NATIONAL ENERGY BOARD
OFFICE NATIONAL DE L'ÉNERGIE

PUBLIC REVIEW OF ARCTIC SAFETY AND ENVIRONMENTAL OFFSHORE DRILLING REQUIREMENTS

EXAMEN PUBLIC DES EXIGENCES RELATIVES À LA SÉCURITÉ ET À L'ENVIRONNEMENT POUR LES ACTIVITÉS DE FORAGE EXTRACÔTIER DANS L'ARCTIQUE

VOLUME 4

Roundtable held at
Table ronde tenue au

Midnight Sun Complex
Inuvik, Northwest Territories

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ROUNDTABLE / TABLE RONDE

Public Review of Arctic Safety and Environmental Offshore Drilling Requirements

Examen public des exigences relatives à la sécurité et à l'environnement pour les activités de forage extracôtier dans l'Arctique

ROUNDTABLE LOCATION/LIEU DE LA TABLE RONDE

Roundtable held in Inuvik (Northwest Territories), Thursday, September 15, 2011
Table ronde tenue à Inuvik (Territoires du Nord-Ouest), jeudi, le 15 septembre 2011

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TABLE OF CONTENTS/TABLE DES MATIÈRES

--- Upon commencing at 9:34 a.m./La session débute à 9h34

3675. **MS. McCULLOCH:** ...for this Thursday, which is Day Four of the Arctic Review Roundtable here in Inuvik. So if you could take your seats that would be appreciated while we'll get things underway.

3676. My name is Vicki McCulloch. I am one of the three facilitators that has been working with folks here at the Roundtable over the last three days and heading into the next two.

3677. So before we get back into the working sessions today I would like to just review our Agenda for the day. So essentially we're going to -- our first task of the day, starting in a couple of moments, will be to return to complete the Roundtable discussions for Theme Number 3 on the Agenda which relates to learnings. We'll take that to the morning break.

3678. After the break we will move into Theme Number 4, which is drilling safety. We have I think three -- two or three presentations there -- two maybe. And we'll enjoy those presentations before lunch.

3679. After lunch we'll move into the drilling safety Roundtable discussion and we will, in fact, continue that for the rest of the day. So there's a lot of opportunities for the conversation to continue both with respect to the discussion started yesterday on learnings and also with respect to drilling safety.

3680. So that's our Agenda for the day. Any questions or comments on that before we continue?

--- (No response/Aucune réponse)

3681. **MS. McCULLOCH:** All right. I just wanted to take a couple of minutes, or perhaps less, as a facilitator just to report back to you, as we've done over the last couple of days, on the very high level themes or summaries of what we -- the three of us, Andy, Jim and myself -- have heard with respect to what you folks have been saying.

3682. So yesterday we heard and continue to hear as we have over the course of the last few days about the value of traditional knowledge and understanding the unique Arctic environment.

3683. Participants also noted the need for ongoing face to face communication with communities using the methods and timing that will meet their needs. Members of the communities also spoke very articulately noting that the ocean is our banquet table, our garden, and dollars alone cannot reflect its value.

3684. It was also noted, though, that there is existing information out there that can contribute to understanding that, and there's information that has been collected over the past few decades that can contribute to understanding the environment and it needs to be utilized. However, there are still gaps in knowledge.

3685. Andrew?

3686. **MR. RUBEN:** Thank you. I'm Andrew. It seems to be just me who's speaking my language here.

3687. But I would also like to say if you're going to do some work on Arctic shores, I think we should have had more of my people here because when we had the consultations in my community, I was told that two people from each community would be invited here as a delegate. This work is very difficult work so we should have had more people come here.

3688. In my community there are people who do a lot of volunteer work to help keep everything safe. There are search and rescue groups and they have to use their own snowmobiles and vehicles. I would like the search and rescue organizations in the communities to be helped financially if possible.

3689. That's all I wanted to say. Thank you.

3690. **MS. McCULLOCH:** Thank you, Andrew.

3691. Just by way of other messages that we heard, we did get some insights into the clear separation between the processes related to rights issuance and the regulatory approval of drilling.

3692. And finally, there is a lot to be learned in terms of the experience to date and experience with others in terms of the safety for both human and environmental aspects of drilling. Both the National Energy Board and industry are responsible for promoting a positive, safety culture.

3693. So those are the highlights that we heard from yesterday.

3694. Before we get into the Roundtable for -- continuing the Roundtable for Theme Number 2, I just wanted to provide again some friendly reminders to folks with respect to when you're speaking, try to speak slowly and I will try to pledge to do that myself.

3695. Please state your name and your organization. It's helpful for the folks producing the transcripts, for the folks in the room, for the interpreters, but also for the folks listening by telephone and through the webcast.

3696. Also I wanted to note that if you are asking questions, to please be as clear as possible with respect to the nature of your question. It helps if you direct it to an individual or at least an organization. And if it is relevant, if you could reference a question that may have been previously submitted by you or your organization that helps people to respond and focus their response.

3697. I also wanted to note for folks that there are copies of some of the presentations in your binders. However, there's also some additional materials at the back of the room and you'll see them at those back tables. I'll just bring to your attention a couple.

3698. There is the National Energy Board's Backgrounder on Financial Responsibility and Liability that was referenced yesterday. And also there is some information related to the Beaufort Regional Environmental Assessment at the back as well.

3699. I think with that we've ended the housekeeping matters for today and I would like to turn over the floor to my colleague, Jim Micak, to return to the Roundtable on Theme Number 2 related to learnings.

3700. Sorry, Merven, you had a comment?

3701. **MR. GRUBEN:** Are you going to go back to Theme Number 3?

