



International  
Association  
of Oil & Gas  
Producers

# International Standards Bulletin

info.ogp.org.uk/standards/



## Executive summary

A comprehensive 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. They are developed using a consensus process that includes more than a thousand oil & gas industry experts from around the globe and an international review and approval process.

109 ISO standards have now been issued, including 18 revised or new publications in 2004. A further 13 are planned for revision/publication this year. The international oil & gas industry and national standardization organizations support these standards for worldwide ap-

plications. 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.

## OGP encourages Rosneft in Russian standards work

The Russian state owned oil company Rosneft, with the assistance of its subsidiary company RN-Teleport, arranged an open seminar followed by a round table meeting on the implementation of the new Russian Federal Law on Technical Regulating in Moscow, 1-2 December 2004. This subject is closely related to standards for the oil and gas industry. Key Russian official representatives were invited to speak at the seminar together with some OGP Standards Committee members.

The seminar was attended by 80 oil and gas industry managers and engineers, mainly from Gazprom, Rosneft, Lukoil, TNK-BP, Surgutneftegaz, Sibneft, Rostekhnadzor, GOST Interstandard, Vniimash and other Russian institutes and authorities.

Among the international oil companies present were BP, ENI, Hydro and Shell. Prior to this event, OGP arranged a workshop on international standards in Moscow in November 2003. The background for both of these events is the new approach to considering regulations and standards in Russia, where GOST standards are no longer mandatory state standards, but voluntary Russian national standards – a situation similar to that in many other countries.

Use of international standards from ISO and IEC will play an increasingly important role in the Russian industry. The organization of the standards development and maintenance work needs to change from previously being government funded and controlled to becoming driven by the Russian oil and gas industry needs. The present situation and problems were fully recognized by the speakers and attendees of the seminar. The Russian standards work lags behind the very active international work, and key stakeholders (eg Russian oil & gas companies and associated institutes) have not been involved to the degree they should be. This is now changing. The conclusions from the



round table meeting sounded clear determination towards the necessary changes.

Key Russian participants at the round table meeting, such as Gazprom, Rosneft, TNK-BP, Vniimash and others, prepared a set of recommendations which include objectives and priorities for the improvement of the standardization work in the Russian oil and gas industry. These recommendations take into account the necessity to provide resources to strengthen and coordinate the work, including effective planning and interaction with national, regional and international standardization and legislative bodies in the oil and gas industry.

The meeting also proposed the organisation of a new conference to be held in Moscow in 2005 to follow up the good results of these events and focus on the implementation of the recommendations. The determination shown by many participants bears good hope of continued cooperation between Russian companies and OGP Standards Committee members.

ISO TC67 GOES TO AFRICA and holds its plenary meeting in Pretoria 20-21 September 2005.

OGP WILL HOLD A WORKSHOP on international standards in conjunction with the World Petroleum Congress in Johannesburg, 25 September 2005.

# ISO Standards for use in the oil & gas industry

- ISO 10418 Basic surface safety systems
- ISO 10423 Wellhead & christmas tree equipment
- ISO 10434 Bolted bonnet steel gate valves (Rev)
- 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 H<sub>2</sub>S environments
- ISO 15156-2 Cracking-resistant steels and cast irons for use in H<sub>2</sub>S environments
- ISO 15156-3 Cracking-resistant alloys for use in H<sub>2</sub>S environments
- ISO 15138 HVAC offshore
- ISO 15544 Emergency response
- ISO 15663 Life cycle costing, Parts 1-3
- ISO 17292 Metal ball valves
- ISO 17776 Assessment of hazardous situations
- ISO/TS 29001 Sector-specific quality management system

- ISO 3977-5 Gas turbines – procurement
- ISO 10424-1 Rotary drilling equipment
- ISO 10424-2 Threading, gauging and testing of rotary connections
- ISO 10434 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 (Corr)
- ISO 13705 Fired heaters for general service
- 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 Brazed aluminium platefin type heat exchangers
- ISO 15649 Piping
- ISO 15761 Steel valves DN 100 and smaller
- ISO 16812 Shell & tube heat exchangers
- ISO 21049 Centrifugal and rotary pumps shaft sealing

- ISO 13819-2 Fixed steel offshore structures
- 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/TR 13637 Mooring MODUs
- ISO 13625 Marine drilling riser couplings
- ISO 19901-7 Stationkeeping systems

- 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
- 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

- ISO 3183 Linepipe, Parts 1-3
- ISO 13623 Pipelines
- 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
- ISO 21329 Test procedures for pipeline mechanical connectors

- 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 (Rev)
- 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 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 (Rev)
- ISO 11960 Casing and tubing (Rev)
- ISO 11961 Drillpipe
- ISO 13500 Drilling fluids

- 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 13678 Thread compounds
- ISO 13679 Connection testing
- ISO 13680 CRA seamless tubes for casing and tubing (Corr)
- ISO 14310 Packers and bridge plugs
- ISO 15136-1 Progressing cavity pump systems
- 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 2004  
 Standards in **green** are a priority for 2005 issue  
 Many of these standards are adopted by API, CEN and other recognised standards bodies

## Panamerican standards move

During the Rio Oil & Gas Fair and Exhibition in October 2004, ABNT, COPANT, ISO TC67 and OGP promoted the Panamerican Panel on Standardization for the Petroleum and Natural Gas Industries. The event was fully sponsored by Petrobras with technical presentations and contributions from Argentina (IRAM), Brazil (ABNT CB-50), Canada (CSA), Mexico (PEMEX), Norway (SN), USA (ANSI/API), Europe (CEN TC12) and the Panamerican Commission for Technical Standardization – COPANT itself.

