

NATIONAL COMMITTEE OF
URUGUAY
PRESENTS

WPC EXPERT WORKSHOP

Best Practices in Offshore Exploration and Production in Times of Crisis

ROUND TABLE


Best Practices in Offshore Exploration and Production in Times of Crisis

October 1st, 2015 | Montevideo, Uruguay




ORGANIZE:

 **arpeL** 50th ANNIVERSARY
REGIONAL ASSOCIATION OF
OIL, GAS AND SERVICES SECTOR COMPANIES
DE LA AMÉRICA DEL SUR

 **World Petroleum Council**

SUPPORTED BY:

 **ANCAP**

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A) Lessons Learned from the Process of Organising the Workshop

The low oil prices scenario was identified by the organizers as the largest risk to ensure an ample and diverse participation, particularly given the event was focusing on offshore activities.

As the deadline was approaching, and realising that the participation (either from attendants or from experts from offshore regional producing countries) would be lower than anticipated, the Special Co-ordination Committee made three important decisions that proved to support the ultimate success of the event:

1. Remove the registration fees and make the invitations even more selective ("by invitation only") to ensure participants were adequate to the event's objectives. ARPEL was in charge of absorbing 59% of the organisation costs; the remainder was covered by the sponsors as indicated above
2. Change the original name of the event, which became a "Round Table" instead of "Regional Workshop". This implied no changes on the original objective of information/experience exchange but rather on the dynamics of the discussions.
3. Recommend a new discussion dynamics through a high level debate between the Speakers and the Experts Commentators as explained in Part 1 - A) above.



PART 1 – CONTENT & OUTCOMES

B) Workshop Overview

B.1. Introduction

Following the increased energy demand and technological innovations, oil and gas offshore drilling activities extended and moved into deep and ultra-deep water areas. Almost a third of the oil and a quarter of the natural gas consumed in the world come from underwater areas. Forecasts show a continuing growth of production in traditional offshore regions and significant development in new areas.

Since the early 70's, offshore oil and gas operations have become increasingly more complex and regulated and international standards and recommended practices evolve hand in hand with this complexity as much with stakeholder expectations.

The oil price bonanza of the last 5 years and the increased demand encouraged the development of frontier projects in Latin America and the world, seeking for offshore reservoirs, even in countries with little history on hydrocarbon production (or with no history at all!!!)

The start of the oil price slump in 2014 impacted offshore activities in assorted ways; from E&P investment cuts to the re-writing of contracts, the re-definition of portfolios and the search for innovation and technology as alternatives for companies to remain economically viable in the short term and sustainable in the long term.

In this context and fulfilling their missions, WPC and ARPEL joined efforts to develop a forum to exchange experience/information. The World Petroleum Council and ARPEL have been fostering this cooperative approach among its members and other stakeholders since their creation, supporting them to remain afloat or even emerge stronger after each economic downturn as well as aiming to find sustainable solutions to key energy issues.

B.2. Objective of the Event

The Regional Workshop aimed at the exchange of best operational and management practices associated to offshore exploration and production in times of crisis. The scope of the topics included areas linked to the value chain as well as topics associated to operational excellence.

B.3. Key Topics

The Regional Workshop addressed issues related to:

- Economic viability and efficiency: viability of offshore plays in forecasted oil and gas price trends, feasibility analysis of offshore projects and scale management strategies, technology and innovation as vehicles to improve offshore efficiency.
- Deep-water challenges: Frontier deep-water drilling challenges, host country requirements for successful deep-water offshore development.



- Operational excellence - Best practices: The use of project management skills to overcome offshore development challenges, increasing efficiencies in construction, inspection, repair and maintenance; enhanced integrated field development, asset management and operational excellence strategies; well integrity, and international approach to operating standards in the offshore E&P sector.

C) Key Discussions and Outcomes

C.1. A Note on the Price of Oil

Out of 890 billion dollars that were to be invested for oil and gas exploration and production projects in 2015, it is estimated that 250 billion will be cancelled due to low oil prices. Companies' guidelines are clear: reduce costs and do more with less. However, the challenge to companies is to maintain unchanged the high priorities on safety management, spill prevention and personnel training .