3702. **MS. McCULLOCH:** Yes, sorry, I said Theme Number 2 and I meant Theme 3, learnings.

3703. **MR. GRUBEN:** Okay.

3704. **MS. McCULLOCH:** Yes, we're going back to that right now.

3705. **MR. GRUBEN:** Okay.

3706. **MS. McCULLOCH:** Yes, sorry.

3707. **MR. MICAK:** Thanks, Vicki. Good morning, everybody.

3708. As just mentioned, we're going back to a Roundtable discussion on Theme Number 3 and that's about learnings. And just to recap, we had three presentations yesterday afternoon.

3709. We heard first from Max. And Max spoke to the lessons that his Board learned as a result of the Macondo spill and how they responded to that -- that particular situation.

3710. We then heard from Claudine Campbell from the NEB, and Claudine spoke to research that has been done with respect to major incidents and the importance and the value of a management systems approach in terms of perhaps avoiding mistakes that have been made in the past.

3711. And then finally we heard from Mark Fleming, and Mark spoke to the importance of safety culture and shared with us many examples of the importance of safety culture and the application of some of the principles related to that.

3712. At the end of the day we had a very, I would say, a very interesting discussion that took place, but we stopped that discussion because of the need to involve the interpreters in the Rountable.

3713. And before we move on to asking new lines of -- or including new lines of discussion, I wanted to come back and to ask anybody if there is any final comment that anybody might want to share with the room with respect to the discussion that took place at the end of the day.

3714. Is there anybody that wanted to pick up on that conversation at the end of the day?

--- (No response/Aucune réponse)

3715. **MR. MICAK:** No, okay.

3716. Mark, I understand you wanted to clarify one point that was made yesterday?

3717. **DR. FLEMING:** Yeah. Mark Fleming.

3718. During -- one of the things that occurred to me once I had finished, I made the point yesterday in my presentation that the Macondo disaster and many disasters can be attributable to failures in management, which is a common conclusion.

3719. What I wanted to be clear about is that we're talking really about failures in management systems and not necessarily failures of particular individuals.

3720. When I started my career working in safety it was common to blame workers for accidents and injuries, and over time we moved away from that and started to understand it was about the environment that they were working in.

3721. More recently I think I've become concerned that in the past we may have blamed the workers and now all we're doing is blaming the managers, and neither of those two approaches are particularly helpful. And I want to be clear I don't want to contribute to that current practice of management bashing. Both as individuals and as a group of professionals, that's not a helpful strategy.

3722. What I do think is we have not been very effective at improving our management systems in terms of how they actually live and operate. So in general if you look at any hazard or any disaster you could see that there were systems that were in place, or should have been in place, and if they were in place the disaster would not have occurred. The question for us to understand is how can we make sure that those management systems are actually working properly?

3723. If we look at the innovation in engineering over the last 20 years it's been phenomenal in terms of what we can achieve technically. I don't believe we've had the same level of innovation in management system design, which is, I think, the challenge that I'm trying to put to people is how much effort are we putting into improving our management system design in comparison to our engineering design.

3724. So I just want to be clear that it's management systems we were talking about.

3725. **MR. MICAK:** Thanks, Mark, for that clarification.

3726. I have two; I have Merven and then John.

3727. Merven -- name please.

3728. **MR. GRUBEN:** Thank you. Merven Gruben, Hamlet of Tuktoyaktuk.

3729. It's all relating to your learnings and what you just talked about, and it's something I addressed when we first started the meeting here.

3730. In reference to your Det Norske Veritas Report that the NEB had commissioned, this is basically what it's all about here too is, you know, it is the learnings and what you've learned from -- or what we've all learned from that, but it concludes that in most cases the applicable regulatory oversight was not comprehensive or focused enough to ensure gaps were identified and required corrective action and preventive actions were developed and implemented.

3731. But in its capacity as the NEB it's your -- up to you to determine if each company's plans are adequate for our challenges in the Arctic offshore.

3732. But what brings me back to this is the challenges that we have out there, and I'm looking at your group here, you're really -- your whole NEB group doesn't really have any experience in the Arctic offshore.

3733. I think that really has to be addressed. I mean, right now I have more faith in the industry that worked out there before, from their -- from what they learned in the experience then I do in the NEB right now. But, you know, there is still some people around that worked in the Beaufort in the olden days that I'm sure that you can reference to. And Jim Guthrie comes to mind, and I haven't seen him anywhere in these meetings here.

3734. But, you know, like we have to be -- we have to be okay before you guys go any further, I mean, like if you're going to okay what's happening out there. You don't really -- you're lacking the experience.

3735. Thank you.

3736. **THE CHAIRMAN:** Thank you, Merven. This is good advice.

3737. I should say that we have expertise on Board with the Beaufort Sea, Dr.

Dixit. Bharat is among them. And we don't have recent experience because nothing has been going on so I can't feel bad about that. What we also have is financial resources to hire and contract out by contract attract the resources that we need.

3738. So I say that at this time we have the right amount of resources given that there's zero activity and I commit to you that we will be seeking in obtaining the resources we need as we go along, including the people that we will need to hire or contract.

3739. But at this time, we have onboard already a group of people who have experience that, I think, is very fitting for getting ready to the emergence, possibly, of an industry. But your point is well taken Merven; I accept it.

3740. I don't think my staff want to add anything to that. No, that's fine. Thank you.

3741. **MR. MICAK:** Thank you.

3742. John, you had a question or comment.

3743. **MR. STUART JR.:** Thank you, John Stuart Junior; Tuktoyaktuk Community Corp.

