASTM *continued*

WTO Member	Symbol	Title - HTML format	Date (Day/ Month/Year)
Costa Rica	G/TBT/N/ CRI/28	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Regular Petrol	24/06/2005
Costa Rica	G/TBT/N/ CRI/31	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Pressure Vessels	24/06/2005
Costa Rica	G/TBT/N/ CRI/32	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Land Transport of Liquid Hydrocarbons (Other than Liquefied Petroleum Gas)	24/06/2005
Nicaragua	G/TBT/N/ NIC/57	Committee on Technical Barriers to Trade - Notification - Nicaragua - Regular Petrol	24/06/2005
Nicaragua	G/TBT/N/ NIC/59	Committee on Technical Barriers to Trade - Notification - Nicaragua - Threaded (POL-type) connection valves	24/06/2005
Nicaragua	G/TBT/N/ NIC/61	Committee on Technical Barriers to Trade - Notification - Nicaragua - Liquefied Petroleum Gases	24/06/2005
Philippines	G/TBT/N/ PHL/44	Committee on Technical Barriers to Trade - Notification - Philippines - Flat Glass	20/06/2005
Mauritius	G/TBT/N/ MUS/2	Committee on Technical Barriers to Trade - Notification - Mauritius - Plastic Carry Bags	03/05/2005
Ecuador	G/TBT/N/ECU/4	Committee on Technical Barriers to Trade - Notification - Ecuador - Cement, Lime and Gypsum	17/03/2005
Panama	G/TBT/N/ PAN/33	Committee on Technical Barriers to Trade - Notification - Republic of Panama - Construction Materials	08/02/2005
Israel	G/TBT/N/ ISR/77	Committee on Technical Barriers to Trade - Notification - Israel - Gas oil for diesel engines	25/01/2005
Panama	G/TBT/N/ PAN/29	Committee on Technical Barriers to Trade - Notification - Panama - Original asphalt cements and modified asphalt cements	06/01/2005
Honduras	G/TBT/N/ HND/11	Committee on Technical Barriers to Trade - Notification - Honduras - Liquefied Petroleum Gas / Petrol	13/12/2004
Guatemala	G/TBT/N/ GTM/16	Committee on Technical Barriers to Trade - Notification - Guatemala - Aviation gasoline (AvGas)	09/12/2004
Guatemala	G/TBT/N/ GTM/17	Committee on Technical Barriers to Trade - Notification - Guatemala - Asphalts	09/12/2004
Guatemala	G/TBT/N/ GTM/18	Committee on Technical Barriers to Trade - Notification - Guatemala - Premium petrol	09/12/2004

**Annex: WTO Notifications Referencing U.S. Domiciled SDOs - ASTM continued**

<b>WTO Member</b>	<b>Symbol</b>	<b>Title - HTML format</b>	<b>Date (Day/ Month/Year)</b>
<b>Guatemala</b>	G/TBT/N/ GTM/21	Committee on Technical Barriers to Trade - Notification - Guatemala - Petroleum products - Aviation kerosene (Jet A-1)	09/12/2004
<b>Guatemala</b>	G/TBT/N/ GTM/22	Committee on Technical Barriers to Trade - Notification - Guatemala - Petroleum Products - Illuminating kerosene	09/12/2004
<b>Honduras</b>	G/TBT/N/ HND/4	Committee on Technical Barriers to Trade - Notification - Honduras - Petroleum Products - Aviation kerosene (Jet A 1)	09/12/2004
<b>Honduras</b>	G/TBT/N/ HND/5	Committee on Technical Barriers to Trade - Notification - Honduras - Aviation gasoline	09/12/2004
<b>Honduras</b>	G/TBT/N/ HND/6	Committee on Technical Barriers to Trade - Notification - Honduras - Petroleum Products - Illuminating Kerosene	09/12/2004
<b>Honduras</b>	G/TBT/N/ HND/8	Committee on Technical Barriers to Trade - Notification - Honduras - Premium Petrol	09/12/2004
<b>Honduras</b>	G/TBT/N/ HND/10	Committee on Technical Barriers to Trade - Notification - Honduras - Petroleum Products - Asphalts	09/12/2004
<b>El Salvador</b>	G/TBT/N/ SLV/50	Committee on Technical Barriers to Trade - Notification - El Salvador - Asphalts	09/12/2004
<b>El Salvador</b>	G/TBT/N/ SLV/54	Committee on Technical Barriers to Trade - Notification - El Salvador - Petroleum products - Aviation gasoline (AvGas)	09/12/2004
<b>El Salvador</b>	G/TBT/N/ SLV/55	Committee on Technical Barriers to Trade - Notification - El Salvador - Petroleum products - Aviation kerosene (Jet A-1)	09/12/2004
<b>El Salvador</b>	G/TBT/N/ SLV/56	Committee on Technical Barriers to Trade - Notification - El Salvador - Petroleum products - Illuminating kerosene	09/12/2004
<b>El Salvador</b>	G/TBT/N/ SLV/58	Committee on Technical Barriers to Trade - Notification - El Salvador - Premium petrol	09/12/2004
<b>Costa Rica</b>	G/TBT/N/ CRI/17	Committee on Technical Barriers to Trade - Notification - Costa Rica - Aviation gasoline	07/12/2004
<b>Costa Rica</b>	G/TBT/N/ CRI/18	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Petroleum products - Aviation kerosene (Jet A-1)	07/12/2004
<b>Costa Rica</b>	G/TBT/N/ CRI/19	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Petroleum products - Illuminating kerosene	07/12/2004
<b>Costa Rica</b>	G/TBT/N/ CRI/21	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Premium petrol	07/12/2004

