Oil & Gas UK
the voice of the offshore industry

Well Life Cycle Integrity Guidelines

Oil & Gas UK's Approach

Mike Richardson **(Senergy)**

Well Integrity Forum 6 June 2012

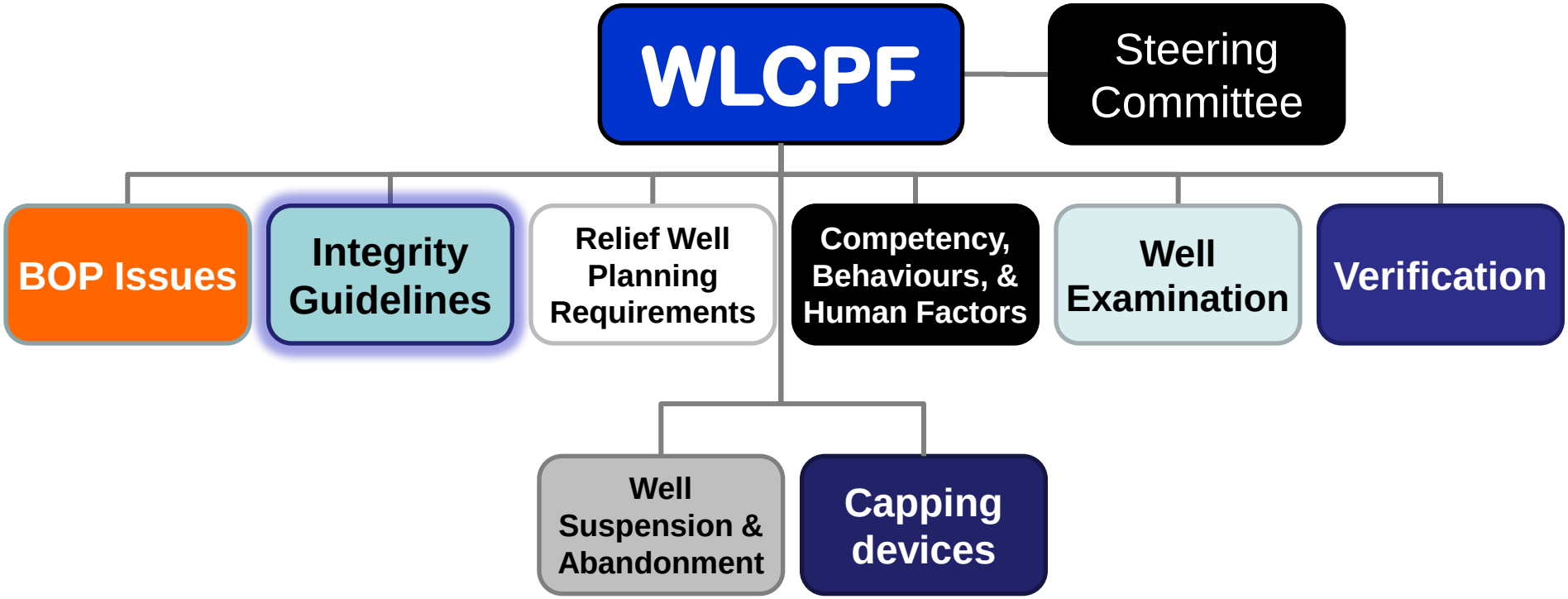

ELGIN
WHP A
22/30c

- Well Life Cycle Practices Forum
  - Workgroups and 2011 work
  - Workgroups and 2012 work

