

# 3<sup>rd</sup> Workshop and Symposium on Safety and Integrity Management of Operations in Harsh Environments

## / Regulatory Considerations in the Canada-Newfoundland and Labrador Offshore Oil and Gas Area

Speaking Notes for Chair and CEO, Scott Tessier  
October 20, 2017

## Slide 1 – Introduction

Thank you Sean and good afternoon everyone. It is a pleasure to speak to you today about regulating in one of the harshest offshore environments in the world.

For those of you unfamiliar with the C-NLOPB, we are the independent, arm's length regulator of petroleum related activity in the Canada-Newfoundland and Labrador Offshore Area. Our responsibilities include safety and environment, which are our highest priorities, as well as resource management, exploration and local industrial benefits.

After my safety moment, I will share a video that provides further information about us. Information about the Board and our work is also available on our website. My slides and remarks will be available there in the next few days.

I will however offer a word here about what we do not do, which is promote the industry. Our role is to oversee operator compliance and while we enable exploration, production and development on behalf of governments and the public, promotion of the industry falls outside our mandate and is in fact a role for industry itself, along with governments and in Newfoundland and Labrador, Nalcor Energy.

## Slide 2 – Safety Moment OHSI Implementation

For my safety moment, I'd like to provide an update on progress that has been made implementing the recommendations of the Offshore Helicopter Safety Inquiry, headed by retired Justice Robert Wells who is with us today, following the crash of Cougar Flight 491 in 2009. The Inquiry's Phase I report was delivered to the C-NLOPB in November 2010 and contains 29 recommendations for enhancing safety of helicopter travel offshore.

Recommendation 26 called for the C-NLOPB to initiate high-level safety conferences with the oil Operators, the helicopter operator(s), worker representatives, and stakeholders at least every two or three years. Our first safety conference was held in November 2014 and we have been pleased to partner with C-RISE this week.

Offshore helicopter safety continues to be a high priority for the Board. Work is continuing on the implementation of Wells Inquiry recommendations. Practically all recommendations have now been fully implemented. The status of each is presented in this table; some of those not showing as green are long term by design.

The black box in the bottom right corner aligns with recommendation 29b, regarding the possibility of a separate safety regulator. You can chat with Judge Wells directly about that one!

All in all, I'm quite confident in declaring that our Board continues to be an international leader in the oversight of offshore helicopter passenger safety. Our senior safety advisor, Dan Chicoyne is also here today and he deserves a lot of credit in this area.

It is important to note that while a recommendation may be considered implemented, the Board and the industry-led Helicopter Operations Steering Committee will continue to track opportunities for further improvement. For example, recommendation 19 speaks to specific actions needed to strengthen safety culture offshore, and work in that regard will be on-going. We will never reach a point where we feel safety culture cannot be further improved.

### Slide 3 - Video

I'd like to share with you now a short video to provide some background information about the C-NLOPB. It's one of several videos on our You Tube Channel, which also includes a Fast Facts video.

**Play Video – “We are the C-NLOPB”**

### Slide 4 – Disclaimer

A bit of housekeeping before I proceed further: this is a disclaimer that applies to all the maps used in my presentation. I won't read it but it refers to Canada's jurisdiction over resources outside the 200 mile limit. Canada has filed a submission with the UN Commission on the Limits of the Continental Shelf, the review of which is pending. The disclaimer is a caution to interest holders of potential implications for any licences that extend outside the 200 mile limit under the UN Convention on the Law of the Sea.

### Slide 5 – Canada-NL Offshore Area

Having said that, our offshore is vast and has more than 20 underexplored sedimentary basins. The area we regulate is 1.8 million square kilometers. That's bigger than the US Gulf of Mexico and bigger than the Norwegian Shelf Offshore Area.

As mentioned, under the *Atlantic Accord Acts*, our jurisdiction extends to the outer edge of the continental shelf. This is why you see C-NLOPB-issued licences outside the 200 mile limit represented on the map by the red line.

In addition to regulating production, the C-NLOPB oversees precursor activities such as seismic data acquisition, exploration drilling and sub-sea development.

## **Slide 6 – An Extremely Harsh Offshore Environment**

Canada's east coast is one of the harshest environments in the world and presents offshore Operators with significant operational challenges.