**Annex: WTO Notifications Referencing U.S. Domiciled SDOs - ASTM** *continued*

<b>WTO Member</b>	<b>Symbol</b>	<b>Title - HTML format</b>	<b>Date (Day/ Month/Year)</b>
<b>Costa Rica</b>	G/TBT/N/ CRI/22	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Asphalts	07/12/2004
<b>Nicaragua</b>	G/TBT/N/ NIC/51	Committee on Technical Barriers to Trade - Notification - Nicaragua - Kerosene	24/11/2004
<b>Peru</b>	G/TBT/N/PER/8	Committee on Technical Barriers to Trade - Notification - Peru - Primary cells and primary batteries	10/11/2004
<b>Argentina</b>	G/TBT/N/ ARG/166	Committee on Technical Barriers to Trade - Notification - Argentina - Latex paints	08/11/2004
<b>Philippines</b>	G/TBT/N/ PHL/38	Committee on Technical Barriers to Trade - Notification - Philippines - PVC rigid electrical conduit	05/10/2004
<b>Costa Rica</b>	G/TBT/N/CRI/9	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Hydraulic Cements	04/06/2004
<b>Canada</b>	G/TBT/N/ CAN/99	Committee on Technical Barriers to Trade - Notification - Canada - Cigarettes	10/05/2004
<b>Israel</b>	G/TBT/N/ ISR/38	Committee on Technical Barriers to Trade - Notification - Israel - Baby changing units	20/02/2004
<b>Nicaragua</b>	G/TBT/N/ NIC/36	Committee on Technical Barriers to Trade - Notification - Nicaragua - Cement	07/10/2003
<b>Brazil</b>	G/TBT/N/ BRA/118	Committee on Technical Barriers to Trade - Notification - Brazil - Biodiesel	23/05/2003
<b>Colombia</b>	G/TBT/N/ COL/38	Committee on Technical Barriers to Trade - Notification - Colombia - Liquid chlorine	23/05/2003
<b>Colombia</b>	G/TBT/N/ COL/39	Committee on Technical Barriers to Trade - Notification - Colombia - Scouring powders	23/05/2003
<b>Colombia</b>	G/TBT/N/ COL/40	Committee on Technical Barriers to Trade - Notification - Colombia - Dishwashing paste	23/05/2003
<b>Brazil</b>	G/TBT/N/ BRA/110	Committee on Technical Barriers to Trade - Notification - Brazil - Sanitizing Products	11/04/2003
<b>Brazil</b>	G/TBT/N/ BRA/104	Committee on Technical Barriers to Trade - Notification - Brazil - Aviation kerosene	13/03/2003
<b>Dominican Republic</b>	G/TBT/N/ DOM/12	Committee on Technical Barriers to Trade - Notification - Dominican Republic - Supplementary cementing materials	13/03/2003