Participants agreed that the oil industry frequently manages uncertainty and the oil price is one of the many risks to manage. However, although industry is perfectly aware of the cycles of oil and gas prices (i.e., prices periodically going up and down), it also acknowledges the essentiality of oil and gas for -present and future- modern life.

Having said the above, some speakers indicated that low oil prices increase uncertainty and may be one of the highest risks that industry will face if lay-offs are the main cost control measure. The reason is the -future- difficulty to recover the expertise of experienced professionals and to gain the confidence of young professionals in our industry as an attractive sector to work for.

In these times of uncertainty the exchange of information, knowledge and perceptions among knowledgeable professionals through a venue such as this Round Table was most valued by company executives.

C.2 Exploration Challenges and Opportunities for Best Practices

It was indicated that a safe and efficient deepwater exploration well starts with the selection of a rig adapted to the environment specificities and that there were three critical aspects to consider:

- Rig marine capabilities
- Well control equipment (i.e., blow-out preventer)
- Riser system

The reliability of equipment/services was highlighted as a key factor to improved economics during drilling. Two facts are pushing for the selection of highly reliable and efficient equipment and services to avoid losing time and -thus- increase efficiency:

- Technical impact: the wellbore stability (hence drilling and casing running operations) deteriorates with time, so it is critical to avoid keeping the well open for no reason
- Financial impact: most of the services hired for a drilling operation are on daily rate (rig, logistics support, directional drilling services, etc.) and the current running daily rate of a deepwater operation ranges from 800 to 1,200 kUSD/d

It was pointed out that the evolution of offshore E&P into deeper waters has increased the number and complexity of the challenges faced by the oil industry. Among these challenges, the following were highlighted:



- Search for further integration of technology on a massive scale
- Need for deeper understanding of the fundamentals as a way to support systems integrity (structures, materials, soils, etc.)
- Assurance of maximum reliability to deliver long term operability
- Development (or procurement) of technologies and their qualification to directly support business needs
- Improved management of the integrity with a special focus on risk management and personnel training and competence

Standardisation of exploratory activities was suggested as an alternative to improve efficiency during well construction and, during the discussion, this was considered from different angles.

- On one side, the processes are standardised by most operators; for example, well engineering and design of the, risk assessment, etc.. This is beneficial since it reduces approval time, training needs of the projects, among other benefits.
- From the technical side, although it was agreed that international standardisation would be a plus for improved efficiency, there were some challenges identified that would hinder the accomplishment of the full benefits. Some examples were shared to validate this approach:
 - Technical reasons: for example, the material of the pipes utilized may be adapted depending on the area/reservoir
 - Regulatory reasons: sometimes local content requirements prevent the operators to acquire material from other countries so the operator has to adapt (and thus cannot standardise)
 - Financial reasons: there is a risk of having only one provider which may turn this into a big issue such as market control and high prices

Last, but not least, a note was made to highlight the fact that oilfield service companies also need to align with industry objectives with regards to issues like technology, training, risk management, logistics and supply chain management, etc. in order to reduce downtime and -thus- enhance efficiency.

C.3. Alternatives to Improved Efficiency - Technology and Innovation

Today's industry environment is forcing operators, suppliers, and other service providers across the E&P industry to overcome technical and commercial challenges by transforming their performance.

The low oil and gas prices scenario represent an opportunity to learn and to do things differently, i.e., more efficiently, and to accomplish this, industry has four main challenges:

- The extension of technical performance with game-changing technology. In this regards, research and engineering accomplishments should be fast-tracked to industrialize the technology; to achieve this, multiple partners should work in parallel.
- The adoption of new ways of working to maintain reliability at adequate levels.
- Become more efficient by -e.g.- optimizing assets efficiency and people's productivity enhancing the use of automation
- The alignment of technical and commercial interests across the E&P value chain.