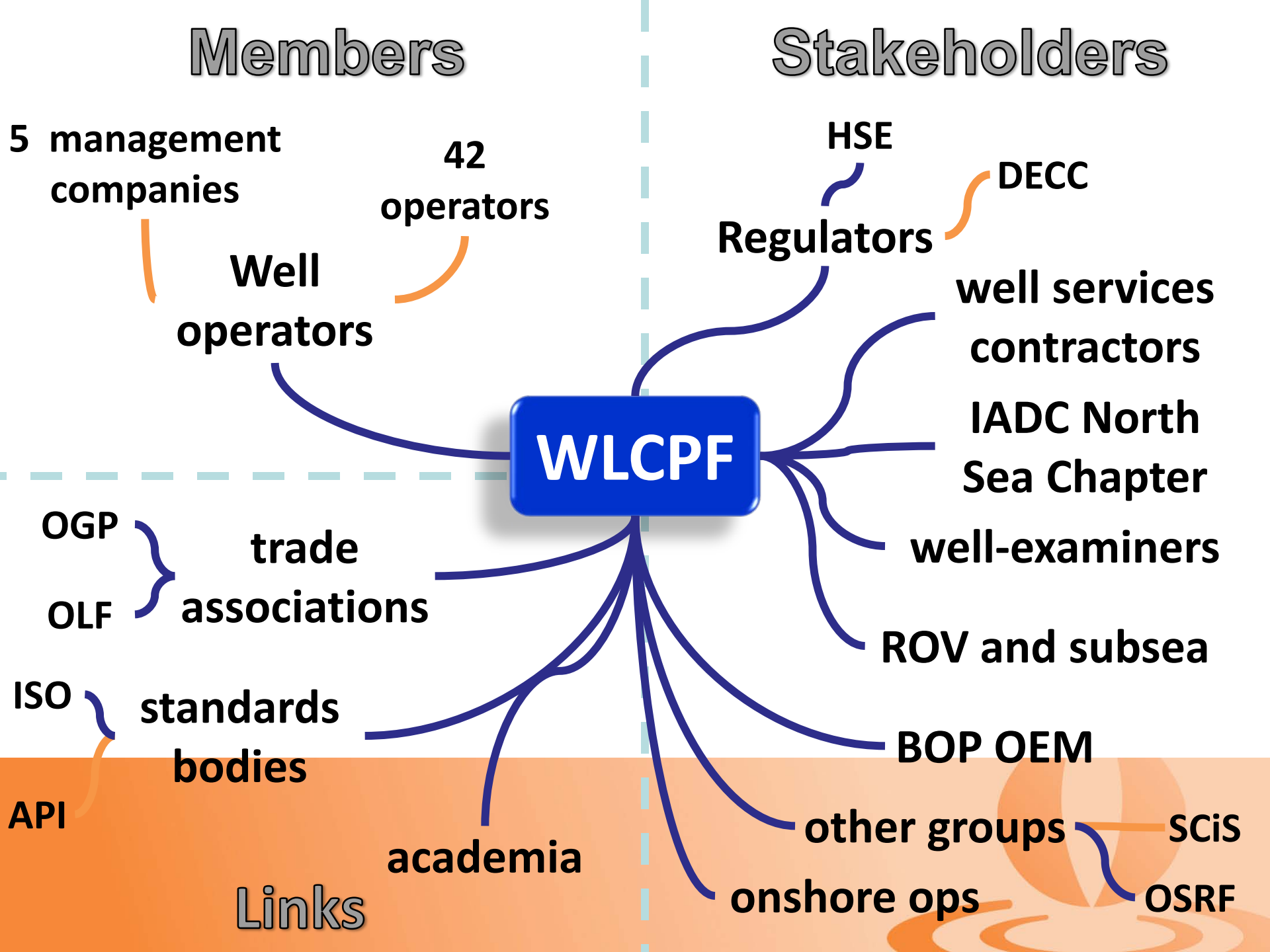
- Well Life Cycle Integrity Guidelines
  - SI 913 (Design & Construction Regulations)
  - Guidelines content
  - Next steps