3744. My question is for Mr. Fleming. You were talking about the Gulf incident. I was hearing stories ever since it happened on what was the cause of all that.

3745. I remember a few meetings with industry that they had a piece that I heard was the cause of the incident in Macondo, that it was supposed to shut off, and that was the same piece that they were going to use up in the Beaufort that would be infallible, wouldn't break, wouldn't cause a spill, wouldn't spill a drop.

3746. So I'd like to know if it was -- it was an employee accident or an engineering accident.

3747. Thank you.

3748. **DR. FLEMING:** Mark Fleming.

3749. So the answer is I don't -- there are multiple causes. I'm probably not the

best person to talk about the technical failures of the blow-out preventer and the sub-sea material. So there were technical failures in that; maybe Max can talk to that.

3750. But the underlying causes were failures of how the rig was being operated and the decisions that both managers onshore, staff at the rig at the time, made that were principal causal factors.

3751. So usually what we have is a mixture of something breaks that wasn't supposed to break and people didn't do what they were supposed to do when it did break. So it's usually a mixture of those two things.

3752. So technology breaks and if anybody says to you that this piece of technology will not break, I would not believe them because all we know from our experience is that whatever we make it's likely to break if you put it in the wrong situation.

3753. And usually when it breaks, our best response is for people to be able to do the right thing and make sure nothing really bad happens, and that's usually the case. Ninety-nine (99) percent of the time people step in and fix the problem.

3754. It's only the 1 or even 00.1 percent of the time that we don't succeed in stepping in and fixing it. So it's going to be a mixture would be -- would be my assessment of the situation.

3755. **MR. MICAK:** Max, anything you can add?

3756. **MR. RUELOKKE:** No, that is correct. It was certainly a combination of circumstances and that chain of events could have been broken at any one time but unfortunately it didn't get broke.

3757. **MR. MICAK:** Anybody else want to speak to this? No?

3758. Any other questions or comments from anyone on learnings?

3759. Yes, please.

3760. **MR. MORRISON:** Keith Morrison from NTI.

3761. I'd just like to, I guess, reiterate what Raymond was saying about making sure that government and also industry has people in place who understand the

operating conditions, both physical and regulatory operating in the North.

3762. It's fine at high-level for someone -- for an organization to be aware; the Board is aware that this has to take place but what we have found is quite often there's a middle-management, for lack of a better term, level who actually do most of the work who might not be aware of what the reality is and what their requirements are for a particular jurisdiction and as a result cause delays or cause problems that may not be necessary.

3763. Two examples spring to mind and I'll be fairly vague on them. One I've been actually dealing with for the last two day is a situation -- with all respect to ANDSI, formerly INAC, formerly DIAND, formerly whatever -- that a situation has arose, that it's going to take us probably several weeks to months to clear up.

3764. This situation has been aware -- everyone has been aware that this situation would arise since the land claim was signed 18 years ago. And were absolutely certain that it would happen as of six years ago, but it never got to the level of the people who actually do stuff in Ottawa.

3765. And so they have to set up new processes, which is going to take us several months to get -- well, I'll be honest, to get money that we deserve or that's required to be given to us because at the high level, it was understood that this would happen, but the middle level who do things weren't aware of this, even though everybody knew it was coming or -- apparently except them.

3766. The other example that came up -- came to mind was, several years ago, one mining company requested permission to freeze a fuel barge in over winter. And they were -- and they were dealing with the coast guard out of Ottawa and -- or out of Ontario, and the guy in Ontario insisted that barges could not be frozen in in the North over winter, which was somewhat of a surprise to us who could look out our office window and see the coast guard barge that was frozen in every winter.

3767. So, again, this was a situation where someone down south -- it was just a simple thing. He -- this person was just not aware of the reality, but because of that level not being aware of it, processes were delayed and things got extended out. And I could easily see the same thing happening in the event of an accident or an incident where someone who is well meaning doesn't understand what the situation is up in the North.

3768. The NEB opening an office in Inuvik is a -- is a good first start, but

companies -- companies I know have a presence here in industry, but they have to ensure that at the level where people do things, they are aware of what the situation is.

3769. Everyone can be well meaning, and everyone can mean -- can want to do the right thing, but sometimes the right thing gets delayed just because someone is not aware of what they should be doing, who should -- who they should be talking to or where they are.

3770. Thank you.

3771. **MR. MICAK:** Was there -- was there a specific question that you wanted somebody to respond to, or is there any advice -- there's a lot of advice that you provided there. Is there a specific piece of advice that you'd like to direct to the NEB that they might consider in its filing requirements?

3772. **MR. MORRISON:** I would suggest -- that's sort of a general piece of advice for everyone, but what I would suggest to the NEB is to ensure that they have people at the -- at -- again, for lack of a better term, the middle management level, who are specifically responsible for knowing what happens to go -- go on or what is supposed to go on in a given jurisdiction so -- dealing with whatever so that they are able to see what's going on and intercede with their co-workers -- no, wait, have you taken into account you have to deal with this board before you do this? And, again, that would be the same for industry.

3773. Industry generally is ahead of the ball on this. Government, I find, falls behind.

3774. **MR. MICAK:** Thanks very much.

3775. Kenneth, you had a question.

3776. **MEMBER BATEMAN:** Thank you. I have two questions. One I'd like to direct first to Mr. Ruelokke and then second to Mr. Fleming. The question that I'm referring to is question 2.1 earlier prepared by the National Energy Board.

3777. Mr. Ruelokke, can you comment on the extent to which the National Energy Board's management systems framework for offshore drilling is comparable to the safety case that was implemented in the North Sea as a result of the Piper Alpha tragedy?