What makes this part of the world more challenging than most is the remoteness of operations and the prevalence of harsh environmental conditions. Our offshore area is known to have intense storms, seasonal ice and icebergs, high wind and waves, heavy fog and deep water depths. One senior representative from an offshore operator you've all heard of described our offshore environment to me as 'humbling' and he has worked in some pretty harsh environments.

We have issued licences for parcels of land that are more than 500 kilometers from St. John's. In these frontier regions, there are few installations in proximity to one another, which means less support and less opportunity to achieve the synergies say for spill response that exist for the current Grand Banks Operators.

As I mentioned, safe helicopter travel to and from offshore installations is an area of continued focus. The Sikorsky S-92 fleet is capable of flying to remote locations, but as distances increase, helicopters have to take fewer passengers to accommodate the necessary fuel.

Passenger comfort is also a consideration.

## **Slide 7 – Requirements for Rig and Vessel Intake**

Deep water drilling in harsh environment frontier regions triggers the need for special requirements on rigs and vessels. Operators must have equipment, trained personnel and policies and procedures appropriate to the conditions in which they operate.

Prior to being issued an authorization from the Board, an Operator must submit a Safety Plan that demonstrates that "risks have been reduced to a level that is as low as is reasonably practicable."

The C-NLOPB conducts a systematic and comprehensive assessment of the Operator's Safety Plans and other safety-related information.

Following authorization our Safety and Environment Departments conduct ongoing monitoring activities, which include audits and inspections, reviews of Operator's daily reports, incident reports, complaints and Joint Occupational Health and Safety proceedings to name a few.

## **Slide 8 – Licences and Wells**

The industry downturn that resulted from low oil prices has had a negative effect on economies globally, including here in Newfoundland and Labrador. Yet, from a regulatory perspective, we have been very busy and industry continues to invest significantly in this region.

Currently there are 29 exploration licences, 55 significant discovery licences and 12 production licences.

Since 1966, there have been 445 wells drilled in our offshore, including 220 development wells, 56 delineation wells and 169 exploration wells.

## **Slide 9 – Forecast**

This is the C-NLOPB production forecast for the approved development projects in the Canada-Newfoundland and Labrador Offshore Area – Hibernia, Terra Nova, White Rose, North Amethyst and Hebron. Our estimates are somewhat conservative, consistent with our nature as regulators.

To date, 1.6 billion barrels of oil have been produced from the four projects.

Overall, production is expected to reach 72.7 million barrels for the 2017-2018 fiscal year, noting that's highly dependent on facility and field performance, both of which can be quite challenging to predict accurately.

Hibernia, shown in blue, continues to be a workhorse for our offshore, probably producing about 48 million barrels. Now in its 20<sup>th</sup> year of operations, they have surpassed 1 billion cumulative barrels produced. By our estimates, there are over 600 million barrels remaining there.

Terra Nova, in red, is currently predicted to produce 8.5 million barrels in this fiscal year. They have been producing for 15 years with 399 million barrels to date, and approximately over 100 million barrels remaining.

White Rose and North Amethyst, in orange and yellow, have been operating since 2005 and produces from two fields. 230 million barrels have been produced from the White Rose Field and nearly 50 million barrels have been produced from the North Amethyst Field. It is predicted to produce 14.6 million barrels this fiscal year. The White Rose Extension will provide an additional 174 million barrels.

Hebron, the newcomer to the Jeanne d'Arc basin and shown in green, has begun drilling. It is expected to see first oil this year with estimated reserves of over 700 million barrels.

All of these predictions of course are subject to adjustment and often much to the chagrin of our provincial Minister of Finance.

## **Slide 10 – Exploration Potential**

A scheduled land tenure system was implemented by the Board in 2013 and has been quite successful in attracting new players to, and interest and investment in, our offshore by enhancing transparency, predictability and input.

Our geologists and geophysicists research the prospectivity of land and, with input from industry through the nomination process, make parcels of land available in our Calls for Bids.

The scheduled land tenure system provides additional time for companies to conduct geoscientific assessments of the hydrocarbon prospectivity in the lesser explored basins. We also facilitate exploration by authorizing geoscientific and exploratory drilling programs, provided Operators meet legislative and regulatory requirements and have undertaken measures to reduce any risks to levels that are as low as reasonably practicable.

2017 has been another successful year for seismic data acquisition. Multi Klient Invest AS, or MKI, has undertaken several seismic programs in our offshore area. The company has been collecting 2D seismic data along the Southern Grand Banks and the Labrador Sea which will total approximately 22,000 line kilometres of data.

