Beginning with rules for a boiler test in the age of steam, ASME has grown into one of the world’s leading developers of industrial standards.

By Bernard E. Hrubala

Ancient times saw the invention of the screw, water wheel, and potter’s wheel. The Middle Ages brought forth the windmill, wheel barrow, rudder, and mechanical clock. The eighteenth and nineteenth centuries, best known as the era of the Industrial Revolution, were without a doubt the period of changing how we manufacture products and move about the world. During this period was the birth of steam-powered engines, screw cutting machines, mass production, and yes, ASME’s codes and standards.

Steam power was the greatest technical achievement of the Industrial Revolution. Industry needed guidance and reliable standards for applying and using this enormous power, and the public demanded the safe use of steam power and power-driven machinery. In 1884, ASME published the first performance test code—Code for the Conduct of Trials of Steam Boilers. From here, the rest is history.

125 Years Later

Today ASME publishes 500 codes and standards that cover a wide range of engineered products and processes, including boilers, pressure vessels, nuclear power plant components, elevators, escalators, hand tools, fasteners, machine tools, plumbing fixtures, cranes, and transport tanks. There are more than 5,000 ASME certified manufacturers, 50 percent of which are outside the United States.

The efforts to develop, revise, and maintain these standards are supported by 700 technical and supervisory committees with over 4,000 volunteers and staff members. There are an average of more than 800 face-to-face committee meetings held annually, and an untold number of telephone and Web conferences among volunteer committee members. ASME’s codes and standards are adopted, referenced, and recognized in more than 100 countries.

As an organization, ASME Codes and Standards has successfully moved from a national vision to an international vision. This shift from domestic to international requires a
fresh look at how we approach codes and standards. Besides translating standards into other languages, international efforts are reflected in a general move towards developing performance-based standards and adopting best practices.

We are learning how to properly identify needs outside North America, particularly in Third World countries. For example, ASME may initiate discussion on electrical power generation and find that what is needed first is clean water. ASME’s strong suit in this area is the consensus process, which encourages collaboration, bringing government agencies, authorities, and standards development organizations to the table.

We continue to grow and have sufficient depth and breadth of knowledge within our volunteer and staff partnership to meet the many challenges posed by globalization. About 10 percent of our volunteer members are based outside the United States, and the number of international members is significantly increasing each year.

ASME’s codes and standards are continually undergoing dramatic changes and advancement at an increasing rate, and are being reinvented to better serve the growing need for harmonized codes, standards, and conformity assessment programs. Today’s new design and performance requirements are increasingly complex and therefore require the technical collaboration of multiple engineering disciplines.

Developing Codes and Standards

ASME supervisory boards are responsible for standards development in the areas of pressure technology, nuclear power, safety, performance testing, standardization, and product and personnel certification; the Board on New Development seeks opportunities for standards development in areas not addressed by the other boards. A new Energy and Environmental Standards Advisory Board has just been approved to identify and initiate new standards activities by working with the supervisory boards.

Established codes and standards are regularly revised to reflect new developments, and new standards are constantly being developed. A request for a code or standard may come from individuals, committees, professional organizations, government agencies, industry groups, public interest groups, or from an ASME division or section. The request is referred to the appropriate supervisory board for consideration. If the board determines there is a demonstrated need for the standard, it either assigns the request to an existing standards committee or forms a new one.

The standards committees are composed of engineers and other interested parties with knowledge and expertise in the particular field, who agree to follow ASME’s Policy on Conflict of Interest and the Engineer’s Code of Ethics. They represent users, manufacturers, consultants, universities, testing laboratories, insurers, and government agencies. Committee members are chosen so that no single group is allowed to dominate.

All standards development committee meetings are open to the public, and voting procedures must ensure that the group reaches consensus. Any materially interested party who believes that due process was not observed may appeal to the standards committee, the supervisory board, and ultimately, to the Board on Hearings and Appeals.

All proposed standards are made available for public review and comment. Supervisory boards assure procedural compliance. The standards committee must respond to all comments that are submitted during the public review period. When all comments have been addressed, the document is approved and published by ASME.

The Future

ASME Codes and Standards has an excellent reputation and record of success at studying trends and issues which are likely to shape the future and development of standards. This is a very productive time for us. During the next three years, ASME Codes and Standards has some 25 first-time products—including standards, education and training programs, and certification programs—slated for development.

Imagine what will be accomplished by our 150th anniversary. ASME Codes and Standards will continue to develop the capacity of thinking and working in a global market. No one country, region, section, profession, or organization will be able to address this century’s Grand Challenges alone. ASME’s codes and standards organization leads the way and plays a vital link for global collaboration and partnerships to meet the future challenges.

Making a better world includes the making of standards; ASME Codes and Standards is proud to be a part of this endeavor.