3778. **MR. RUELOKKE:** Max Ruelokke. Well, I'm -- I obviously can't speak for the NEB, but we share the same drilling and production regulations. We develop and work with the same guidance documents. And we're also familiar through our membership in the International Regulators Forum with the safety case system that's imposed in the UK.

3779. We don't use the terminology safety case, but it's the same kind of approach. We make sure that the operators have a robust management -- safety management system and that that system is routinely and regularly tested so that it can deal with -- deal effectively with any kind of incident that -- that can arise.

3780. And I'll just say we don't call it a safety case, but the safety case system in the UK does something very, very similar. So the systems are -- and we've noticed that also when we -- we quite often have -- have operations or rigs that move from the -- from the UK jurisdiction over to ours.

3781. We had that case with the Stena Caron drillship that drilled the Lona well, and so our -- our offshore operations folks had gone over and spent some time with -- with the -- on the facility prior to her moving over to Canada.

3782. And through that, we were also very much aware with the requirements for the U.K. and we're very satisfied that our requirements were at least as good as theirs.

3783. **MEMBER BATEMAN:** Thank you.

3784. My second question to Mr. Fleming. Has the safety case approach evolved in a material way since the Piper Alpha tragedy?

3785. **DR. FLEMING:** Sorry. Mark Fleming.

3786. I think Max probably could comment on this as well. I was based in the U.K. when the safety case regime came in. There have been a number of iterations of the safety case process over that time.

3787. One of the things, given my background, I'm aware of the changes is around human factors -- human performance in general. The requirements have increased and changed over time and, specifically, on how safety culture is managed.

3788. In the first round of safety cases -- I read of many of them for a project --

companies would say things like, “Here is the risk calculation and we estimate that in our case these figures will be even lower than we've calculated because of our good safety culture,” and all of them pretty much said that without too much evidence to back it up.

3789. More recently, I've had some conversations and although the health and safety executive do not regulate safety culture, they do not have requirements on that level, they have been asking more particular questions, I think, around getting the companies to demonstrate that they are high reliability organizations so that they have very good human performance standards.

3790. So safety culture is becoming a part of that to a greater extent that it maybe was in the past, but it is an evolving and changing process as each new cycle of safety case submissions changes.

3791. **MR. MICAK:** Thank you. Max, is there anything you want to add to that? No? Okay. Thank you.

3792. Eddie Dillon?

3793. **MR. DILLON:** Thank you, Jim. Eddie Dillon from Tuk.

3794. Just to build on the gentleman’s comment from Nunavut and I think it built on the question that came over the internet from Dr. Adams -- is what -- when the government takes the money on the leases from the industry, can't that money be used to hire security measures in government to monitor this type of activity because I go back to the last budget where the federal government cut back Environment Canada’s positions of hundreds of jobs and we’re talking about the environment. It doesn't make sense that you cut jobs when you're biggest risk of the environment is happening in the North.

3795. I just thought I’d build up on -- on the question there and the issue that was brought up from the media that sent the question therein.

3796. But just to build on the issue about the technology available today in regard to reviewing and seeing what the mistakes were and how to make them better in the future. When everybody refers to technology, I sit here and I remember seeing when the blow-out was happening. And we’re talking about middle management, executives, those kind of people that are involved in the incidents.

3797. When the blow-out was happening in the Gulf and everybody was trying to scramble and trying to correct the incident, the thing I didn't like seeing was the Chief Executive Officer of BP out in the yacht relaxing when this thing was happening. You know, those kind of things were -- we put our faith into the NEB to make sure that doesn't happen up here.

3798. Thank you.

3799. **MR. MICAK:** Thank you, Eddie. Bob Simpson.

3800. **MR. SIMPSON:** Bob Simpson with the Inuvialuit Regional Corporation.

3801. I just have a brief question and then maybe some commentary as well. It's the scope of the review, point 9, state of knowledge of long-term impacts of a spill on the environment, way of life and communities in Canada's Arctic.

3802. My particular question is what is the state of knowledge that NEB has possession of, and if there is some analysis of what the gaps or deficiencies in that state of knowledge is, and what to do about the lack of knowledge in that area?

3803. In particular, the reason for the question is that we've heard from industry that there -- the economic benefits of deep offshore development or exploration, in particular, is all hinged upon application, so we haven't got firm answers about what are the economic benefits.

3804. We have heard, I think, very clearly so far and I think that will continue that there is an extremely high-risk to the way of life, the environment, and communities if there is an oil spill but nobody seems to be saying what to do about it.

3805. So there's not only the scope is the state of knowledge but what are we -- how do we follow-up on that issue. The risks are high and the rewards are low and so far all I've heard is compensation is a factor and I think that's within the mandate of the NEB to address, as well as under the IFA.

3806. And there are -- I think in particular in the Inuvialuit Regional Corporation as a result of MGP has been trying to address, or that knowledge gap, more precisely identify what social, cultural or economic impacts are and we certainly are working very closely through the Beaufort Regional Environmental Assessment and building on that knowledge, in a broader sense, in terms of resource development.

3807. But oil spills is a very specific item that I think communities have raised constant concerns. We do hear from industry, due diligence in terms of prevention, management systems, et cetera, et cetera, but nobody has said that an accident wouldn't happen and nobody can provide that assurance that Inuvialuit would seek.

3808. There are things that should be looked at and I think people have been stating as the preparation and prevention is critical, and all those seem to be focused on management systems, engineering and et cetera, et cetera.