The Panel discussed the opportunity to create a Committee inside COPANT to function as the mirror for ISO TC67 and as a forum for the petroleum

and natural gas standardization for the Panamerican countries. About 120 people participated at the event and the conclusion was that the creation of the forum inside COPANT looks opportune. Nevertheless it was pointed out that the new Committee should maximize its co-operation with the global ISO TC67 work program and avoid proposing additional standards and duplication of efforts with the international efforts.

ABNT intends to propose the creation of the new Committee inside COPANT during its General Assembly in May 2005. The proposal needs to be supported by two other Panamerican countries to come into force.

## IFAN update

### Tools for World Trade: Standardization – Awareness – Compliance

In November 2004 the International Federation of Standards Users (IFAN) held its conference in Amsterdam. A main theme was how to increase awareness of both published standards and of the standards development process. The second theme was to examine the relationship between standards, regulations and the compliance systems for these. The oil and natural gas sector came into the spotlight as an example where these relationships are being solidly worked. Speakers from BP, Cameron, the Norwegian Petroleum Safety Authority and Shell represented our industry. Compared with other sectors, for example the food sector, the oil industry can be characterized as being well on the way to having “one standard” being used worldwide. See [www.ifan.org](http://www.ifan.org).

## Success story – adoption progress

API has now (January 2005) adopted some 37 of the ISO standards shown above. CEN adoption is now at some 73, of which 23 are common to all three organizations. These numbers represent growing consensus in the oil & 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

## CAPTURE THE VALUE ADDED

Make use of well over 100 new ISO standards for your own benefit! For up-to-date news, see [www.TC67.net](http://www.TC67.net)

## OGP CATALOGUE OF INTERNATIONAL STANDARDS

for the oil & gas industries has been updated – see the ‘standards’ area of the OGP website



**International  
Association  
of Oil & Gas  
Producers**

## 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](http://www.ogp.org.uk).



## OGP position on standards

OGP has been a catalyst for change 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;
- 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.

## Cost savings by ISO standards

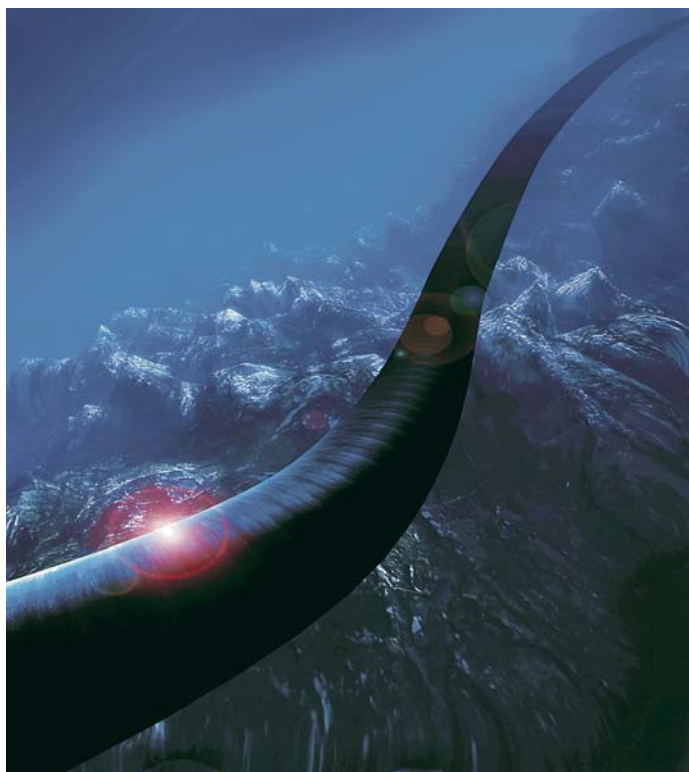
The Norwegian Ormen Lange and Langed field development project includes 480 km 30-inch and 6-inch pipelines from the offshore field to shore in Norway and a 1,200 km long 42-44-inch gas export pipeline from Norway to England.

The cathodic protection system for a major part of the pipeline systems has been designed in compliance with ISO 15589-2 "Petroleum and natural gas industries – Cathodic protection of pipeline transportation systems – Part 2: Offshore pipelines". This standard has adopted the current experience and knowledge within the industry with respect to consumption of sacrificial anodes on sub sea pipeline systems, and has in particular provided updated design factors concerning degradation rates for modern pipeline coating systems.

For the 700-km northern part of the Langed gas export pipeline, 2,000 tonnes of aluminium sacrificial anodes will be installed, while 720 tonnes will be installed on the pipelines from the offshore field to shore. This is approximately 50% of the anode tonnage required by previously applied NORSOK standards, and the costs for purchase and installation of anodes are reduced correspondingly. Total cost reduction is in the order of 20 million US dollars.

The combination of the new ISO standards for pipelines, ISO 13623 and the DNV 2000 pipeline design codes has resulted in a more accurate calculation of wall thickness and critical span lengths. This results in less steel and less rock-dumping operations along the pipeline. It has been estimated that these two elements have reduced the cost of the Ormen Lange pipelines by 60 million US dollars.

In summary, international standardisation work offers substantial returns on the efforts spent in making the ISO standards.



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

**STANDARDS CAN BE OBTAINED FROM YOUR NATIONAL STANDARDS BODY - CHECK THEIR WEBSITE FOR ELECTRONIC COPIES!**

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