

EXECUTIVE SUMMARY

A set of International Standards for a wide selection of vital oil & 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 1400 oil & gas industry experts from around the globe and an international review and approval process.

131 ISO standards have now been issued, including 19 revisions or new publications in 2007. A further 19 are planned for publication this year. The international oil and gas industry and national standardisation organisations

support these standards for worldwide applications. North and South American, Chinese, European and other standards bodies are now adopting them for regional and national use (see details inside). 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. For details on standards available from ISO TC67, see the wall-chart inside.



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

GULF STATES ADOPT ISO STANDARDS

The Gulf Standards Organization (GSO), as a sub-regional standardisation organisation is currently making significant efforts on the adoption of the latest revisions of International Standards (ISO/IEC) as Gulf and National Standards.



The Gulf Standards Committee for Oil & Gas Industry in the GCC Countries (GSO TC 7) is one of the GSO Technical Committees. The Committee objectives include the adoption of ISO standards, which satisfy the needs of the region's oil & gas industry, as Gulf Standards. The GSO TC 7 program covers standards under the scope of ISO TC67, ISO TC28 and ISO TC193. Working Groups for Gulf Standards development and adoptions of ISO standards have been established to facilitate this process.

The GSO TC7 work program for the year 2007 included adoption of 123 ISO standards. As an outcome of the Fourth Meeting of GSO TC7, which was held in Abu Dhabi on 28th & 29th January 2008, the committee announced the adoption of 83 ISO standards (in its original language) as Gulf Standards.

The 2008 work program of GSO TC7 includes the adoption of 94 ISO standards. These standards are currently under review and comments of the specialists from the GCC countries.

Workshops
OGP will hold two International Standards workshops in 2008: Beijing, 31 Oct - 1 Nov and Australia, the week of 3 November. See OGP web for details.

INTERNATIONAL STANDARDS WORKSHOPS

A workshop on International Standards Development was organised in **Tripoli, Libya** in November 2007 by the Libyan Petroleum Institute (LPI) and the Libyan National Centre for Standardization and Metrology (LNCSM), in association with ISO and OGP. Participants discussed how Libya and other North African countries could, through participation, positively influence the development of these standards and their national adoption. A roundtable discussion focused on the benefits and challenges faced by the Libyan oil & gas industry in the adoption and implementation of International Standards. The meeting concluded with the need for increased awareness and uptake of International Standards among national oil companies (NOCs), functional national mirror committees fostering national participation, and sustained participation in relevant standards committees. It was decided to increase cooperation among NOCs, LNCSM and LPI with international operators to advance towards the adoption and implementation of International Standards for the oil & gas industry.

Over 100 participants from the Balkan states as well as from Qatar, Russia, the Netherlands, France, Norway, Austria and Hungary took part in an OGP Standards workshop in **Bucharest, Romania** in February 2007, organised with Petrom and the Romanian Standards Association (ASRO). The overall objective was to provide regional professionals from oil & gas companies, national authorities, service providers, the supply industry and standardisation organisations with the opportunity to gain a broader understanding of European

and International Standards and related standards activities. More specifically, the Bucharest workshop examined how Romania and other countries in the region could benefit from a global approach to industry standards, and also help influence new standards as they develop.



Alka Sirohi, BIS, Director General

OGP organised a workshop on International Standards for the oil & gas industry in **New Delhi, India** together with Petroleum Federation of India (Petrofed) and the Bureau of Indian Standards (BIS) in April 2007. Ms Alka Sirohi, BIS, Director General, addressed the workshop. The workshop attracted about fifty interested members of the Indian oil & gas industry and some outside guests.

For more information see the OGP website.

ISO 19902 PUBLISHED

FIXED STEEL OFFSHORE STRUCTURES STANDARD

In December 2007 ISO 19902 was published. This is a major accomplishment. It covers the design and operation of fixed steel offshore structures, including traditional jackets and towers. Many of the requirements are also applicable to other forms of steel structure such as minimum platform concepts and jack-ups purpose built for production.



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
 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 (Rev)
 ISO 15544 Emergency response
 ISO 15663 Life cycle costing, Parts 1-3
 ISO 17776 Assessment of hazardous situations
 ISO 20815 Production assurance and reliability management (New)
 ISO/TS 27469 Method of test for offshore fire dampers (New)
 ISO/TS 29001 Sector-specific quality management systems (Rev)