**Annex: WTO Notifications Referencing U.S. Domiciled SDOs - ASTM** *continued*

<b>WTO Member</b>	<b>Symbol</b>	<b>Title - HTML format</b>	<b>Date (Day/ Month/Year)</b>
<b>Trinidad and Tobago</b>	G/TBT/N/ TTO/16	Committee on Technical Barriers to Trade - Notification - Trinidad and Tobago - Portable gasoline containers	05/03/2003
<b>Trinidad and Tobago</b>	G/TBT/N/ TTO/15	Committee on Technical Barriers to Trade - Notification - Trinidad and Tobago - Portable kerosene and diesel containers	04/03/2003
<b>Brazil</b>	G/TBT/N/ BRA/94	Committee on Technical Barriers to Trade - Notification - Brazil - Liquefied petroleum gas	30/01/2003
<b>Brazil</b>	G/TBT/N/ BRA/67	Committee on Technical Barriers to Trade - Notification - Brazil - Fuel oils	05/12/2002
<b>Brazil</b>	G/TBT/N/ BRA/68	Committee on Technical Barriers to Trade - Notification - Brazil - Lube base oils	05/12/2002
<b>Brazil</b>	G/TBT/N/ BRA/50	Committee on Technical Barriers to Trade - Notification - Brazil - Automotive gasoline	04/09/2002
<b>Brazil</b>	G/TBT/N/ BRA/51	Committee on Technical Barriers to Trade - Notification - Brazil - Lube oils and greases, and lube oil additives	04/09/2002
<b>Brazil</b>	G/TBT/N/ BRA/52	Committee on Technical Barriers to Trade - Notification - Brazil - Processed natural gas	04/09/2002
<b>Brazil</b>	G/TBT/N/ BRA/48	Committee on Technical Barriers to Trade - Notification - Brazil - Multiphase and monophasic electronic energy meters	02/09/2002
<b>Philippines</b>	G/TBT/N/ PHL/24	Committee on Technical Barriers to Trade - Notification - Philippines - Electric wires and cables - Annealed copper wires	28/08/2002
<b>Thailand</b>	G/TBT/N/ THA/81	Committee on Technical Barriers to Trade - Notification - Thailand - Base oils, oils obtained from crude petroleum	10/07/2002
<b>Colombia</b>	G/TBT/N/ COL/14	Committee on Technical Barriers to Trade - Notification - Colombia - Finished pipes for water supply and Fittings for the Laying and Repair Thereof	26/04/2002
<b>Colombia</b>	G/TBT/N/ COL/16	Committee on Technical Barriers to Trade - Notification - Colombia - Finished pipes and fittings for sewer systems and sanitary use	26/04/2002
<b>Philippines</b>	G/TBT/N/ PHL/18	Committee on Technical Barriers to Trade - Notification - Philippines - Cement	12/03/2002
<b>Australia</b>	G/TBT/N/AUS/8	Committee on Technical Barriers to Trade - Notification - Australia - Baby walkers	12/11/2001
<b>Trinidad and Tobago</b>	G/TBT/N/TTO/8	Committee on Technical Barriers to Trade - Notification - Trinidad and Tobago - Corrugated galvanized and aluminium-zinc alloy coated steel sheets	27/09/2001

Annex: WTO Notifications Referencing U.S. Domiciled SDOs - ASTM *continued*

WTO Member	Symbol	Title - HTML format	Date (Day/ Month/Year)
Chile	G/TBT/N/ CHL/20	Committee on Technical Barriers to Trade - Notification - Chile - Liquid petroleum products	24/07/2001
Chile	G/TBT/N/ CHL/21	Committee on Technical Barriers to Trade - Notification - Chile - Crude petroleum and liquid petroleum products	24/07/2001
Canada	G/TBT/N/CAN/6	Committee on Technical Barriers to Trade - Notification - Canada - Lamps, reflective devices and associated equipment	05/06/2001
Chile	G/TBT/N/CHL/2	Committee on Technical Barriers to Trade - Notification - Chile - Petroleum products	15/02/2001
Chile	G/TBT/N/CHL/4	Committee on Technical Barriers to Trade - Notification - Chile - Distillate fuels	15/02/2001
Chile	G/TBT/ Notif.00/602	Committee on Technical Barriers to Trade - Notification - Chile - Spark-ignition engine fuels	22/12/2000
Trinidad and Tobago	G/TBT/ Notif.00/606	Committee on Technical Barriers to Trade - Notification - Thailand - Steel bars and rods	18/12/2000
Chile	G/TBT/ Notif.00/386	Committee on Technical Barriers to Trade - Notification - Chile - Fuels	03/10/2000
Chile	G/TBT/ Notif.00/394	Committee on Technical Barriers to Trade - Notification - Chile - Polyamide (PA) compounds for manufacture of gas pipes and fittings	28/09/2000
Chile	G/TBT/ Notif.00/219	Committee on Technical Barriers to Trade - Notification - Chile - Gasoline	08/05/2000
Chile	G/TBT/ Notif.00/218	Committee on Technical Barriers to Trade - Notification - Chile - Gasoline	05/05/2000
Chile	G/TBT/ Notif.00/213	Committee on Technical Barriers to Trade - Notification - Chile - Petroleum products	03/05/2000
Chile	G/TBT/ Notif.00/214	Committee on Technical Barriers to Trade - Notification - Chile - Petroleum products	03/05/2000
Chile	G/TBT/ Notif.00/100	Committee on Technical Barriers to Trade - Notification - Chile - Liquid fuels	24/02/2000
Chile	G/TBT/ Notif.99/611	Committee on Technical Barriers to Trade - Notification - Chile - Kerosene aviation fuel	23/12/1999
Chile	G/TBT/ Notif.99/614	Committee on Technical Barriers to Trade - Notification - Chile - Distillate fuels	23/12/1999
Chile	G/TBT/ Notif.99/615	Committee on Technical Barriers to Trade - Notification - Chile - Natural gas	23/12/1999