3809. But what is being done in terms of preparation with communities, how do they ensure that, you know, resources will be available for them to participate in clean-ups, how will they be able to protect their culture, their way of life in the future. Their whole social fabric needs to be looked at because this is incredibly significant. And at the end of the day with the review I would expect that NEB would report, make recommendation on all areas of their scope of the review.

3810. And that goes back to the question is if there is some knowledge that NEB possesses that I'm not aware of I would assume that NEB would be making a recommendation in some critical areas of what to do about it.

3811. Thank you.

3812. **MR. MICAK:** Thank you, Bob.

3813. There's a lot -- a lot of advice there but I pulled out two key questions that you pose; one is the state of the knowledge and how aware is the NEB in terms of the state -- state of knowledge on the environment. And the second dealt with the responding to the spill, and tomorrow we're going to be spending the entire day or better part of the day addressing that particular item.

3814. But Gaétan, would you like to address that first question?

3815. **THE CHAIRMAN:** Yes, thank you, Bob.

3816. It seems to me about the challenge that we have with respect to knowledge is not so much is there enough. The challenge to me is more the management of all the knowledge we have already that has been accumulating over the years, since the sixties, the seventies and the eighties.

3817. And the purpose of this review, Bob, is -- was and we've achieved some

of that already with all the documents that have been exchanged between people since the spring.

3818. All the knowledge we have, Bob, is in the public domain and can be found in the Arctic Review, and it's not an easy thing to navigate through. As my opening statement said, we have 50 contributors to knowledge in this room. We have thousands of pages and most of these documents have in them multiple links to thousands of pages of other stuff.

3819. So at the end of the process, Bob, we will have a final report that will summarize what is known and will summarize what is not known in respect of applications that will come in the future for a specific well or a specific activity under the regulations.

3820. So I don't think we will attempt, Bob, to summarize the state of science to explain the entire ecosystem in and of itself. Our focus will be to summarize the knowledge that this Board will need to have to be effective when it deals with an application in the future.

3821. And when this application comes in, the Board will look at the whole situation with fresh eyes and will ask itself, what information do we need now as we have received an application for that particular region of the Beaufort Sea or offshore Baffin Island if it happens there? And it will ask the question again.

3822. And we heard from industry yesterday that they are prepared under the existing legislation to make that information publicly available.

3823. So I would suggest, Bob, it's like the question of sustainability, it's a process that never ends, and I don't know that we will be able to be totally responsive to your need for clarity as to what the knowledge the Board has because we have more than any human brain can handle given the size of the task.

3824. So our purpose would be to zoom in what is relevant to the communities and the Board and other participants when the time has come for a specific application for a specific well to be drilled.

3825. The knowledge we will value the most, as a closing remark on that is, is what knowledge must we now acquire now that we've seen the Gulf of Mexico? We've seen something that perhaps some would characterize as a worst case scenario. Some would argue it's even worse than -- that is possible than the Beaufort Sea.

3826. And it is this new knowledge that I think this review is also focused on, which I don't think we will have nailed down by Friday afternoon, but we'll have enough to actually have the Board clarify information requirements how to gain this additional knowledge that has become necessary as a result of the Gulf of Mexico disaster and other industrial accidents.

3827. We will not make recommendations because we have the power to do what we need to do as a Board, so I expect in the final report to have our conclusions. We need not recommend to ourselves, because we recommend to ourselves and we say we agree. So we -- we don't need to do that. It will be a report as to where we are and what we'll be offering the communities and yourselves, participants, on a move forward basis.

3828. I -- I probably -- I'm pretty sure, Bob, it's not fully responsive to your query, but that's the best I can do in terms of offering what the -- the path forward looks like as a journey that will not end with the final report, but will be a major steppingstone.

3829. **MR. MICAK:** Thank you, Gaétan. Follow-up, Bob?

3830. **MR. SIMPSON:** Yeah. Thank you, Gaétan.

3831. Just on the last point on the recommendations, and I understand NEB's scope, your mandate, et cetera, so -- there are aspects of your -- the scope of the review that are not so much directed to just industry or what you do internally. There are recommendations that will need to be directed to government or at least highlighted. And some of those are being fulfilled in terms of the science. I mean, BREA, that's the whole intent of BREA, is to try and build up that state of knowledge in terms of the ecosystems, et cetera.

3832. In particular, a lot of the questions that have been floated around in the last couple of days in terms of preparation and prevention in terms of communities, I think you have stated once we have applications and once there is some development occurring, NEB certainly will prepare. You need to prepare a budget and a request to Parliament for resources essentially.

3833. I'm just wondering whether there is going to be a part of that, some aspects of it going in and saying, well, what about the social issues; what about the cultural issues; what about preparation for communities, and we ran into that same problem

with MJP.

3834. Industry basically said, well, we'll do what we can in terms of economic and business opportunities, et cetera, but we pay royalties, we pay taxes. And we think that it's the government's responsibility to address those types of impacts.

3835. I think that would be very helpful in -- in this review is to at least highlight that issue to government, that that needs to be addressed, and, of course, the state of knowledge -- I've gone through your website, and it's very lacking. There are gaps in particular with that review, so I think that needs to be more precisely addressed.

3836. **MR. MICAK:** Thank you, Bob.

3837. Michel, you wanted to add to this, Michel Chenier?

3838. **MR. CHENIER:** Yes. Good morning. Thank you, Jim. I thought I'd try to maybe just add a bit of a perspective to Bob's comments and -- and questions on two points.

3839. One point that I heard is around policy issues that may be discussed within -- within this particular review here that may be outside of the NEB's mandate. I'd like to reassure Bob and other participants that we are very much following the NEB's proceedings and are noting the various matters that may be outside of the NEB's mandate. And, again, I want to reassure you that those will be considered by governments as we move forward here in our collective journey.