The benefits of overcoming these challenges are expected to include:

- Lower operating costs
- Optimized rig-site and support personnel
- Improved health, safety and environment performance and service delivery



- Successful execution, ahead of plan
- Lower Non Productive Time
- Reduced rig-site personnel

The case of technology as an alternative to weather the crisis and as a driver to renewed focus to evolve and improve was made. Other speakers built upon this idea to describe the experience on programs based on the integration of people, processes and technology that leverage the relationship between the core and support areas, i.e., exploration, production, drilling, logistics and supply chain management, maintenance and inspection and subsea engineering. This approach is usually known as Integrated Operations Management and the experience shows that these programs have increased the accuracy and speed of the decision making process with more precise information available and the right interaction among the specialists. The overall result is the increase of production efficiency, a reduction in operational costs and the optimisation of CAPEX.

However, some warnings were made to ensure that integrated operations strategies function as a major enabler in a low oil price environment; they must be engineered to include:

- clear deliverables with realistic financial targets,
- a transition management plan to define the people transition process, including communication strategies, and
- smart processes to make best use of technology

To enable the continuous improvement of the results obtained from an Integrated Operations Management approach, the following issues should be carefully addressed:

- Transition Management - The greatest challenge that most operators face in implementing a successful integrated operations strategy is effective people engagement. Many staff will not have considered the consequences of the digital oil field such as increased collaboration, remote working, information sharing and “out of hours” decision making.
- Training - This is a key component if all integrated operations projects and should be planned carefully. Once the project is established, the training requirements shift toward design and operational requirements. These may cover a broad spectrum of knowledge depending on the scope of the areas
- Continuous Maturity and Performance Assessment - It is vital to monitor the actual maturity level of integrated operations at various intervals to evaluate the progress and setup the actions to correct any deviations from its course.

C.4. Safety and Environment - A Constant Concern Despite the Price of Oil

The key environmental and safety issues to be considered in the risk assessment of offshore E&P activities include loss of control of the well and the access to capping stacks.

The implementation of appropriate safety and environmental management systems (SEMS) is a must, regardless the price of oil. SEMS represent a key mechanism to reduce the likelihood of major incidents and was highlighted as a way of avoiding the loss of: tens of billions, the license to operate ... and even the company!

SEMS delivers safe and reliable operations, i.e., the necessary operational integrity, if effectively implemented. The key elements of any SEMS a company should have include: technical standards, safe work practices and operating procedures; personnel skills and knowledge and operating processes that ensure efficient decision making. When SEMS is combined with a good safety culture it is the best barrier to a major incident.



The contractor/operator interface was -again, and in this context- highlighted as a particularly important issue in offshore operations. Operators need to manage their relations with the contractors, e.g., explain what their expectations are with regards to safety management and agree on the decision making process. And this process is further extended between the contractors and the sub-contractors.

Once standards and procedures are in place (tested, audited, checked, etc.) the focus needs to be on leadership, on site coaching, communications and the search for continuous improvement. Some practical examples on how to address this were shared:

- Since large accidents seldom happen, simulators should be used for training on limit situations as an alternative to experiences (i.e., real accidents)
- Take advantage of experienced about-to-retire professionals to develop competency coaching to actually see young generations at work (on site!!!) and feedback their managers on the training required
- The feedback discussions of the audits results with the upper management is the most important part of the audit as a means to secure continuous improvement of the SEMS through leadership.
- An interesting and productive approach to address the regulators/operators interface on safety/environmental issues in times of crisis is that regulators interact with the operators at the leadership level to make clear the expectations of the former. By the same token, the leaders of the company should also explain what they are doing, how they are monitoring their management systems and what is the actual performance of their actions.

In this regard, it was highlighted the importance of the role of associations like ARPEL (www.arpel.org), API (www.api.org) and IOGP (www.iogp.org) to share knowledge as a means to support continuous improvement of safety and environmental management and performance.

D) Contacts

The list with the details of the speakers, expert commentators, attendees and organisers is included as Appendix I of this report.

E) Supporting Documents and Presentations

The final Programme of the event is in Appendix II

The Curriculum Vitae of the Speakers can be found in Appendix III.