**Annex: WTO Notifications Referencing U.S. Domiciled SDOs - ASTM** *continued*

<b>WTO Member</b>	<b>Symbol</b>	<b>Title - HTML format</b>	<b>Date (Day/ Month/Year)</b>
<b>Chile</b>	G/TBT/ Notif.99/618	Committee on Technical Barriers to Trade - Notification - Chile - Petroleum products	23/12/1999
<b>Chile</b>	G/TBT/ Notif.99/549	Committee on Technical Barriers to Trade - Notification - Chile - Petroleum products	05/11/1999
<b>Chile</b>	G/TBT/ Notif.99/550	Committee on Technical Barriers to Trade - Notification - Chile - Liquefied petroleum gas	05/11/1999
<b>Philippines</b>	G/TBT/ Notif.99/271	Committee on Technical Barriers to Trade - Notification - Philippines - Steel bars	14/06/1999
<b>Chile</b>	G/TBT/ Notif.99/210	Committee on Technical Barriers to Trade - Notification - Chile - Diesel oil and aviation fuels	05/05/1999
<b>Chile</b>	G/TBT/ Notif.99/145	Committee on Technical Barriers to Trade - Notification - Chile - Liquefied petroleum gas	30/03/1999
<b>Chile</b>	G/TBT/ Notif.99/126	Committee on Technical Barriers to Trade - Notification - Chile - Petroleum products	25/03/1999
<b>Chile</b>	G/TBT/ Notif.99/127	Committee on Technical Barriers to Trade - Notification - Chile - Petroleum products	25/03/1999
<b>Chile</b>	G/TBT/ Notif.99/128	Committee on Technical Barriers to Trade - Notification - Chile - Petroleum products	25/03/1999
<b>Chile</b>	G/TBT/ Notif.99/130	Committee on Technical Barriers to Trade - Notification - Chile - Liquefied petroleum hydrocarbons	25/03/1999
<b>Chile</b>	G/TBT/ Notif.99/132	Committee on Technical Barriers to Trade - Notification - Chile - Petroleum products	24/03/1999
<b>Mexico</b>	G/TBT/ Notif.99/14	Committee on Technical Barriers to Trade - Notification - Mexico - Infant walkers	29/01/1999
<b>Thailand</b>	G/TBT/ Notif.98/522	Committee on Technical Barriers to Trade - Notification - Thailand - Lighters	30/10/1998
<b>Netherlands</b>	G/TBT/ Notif.98/173	Committee on Technical Barriers to Trade - Notification - Netherlands - Coffins and other corpse casings	06/04/1998
<b>Netherlands</b>	G/TBT/ Notif.97/608	Committee on Technical Barriers to Trade - Notification - Netherlands - Materials for the manufacture of inflated relief boats	06/10/1997
<b>Netherlands</b>	G/TBT/ Notif.97/532	Committee on Technical Barriers to Trade - Notification - Netherlands - Materials for the manufacture of inflated relief boats	29/09/1997

