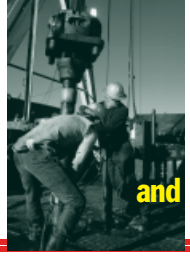


Do it once, do it right, do it internationally

by Cheryl Stark, Chair, ISO/TC 67, Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries

ISO/TC 67 writes standards for *"Materials, equipment and offshore structures for the petroleum, petrochemical and natural gas industries"*, but excludes equipment regulated by IMO (ship hulls). Categorized under hardware and consumables, we cover the capital expense part of the business. It is estimated that the industry spends over USD 250 billion annually on capital items in a market reaching six continents and most economies.

ISO/TC 28, *Petroleum products and lubricants*, is our counterpart in establishing specifications for the raw materials drilled, transmitted via pipelines, refined, measured, tested and sold.

Now more than ever

The industry needs standards now more than ever as new markets and new countries enter the petroleum business. According to records, standards were first written for petroleum equipment in Azerbaijan in the late 19th century. Modern standardization began in 1923 when the American Petroleum Institute (API) prepared standards defining interchangeable products that met the needs of fit, form and function.

API standards provided the foundation for about 60% of TC 67's work, the remainder being applied to new technology or imported from other standards developing organizations (SDOs), such as NORSOK, NACE, BSI, DIN and the UK's Energy Institute (formerly the Institute of Petroleum). Worker safety, locale, final product, availability of equipment, and cost containment are still the key factors driving standardization in the industry.

"The industry needs standards now more than ever as new markets and new countries enter the petroleum business."

Those participating in standards writing represent all sectors of the petroleum industry. Operators from state-owned and global companies, drilling contractors, service and supply organizations, manufacturers, regulators, and academia contribute technology and people to the process. At present, TC 67 has participants from 24 countries and observers from 27, totaling more than 1000 people. The standards that evolve represent the global consensus of knowledgeable experts, and the best available technology at the time. Currently, TC 67 has a programme of 161 standards with over 105 having been published at least once.

A collaborative effort

Standardization is the collaborative effort of six subcommittees, each with multiple working groups, overseen by a management committee. Our working groups handle one-item issues, such as life cycle costing, reliability measurement, corrosion in hydrogen sulfide environments, quality, and aluminum pipe products.

The subcommittees are discipline specific, covering such topics as pipeline transportation systems, fluids, drilling and production equipment, tubular goods, refinery equipment and offshore structures. We also hold joint

working groups with other ISO technical committees in fields such as machinery and valves.

Each subcommittee works on some 12 to 35 standards, ranging from about 25 to 500 pages in length depending on the topic and technology presented. Any ISO standard produced is a "stand-alone" document, but may reference others in the TC 67 programme, or other SDOs.

"Those participating in standards writing represent all sectors of the petroleum industry."

TC 67's management committee comprises a designated representative from each participating member country wishing to have an input. These committee members oversee the project management teams, interface with the ISO Central Secretariat when needed, and generally act as a knowledge resource for the project members creating a standard. They do not set the programme nor direct the efforts of any subcommittee or working group, but address issues raised that have an impact on the TC.

Partners smooth the process

TC 67 has many partners that help the process flow more smoothly. The API also holds the secretariat to TC 67, and supports joint ISO/API work programmes. Many subcommittees or working groups are managed as a single entity, with the work being carried out by global experts. The API has an adopt-back policy in which any ISO standard from ISO/TC 67 can be co-branded with the API logo, and identified as ISO/API. To date, about 45 ISO standards have been readopted by API.

The European Committee for Standardization (CEN) is also a major partner, having a formal liaison with TC 67. CEN/TC 12 carries the same title as ISO/TC 67, and complies with the intent of the 1992 Vienna Agreement under which CEN gives ISO priority in standards development, but any standard deemed of European importance is adopted by CEN and replaces the internal standards of any member country. About 90 ISO standards have been implemented by CEN, with most of the remainder awaiting ballot in CEN or completion at ISO. The organization is using the co-branding strategy in identifying these standards as CEN/ISO, and denoted as EN ISO.

The International Association of Drilling Contractors (IADC) is another major partner and liaison. These owners/operators of equipment and offshore structures are vital to the process, providing experts, technology and standards implementation. An International Standard simplifies manufacturing, inventory and use worldwide, as it does in the service and supply sector as well.