ISO 3977-5 Gas turbines – procurement
 ISO 10428 Sucker rods
 ISO 10431 Pumping units (Rev)
 ISO 10434 Bolted bonnet steel gate valves
 ISO 10437 Special-purpose steam turbines
 ISO 10438 Lubrication, shaft-sealing and control-oil systems, Parts 1-4 (Rev)
 ISO 10439 Centrifugal compressors
 ISO 10440-1 Rotary-type positive-displacement process compressors (oil-free) (Rev)
 ISO 10440-2 Rotary PD packaged air compressors
 ISO 10441 Flexible couplings – special (Rev)
 ISO 10442 Integrally geared air compressors
 ISO 13631 Reciprocating gas compressors
 ISO 13691 High speed enclosed gear units
 ISO 13704 Calculation of heater tube thickness (Rev)
 ISO 13705 Fired heaters for general service
 ISO 13706 Air-cooled heat exchangers

ISO 13707 Reciprocating compressors
 ISO 13709 Centrifugal pumps (Rev)
 ISO 13710 Reciprocating positive displacement pumps
 ISO 14691 Flexible couplings – general
 ISO 15547-1 Plate & frame type heat exchangers
 ISO 15547-2 Braze aluminium platefin type heat exchangers
 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 (Rev)
 ISO/TS 24817 Composite repair of pipework
 ISO 25457 Flares details (New)
 ISO 28300 Venting of storage tanks (New)

ISO 13624-1 Marine drilling riser systems (New)
 ISO/TR 13624-2 Marine drilling riser systems analysis (New)
 ISO 13625 Marine drilling riser couplings
 ISO 19901-7 Stationkeeping systems

ISO 19900 Offshore structures - general requirements
 ISO 19901-1 Metocean design and operating considerations
 ISO 19901-2 Seismic design
 ISO 19901-4 Geotechnical and foundation design
 ISO 19901-5 Weight control
 ISO 19901-6 Marine operations (New)
 ISO 19902 Fixed steel offshore structures (Rev of ISO 13819-2)
 ISO 19903 Fixed concrete offshore structures
 ISO 19904-1 Floating offshore structures

ISO 3183 Steel pipe for pipeline transportation systems (Rev)
 ISO 13623 Pipeline transportation systems (Rev)
 ISO 13847 Pipeline welding
 ISO 14313 Pipeline valves (Rev)
 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
 ISO 21329 Test procedures for pipeline mechanical connectors
 ISO 21809-1 External polyolefin coatings for pipelines (New)
 ISO 21809-2 Fusion-bonded epoxy coatings (New)
 ISO 21809-3 Field joint coatings for pipelines (New)

ISO 13628-1 Subsea production systems
 ISO 13628-2 Subsea flexible pipe systems
 ISO 13628-3 Subsea TFL pumpdown systems
 ISO 13628-4 Subsea wellhead and tree equipment
 ISO 13628-5 Subsea control umbilicals (Rev)
 ISO 13628-6 Subsea production controls

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

ISO/TR 10400 Calculations for OCTG performance properties (Rev)
 ISO 10405 Care/use of casing/tubing
 ISO 10407-1 Drill stem design
 ISO 10407-2 Inspection and classification of drill stem elements (New)
 ISO 10414-1 Field testing of water-based fluids (Rev)
 ISO 10414-2 Field testing of oil-based fluids
 ISO 10416 Drilling fluids - lab testing (Rev)
 ISO 10417 Subsurface safety valve systems
 ISO 10424-1 Rotary drill stem elements
 ISO 10424-2 Threading and gauging of connections (New)
 ISO 10426-1 Well cementing
 ISO 10426-2 Testing of well cements

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 10426-6 Static gel strength of cement formulations (New)
 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 Drill pipe (Rev)
 ISO 13500 Drilling fluids
 ISO 13501 Drilling fluids - processing systems evaluation

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

ISO/TR 15464 Gauging and inspection of casing, tubing and line pipe threads (New)
 ISO 15546 Aluminium alloy drill pipe (Rev)
 ISO 16070 Lock mandrels and landing nipples
 ISO 17078-1 Side-pocket mandrels
 ISO 17078-2 Flow control devices for side-pocket mandrels (New)



Standards in **brown** issued in 2007
 Standards in **green** are a priority for 2008 issue
 Many of these standards are adopted by API, CEN and other recognised standards bodies

ISO STANDARDS ADOPTION IN RUSSIA

The OGP Standards Committee has participated in numerous meetings and conferences related to the adoption of ISO standards in Russia, including the last International Conference "International standardization – the way to raise effectiveness of the oil & gas industry" in Astrakhan, September 2007.

Adoption of the Federal Law on technical regulation opens new possibilities for the application of International

Standards in Russia and for reducing the gap with Russian Standards.

As part of a process of restructuring in Rostekhnregulirovanie (the national standardization body of Russia), a new

Technical Committee 023 "Material, technique and technology of oil & gas production", lead by Gazprom, has been established and the first meeting was held in Astrakhan, September 2007.

A new regional Interstate Technical Committee will also be created in the Euro Asian Interstate Council (EASC) on the basis of the Russian TC 023.