In the West and East Flemish Pass, the Jeanne d'Arc Basin and the Carson Basin, MKI has recently completed 3D seismic operations in four areas using three, 3D vessels – *The Ramform Thethys, Titan and Sterling*.

Preliminary calculations indicate that 2017 has set a record for the highest single season 3D acquisition total at approximately 20,000 square kilometres.

All together, five of the eight land tenure regions will be explored this year.

### **Slide 11 – Offshore Safety: Some Current Areas of Focus**

Over the past few years, industry has faced significant, market-driven price and cost pressures which has resulted in cost-cutting and increased attention on efficiency. Of course, our concern as regulators is the potential for fatalities, serious injuries or significant spills due to improper maintenance or other cost-cutting activities. We are not alone in this regard, Anne Myhrvold from the Norwegian regulator spoke to this from their perspective on Wednesday, and she and I had an opportunity to compare notes for a few hours yesterday.

In their recently published 7<sup>th</sup> Annual Benchmark Study, DNV GL has provided one of the most up-to-date snapshots of industry adjustment to the business environment. The company asked oil and gas industry leaders in late 2016 if cost cuts in their organizations were raising health and safety risk. Nearly one-fifth (19%) said yes, and the percentage rose incrementally among respondents further down the chain of command. Only 11% of top level executives believed safety risks had increased because of cost cutting, compared with 23% of people in non-management roles. I'm not entirely sure what to read into that, but certainly noticed the discrepancy.

The threat of causing a major catastrophe by cutting corners, not following proper procedures, or not ensuring personnel are properly trained and competent should in itself be incentive enough for companies to be vigilant in safety and environmental protection. There is a business case for vigilance. The costs of a major catastrophe are astronomical compared to any savings that might be achieved by cutting corners. The billions of dollars paid out in the aftermath of the *Deepwater Horizon* tragedy is testament that working safely is good for the bottom line.

While we are sensitive to the operating environment, the public expects us to be steady in our oversight of legislative and regulatory compliance.

The *Atlantic Accord Implementation Acts* and associated regulations are silent on the price of oil. So, risks that were deemed to be as low as is reasonably practicable, or ALARP, at \$105 per barrel should not be seen much differently at \$50 per barrel.

ALARP is the only acceptable level of risk we were willing to accept then, and it's the only threshold we're willing to accept now.

While the industry must adjust to the market without compromising on legislative and regulatory obligations, regulators must be predictable and not unduly swayed by market considerations.

With this environment as background, I'd like to speak about a number of key areas of focus for us, the first of which is training and competency.

## Training and Competency

To their credit, companies in our jurisdiction have to date been quite responsible in publicly affirming their commitments to safety and environmental protection in rolling out cost-cutting measures.

We as regulators expect this commitment to be reflected in on-going decisions and activities. Ensuring personnel are properly training and competent in all jobs and at all levels is vital to offshore safety, particularly for positions that involve high degree of risk management.

We have learned some valuable lessons this week from presenters like Dr. Flin and Dr. Taber, who spoke about human factors in safety-critical environments and Dr. Shah, who spoke about abnormal situation management. Our understanding of how people react in crisis is improving, but we know with certainty that if personnel are not properly trained and also competent to perform their duties, they are more likely to fail and even more so under duress.

In times of budget restraint, training is often one of the first budget items to undergo reduction. I'm pleased to say that at the C-NLOPB, while we have maintained our budget at 2015 levels, we have continued to ensure our staff has access to all the training they need to do their job well.

## Asset Integrity

Another key area of focus for many regulatory agencies around the world is asset integrity. We are no exception, working to ensure against cuts in areas like maintenance during times of budgetary restraint. It's something we've tracked closely in quarterly meetings with our Operators.

This is also a main topic of discussion these days at the International Regulators Forum (IRF) table. The IRF is a group of offshore health and safety regulators from 10 countries that work to drive forward improvements in health and safety in the sector through collaboration on joint programmes and information sharing.

The IRF held its 2017 Annual General Meeting from October 2-4 in Copenhagen. The New Zealand and North Sea regulators reported on their piloting of a standardized template to evaluate maintenance of safe operations in a low oil price environment. The results of the pilot will be further discussed at the 2018 IRF AGM, next June.