Agenda

Well Life Cycle Practices Forum
-permanent industry forum in O&GUK



Well Life Cycle Practices Forum Structure and Workgroups


Members
Stakeholders
5 management companies
42 operators
Well operators
HSE
DECC
Regulators
well services contractors
IADC North Sea Chapter
WLCPF
well-examiners
OGP
OLF
trade associations
ROV and subsea
ISO
standards bodies
BOP OEM
API
other groups
SCiS
academia
onshore ops
OSRF
Links

Workgroup members:-

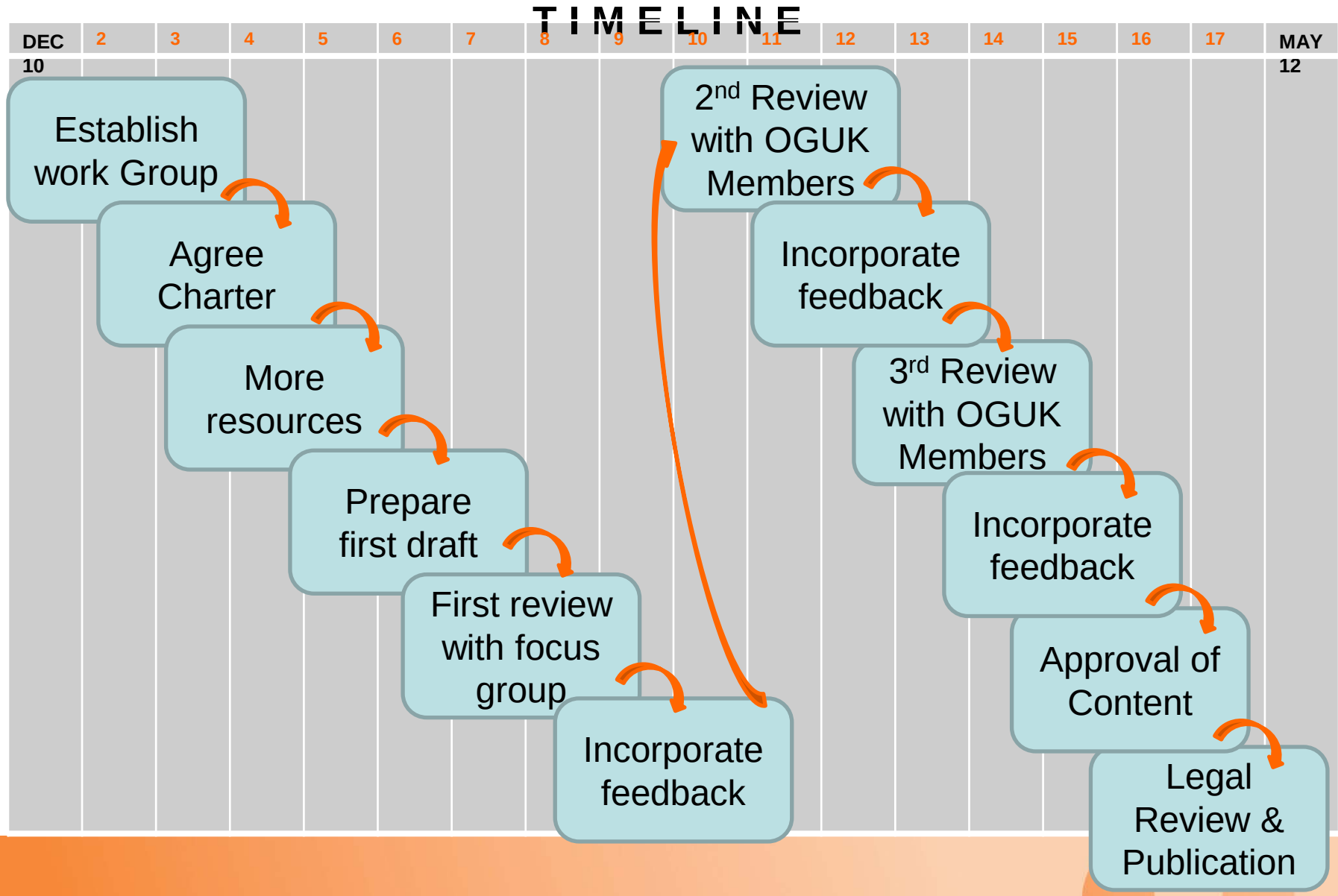
OGUK, BP, Senergy, Canadian Overseas Petroleum, HSE, Centrica, Nexen, Chevron, Total, Perenco, Shell, Talisman, Taqa, Baker Hughes (WSCF rep), Schlumberger (WSCF rep), Archer & Transocean (IADC rep)

