

Offshore safety: Getting it right now and for the long term

Background

Almost three years ago the Macondo incident happened in the Gulf of Mexico.

OGP, as the global body of a responsible industry, was the logical organisation to help determine what could be done on an international scale to reduce the likelihood and impacts of well incidents. Therefore, to improve the industry's well incident prevention, intervention and response capabilities, we established the Global Industry Response Group (GIRG). Within months of Macondo, the GIRG was up and running.

It brought together more than 100 technical experts and managers from some 20 companies around the world. Given the urgency of the situation, these professionals soon organised themselves into three teams to focus specifically on prevention, intervention and response. Their aim was to deliver:

- Recommendations on how to improve well engineering design and well operations management. This would reduce the likelihood and impact of future well incidents.
- Ideas on how to improve capping response and readiness in the event of an incident and further study on the need for — and feasibility of — global containment solutions.
- Suggestions for more effective and fit-for-purpose oil spill response preparedness and capability.

Just over a year after Macondo, in May 2011, the GIRG reported its recommendations in a series of detailed reports. These were submitted to the European Commission and remain available on the publications page of www.ogp.org.uk

Since then, the upstream industry has worked hard to implement these organisational, structural and procedural improvements in full.

This bulletin outlines what is already in place as well as work in progress.

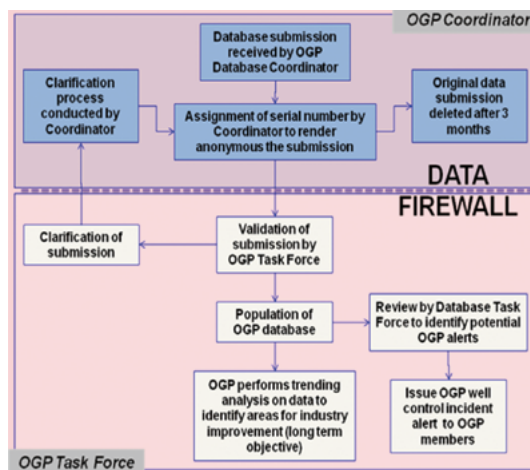
Prevention: improving well safety

After almost a year of in-depth analysis, the GIRG determined that in the field of prevention, more reliable well safety relied on renewed efforts in four key areas:

- Creation of an industry-wide well control incident database
- Assessment of blow-out-preventer reliability and potential improvements to this equipment
- Improved training and competences and more attention paid to human factors
- The development and implementation of key international standards pertaining to well design and well operations management

To help drive these improvements, OGP established a new Wells Expert Committee (WEC), which has since set up a dedicated task force for each of these priorities. Participants include 20 companies and organisations from 12 countries with operations that span the globe.

The first of these task forces has already made significant progress in sharing lessons learned from a variety of well control incidents, both historic and more recent. One alert has already helped to avert a new well control incident.



Industry-wide well control incident database graphic

The WEC's BOP Task Force has commissioned a third-party study to establish a consistent method for calculating a BOP system reliability level in order to facilitate comparative analysis. This involves working closely with regulatory bodies around the world to develop clear definitions and a consistent method for evaluating system reliability. Results will help in assessing the value of possible technological developments.

The Human Factors, Training Competence and Behaviours Task Force has become a unifying force in enhancing existing well control training, examination, certification and associated behavioural, competence assessment and assurance elements. All of this has involved close liaison with other organisations including Oil & Gas UK's Well Life Cycle Practices Forum, the International Association of Drilling Contractors, the Center for Offshore Safety in the United States, the International Well Control Forum, the Australian Petroleum Production & Exploration Association and OGP's own Safety Committee (which is developing with Aberdeen University a syllabus on non-technical skills for rig personnel).



The WEC's International Standards Task Force has established a prioritised list of key standards pertaining to well design and well operations management. Working with OGP's Standards Committee, it will consult relevant authorities around the world on developing such standards for global implementation. This will be consistent with the 'OGP interim solution' recently created to ensure that work on important global standards continues pending the resolution of a number of EU and US embargo issues.

Intervention: tangible progress

Macondo reinforced the necessity of being prepared — improvements to well integrity notwithstanding.