Aging infrastructure poses challenges to Operators in its maintenance and repair. In addition to normal wear and tear, our harsh environment forces continuous exposure to extremes of weather, waves, ice and oxidation, as mentioned earlier.

Whether they are new or old, installations operating in our jurisdiction must be fit for purpose and meet the highest industry standards before the Board will issue an Operations Authorization. Operators are required to have strong preventative maintenance programs and pay particular attention to safety critical equipment.

In conjunction with the Certifying Authorities, the C-NLOPB monitors Operators' maintenance plans and activities, and inspects facilities to ensure risks are managed to a level that is as low as is reasonably practicable, and plans are executed to keep the facilities in an appropriate condition.

Special attention is being paid to temporary repairs, as well as ensuring that the scope of the maintenance, repair and replacement activities during turn-around periods is comprehensive and complete.

Asset integrity is of course a key focus of this conference and we have already learned a lot from the many experts and researchers who have presented over the past two days.

We have been left with much to think about and good grounds for further research and collaboration.

## Asset Life Extension

In our offshore, production installations are in the range of 13 to 21 years old and are approaching the end of their design life. At least one Operator locally is currently looking to extend the design life of their facility, and others will eventually follow.

Accordingly, the C-NLOPB established a joint industry – regulator technical working group to develop guidance surrounding Asset Life Extension in this jurisdiction. The Technical Working Group has consulted with regulators in other jurisdictions, in particular the Petroleum Safety Authority and the UK's Health and Safety Executive, and also with the local Certifying Authorities, DNV GL and Lloyds Register. The Working Group has established a framework concept for Asset Life Extension modeled after the HSE program (entitled PS4) albeit customized to reflect local Canadian requirements. It is anticipated that a draft guidance document will be ready for wider stakeholder consultation early next year.

## Enhancing Public Confidence

The C-NLOPB Strategic Plan sets out our mission and values, as well as strategic priorities and goals for the next five years.

The plan was developed in careful consideration of our external environment, government, public and stakeholder expectations, and of course, our own expectations.

It identifies three strategic priorities: operational efficiency and effectiveness; effective change management; and effective information and data management with a number of goals assigned to each priority area.

The strategic plan is a useful tool in guiding our actions. It sets out what we expect of ourselves and what the public can expect from us. Our performance as a world class regulator can be assessed against this plan by the public and by the Board itself.

Another useful tool in helping us to meet public and stakeholder expectations is our annual work plan. This is where our vision, goals and priorities are reflected in our yearly activities. Each year we forecast what is likely to lie ahead in terms of offshore, regulatory and internal activity. We then set priorities and make decisions so that we can efficiently and effectively implement our mandate.

We see increasingly these days that transparency and accountability are critical for regulators if we are to maintain public trust and confidence. It would be practically impossible for us to function effectively without that trust and confidence.

Public reporting and sharing information is an important part of what we do. Our main communications vehicle is our website, which contains a lot of information across all areas of our mandate. It receives constant attention to keep it as up-to date and relevant as we can. We always welcome suggestions in this regard.

Over the past four years, we have become more engaged in social media. We now have about 1400 followers on Twitter, which is not too bad for a regulator.

Twitter has become an important communications tool for the Board, particularly for outreach to stakeholders and the general public.

Our C-NLOPB YouTube Channel is getting plenty of views and is an important medium for reaching younger audiences in particular. This is a new medium for us and we plan on expanding the videos we offer there.

We also launched a blog page in April, which can be a very useful tool to share ideas, information and perspectives with our audiences. Blog posts are written by staff and cover a range of topics.

The Board produces an Annual Report that is available to the public on our website. It covers the full range of our mandate and highlights our activities for the past fiscal year.

We welcome opportunities like this to speak about who we are and what we are doing. Several of our staff participate in conferences and we have a strong presence at this one.

We are also quite open to the media and try to respond to interview requests whenever appropriate to do so.

The reality is that we as regulators have to work harder than ever to earn the confidence of our authorizing environment – that is, governments and the public. As the saying goes, it takes a long time to earn such trust and it can be lost in no time at all.

### Regulatory Modernization

We support the transition by governments to more performance-based regulations for a number of reasons. First and foremost, our interest is in being able to hold companies to the highest standards of health and safety, protection of the environment and conservation of resources.

As noted, Operators continue to explore in more technologically complicated ways and more physically challenging environments with varied hazards and risks. The regulatory framework should promote advancements in equipment and continuous improvement in operating practices.