3840. Second of all, for the benefit of other participants because I know very well Bob is aware of this, given he's leading this particular component of BREA, but we do have a social and cultural, economic indicators project that's goal is to develop social, cultural, and economic baseline data and indicators for the ISR, identify the impacts associated with oil and gas activities, so very much a very important pillar of the BREA initiative.

3841. And I want to take this opportunity to thank Bob for his leadership in that particular regard. Thank you.

3842. **MR. MICAK:** Thank you, Michel.

3843. Yes. Robert, Robert Powell?

3844. **MR. POWELL:** Thank you very much. Over the last couple of days we've heard some discussion about how the NEB might go about regulating, and there have been some call from some of the industry folks for goal-based regulation.

3845. And I recall reading a speech by one of the Board Members -- I believe his name is Bob Vergette -- about goal-oriented regulation. And I wonder if I could ask the Board to comment on whether they regard those two things as different and how they are different.

3846. **THE CHAIRMAN:** Thank you very much, Rob. That allows us to clarify language here. Bob Vergette is his name. He doesn't speak much French, but it sounds like French, Vergette.

--- (Laugher/Rires)

3847. **THE CHAIRMAN:** I hope he's listening to this right now.

--- (Laugher/Rires)

3848. **THE CHAIRMAN:** We've tried to be careful, and not always have been, about the model, and it's goal oriented. You got it nailed, Rob, in your question.

3849. And our goal-oriented approach is essentially identical to performance-based regulation, which is more the parlance in the United States and perhaps elsewhere. And it's a euphemism for regulation base in part -- in part on prescriptive elements and strictly management system elements.

3850. So the NEB and I think the offshore boards -- I don't know if Max would agree with that -- it's a blend of the best of these two worlds.

3851. I'll give two examples. If you need to calculate the thickness of the wall of a pipe, you know, the wall thickness of a pipe, there's a linear equation that says the wall thickness shall be .72 times something, something. There's no goal -- there's no goal base or performance base language for the wall thickness. Your plank number is an equation; you get your wall thickness.

3852. On the other side of the ledger, you've got -- at least have a safety system that tells us that you will have a safety culture that make people safe, workers and communities alike. The onus is on you to demonstrate to us how you will do that.

3853. So goal oriented is the phrase that communicates the fact that the Board, when necessary, goes prescriptive and when more effective goes performance based. If I misspoke at all either Bharat or someone else will -- will correct the impression I may have left.

3854. Bharat?

3855. **MR. DIXIT:** Thank you, Gaétan. Thank you, Rob.

3856. There may be some confusion, but I think Gaétan is correct in his summary that goal-oriented regulation, the phraseology we used when the Canada Oil and Gas Drilling and Production Regulations came into force is that blend of prescriptive and goal-setting or performance-based elements.

3857. As I tried to explain last time, it is always incumbent on the operator to demonstrate that their methodology is appropriate and it's only when the Board is satisfied will a regulatory decision be made.

3858. **THE CHAIRMAN:** Well example, Rob, if we tell a company, please reduce the pressure by 20 percent, this is not goal-oriented, this is prescriptive; do it now otherwise we shut you down and the Board has these powers and uses them when necessary, based on the circumstances.

3859. **MR. POWELL:** Thank you.

3860. And Bob, sorry for mangling your name.

3861. **MR. MICAK:** Thanks.

3862. Any other questions, comments from anybody in the room on learnings?

3863. Lyne, yes, please.

3864. **MEMBER MERCIER:** I'll ask mine now.

3865. My question is related to a question we sent to industry on August 29, it's Question 10.1, but I will direct my question to Max and then maybe ask industry to comment on it.

3866. So, Max, yesterday it was very interesting to see how you were drilling

this Lona 0-55 while they have this incident in the Gulf of Mexico and where you were keeping abreast of every news so you would be doing the right thing.

3867. And my understanding is that there was increased regulatory oversight and part of it was that during the drilling operation there would be times out or stand-down before hitting target zone. So that was something that you introduced.

3868. So what I'd like to know from you is that is that procedure something that you think is going to become the standard from now on or use it as, like, temporary or what are your views on that and then I'd like to hear from industry who are drilling that well, what they think about it and whether it should be new best practices.

3869. **MR. RUELOKKE:** It's Max Ruelokke.

3870. Thank you for that question, Lyne.

3871. What we did with the requirement for operations timeouts was to formalize a process that should be occurring in any event.

3872. Anytime when you reach a critical aspect of the operation or critical phase the operator, the drilling contractor and the regulator need to be able to understand and ensure that everything that needs to have been done to that point in time to allow the next set of actions to be taken has been done. And you need to know that you have the training, the equipment, the expertise available in the event that something goes wrong in the next phase of the operation.

3873. It should be a normal part of everyday practice but quite often it gets skipped and certainly in the Macondo well it got skipped on a number of occasions. So when we formalized it, it ensures that it happens and that it makes it possible for all of us to step back, look at what we've done, make sure we've done all the right things and we're prepared to do the next things that need to be done.

3874. And only when we're all satisfied, then as the regulator, we will allow the next steps to be taken and it worked very well for us in that instance and we will -- we will continue to use it on a risk assessment basis.

3875. We'll look at each -- when we look any particular well you'll know there may be multiple targets, there may be areas where you have different rock formations that will require different kinds of treatments. And so it will continue to be an evolving, I think, type of best practice that we'll continue to use.

3876. **MR. MAIER:** Yes, Rod Maier; Chevron.