Other Companies who have input to the Guidelines:-

Apache, Chris Dykes, Chryasor, CNR, COP, EOG, ENI, Expro, Fairfield, First Drill, GDF, Green Park, Maersk, Marathon Norge, Noble, NRG, Red Spider, Star Energy

Other Industry Bodies involved:-

DECC, OGP, UKOOG, ISO, OLF and COIN



Well Integrity Guidelines Timeline

Part IV, Wells, General Duty:-

The well-operator, shall ensure that a well is so designed, modified, commissioned, constructed, equipped, operated, maintained, suspended and abandoned that –

(a) so far as is reasonably practicable, there can be no unplanned escape of fluids from the well; and

(b) risks to the health and safety of persons from it or anything in it, or in the strata to which it is connected, are as low as is reasonably practicable.

What The Guidelines Cover

- Structured to help companies better understand their obligations under the UK regulations
- Start with philosophy of well control, integrity and barriers
- Recommendations & examples
- Some elements educational
- **THE FULL WELL LIFE CYCLE**

Chapters

- **General**
  - Legislation, barriers, pressure testing, MoC

- **Well Life Cycle**
  - Well design and operations planning – risk assessment
  - Drilling
  - Well testing
  - Completion
  - Commissioning – includes handover information
  - Operate and maintain – annulus management, response to failure, conditions that can impact well integrity
  - Intervention and workover
  - Suspension and abandonment -ref existing guidelines

•Guidelines applicable to all onshore and offshore wells in UK.

•First issue focussed on documenting existing Industry good practice for typical wells:-

- Reference existing standards, specifically Norsok, ISO, API.
- Address the findings from the Montara and Macondo
- Cover all existing HSE Guidance relating to well integrity (e.g. HSE well construction standards.)

•Each section includes guidance on roles and responsibilities

Content of the Well Life Cycle Integrity Guidelines

- The style and content of the Guidelines provides useful information and encourages discussion.

- The first issue intended to cover the majority of “conventional” well types and well operations.

- Operators can elect **not** to follow the Guidelines **but** should be able to justify why they have decided not to - ALARP

The Guidelines Content

- Complete legal review of Rev0.
- Obtain OGUK Board approval to publish.
- Guidelines available via Oil & Gas UK website
- Support communication of the Guidelines.
- Obtain feedback on the Guidelines.
- Agree what activities should be covered in Rev1 and initiate work on Rev1 for issue in 2013.
- WIF and WLCIG joint working ?

Next Steps

SUPPLEMENTARY MATERIAL

TYPICAL ISSUES

	Current wording	Suggestion from feedback
1)	**Barriers for Coil tubing operations (Section 10.6.2)**	
1137	When using coiled tubing on a live well, check valves (non-return valves) should be used in the bottom hole assembly to prevent backflow, unless operational requirements such as reverse circulating preclude their use. There are two forms of check valve: dart type; and flapper type.	In other Sections, barrier testing guidelines are provided. NRVs in coiled tubing operations are possibly as vulnerable as float valves in casing service. Guidelines for testing CT NRVs should be added.
xxx		It may be useful to remind the user that activating a shear sub to release the BHA effectively removes the NRV barrier(s).