**Annex: WTO Notifications Referencing U.S. Domiciled SDOs - API**

<b>WTO Member</b>	<b>Symbol</b>	<b>Title - HTML format</b>	<b>Date (Day/ Month/Year)</b>
<b>Kenya</b>	G/TBT/N/KEN/31	Committee on Technical Barriers to Trade - Notification - Kenya - Liquefied Petroleum Gas	14/06/2006
<b>Kenya</b>	G/TBT/N/KEN/32	Committee on Technical Barriers to Trade - Notification - Kenya - Liquefied Petroleum Gas	14/06/2006
<b>Colombia</b>	G/TBT/N/COL/74	Committee on Technical Barriers to Trade - Notification - Colombia - Natural gas and liquefied petroleum gas	12/01/2006
<b>Guatemala</b>	G/TBT/N/GTM/24	Committee on Technical Barriers to Trade - Notification - Guatemala - Lubricating oils	09/12/2004
<b>Honduras</b>	G/TBT/N/HND/3	Committee on Technical Barriers to Trade - Notification - Honduras - Lubricating Oils	09/12/2004
<b>El Salvador</b>	G/TBT/N/SLV/57	Committee on Technical Barriers to Trade - Notification - El Salvador - Lubricating Oils	09/12/2004
<b>Costa Rica</b>	G/TBT/N/CRI/20	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Lubricating Oils	07/12/2004
<b>Nicaragua</b>	G/TBT/N/NIC/53	Committee on Technical Barriers to Trade - Notification - Nicaragua - Lubricating oils	24/11/2004
<b>Brazil</b>	G/TBT/N/BRA/118	Committee on Technical Barriers to Trade - Notification - Brazil - Biodiesel	23/05/2003
<b>Brazil</b>	G/TBT/N/BRA/104	Committee on Technical Barriers to Trade - Notification - Brazil - Aviation kerosene	13/03/2003
<b>Brazil</b>	G/TBT/N/BRA/67	Committee on Technical Barriers to Trade - Notification - Brazil - Fuel oils	05/12/2002
<b>Netherlands</b>	G/TBT/N/NLD/55	Committee on Technical Barriers to Trade - Notification - The Netherlands - Mining equipment	10/10/2002
<b>Brazil</b>	G/TBT/N/BRA/50	Committee on Technical Barriers to Trade - Notification - Brazil - Automotive gasoline	04/09/2002
<b>El Salvador</b>	G/TBT/N/SLV/8	Committee on Technical Barriers to Trade - Notification - El Salvador - Petroleum products	16/04/2002
<b>Mexico</b>	G/TBT/N/MEX/22	Committee on Technical Barriers to Trade - Notification - Mexico - Lubricating oils for engines	03/04/2002
<b>Chile</b>	G/TBT/N/CHL/21	Committee on Technical Barriers to Trade - Notification - Chile - Crude petroleum and liquid petroleum products	24/07/2001
<b>Trinidad and Tobago</b>	G/TBT/N/TTO/7	Committee on Technical Barriers to Trade - Notification - Trinidad and Tobago - Pipelines	30/03/2001
<b>Chile</b>	G/TBT/Notif.99/614	Committee on Technical Barriers to Trade - Notification - Chile - Distillate fuels	23/12/1999

## Annex: WTO Notifications Referencing U.S. Domiciled SDOs - ASME

WTO Member	Symbol	Title - HTML format	Date (Day/Month/Year)
Kenya	G/TBT/N/KEN/31	Committee on Technical Barriers to Trade - Notification - Kenya - Liquefied Petroleum Gas	14/06/2006
Colombia	G/TBT/N/COL/74	Committee on Technical Barriers to Trade - Notification - Colombia - Natural gas and liquefied petroleum gas	12/01/2006
Colombia	G/TBT/N/COL/71	Committee on Technical Barriers to Trade - Notification - Colombia - LPG cylinders, LPG tanks	04/10/2005
Guatemala	G/TBT/N/GTM/26	Committee on Technical Barriers to Trade - Notification - Guatemala - Vehicles used for the Land Transport of Liquefied Petroleum Gas (LPG)	15/07/2005
Honduras	G/TBT/N/HND/16	Committee on Technical Barriers to Trade - Notification - Republic of Honduras - Vehicles for Land Transport of Liquefied Petroleum Gas (LPG)	01/07/2005
Costa Rica	G/TBT/N/CRI/33	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Liquefied Petroleum Gas	24/06/2005
Nicaragua	G/TBT/N/NIC/56	Committee on Technical Barriers to Trade - Notification - Nicaragua - Vehicles for Land Transport of Liquefied Petroleum Gas (LPG) in Bulk	24/06/2005
Honduras	G/TBT/N/HND/11	Committee on Technical Barriers to Trade - Notification - Honduras - Liquefied Petroleum Gas / Petrol	13/12/2004
Honduras	G/TBT/N/HND/13	Committee on Technical Barriers to Trade - Notification - Honduras - Liquefied Petroleum Gas (LPG) Stations with Fixed Storage Installations	13/12/2004
Chile	G/TBT/Notif.00/387	Committee on Technical Barriers to Trade - Notification - Chile - Stationary welded steel tanks for storage of liquefied petroleum gas	03/10/2000
Chile	G/TBT/Notif.00/220	Committee on Technical Barriers to Trade - Notification - Chile - Welded steel cylinders and tanks	08/05/2000
Philippines	G/TBT/Notif.99/447	Committee on Technical Barriers to Trade - Notification - Philippines - Steel cylinders for liquefied petroleum gas	03/09/1999
Japan	G/TBT/Notif.97/735	Committee on Technical Barriers to Trade - Notification - Japan - Nuclear power facilities for power generation	03/12/1997