3877. Lyne, thanks for that question.

3878. Certainly -- and we actually called it at Lona, a safety stand-up to emphasise the positive aspects of it as opposed to laying down on safety. But in that particular instance at the -- near the end of the well operation we did shut down the rig for a 12-hour duration so that we were able to get both of the crew, the day and the night crew covered off on it.

3879. And really the focus for that safety stand-up was to reinforce our safety principles. And as we were nearing the end of the well to reinforce -- to remind everybody not to be complacent as we were nearing the end of the journey, that we hadn't completed our journey yet and to reinforce it.

3880. And we also took the opportunity to solicit feedback from the people that were working on that operation as well, in terms of what should we incorporate, you know, in future learnings and how to adopt that in the future. Certainly a safety stand-up in planning the well is pretty much a normal practice for us at the start of a well operation.

3881. And we have a number of sessions with our contractors and the staff. We have three-day -- what we call these clear leader workshops where we engage the representatives from the contractor and the like.

3882. We meet with all the crew staff before we commence the operations to include the safety stand-ups during the program. It's something we may program. It's a function of the well duration. You know, if it's a shorter well, we may not have time to get it in. If it's a longer duration, we would put in multiple ones.

3883. The other thing to emphasize is these are not always planned ahead. We may also have them in the event of, let's say, we have a near miss or that we have an incident on the -- on an operation. We would potentially have a safety stand-up at that particular point in time again to assess what went wrong, take the corrective measures and making sure it was safe to proceed.

3884. Maybe I'll ask my colleague, Kevin Carey, to further elaborate.

3885. **MR. CAREY:** Yes, this is Kevin Carey at Chevron as well.

3886. It's not an uncommon practice and certainly not exclusive to Canadian waters where we've utilized this. It's pretty much a global process that's utilized as Rod has previously mentioned.

3887. In addition, I think one other time that it's significantly used for us, if there's ever a change in procedures that's required or if we're going to do something that is out of the ordinary, we always shut the rig down in order to make sure that again everybody goes over the process and we make sure we have the equipment, everybody's trained to do what needs to be done and the procedure goes forward after the rig has been shut down, so that's -- again, it's a common practice used globally.

3888. **MR. SYKES:** Gary Sykes, ConocoPhillips. And thank you for the question.

3889. Again, I think the terminology safety stand-up, safety stand-down can be interchangeable. It kind of means, you know, the same; effectively a time-out in the operation specifically to talk about safety. So again we have that practice and, at various times in our operations, you know, we'll call a safety stand-down.

3890. But I think, you know, what's important is that prior to every critical operation, we have a meeting, you know, focused on safety with all of the workers to be involved in the operation so that we can have a discussion around hazards and identifying any risks in order that, you know, we can carry out the operation safely.

3891. **MR. MICAK:** Michael, and then the gentleman behind Michael. Michael?

3892. **MR. PEACOCK:** Yeah, Mike Peacock, Imperial.

3893. Lyne, I think that's a great question and it's a really important thing for people to be aware of.

3894. I completely agree with what Rod and Gary have said, and I certainly agree with what Max said, in that it's a best practice and I think we certainly have it integrated into our systems already, exactly the same processes that Chevron and Conoco have alluded to. And we call them safety stand-downs and we're not afraid to implement them and we're not afraid to terminate operations that we deem unsafe.

3895. And, Mark, we will do that and we use leading indicators sometimes to

tell us and if we see unsafe operations and we see unsafe activities based on the indicators we have, we will shut down operations, so I think it's a very, very good question.

3896. **MR. MICAK:** Thank you.

3897. The gentleman who's been very patient in the back. Your name, please?

3898. **MR. INUKTALIK:** Thank you. My name's Adam Inuktalik with the Ulukhaktok Community Corp. and my question is to the NEB regarding the worst-case scenario.

3899. In the approved application, oil company Canada agrees to have $1 in their oil spill cleanup, and that's what's agreed upon. And then oil company Canada spends that $1 doing their cleanup.

3900. And then you do the inspection and come back to them and tell them, "You need to put another thousand dollars into this cleanup here to get it right." And then oil company Canada decides that it's going to bankrupt them, so they're not going to do it. They shut down everything here in Canada and then move somewhere else.

3901. Can we go after their assets or after their company in oil company Saudi Arabia or oil company America?

3902. **MR. MICAK:** Thank you for the question. Gaétan.

3903. **THE CHAIRMAN:** Thank you for the question. And Jean-Denis will answer the question but the short answer will be yes. The legislation we administer requires us, the NEB, to administer the financial responsibility aspects and no well can be authorized by us unless we are satisfied that the financial responsibility has been demonstrated.

3904. But Jean-Denis will take it from here and give you any further detail as he thinks is helpful here.

3905. **MR. CHARLEBOIS:** This is Jean-Denis Charlebois with the NEB.

3906. In the event of a spill, if the NEB is not satisfied with the actions taken by the operator the NEB has the authority to take over spill response. And to the extent

that the NEB incurs cost in doing that the NEB will, in all likelihood, seek recovery of those costs from the operator that did not perform its duty correctly.

3907. **MR. MICAK:** Does that answer your question?

3908. Thank you.

3909. I have three and one from a member of the Board. I'm going to go to the speaker in the back and then to the Board and then to Will and then to Duane and then we'll break -- take our morning break.

3910. Please?

3911. **MR. TEDDY:** Thank you. Vince Teddy; Tuktoyaktuk Community Corporation.

3912. Just a follow-up question that the NEB member asked Max or Max responded to the question anyways.

3913. The question was about, I guess, management system tests and safety. And when you responded you said, "Well, some of the stuff was skipped"; so that's one part. And then you said "In that we formalized this through the management system". I want to know what you mean by formalized because that, you know -- qualify that for me, please.