But a prescriptive approach generally addresses a specific set of circumstances and is unable to quickly adapt to technological advancements and improvements in best practices, so “the bar” remains static.

The requirement to have a management system, embedded within the performance-based approach, ensures that Operators proactively evaluate project-specific hazards and risks and identify the most appropriate technology, design, and operational requirements for the circumstances.

A performance-based regulatory framework provides the basis for regulators to challenge and hold Operators accountable to having the necessary processes in place to effectively identify and manage health, safety and environmental issues.

So that makes sense. There are some keys to success here that are worth noting and restating.

As I mentioned earlier, well-resourced regulators are critical to ensuring we have the advantage of ongoing training and skills development. Being well trained means we are better than ever at being risk focused, which in turn means our policies, procedures, structures and resource allocation are able to be put where they are most needed.

Performance-based regulatory instruments need to be characterized by clarity of expectations in terms of what is acceptable, but with flexibility; and characterized by good alignment of policy intent, regulations and guidance.

And of course there needs to be continued commitment by Operators to reduce risk to a level that is as low as is reasonably practicable, and to clearly demonstrate this to regulators.

There should also be incentives for regulated entities to perform better.

In a performance-based regime, everyone should be regulated more according to their own performance, not the failures or successes of others.

And there should be an appropriate transition period and plan when new approaches are to be implemented.

We all need to recognize that there will be continuous improvement in this journey – it won't happen overnight, it won't always be perfect and performance-based regulation is a significant change for governments, regulators and industry that some will find uncomfortable.

In the case of regulators, that discomfort will often stem from the need for us to move away from our beloved checklists, and increasingly rely on professional judgment and understanding of risk.

The Frontier and Offshore Regulatory Renewal Initiative, or FORRI, aims to modernize the regulatory framework governing oil and gas activities in Canada's frontier and offshore oil and gas areas. It is a partnership of federal and provincial government departments from Newfoundland and Labrador and Nova Scotia and includes participation of regulators who are providing technical advice to governments.

Modernizing the regulations governing frontier and offshore oil and gas activities will contribute to maintaining Canada's high standards for safety, environmental protection and resource management. We had a good discussion yesterday with the Canadian Standards Association about the importance of that organization's work in a Performance-Based Regime.

### Standardization

On the topic of standardization. If Operators want to move people and installations from region to region, I think we'd all agree there should be requirements for similar known and accepted qualifications and/or equivalency.

But rest assured as well that we at the C-NLOPB are vigilant against the dilution or weakening of safety standards. As I've said on several occasions, I'm fine with the C-NLOPB having the toughest safety requirements in the world. But we can always learn from the best practices, or mistakes of others.

### **Slide 12 – Safe Drilling in Deep Water**

In case you missed it yesterday during break, Marshall Conway and Valarie Goodland-Hennessey, from the C-NLOPB's Operations and Safety Departments respectively, were at our booth describing how we have strengthened regulatory oversight of deepwater drilling.

The *Deepwater Horizon* blowout was an example of where regulators, companies and governments undertake lessons learned to help prevent similar occurrences from happening.

In Canada, the C-NLOPB's initial assessment of what went wrong led to the creation of special regulatory oversight measures, which have become standard practice for our oversight of deep water, high-temperature, high-pressure and critical wells.

Some of those measures include:

- Establishing a dedicated regulatory oversight team within the C-NLOPB to oversee the Operator's execution of the drilling program;
- Timely submittal of daily reports;
- Formal bi-weekly meetings between the oversight team and the Operator;
- Increasing the frequency of audits and inspections onboard the offshore installation;
- Placing C-NLOPB technical experts onboard the offshore drilling installation from time to time to observe specific operations, such as casing and cementing operations, BOP testing, well control drills or the well termination program. In the case of BOP testing, the C-NLOPB may also request a representative of the Certifying Authority to be present; and
- Scrutinizing reports received from Operators respecting the testing of both primary and back-up BOP control systems.

C-NLOPB Operations staff have received special training in deep water drilling and we continue to monitor for any new developments and lessons learned with respect to well operations, BOP equipment or spill response readiness. Sharing lessons learned with other regulators, for example through the International Regulators Forum, is key to ensuring that the C-NLOPB's regulatory practices and procedures remain world class.

