



**International
Association
of Oil & Gas
Producers**

International Standards Bulletin

EXECUTIVE SUMMARY

A set of International Standards for a wide selection of vital oil and gas industry materials, equipment and offshore structures is emerging from the International Standards Organization, ISO. These standards are primarily the responsibility of ISO Technical Committee 67 (ISO TC67). They are developed using a consensus process that includes more than a thousand oil and gas industry experts from around the globe and an international review and approval process.

116 ISO standards have now been issued, including 13 revisions or new publications in 2005. A further 16 are planned for publication this year. The international oil and gas industry and national standardization

organizations support these standards for worldwide application. North and South American, Chinese, European and other standards bodies are now adopting them for regional and national use. For industry, they will reduce costs and delivery time, and facilitate trade across national borders. For regulators, they offer support for goal-setting and functional regulations, while achieving higher levels of safety through better design.

These standards are now being implemented widely in oil and gas provinces around the world, replacing existing industry, regional and national standards and eliminating or reducing the need for company-specific specifications.



<http://info.ogp.org.uk/standards/>

For details on standards available from ISO TC67, see the wall-chart inside.

GLOBAL LEADERS ACKNOWLEDGE STRATEGIC ROLE OF ISO STANDARDS

Oil and gas industry leaders acknowledged the essential contribution to their industry of standards published by ISO, the International Standardization Organization, at the World Petroleum Congress (WPC) held in Johannesburg, South Africa, in September last year. More than 6,000 attendees from 98 countries participated in this the 18th WPC, held from 25 to 29 of September 2005. Discussion ranged from the need for greater standardization to reform of the process of measuring oil and gas reserves and the possibility of developing green fossil fuels.

A roundtable discussion on the impact of international exploration and production standards that took place on the first day of the congress, moderated by OGP's Executive Director, featured representatives from major petroleum companies including Petrobras, Qatar Petroleum & Shell, as well as participation by the US Minerals Management Services (MMS), Nigeria's National Engineering and Technical Company (NETCO), Halliburton, the Chinese Petroleum Standards Committee (CPSC) and ISO Secretary-General.

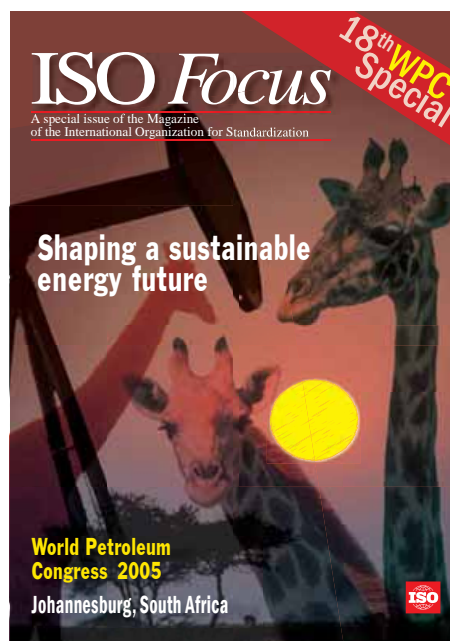
Shell views international standardization as an asset for its global operations, citing the company's design and engineering practices for self-regulation, which are based on and reference ISO standards.

MMS recognition of the benefits of using industry "best practices" as defined in technical standards and their incorporation into operating regulations has been part of the agency's regulatory philosophy since its creation in 1982. Consistent with the trend toward international commerce, today's offshore oil and gas industry has become global in scope. MMS thus finds itself regulating the OCS activities of an international industry. If done correctly, one set of International Standards providing for regional differences can lower

business costs, provide a consistent regulatory climate on a global scale, make resources more economic to produce and provide for safer and environmentally sound operations.

The ISO Secretary-General underlined this and confirmed that the globalisation of trade and issues such as environmental protection, security, health and social responsibility had brought consensus-based international standards increasingly into demand. International standards, he said, can foster a "win-win" relationship between the developed and the developing world. Through ISO, the oil and gas industry develops standards aimed at ensuring interoperability, support, customer-supplier relations and the dissemination of new technologies. The industry also makes extensive use of ISO management systems standards such as ISO 9001 for quality and ISO 14001 for environmental management, as well as ISO standards for conformity assessment.