The 2008-2012 programme of TC 023 includes about 160 new national standards (GOST R) harmonised with International Standards.

The OGP Standards Committee will continue collaboration with the CEN/TC12/AH8 group "Harmonization in standardization between CEN and EASC" to support these activities in Russia and the CIS.

The first oil & gas industry ISO has now been identically adopted in Russia as GOST R/ISO 13706 "Air-cooled heat exchangers." This standard is now also available as API Std 661/ISO 13706 and in Europe as EN ISO 13706. Global adoption is growing.

The next international standardization conference will be held on 29 September – 3 October in Volgograd, Russia (see www.rgrt.ru).

QUALITY FOR OIL AND GAS SECTOR

The second edition of ISO TS 29001, the sector-specific quality management system (QMS)

specification for the petroleum, petrochemical and natural gas industries, was published in

ISO TC67 goes to China for its plenary meeting in Beijing on 29-30 October 2008

ISO TC193 Natural Gas goes to Kazakhstan for its plenary meeting in Astana on 15-19 September 2008

December 2007. This adds requirements to the generic ISO 9001 QMS standard to reduce risk, include industry specific needs and to increase confidence in supplier products and processes. The ISO TS was developed jointly by API and TC67, and is identical to API Spec Q1.

SUCCESS MILESTONES – ADOPTION PROGRESS

API have now (May 2008) adopted back some 60 of the ISO standards shown above. CEN have adopted 108. 54 are common to all three organisations. These numbers represent growing consensus 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

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

NEW STANDARDS FOR LINE PIPE

The new International Standard for line pipe ISO 3183 "Petroleum and natural gas industries – Steel pipe for pipeline transportation systems" was published in 2007 and replaces the former three part ISO standard of the 1990's.



Pipeline Construction in L 690 (X100) High Strength Line Pipe (Canada)

The new standard has been developed jointly by ISO and API working groups who successfully harmonised most ISO and API requirements. Representatives from 25 countries voted for this standard. API adopted ISO 3183:2007 as the 44th Edition of API Spec 5L. The API edition contains two additional informative annexes dealing with several regional deviations and API's proprietary monogram marking system.

This new comprehensive standard specifies requirements for the manufacture and supply of a wide range of carbon-manganese and microalloyed seamless and welded

steel pipes for use in pipeline transportation systems. The range of specified pipe strengths now includes three new high strength grades, L625 (X90), L690 (X100) and L830 (X120).

The new ISO 3183 adopted API's system of two product specification levels (PSL's). PSL 1 specifies pipe of a standard quality level which will assist distributors who maintain stocks of standard pipes which are regular call-off items. The higher level PSL 2 specifies pipe for more demanding services which require mandatory testing of chemical composition, notch toughness and strength properties. A series of options allows the purchaser of PSL 2 pipe to specify additional technical requirements, or more comprehensive testing, or to customise a specific order according to the intended application. ISO 3183 provides greater guidance in a single document than other line pipe standards and includes several optional annexes covering jointers, couplings, manufacturing procedure qualification and non-destructive testing or which specify detailed test requirements relating specifically to PSL 2 pipe requiring resistance to ductile fracture propagation for gas industry use, for sour service and for pipe ordered for offshore service. ISO 3183:2007 is intended for world wide application and features dual SI and USC units.

IEC 61892

IEC 61892 – "Mobile and fixed offshore units – Electrical installations" is a set of standards prepared by IEC TC 18 "Electrical installations of ships and of mobile and fixed offshore units". A total of



Sleipner (by Dag Myrestrand, Statoil-Hydro)

28 countries are participating in IEC TC 18. The Secretariat of TC 18 is held by Norway. The standards consist of 7 parts (all published by end December 2007),

- Part 1: General requirements and conditions
- Part 2: System design
- Part 3: Equipment
- Part 4: Cables
- Part 5: Mobile units
- Part 6: Installation
- Part 7: Hazardous areas.

The standards are intended to enable safety in the design, selection, installation, maintenance and use of electrical equipment for the generation, storage, distribution and utilization of electrical energy for all purposes in offshore units which are being used for the purpose of exploration or production of petroleum resources.

The standards incorporate and co-ordinate, as far as possible, existing rules and form a code of interpretation, where applicable, of the requirements of the International Maritime Organization.

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.

THE INTERNATIONAL STANDARDS BULLETIN

This bulletin is developed by the OGP Standards Committee, which includes members from: API, BP, CEN, ConocoPhillips, China Petroleum Standards Committee (CPSC), Eni, ExxonMobil, ISO, Energy Institute, Mærsk, Petrobras, Petro-Canada, Petropars, Qatar Petroleum, Repsol-YPF, Saudi Aramco, Shell, Total.

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

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.