Presentations made at the event (only of those who officially agreed that they be shared in the Internet) can be found at [Specific WPC URL ADDRESS\(1\)](#)

Some pictures of the event can be found at [Specific WPC URL ADDRESS\(2\)](#)



Appendix I - List of Participants

The total number of participants was 84 with the following distribution by country:

- 7 from Argentina: YPF, Upstream Services, Pluspetrol, Imagina, IAPG, Enap Sipetrol Argentina
- 2 from Bolivia: YPFB
- 7 from Brazil: Accenture, Embraer, IBP, Petrobras, Schlumberger, Total
- 3 from United States: Exxon, Schlumberger, Center for Offshore Safety.
- 1 from England: WPC
- 2 from Jamaica: PCJ
- 61 from Uruguay: ALADI, ANCAP, CAF, National Direction of Energy, National Direction of Mining, Canadian Embassy, British Embassy, KPMG, Montevideo Gas, Nautimill, Petrobras, Schuepbach Energy, Union Oil & Gas Group, Uruguay XXI, ARPEL, and WPC



Appendix II - Program of the Event



PROGRAM

13:30 - 14:00	PARTICIPANTS REGISTRATION
14:00 - 14:15	OPENING REMARKS José Coya President - ANCAP Jorge Ciacciarelli Executive Secretary - ARPEL Andrés Tierno Abreu President of the Uruguay National Committee - World Petroleum Council
14:15 - 14:45	KEYNOTE SPEECH CHALLENGES AND PROSPECTS OF THE OFFSHORE EXPLORATION AND PRODUCTION Pierce Riemer Director General – World Petroleum Council
14:45 - 15:45	BEST PRACTICES FOR AN EFFICIENT EXPLORATION Moderator: Santiago Ferro Head of Administration and Contracts of Exploration and Production - ANCAP BEST PRACTICES OF FRONTIER DEEPWATER DRILLING Jean-Benoît Laudet Director of Drilling Department - Total E&P do Brasil Ltda THE USE OF PROJECT MANAGEMENT SKILLS TO OVERCOME DEVELOPMENT CHALLENGES Abbas Raad Geoscience Supervisor South America, Southern Margin Operations - ExxonMobil
15:45 - 16:15	Coffee break
16:15 - 17:45	STRATEGIES AND APPROACHES TO OPERATIONAL EFFICIENCY Moderator: Milton Costa Filho Executive Secretary - Brazilin Institute of Oil, Gas and Biofuels STRATEGIES OF OILFIELD SERVICES PROVIDING COMPANIES IN TIMES OF CRISIS Chris Garcia Latin America International Account Director and Deepwater Adviser - Schlumberger ENHANCED INTEGRATED FIELD DEVELOPMENT, ASSET MANAGEMENT AND OPERATIONAL EXCELLENCE STRATEGIES Esdras Demoro Director - Embraer Marcos Leitão Manager - Accenture INTERNATIONAL APPROACH TO OPERATING STANDARDS IN THE EXPLORATION AND PRODUCTION SECTOR Charles Williams Executive Director - Center for Offshore Safety
17:45 - 18:00	CLOSING REMARKS Pedro Baridón Membership Vice-president - World Petroleum Council Benito Piñeiro Chairman of the Board - ARPEL



Appendix III - Speakers and their Curriculum Vitae



Dr. Pierce Riemer - Director General - The World Petroleum Council

Dr. Pierce Riemer was appointed Director General of the World Petroleum Council in 1999. He is responsible for the WPC secretariat and looking after its 65 member countries. He moved to the World Petroleum Council after nine years with the International Energy Agency, where he set up the Greenhouse Gas Programme in 1990 and was responsible for carbon dioxide capture and storage activities as well as other climate change related projects. He also had responsibility for the technical programmes, demonstration plants, JI, AIJ activities, and studies relating to greenhouse gas emissions from industrial sources at the IEA. During his time at the IEA he also helped set up a monitoring programme for the Sleipner carbon storage activities. In addition he was part of the IEA delegation to the Kyoto protocol negotiations.

He was the official Liaison with Oakridge National Laboratory (USA) for ETDE and was in charge of management and preparation of expert documents for PROMPT (The Institute for Prospective Technological Studies), for the European Commission.