The Board updated its guidelines to incorporate learnings from a variety of sources, including the Montara and Macondo investigations, and the North Sea Regulators' analysis of drilling practices based on the Macondo findings.

In the spirit of continuous improvement, the C-NLOPB uses every available opportunity to exchange knowledge, participate in technical discussions, and assess guidance and best practices from other regulatory bodies and industry experts.

The Board also continues to work with Operators to ensure they have modern, up-to-date spill response plans as part of the regulatory authorization process.

In addition to having plans for emergency response and relief well drilling, Operators must now have access to a rapidly deployable subsea well incident intervention system.

Stricter expectations have also been established on the details for relief well drilling contingency arrangements.

As always, spill prevention is the key. The C-NLOPB will not issue a well approval until the Operator has demonstrated that the drilling of the well will be conducted safely, without pollution and without waste, in compliance with the Drilling and Production Regulations.

### **Slide 13 – Safety Improvement Staircase**

This slide focuses attention on recent performance of the local industry. We receive incident reports from drilling and production facilities as well as seismic operations and offshore diving and construction activity.

This Safety Improvement Staircase is a local version of a concept included in a report by the International Oil and Gas Producers. It illustrates some of the more significant types of incidents that have been reported to us since 2015. It doesn't include the 216 First Aid incidents that were reported and fortunately, there were no fatalities during this period.

It essentially shows what it would have taken to get to zero significant incidents over the past two years or so.

For the most part, and notwithstanding the industry downturn, Operators continue to conduct safe and environmentally responsible activities. Of course, there is always room for improvement, particularly in reducing the number of non-hydrocarbon and hydrocarbon releases, hazardous substances releases, dropped objects, ice and adverse weather events, worker injuries, gas detection events, helicopter incidents, well control events and fires.

### **Slide 14 – New Activity**

There have been several important milestones over the past five months. ExxonMobil and its co-venturers completed construction of the Hebron Gravity-Based Platform and it is now on location on the Grand Banks and set to become our next producing project.

Six specialized facilities were approved for operation in our Offshore Area. Over the summer months, Multi Klient Invest or MKI operated three 3-D seismic vessels - the *Ramform Thethys*, *Titan* and *Sterling*, and one 2-D vessel – the *Atlantic Explorer*. The *Fugro Discovery* was approved for use by two programs; a wellsite survey for Husky and a Seafloor and Seep Sampling program for Fugro.

The *Transocean Barents* is a harsh environment, ultra-deepwater dual activity drilling rig built in 2009. It was brought in from the Norwegian Shelf and contracted by Suncor to work in the Terra Nova Field.

As I noted earlier, the Board carries out extensive safety assessments on the vessels involved prior to issuing authorizations. We're focused on and have demonstrated continuous improvement in our vessel and rig intake processes.

Of particular importance to this area of the province is the White Rose Extension Project. The construction of the wellhead platform and the eventual production of oil will bring significant economic and social benefits.

The wellhead platform will tie back to the *SeaRose* FPSO and will eventually produce approximately 75,000 barrels of oil per day at peak. Husky Energy, the majority owner and Operator, expects construction to begin in late 2017 and first oil is expected in 2022, pending regulatory approvals. We're now taking a close look at the project as sanctioned in comparison to the Development Plan we approved a couple of years ago.

## **Slide 15 – World Class Regulatory Oversight**

The C-NLOPB values its relationships with other regulators. As already mentioned, we are active participants in the IRF. Discussions at the recent IRF meeting highlighted shared concerns and good practices amongst the countries, including: decommissioning, operator capability in management of late field life, subsea leak detection, well intervention in older subsea fields, data analysis, information sharing and supply chain quality control issues.

Progress reports were received from each of the IRF working groups. Of special note:

- the Performance Measures Working Group has been examining existing IRF data related to underlying causes for various barrier failures. Its final report with recommendations will be submitted at the 2018 AGM;
- the Safety Culture Working Group will conduct a workshop as part of the 2018 IRF conference to gain insight from industry and workers regarding the suite of indicators that may be helpful in evaluating cultural strength and weakness;
- the Standards Working Group has finalized its gap analysis of standards related to well integrity and is sharing its findings with standard development organizations; and
- as previously noted the work of the IRF's Asset Integrity Working Group.

We are also a founding member of the International Offshore Petroleum Environment Regulators, or IOPER.

IOPER members are dedicated to raising environmental performance standards applicable to the industry's normal operations, as well as environmental emergency prevention, preparedness and response.