There was a consensus at the congress that International Standards encourage economic growth by opening up markets and helping break down technical barriers to trade, but that core issues such as quality and reliability must first be addressed and resolved. Here, International Standards might be seen as biasing the market towards exports from the developed world, but only in the short term. Their advantage was that they are available for all to ▶

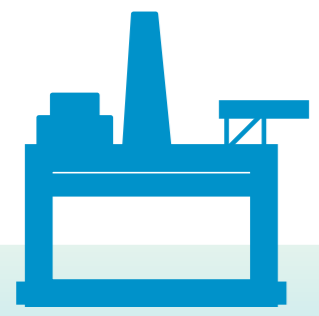


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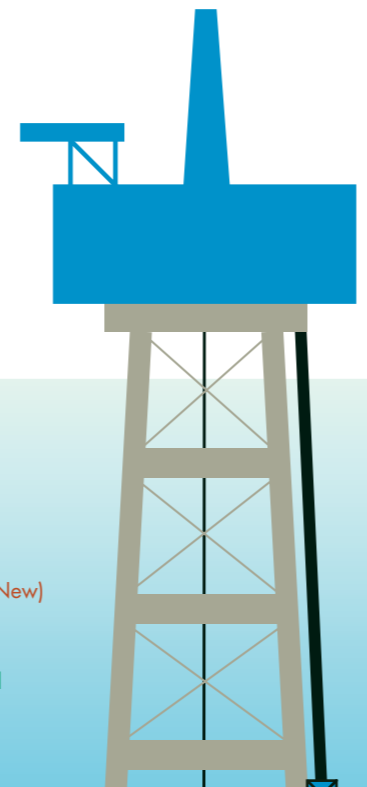
**Qatar
Petroleum**
will host an OGP
workshop on Interna-
tional Standards in
Doha, Qatar, on
3rd & 4th April 2006.
See the flyer on
the OGP website

ISO Standards for use in the oil & gas industry

- ISO 10418 Basic surface safety systems
- ISO 10423 Wellhead & christmas tree equipment
- ISO 13533 Drill-through equipment (BOPs)
- ISO 13534 Hoisting equipment - care/maint
- ISO 13535 Hoisting equipment - specification
- ISO 13626 Drilling and well-servicing structures
- ISO 13702 Control & mitigation of fire & explosion
- ISO 13703 Offshore piping systems
- ISO 14224 Reliability/maintenance data (Rev)
- ISO 14692 GRP piping, Parts 1-4
- ISO 14693 Drilling equipment
- ISO 15156-1 Selection of cracking resistant materials for use in H₂S environments
- ISO 15156-2 Cracking-resistant steels and cast irons for use in H₂S environments
- ISO 15156-3 Cracking-resistant alloys for use in H₂S environments
- ISO 15138 HVAC offshore
- ISO 15544 Emergency response
- ISO 15663 Life cycle costing, Parts 1-3
- ISO 17776 Assessment of hazardous situations
- ISO/TS 29001 Sector-specific quality management system
- ISO 3977-5 Gas turbines – procurement
- ISO 10434 Bolted bonnet steel gate valves
- ISO 10437 Special-purpose steam turbines
- ISO 10438 Lubrication, shaft-sealing and oil-control systems, Parts 1-4
- ISO 10439 Centrifugal compressors
- ISO 10440-1 Rotary PD process compressors (Rev)
- ISO 10440-2 Rotary PD packaged air compressors
- ISO 10441 Flexible couplings – special
- ISO 10442 Integrally geared air compressors
- ISO 13631 Reciprocating gas compressors
- ISO 13691 High speed enclosed gear units
- ISO 13704 Calculation heat tube thickness
- ISO 13705 Fired heaters for general service (Rev)
- ISO 13706 Air-cooled heat exchangers (Rev)
- ISO 13707 Reciprocating compressors
- ISO 13709 Centrifugal pumps
- ISO 13710 Reciprocating positive displacement pumps
- ISO 14691 Flexible couplings – general
- ISO 15547-1 Plate & frame type heat exchangers (Rev)
- ISO 15547-2 Braze aluminium platefin type heat exchangers (New)
- ISO 15649 Piping
- ISO 15761 Steel valves DN 100 and smaller
- ISO 16812 Shell & tube heat exchangers (Rev)
- ISO 17292 Metal ball valves
- ISO 21049 Centrifugal and rotary pumps shaft sealing
- ISO 23251 Pressure-relieving and depressuring systems (New)
- ISO/TR 24817 Composite repair of pipework (New)