**Annex: WTO Notifications Referencing U.S. Domiciled SDOs - IEEE**

WTO Member	Symbol	Title - HTML format	Date (Day/Month/Year)
<b>El Salvador</b>	G/TBT/N/SLV/113	Comité de Obstáculos Técnicos al Comercio - Notificación - El Salvador - Eficiencia energética de motores de corriente alterna	26/11/2007
<b>Canada</b>	G/TBT/N/CAN/148	Committee on Technical Barriers to Trade - Notification - Canada - Radiocommunications Equipment	17/11/2005
<b>Thailand</b>	G/TBT/Notif.00/508	Committee on Technical Barriers to Trade - Notification - Thailand - Uninterruptible power systems	20/10/2000
<b>Thailand</b>	G/TBT/Notif.00/511	Committee on Technical Barriers to Trade - Notification - Thailand - Information technology equipment: Radio disturbance limits	20/10/2000

**Annex: WTO Notifications Referencing U.S. Domiciled SDOs - NEMA**

WTO Member	Symbol	Title - HTML format	Date (Day/Month/Year)
<b>El Salvador</b>	G/TBT/N/SLV/113	Comité de Obstáculos Técnicos al Comercio - Notificación - El Salvador - Eficiencia energética de motores de corriente alterna	26/11/2007
<b>Kenya</b>	G/TBT/N/KEN/97	Committee on Technical Barriers to Trade - Notification - Kenya - Conservation of biological diversity and resources	19/01/2007
<b>Kenya</b>	G/TBT/N/KEN/91	Committee on Technical Barriers to Trade - Notification - Kenya - Air pollution control	03/01/2007
<b>Kenya</b>	G/TBT/N/KEN/79	Committee on Technical Barriers to Trade - Notification - Kenya - Water quality	12/12/2006
<b>Kenya</b>	G/TBT/N/KEN/80	Committee on Technical Barriers to Trade - Notification - Kenya - Waste management	12/12/2006
<b>Chile</b>	G/TBT/N/CHL/32	Committee on Technical Barriers to Trade - Notification - Chile - Copper and aluminium electric conductors	16/05/2002
<b>Thailand</b>	G/TBT/Notif.00/508	Committee on Technical Barriers to Trade - Notification - Thailand - Uninterruptible power systems	20/10/2000

## Annex: WTO Notifications Referencing U.S. Domiciled SDOs - NFPA

WTO Member	Symbol	Title - HTML format	Date (Day/Month/Year)
<b>Jamaica</b>	G/TBT/N/JAM/8/Add.1	Committee on Technical Barriers to Trade - Notification - Jamaica - Construction materials - Addendum	20/04/2007
<b>Ecuador</b>	G/TBT/N/ECU/20	Committee on Technical Barriers to Trade - Notification - Ecuador - Liquefied petroleum gas	30/01/2007
<b>Kenya</b>	G/TBT/N/KEN/31	Committee on Technical Barriers to Trade - Notification - Kenya - Liquefied Petroleum Gas	14/06/2006
<b>Colombia</b>	G/TBT/N/COL/75	Committee on Technical Barriers to Trade - Notification - Colombia - Natural gas	12/01/2006
<b>Colombia</b>	G/TBT/N/COL/73	Committee on Technical Barriers to Trade - Notification - Colombia - Liquefied petroleum gas (LPG) cylinders	06/01/2006
<b>Guatemala</b>	G/TBT/N/GTM/26	Committee on Technical Barriers to Trade - Notification - Guatemala - Vehicles used for the Land Transport of Liquefied Petroleum Gas (LPG)	15/07/2005
<b>Honduras</b>	G/TBT/N/HND/16	Committee on Technical Barriers to Trade - Notification - Republic of Honduras - Vehicles for Land Transport of Liquefied Petroleum Gas (LPG)	01/07/2005
<b>El Salvador</b>	G/TBT/N/SLV/66	Committee on Technical Barriers to Trade - Notification - El Salvador - Tanks for petroleum	28/06/2005
<b>Costa Rica</b>	G/TBT/N/CRI/33	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Liquefied Petroleum Gas	24/06/2005
<b>Nicaragua</b>	G/TBT/N/NIC/56	Committee on Technical Barriers to Trade - Notification - Nicaragua - Vehicles for Land Transport of Liquefied Petroleum Gas (LPG) in Bulk	24/06/2005
<b>El Salvador</b>	G/TBT/N/SLV/7	Committee on Technical Barriers to Trade - Notification - El Salvador - Petroleum and petroleum products	16/04/2002
<b>Philippines</b>	G/TBT/Notif.99/448	Committee on Technical Barriers to Trade - Notification - Philippines - Liquefied petroleum gas cylinders	02/09/1999