Previously Dr. Riemer was with the British Coal Corporation, where he worked on coal utilization research, clean coal technology, environment, power generation and later ran the Corporate Planning Branch. Prior to this he worked on environmental projects and power generation and clean coal utilisation studies for the National Coal Board and Coal Products Ltd.

Dr. Riemer holds a PhD in Applied Chemistry (Gas to Liquids). He is a Chartered Chemist, a graduate of the Royal Society of Chemistry and a Fellow of the Energy Institute.

Dr. Riemer is the author of over 300 technical papers, more than 60 magazine features and 15 books. He also holds 8 patents.



Jean-Benoît Laudet - Director of the Drilling Department - Total Uruguay and Total Brasil

Graduated in both Naval Architecture and Petroleum Engineering before joining Total as a drilling engineer in 2002. Since then he has been assigned to projects in France, UK, Nigeria, the Netherlands and Angola. His assignments have mainly been dedicated to exploration and deepwater drilling projects.



Abbas Raad - Geoscience Supervisor South America, Southern Margin Operations - ExxonMobil

Born and raised in Lebanon. Graduated with an Electrical Engineering degree at Supelec in France in 2007 and with MsD in Petroleum Geophysics at IFP School in France in 2008.

Hired with EM in 2008 as a geophysicist. Assignments: Barents Sea, Black Sea, Equatorial Guinea, Sakhalin Russia, Angola B15, Americas and presently South America Operations.



Chris García - Latin America International Account Director and Deepwater Adviser - Schlumberger

Chris Garcia has BS in Petroleum Engineering from University of Texas at Austin 1984. His 28 year career with Schlumberger spans working in 11 different countries, 18 moves, working mostly offshore and deepwater projects. Previous assignments include Deepwater Theme Manager for GOM USA, Deepwater Business Development Manager in Mexico, and Deepwater Latin America Adviser. He has multiple deepwater theme initiatives that include internal training, competency development, peer review advisor, and industry participant/organizer at multiple deepwater global conferences.



Esdras Demoro - Business Director - Embraer Systems

He has an Electronic Engineer degree from Industrial Engineering School, São Paulo (BRA) and an MBA in Production Management from FGV (BRA). He has Business Management Executive Training from IMD (CHE) and from MIT (USA). Over 30 years working with Chemical, Mining and O&G industries, he has held various management positions on Major Brazilian and Multinational companies.



Marcos Leitão - Manager - Accenture

He holds a B.Sc. in Business Administration with major in Economics. His main focus has been supply chain optimization on the oil and gas industry with several capital projects, integrated operations / integrated planning, including lean six sigma programs, logistics optimization, warehousing redesign and other supply chain related projects.



C.R. (Charlie) Williams II - Executive Director of the Center for Offshore Safety (COS)

After a 40 year career at Shell, Charlie Williams retired in 2012 to become the Executive Director of the Center for Offshore Safety (COS) - an industry association entirely focused on safety management. Charlie led the creation of COS and received the Offshore Technology Conference Special Citation plus the Society of Petroleum Engineers HSSE Award for this work.

Most recently he received the Offshore Energy Center – Pioneer Award for lifetime achievement. Charlie joined Shell in 1971 following graduation from the University of Tennessee with a degree in Mechanical Engineering and is a registered professional engineer.

He achieved numerous senior positions in Shell including VP Global R&D and in 2005 was appointed Chief Scientist – a position he held until retirement. Charlie’s work focused on technically challenging well completions and drilling including Deepwater and high pressure/high temperature.

He served as VP Hurricane Recovery for Shell – including reconstruction of the Mars Tension Leg Platform. This project was awarded the National Ocean Industries Association “Safety in the Seas Award”, UK Energy Institute Award for Technology, and Offshore Engineering Project of the Year. He also received the US Department of Interior Corporate Citizenship Award for resolving the mooring failures that occurred during the hurricanes Katrina/Rita.

Charlie chaired the Industry Task Force for Subsea Well Control and Containment and served on the US Department of Interior Federal Advisory Committee post Macondo.

He led the establishment of the Marine Well Containment Company. Charlie’s professional affiliations include being a life member of Society of Petroleum Engineers and chair of many American Petroleum Institute committees.