The C-NLOPB also participates in the International Upstream Forum (IUF), which was formed in 2007 by several countries with offshore oil and gas industries. This Forum allows public policy managers and regulators responsible for resource stewardship to share experiences and views on advancements and changes in upstream oil and gas exploration and development

The 9th International Upstream Forum took place in Aberdeen last month. There were over 30 participants from 12 countries represented.

This year's agenda included:

- Country updates;
- Resource Management discussions;
- Cost Efficiency and Building Collaboration;
- Licencing Requirements; and
- Decommissioning Liabilities.

The C-NLOPB's Well Operations Engineers have a lead role in liaison within external groups such as the Wells Working Group for the North Sea Offshore Authorities Forum and also with the IRF. Their attendance at well control conferences and exhibitions provides the opportunity to stay abreast of key technological developments and state-of-the art well control training, practices and procedures.

Of course, we also work closely within Canada, with our counterparts at the Canada-Nova Scotia Offshore Petroleum Board and the NEB to improve safety and environmental protection.

## Slide 16 – Other Near and Long Term Matters

To begin to wrap up, there are a number of other near and long term matters worth including in my update to you today.

### Federal Review of Environmental Assessment and Regulatory Processes

The federal government is reviewing environmental assessment and regulatory processes in this country and undertaking work nationally intended to “regain public trust; protect the environment; advance reconciliation with Indigenous peoples; and ensure good projects go ahead and resources get to market.” An expert panel appointed by the federal government conducted public consultations over the past year. A discussion paper from earlier this summer that covers federal efforts in this regard is publically available.

We at the Board, the provincial government, and a variety of industry and other stakeholders in Newfoundland and Labrador and across the country have been engaged in consultations and we look forward to seeing the results of the federal government’s deliberations this Fall.

### Climate Change

Climate change has of course been an area of concern for many years and is high on governments’ list of priorities. They have begun to take action to meet the commitments Canada made in signing the Paris Agreement on Climate Change in April, aiming to limit global warming to two degrees as countries prepare national targets.

For our local industry, Operators are required to address climate change in their project-specific environmental assessments.

## Focus on Subsea Tiebacks

Interest appears to be growing to examine opportunities for sub-sea tie backs in small fields. The C-NLOPB is working with governments and local industry in looking at how subsea tiebacks might pose additional opportunities for offshore development in a safe and environmentally responsible manner.

Part of the work has included an examination of best practices and lessons learned from past shallow water tieback experiences such as Hibernia South and South White Rose extension projects, and in the North Sea.

## Digitalized Offshore/Remote Operations

Over the past year or so, there has been increased focus on and discussion with Operators about potential for digitalization and remote operations. We certainly are interested where the industry wants to go in this regard, as it touches on all areas of our regulatory oversight. This is one topic we discussed in detail with our Norwegian counterparts yesterday. I think there's great potential for enhanced local collaboration in this area.

## Offshore Gas

The potential development of our natural gas resource is an area of interest for governments and the industry. There are several significant discoveries of natural gas, including five along the Labrador Shelf. The total amount of gas discovered in these five discoveries is over four trillion cubic feet. To put this in perspective, the Sable Gas Project off Nova Scotia is winding down and will have produced about three trillion cubic feet by the time it stops producing.

The economics and infrastructure required for the commercial development of natural gas have been confounding factors to date, but as the proven, possible and probable reserves continue to grow, it's an area that requires further consideration and examination, and it's of particular interest to the provincial government.

Something that is not shown on this slide is Cybersecurity. This is certainly a topic that's rising on the list of things that keep me up at night!

## **Slide 17 – Contact Us**

I want to again thank you for this opportunity to provide the C-NLOPB's perspective on offshore activities. I'd like to thank Faisal and the C-RISE team, our sponsors and presenters this week, and all of you. I'd also like to thank Ted O'Keefe, Dan Chicoyne, Paul Alexander, Sean Kelly, John Kennedy, Lesley Rideout, Bonnie Winsor, Marshall Conway, Valarie Goodland-Hennessey and the rest of our C-NLOPB team for all the work they've put into the development and delivery of this week's conference.

If you would like additional information about the C-NLOPB, please check out our website, follow us on Twitter, view our videos on You Tube or contact us by phone or email. We're trying to be more transparent, accessible, open and accountable than ever before.

I'll gladly take questions and comments.