ISO 13625 Marine drilling riser couplings
ISO 19901-7 Stationkeeping systems (New)



ISO 13819-2 Fixed steel offshore structures
ISO 19900 Offshore structures - general requirements
ISO 19901-1 Metocean design and operating considerations (New)
ISO 19901-2 Seismic design
ISO 19901-4 Geotechnical and foundation design
ISO 19901-5 Weight control
ISO 19903 Fixed concrete offshore structures (New)
ISO 19904-1 Floating offshore structures (New)



ISO 3183 Linepipe, Parts 1-3
ISO 13623 Pipeline transportation systems
ISO 13847 Pipeline welding
ISO 14313 Pipeline valves
ISO 14723 Subsea pipeline valves
ISO 15589-1 Cathodic protection for on-land pipelines
ISO 15589-2 Cathodic protection for offshore pipelines
ISO 15590-1 Pipeline induction bends
ISO 15590-2 Pipeline fittings
ISO 15590-3 Pipeline flanges
ISO 16708 Pipeline reliability-based limit state design (New)
ISO 21329 Test procedures for pipeline mechanical connectors

ISO 13628-1 Subsea production systems (Rev)
ISO 13628-2 Subsea flexible pipe systems (Rev)
ISO 13628-3 Subsea TFL pumpdown systems
ISO 13628-4 Subsea wellhead & christmas trees
ISO 13628-5 Subsea control umbilicals

ISO 13628-6 Subsea production controls (Rev)
ISO 13628-7 Completion/workover riser system (New)
ISO 13628-8 ROV interfaces
ISO 13628-9 ROT intervention systems
ISO 13628-10 Bonded flexible pipe (New)
ISO 13628-11 Flexible pipe systems for subsea and marine applications (New)

ISO 10405 Care/use of casing/tubing
ISO 10407-1 Drill stem design
ISO 10414 Field testing of drilling fluids, Part 1-2
ISO 10416 Drilling fluids - lab testing
ISO 10417 Subsurface safety valve systems
ISO 10424-1 Rotary drill stem elements
ISO 10424-2 Threading, gauging and testing of rotary connections (New)
ISO 10426-1 Well cementing (Rev)
ISO 10426-2 Testing of well cements (Amendment)
ISO 10426-3 Testing of deepwater well cement
ISO 10426-4 Preparation and testing of atmospheric foamed cement slurries
ISO 10426-5 Shrinkage and expansion of well cement

ISO 10427-1 Bow spring casing centralizers
ISO 10427-2 Centralizer placement and stop-collar testing
ISO 10427-3 Performance testing of cement float equipment
ISO 10432 Subsurface safety valves
ISO 11960 Casing and tubing
ISO 11961 Drillpipe
ISO 13500 Drilling fluids (Rev)
ISO 13501 Drilling fluids - processing systems evaluation (New)

ISO 13503-1 Measurement of viscous properties of completion fluids
ISO 13503-2 Measurement of properties of proppants (New)
ISO 13503-3 Testing of heavy brines (New)
ISO 13503-4 Measurement of stimulation & gravelpack fluid leakoff (New)
ISO 13503-5 Measurement of long term conductivity of proppants (New)
ISO 13678 Thread compounds
ISO 13679 Connection testing
ISO 13680 CRA seamless tubes for casing and tubing
ISO 14310 Packers and bridge plugs
ISO 15136-1 Progressing cavity pump systems
ISO 15136-2 Progressing cavity pump systems - drive heads (New)
ISO 15463 Field inspection of new casing, tubing and plain end drill pipe
ISO 15546 Aluminium drillpipe
ISO 16070 Lock mandrels and landing nipples (Rev)
ISO 17078-1 Side-pocket mandrels



Standards in **brown** issued in 2005
Standards in **green** are a priority for 2006 issue
Many of these standards are adopted by API, CEN and other recognised standards bodies

read, use and help develop, thus providing a level playing field in the long term.