That was the essence of the GIRG's second set of recommendations. It led to the creation of the Subsea Well Response Project (SWRP). SWRP, a consortium founded by nine leading upstream companies, has now designed and built a comprehensive capping system — complete with a subsea dispersant capability — designed for use in waters as deep as 3,000 metres.

Since early this year, the first of the four capping and dispersant capabilities has been available to the global industry via subscription to OSRL, the world's leading oil spill response organisation.



The intervention system capabilities consist of four capping stack toolboxes and two subsea dispersant hardware toolboxes:

The four capping systems, including two 18 3/4" 15k stacks and two 7 1/16" 10k stacks with ancillary equipment are designed to a standard configuration, with common pipework, valves, chokes and spools. This ensures maximum adaptability to every situation, wherever and whenever the system might be needed.

The subsea dispersant hardware toolboxes contain equipment for clearing debris, closing existing BOPs and the subsea application of dispersant at a flowing subsea BOP.

Subsea dispersant capabilities will create safer surface working conditions for response personnel, allowing a well to be shut-in while at the same time accelerating dispersion of oil in the water column.

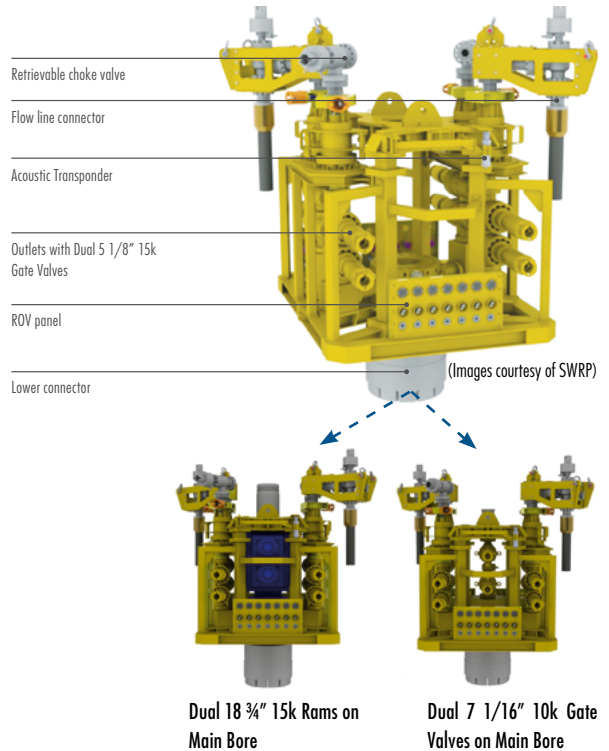
The entire system is designed to be readily transportable by sea and/or air from one of the four OSRL-operated strategic base locations in Europe, Africa, South America and Asia Pacific.

Common 15k System

The integrated intervention system includes four capping stack toolboxes:

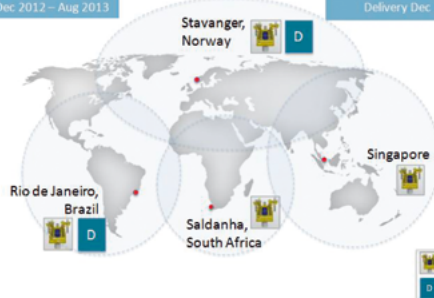
2 x full bore 15k capping stacks

2 x reduced bore 10k capping stacks



4 x capping stack toolboxes
(2 x 10k / 2 x 15k)
Delivery Dec 2012 – Aug 2013

2 x subsea dispersant hardware toolboxes
Delivery Dec 2012



Map of four storage locations

Oil spill response: a united effort

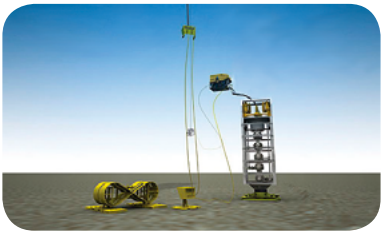
Macondo taught the industry a great deal — not least about improved ways to deal with a major oil spill.

To consolidate this learning and to stimulate new research, the GIRG recommended the formation of an Oil Spill Response Joint Industry Project (OSR-JIP). It now consists of 18 member companies.



Together, they are closely cooperating with key stakeholders in Europe and around the world. These include the European Maritime Safety Agency, SWRP, the American Petroleum Institute (API), the Marine Spill Response Corporation and a number of OGP and IPIECA standing committees and related JIPs.