About the author

Cheryl Stark, currently Manager, External Technology Representation, Group Technology Engineering with BP in Houston, USA, has over 30 years technical and managerial experience in the upstream segment of the oil and gas business. She represents BP as Chair of ISO/TC 67, as a member of the API Executive Committee on Standards (upstream), the Executive Committee on Drilling and Production Operations, the Oil and Gas Producers Association (OGP) Standards Committee, and as a liaison member of CEN/TC 12.

ISO STANDARDS FOR THE OIL AND GAS INDUSTRY

Fluids

Field testing of drilling fluids
- **Part 1**: Water-based fluids (**ISO 10414-1**)
- **Part 2**: Oil-based fluids (**ISO 10414-2**)

Drilling fluids
Laboratory testing (**ISO 10416**)

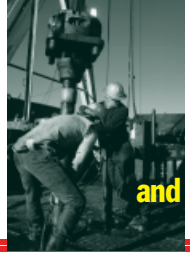
Drilling fluid materials – Specifications and tests (**ISO 13500**)

Drilling fluids (**ISO 13501**)

Cements and materials for well cementing
- **Part 1**: Specification (**ISO 10426-1**)
- **Part 2**: Testing of well cements (**ISO 10426-2**)
- **Part 3**: Testing of deep-water well cement formulations (**ISO 10426-3**)
- **Part 4**: Preparation and testing of atmospheric foam cement slurries at atmospheric pressure (**ISO 10426-4**)
- **Part 5**: Shrinkage and expansion of well cement (**ISO 10426-5**)

Equipment for well cementing
- **Part 1**: Bow-spring casing centralizers (**ISO 10427-1**)
- **Part 2**: Centralizer placement and stop collar testing (**ISO 10427-2**)
- **Part 3**: Performance testing of cementing float equipment (**ISO 10427-3**)

Completion fluids and materials
- **Part 1**: Measurement of viscous properties of completion fluids (**ISO 13503-1**)
- **Part 2**: Measurement of properties of proppants used in hydrolic fracturing and gravel-packing operations (**ISO 13503-2**)
- **Part 3**: Testing of heavy brines (**ISO 13503-3**)
- **Part 4**: Measurement stimulation & gravelpack fluid leakoff (**ISO 13503-4**)
- **Part 5**: Measuring long-term conductivity of proppants (**ISO 13503-5**)



Dedicated standards users

Further support to ISO/TC 67 processes is given through the International Association of Oil and Gas Producers (OGP), which also maintains an active liaison. OGP, a global organization of oil and gas companies, meet regularly to discuss common business interests. Its standards committee directly supports the concept of one standard applicable internationally, and its members are dedicated standards users who wish to see a common set of standards that will enhance efficiency, reduce internal company specifications, and improve the safety of workers and the environment. The committee contributes financially to ensure that any ISO standard is in the ISO-approved format, with ISO-designated drawings. It also acts as a public relations outlet for the ISO/TC 67 process. The association has held numerous workshops to school potential participants and countries in the benefits derived from the ISO standards process.

"Do it once, do it right..."

There is no end to the work! Technology evolves as harsher environments impose greater demands on existing equipment, driving the development of new equipment, techniques and technology, and new ways of obtaining energy. Since the industry never stands still, so its standards must move with the times, being up to date, easy to apply and readily available.

New work items are introduced as the need arises, and these currently arise at an average of 15 per year. Ideas can originate anywhere, and TC 67 welcomes input from new members and countries.

In the true spirit of standardization for the petroleum, petrochemical and natural gas industries, ISO/TC 67 attributes much of its success to date to the motto: *"do it once, do it right, do it internationally!"*

ISO/TS 29001

set to become oil and gas industry's unique QMS standard

by Ken Peurifoy, Vice President and Senior Consultant of Quality Support International, Inc. Spring, Texas and Lanny Gookin, President and Senior Consultant of QMR Consulting, Inc. Houston, Texas

A successful partnership between ISO and the international oil and gas industry has resulted in the publication of a technical specification for implementing ISO 9001:2000-based quality management systems in the sector.

ISO/TS 29001:2003, *Petroleum, petrochemical and natural gas industries – Sector-specific quality management systems – Requirements for product and service supply organizations*, is envisaged to become the common and unique basis for the oil and gas industry's quality management system requirements worldwide.

"ISO/TS 29001:2003 is envisaged to become the common and unique basis for the oil and gas industry's quality management system requirements worldwide."

ISO/TS 29001 is available for use by manufacturers of oil and gas industry equipment and materials (upstream and downstream), service providers to the oil and gas industry, purchasers of