It was also agreed that, ideally, national and international regulators should accept international standards as a basis for regulation, but that much work was still needed, by standardisers and regulators alike, before a point could be reached where conformity with a standard for a particular product or service would provide regulators with the necessary confidence to accept that standard in place of

separate regulation. ISO standards are currently referenced in regulations for which they provide the technical basis — as noted in the WTO's World Trade Report, 2005, which also underlined their role in reducing transaction costs and facilitating world trade. Just prior to the WPC, an International OGP Standards Development Workshop, hosted by the South African Bureau of Standards (SABS) was held in Johannesburg, aimed at increasing awareness and encouraging the participation of African stakeholders in international standardization. It featured speakers from OGP, Shell, BP, ENI, NETCO, ISO, the American Petroleum Institute (API) and the South African Bureau of Standards (SABS).

SUCCESS STORY – ADOPTION PROGRESS

API has now (February 2006) adopted back some 41 of the ISO standards shown above, CEN adoptions is now at some 82 of which 29 are common to all three organizations (see the full adoption list at info.ogp.org.uk/standards/). These numbers represent growing consensus in the oil and gas industry around the globe. With China, Brazil, Canada and others adopting the same ISO standards, we are progressing towards the vision:

Global standards used locally worldwide.

HARMONIZATION IN STANDARDIZATION BETWEEN EUROPE AND RUSSIA

OGP has participated to several meetings and conferences related to a harmonization in standardization between ISO, CEN and Former Soviet Union Countries helping them be a part of the international industry's way of creating global standards. The most promising international conference "European

Experience in Standardization and Technical Regulation" was organized in Brussels (10-12 October 2005) by the Russian Union of Industrialists and Entrepreneurs (RSPP) with the support of the President's Administration of Russia and UN European Economic Commission. This effort is within the framework of the "Road Map" of realization of Common Economic Space agreed at the EU Russian Summit in St. Petersburg June 2003. The main goal of the conference was the study of issues regarding the participation of industrial companies in the formulation of technical regulations and standards in the European

Union. RSPP has now decided to support the organization of Inter-Industry Council on Standardization in Russia for the oil and gas sector. OGP continues to support the formation of such a council as it is believed it would help to coordinate Russian efforts to become an active member and full partner in standards work, both at a regional European level and global level in ISO.

OGP Catalogue of International Standards for the oil & gas industries has been updated. See the OGP Standards website.

ISO & IEC standards can be obtained from your national standards body - check their website for electronic copies!

ISO TC67 goes to Mexico for its plenary meeting in Veracruz on 19th & 20th September 2006.

COST/BENEFITS FROM ISO STANDARDS

ISO/TC 67 has delivered in the last 5 years over 100 new ISO standards for materials and equipment covering all the main elements of an integrated oil and gas development: from the sub-surface safety valve, through the casing and wellhead, subsea systems, offshore platforms and pipelines to the surface facilities, including pumps, compressors, heat exchangers, valves, piping, etc. These are suitable for E&P, refineries, and petrochemical plants.

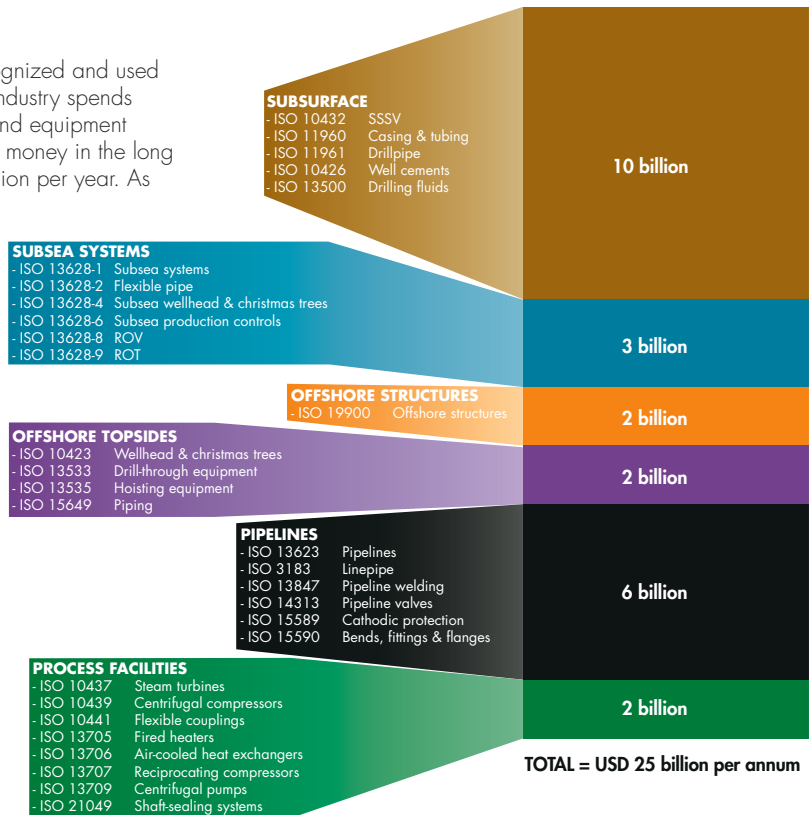
These standards will ensure sustainability to the oil and gas industry by providing a means to:

- carry out business efficiently and cost effectively;
- enhance technical integrity, thereby assuring no harm to people, assets or the environment; and
- transfer knowledge and share best practice.

These standards have been developed by, and are being recognized and used in, the 50 member countries of ISO/TC 67. The oil and gas industry spends at least USD 25 billion per year on procurement of materials and equipment covered by ISO standards. Applying common standards saves money in the long haul; saving as little as 1% can save the industry USD 250 million per year. As a global industry trading in international markets - and with international contractors, suppliers and customers, operating in a multitude of different regulatory frameworks - the oil and gas industry deserves International Standards that are relevant to a global market.

Capture the value added
Make use of well over 120 new ISO standards for your own benefit!

30 KEY ITEMS FOR ISO/TC67



Cost/benefit

Total worldwide industry expenditure covered by the 30 key ISO/TC 67 standards = US\$25 billion p.a.

If only 1% is saved by the use of the ISO standards, then:

Benefit = US\$250 million p.a.

Investment to achieve this is:

Cost = US\$10 million p.a.

Hence, as Return = Benefit/Cost:

Return = 250/10 = 25:1

OGP will hold a session on international standards in conjunction with the International Pipeline Conference to be held in Calgary, Alberta 25 September 2006. The session is being hosted by the ASME and the Canadian Energy Pipeline Association. Invitation is open to all sectors of the oil and gas industry.

ABOUT OGP



The International Association of Oil & Gas producers (OGP) encompasses most of the world's leading publicly traded, private and state-owned oil & gas companies, oil & gas associations and major upstream service companies.

OGP members operate in more than 80 different countries and produce more than half the world's oil and about one third of its gas.

The association was formed in 1974 to develop effective communications between the upstream industry and an increasingly complex network of international regulators.

An essential part of OGP's mission is to represent the interests of the upstream industry to international regulators and legislators.

OGP also helps members achieve continuous improvement in safety, health and environmental performance, and in the engineering and operation of upstream ventures. OGP's extensive international membership brings with it a wealth of know-how, data and experience. OGP committees and task forces manage the exchange and dissemination of this knowledge. OGP

additionally promotes awareness of Corporate Responsibility issues such as transparency of revenues and combatting corruption.

The OGP Standards Committee monitors, co-ordinates and influences the development of international standards to meet the needs of OGP members. There is close communication with national, regional and international standards bodies, particularly the API, CEN and ISO. Information on the activities of the OGP Standards Committee and other OGP committees, including freely downloadable publications produced by the OGP, can be accessed via the OGP website at www.ogp.org.uk.

OGP POSITION ON STANDARDS

OGP has been a catalyst in the industry's approach to standards and strongly supports the internationalisation of key standards used by the petroleum and natural gas industries.

OGP's position on standards is to:

- promote development and use of ISO and IEC international standards;
- ensure standards are simple and fit for purpose;
- use international standards without modification wherever possible;

- ensure visibility of the international standard's identification number, whatever the method of publication;
- base development of standards on a consensus of need;
- avoid duplication of effort;
- minimise company specifications which should be written, where possible, as functional requirements; and
- promote "users" on standards work groups.

The adoption of this approach is expected to minimise technical barriers to trade, enable more efficient worldwide operations, and improve the technical integrity of equipment, materials, and offshore structures used by the petroleum and natural gas industries.

THE INTERNATIONAL STANDARDS BULLETIN

This bulletin is developed by the OGP Standards Committee, which includes members from: API, BP, ConocoPhillips, China Petroleum Standards Committee (CPS), ENI/Agip, ExxonMobil, ISO, Energy Institute, Mærsk, Hydro, Petrobras, Petro-Canada, Qatar Petroleum, Repsol-YPF, Shell & Total.