TYPICAL ISSUES

	Current wording	Suggestion from feedback
1)	**Inflow testing of DHSV's**	
1021	Flapper type valves can only be considered as a lower barrier and only then if a positive differential can be maintained to "hold" the valve shut. A DHSV cannot be used as an upper barrier because it cannot be inflow tested to prove its integrity.	A DHSV can be inflow tested by setting a lower plug and then pressuring up on the tubing and bleeding off above the DHSV while monitoring and comparing against the volume required to pressure up. This requires that pressure is trapped but is a common procedure to test DHSV and hanger plugs from below.
1)	**Surface safety valves for gas lift systems**	
802b	Alternatively [to a subsurface SSV] this may be an actuated valve that is buried in the VR plug profile in the body of the wellhead body.	Paragraph 802b was requested by 2 companies and 2 others had comments on this subject

TYPICAL ISSUES

	Current wording	Suggestion from feedback
1)	**Re-instatement of barriers on subsea wells**	
974	If there are not two effective well barriers in place the well operator should undertake remedial work to re-instate at least two effective barriers at the earliest opportunity, but no later than the next scheduled test defined in the performance standard. In addition the well operator should undertake a risk assessment to determine the way forward for the well until the remedial work has been completed.	Re-instatement of barriers. We understand the logic of repairing failed barrier. In a surface environment this can be done more easily due to direct access to valves on e.g. dry Xmas Tree. **For our subsea wells**, the testing frequency is as per DHSV, thus it may be impractical to arrange a repair in time to respect clause 974! We therefore suggest re-wording stating that "… subsea well barrier failures shall be in line with WIMS" !

TYPICAL ISSUES

	Current wording	Suggestion from feedback
1)	**Testing of DHSV's on subsea wells**	
969	DHSV should be tested at least every six months, unless local conditions or documented historical data indicate a different testing frequency [Ref 74; ISO 10417].	DHSV test frequency of at least every 6 months. Our current testing frequency is 12 months or more. Therefore our acceptance comes down to a production deferral and an increased risk of issues opening old wells (given that they don't have pressure equalising DHSV's). We suggest adding flexibility in this statement: "DHSV's should be tested on a regular basis. Typical 6 months testing interval is common".

OSPRAG Recommendation: The WLCPF will form a project team with at least one dedicated resource to compile a series of well life cycle integrity guidelines similar to those prepared for the “Guidance on Suspension and Abandonment of Wells / North Sea Well Abandonment Study”.

Work Group Charter: Rev0 UK Oil and Gas Well Life Cycle Integrity Guidelines issued for comment by September 2011 and finalised by December 2011. The Guidelines will cover the full well life cycle and will reference existing relevant Industry guidelines with the intent of avoiding duplication. The Guidelines will be reviewed by UK Oil and Gas members and networked with the other sub teams, work group 5 (well decommissioning), UK Health and Safety Executive and UK Onshore Operators Group (UKOOG) before issue. Rev0 will be based on existing material and will be structured such that future revisions can address gaps and capture improvements, including those arising from work undertaken by other sub teams. Well integrity performance metrics and guidance on standard approaches to typical well barrier failures may be considered for inclusion in Rev0. The Guideline language will be based on the HSE document “Writing for HSE” and follow the style of the Oil and Gas UK Well Abandonment Guidelines.

- Oil & Gas UK established the Oil Spill Prevention and Response Advisory Group (OSPRAG)
- provide a focal point for the sector’s review of the industry's practices in the UK, in advance of the conclusion of investigations into the Gulf of Mexico incident.
- OSPRAG was chaired by James L. House, regional vice president and managing director of Apache North Sea Ltd, and comprised senior representatives from all sides of the industry, the relevant regulatory authorities and trade unions.
- The Group provided direction and support to four specialist review groups whose remit was to focus on:
  - technical issues including first response for protection of personnel;
  - oil spill response capability and remediation including national emergency response measures;
  - indemnity and insurance requirements;
  - pan-North Sea regulations and response mechanisms.