**Annex: WTO Notifications Referencing U.S. Domiciled SDOs - SAE International**

<b>WTO Member</b>	<b>Symbol</b>	<b>Title - HTML format</b>	<b>Date (Day/Month/Year)</b>
<b>China</b>	G/TBT/N/CHN/167	Committee on Technical Barriers to Trade - Notification - The People's Republic of China - Compression ignition engine	01/12/2005
<b>Guatemala</b>	G/TBT/N/GTM/24	Committee on Technical Barriers to Trade - Notification - Guatemala - Lubricating oils	09/12/2004
<b>Honduras</b>	G/TBT/N/HND/3	Committee on Technical Barriers to Trade - Notification - Honduras - Lubricating Oils	09/12/2004
<b>El Salvador</b>	G/TBT/N/SLV/57	Committee on Technical Barriers to Trade - Notification - El Salvador - Lubricating Oils	09/12/2004
<b>Costa Rica</b>	G/TBT/N/CRI/20	Committee on Technical Barriers to Trade - Notification - Republic of Costa Rica - Lubricating Oils	07/12/2004
<b>Denmark</b>	G/TBT/N/DNK/15	Committee on Technical Barriers to Trade - Notification - Denmark - Seat belts for wheelchair users	13/05/2003
<b>Canada</b>	G/TBT/N/CAN/58	Committee on Technical Barriers to Trade - Notification - Canada - Motor vehicle headlamps	07/2/2003
<b>El Salvador</b>	G/TBT/N/SLV/12	Committee on Technical Barriers to Trade - Notification - El Salvador -: Air emissions - Mobile sources	16/04/2002
<b>Canada</b>	G/TBT/N/CAN/30	Committee on Technical Barriers to Trade - Notification - Canada - Mirrors fitted to school buses	05/03/2002
<b>Canada</b>	G/TBT/N/CAN/6	Committee on Technical Barriers to Trade - Notification - Canada - Lamps, reflective devices and associated equipment	05/06/2001
<b>Canada</b>	G/TBT/Notif.99/92	Committee on Technical Barriers to Trade - Notification - Canada - Lighting and retro-reflective devices	12/03/1999
<b>Canada</b>	G/TBT/Notif.96/29	Committee on Technical Barriers to Trade - Notification - Canada - Noise emission	16/02/1996