For example, building on the Macondo experience, one of the OSR-JIP's key missions is to optimise the use of subsea dispersant injection. This involves liaison with API's Joint Industry Task Force and an OGP-managed JIP on Arctic Oil Spill Response Technology. In both cases, the aim will be to ensure maximum effectiveness with minimum use of dispersants.



Subsea dispersant system (Image courtesy of SWRP)

Equally important is the consideration of in-situ burning of spilled oil at sea. This work involves summarising existing research on burn residues and atmospheric emissions to form the basis of impact assessment protocols in specific locations and conditions.

The OSR-JIP is also preparing sets of recommended practices — RPs — on environmental risk assessment and response resource planning for offshore installations. In producing these RPs, which will be published early in 2013, the OSR-JIP aims to satisfy the intent of the risk assessment practices espoused in COM (2010)560 and COM(2011)688.

Ultimately, the OSR-JIP aims to re-write the existing 17 volumes of good practice guidance in oil spill response and add to this body of knowledge with another eight volumes on topics that include in-situ burning, satellite observation and the tracking of subsea plumes using 3D modelling techniques.

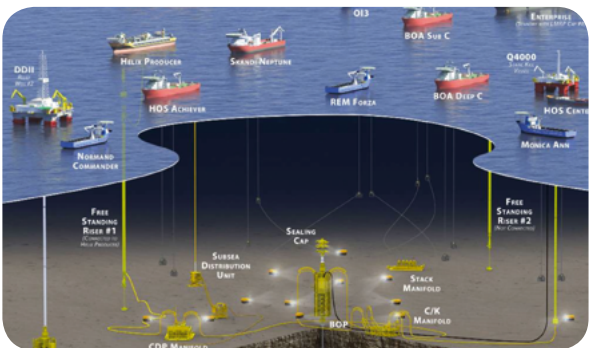
The OSR-JIP has completed several of these documents, including work on sensitivity mapping and responder health and safety.

Transcending companies and borders: Mutual Aid Agreements

Just as the environment is boundless, so should be the industry's response to any threat to that environment in the form of a major oil spill. That is why one of OGP's top priorities has been to build a framework that will assist members in participating in local, regional or global mutual aid efforts.

Work on this is underway. By the end of March, 2013 a dedicated group, working to agreed principles for responding and assisting operators, is aiming to have such a proposal in place.

This is involving coordination among several stakeholders including SWRP, IPIECA, API, APPEA and several service companies.



Mutual Aid (Image courtesy of BP)

Key lessons learned & applied

The upstream oil and gas industry, as typified by OGP members, is in the process of transforming itself. By implementing the GIRG recommendations we are significantly improving the ability to prevent major offshore incidents.

And while recognising that prevention naturally yields the most effective outcomes, we have also built and put in place the equipment needed to cap an uncontrolled well wherever in the world it might occur.

Our ability to deal with any spill that occurs from such leaks is also continuing to improve thanks to active international coordination and cooperation among a growing stakeholder base.

The drive for even greater progress remains.

Appendix 1: Recent OGP reports relevant to offshore safety

- Standards and guidelines for drilling, well constructions and well operations
- Recommendations for enhancements to well control training, examination and certification
- Guidance note on subcontractor management in geophysical operations
- Oxy-arc underwater cutting Recommended Practice
- Managing oil and gas activities in coastal areas — an awareness briefing
- Cognitive issues associated with process safety and environmental incidents
- Safety & health performance indicators — 2011 data
- Offshore environmental monitoring for the oil & gas industry
- Process safety: recommended practice on key performance indicators
- Human factors engineering in projects

All are available from the publications section of www.ogp.org.uk

Appendix 2: Further information is available from the following websites:

<http://www.ogp.org.uk/committees/wells/>

<http://subseawellresponse.com>

<http://oilspillresponseproject.org>

About OGP

OGP represents the upstream oil & gas industry before international organisations including the International Maritime Organisation, the United Nations Environment Programme (UNEP), Regional Seas Conventions and other groups under the UN umbrella. At the regional level, OGP is the industry representative to the European Commission and Parliament and the OSPAR Commission for the North East Atlantic. Equally important is OGP's role in promulgating best practices, particularly in the areas of health, safety, the environment and social responsibility.

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