## Annex: WTO Notifications Referencing U.S. Domiciled SDOs - UL

WTO Member	Symbol	Title - HTML format	Date (Day/Month/Year)
El Salvador	G/TBT/N/SLV/112	Comité de Obstáculos Técnicos al Comercio - Notificación - El Salvador - Eficiencia energética y seguridad de lámparas fluorescentes compactas integradas	26/11/2007
Philippines	G/TBT/N/PHL/78	Committee on Technical Barriers to Trade - Notification - Philippines - Electric wires and cables	16/04/2007
China	G/TBT/N/CHN/97	Committee on Technical Barriers to Trade - Notification - The People's Republic of China - Foam Fire Extinguishing Systems and Components	28/06/2005
China	G/TBT/N/CHN/93	Committee on Technical Barriers to Trade - Notification - The People's Republic of China - Fire Coupling	21/06/2005
Israel	G/TBT/N/ISR/90	Committee on Technical Barriers to Trade - Notification - Israel - Electric Signalling Apparatus	11/05/2005
Philippines	G/TBT/N/PHL/40	Committee on Technical Barriers to Trade - Notification - Philippines - Thermoplastic insulated copper wires and cables	10/03/2005
Saint Lucia	G/TBT/N/LCA/28	Committee on Technical Barriers to Trade - Notification - Saint Lucia - Christmas tree lights and other decorative lighting outfits	03/09/2004
Peru	G/TBT/N/PER/5	Committee on Technical Barriers to Trade - Notification - Peru - Cables	14/04/2004
Israel	G/TBT/N/ISR/28	Committee on Technical Barriers to Trade - Notification - Israel - Fire extinguishers	25/04/2003
Israel	G/TBT/N/ISR/4	Committee on Technical Barriers to Trade - Notification - Israel - Fire detector systems	09/07/2002
Chile	G/TBT/N/CHL/30	Committee on Technical Barriers to Trade - Notification - Chile - Thermoplastic-insulated wires and cables	16/05/2002
Chile	G/TBT/N/CHL/31	Committee on Technical Barriers to Trade - Notification - Chile - Electric conductors - Flexible cord and fixture wire	16/05/2002
El Salvador	G/TBT/N/SLV/7	Committee on Technical Barriers to Trade - Notification - El Salvador - Petroleum and petroleum products	16/04/2002
Thailand	G/TBT/N/THA/59	Committee on Technical Barriers to Trade - Notification - Thailand - Fuses	23/11/2001
Thailand	G/TBT/N/THA/27	Committee on Technical Barriers to Trade - Notification - Thailand - Pressure regulators	22/05/2001
Poland	G/TBT/Notif.00/482	Committee on Technical Barriers to Trade - Notification - Poland - Tobacco products	04/10/2000
Thailand	G/TBT/Notif.98/384	Committee on Technical Barriers to Trade - Notification - Thailand - PVC insulated aluminium cables	12/08/1998

## About the Author

Helen Delaney, former diplomat and Washington Representative, is the President of Delaney Consulting Inc., of Cambridge, MD. She has spent a full career in government relations, standards, and conformity assessment, and has over thirty-seven years of experience in the field.

For seventeen years she was Washington Representative and Director of Global Affairs for ASTM International, one of the world's largest voluntary standards organizations. In 1989 she started her own consulting firm and developed a distinguished list of clients, including the Office of NAFTA Negotiations of the Mexican Government. From 1995 to 1998, she suspended consulting activities to serve in a position newly created by the U.S. Department of Commerce's National Institute of Standards and Technology (NIST): Standards Attaché to the United States Mission to the European Union in Brussels, Belgium. Sponsored by NIST, she became a member of the Foreign Commercial Service and held the diplomatic title of First Secretary. In this post she was the adviser on standards and conformity assessment to two U.S. Ambassadors to the European Union: Stuart Eizenstat and Vernon Weaver. She also acted as adviser to other senior members of the U.S. diplomatic corps and foreign nationals, as well as liaison to the European Commission and European standards organizations. She was an advocate for U.S. business and exporters to the European Union. She assisted many U.S. exporters in understanding and overcoming technical market entry requirements to the EU. She took part in the negotiations that led to the US/EU Mutual Recognition Agreements on Conformity Assessment.

Ms. Delaney resumed her consulting services in Chevy Chase, MD in 1998, specializing in standardization and conformity assessment issues and their relationship to regulation and international trade. As President of Delaney Consulting, Inc., she continued to serve a distinguished clientele which included standards development and conformity assessment organizations, foreign and domestic government agencies, trade associations, and companies.

Ms. Delaney has written numerous articles and papers on standards and trade issues, including a research paper on conformity assessment for the Organization for Economic Co-operation and Development (OECD) in Paris. She is the author of a chapter on technical barriers to trade in *Standardization Essentials*, a textbook published by Marcel Dekker. She has lectured on standards and trade issues before many conferences and institutions, including the University of Maryland, The Catholic University of Washington, D.C., the General Assembly of CEN in Vienna, Austria, The Tabá Trade Ministers Seminar on Standards and Metrology in Cairo, Egypt, the Seminar on the WTO sponsored by the DOC/Commercial Law Development Program in Cairo, Egypt, and the ANSI/NIST Conference Toward a National Standards Strategy in Washington, D.C. She has authored a book published by ASTM International: *Standards: The Corporate Edge*. In 2008, she was awarded the American National Standards Institute's Astin-Polk medal for her work in international standards.