3914. Thank you.

3915. **MR. RUELOKKE:** Yes, Max Ruelokke, again.

3916. Thank you for that question.

3917. When I say we formalize it I mean we -- what used to happen in the past, that there would be an informal discussion around the next steps in a particular set of operations and we decided to impose what we called an operation's time-out, so that's a requirement that we as a regulator held the operator responsible for.

3918. So there was a formal -- in each case there will be a formal meeting and actions -- action items would be noted so that we can make sure that we understood exactly what was done and what was needed to be done. And so that's what I mean when I say I formalize it, it was something that we imposed on the operators.

3919. **MR. MICAK:** Did that answer your question?

3920. **MR. TEDDY:** Well, I guess maybe a definition of that to the operator about the word "formalize" should be put into a definition, that way it doesn't mean that they just stamp it and then move it on because a lot of people think formal means that you just stamp it, move on.

3921. Thank you.

3922. **MR. MICAK:** Thank you.

3923. Georgette?

3924. **MEMBER HABIB:** Thank you.

3925. Good morning, Dr. Fleming. Yesterday I didn't get the chance to introduce myself to you; I'm Georgette Habib; Member of the Board.

3926. This morning you had said that incidents happen because of a failure of the management system. If I would ask you to provide advice, perhaps three points, three major points to this Board as to what is it that we could do in order to incite companies to improve their management system?

3927. **DR. FLEMING:** So that's sort of the $64 million question which I wish I had the answer to.

3928. So I think there's -- the point I'm trying to make is that the documented systems that the major operators have are all very good. The challenge that I think all of them face -- and I can't speak for them but it's my sense -- is to make sure that what's down on paper happens in reality.

3929. So I think the -- from a regulator perspective -- and regulators already do this -- is to look at lots of different ways to see the extent to which those companies they regulate are truly living their systems on a day-to-day basis.

3930. Now, currently all regulators do this to a greater or lesser extent, but what I think needs to be done is, one, we need to become more sophisticated in the way that we assess and examine the extent to which licence holders are living their systems and ensuring that their contractors and subcontractors, and sub-

subcontractors are living those same systems, and that's a really big challenge. So I think the regulator needs to think of new ways of doing that.

3931. I think that the regulator could also encourage the licensees to put more of their research and development efforts into thinking of better ways to improve their management systems or improve -- improve the ways they make their management systems work.

3932. Does that sort of make sense? So it's -- it's not the documented system. They're usually pretty good. It's more, keep thinking of new and innovative ways to make sure they live those systems. So I think if -- if a small proportion of their research and development budget went into that, that would probably be helpful to the industry as a whole.

3933. And I think finally the regulators, in general, should encourage much more collaboration with the -- amongst the industry who are working in the Arctic. So an Arctic collaborative industry group would be useful.

3934. One of the things that I think we have learned from Macondo is that one company's failure impacts everybody. And the Arctic is going to be the same. So if we have an event in Russia, it's going to affect how things operate here and vice versa.

3935. And I think, just even listening today, the companies have developed many great processes internally to improve how they live their systems. It would just be great if they shared them a bit more with each other.

3936. That's the best I can do. Sorry.

3937. **MEMBER HABIB:** Thank you very much.

3938. **MR. MICAK:** Okay. Will and then Duane, and then we're going to break for coffee.

3939. **MR. AMOS:** Thank you. Will Amos for WWF Canada. I have a question for each of our distinguished guests, and I'd like to start with Mr. Fleming -- or Dr. Fleming.

3940. Yesterday you mentioned that the regulation of offshore in the Beaufort Sea ought to be treated more akin to the regulation of the nuclear industry. And I

wonder if you could elaborate further on the -- the impacts that approach would have concretely for the NEB. What does -- what does that mean in terms of the NEB's work, particularly, say, around their assessment of risks that are unacceptable in an area that is effectively the cradle of an entire civilization? Thank you.

3941. The next question, which would be for Mr. Ruelokke, would be, we have discussed extensively the industry's willingness to be transparent with respect to emergency plans, contingency plans, et cetera. And there have been commitments made to -- to ensure transparency on this front.

3942. This issue has been front and centre in the Atlantic offshore, and there's been extensive media reporting of -- of this. Will the Canada and Newfoundland Offshore Petroleum Board be seeking the same degree of transparency from industry participants operating there? Thank you.

3943. **MR. MICAK:** Mark?

3944. **DR. FLEMING:** Okay. Mark Fleming.

3945. The purpose of the comparison to the nuclear industry was to sort of highlight, at least in my head, how the consequences of a potential spill, at least from my understanding, would be to the community.

3946. And while major offshore disasters have negative consequences for local communities, from my perception I think a major spill in this community would be devastating to the community in a way -- in my head, seem similar to a nuclear event.

3947. And one of the things that -- at least in my experience since I've been in Canada, was the challenges that some of the operators had from going as an onshore operator to working in the offshore environment.

3948. So onshore drilling has -- is a hazardous environment and has challenges but when you take that offshore and deepwater it gets even more complicated and it's a difficult transition.

3949. So things that you did onshore now wouldn't be acceptable offshore and I think it's a similar transition, in my head, to move from, say, offshore Nova Scotia to offshore here because of the potential consequences when anything goes bad.

3950. So risk is a combination of how likely something is to happen and also the

consequences of that thing happening. And sometimes that can get lost; that the likelihood may stay the same or get less but because the potential consequences are so much higher you need to have a much lower risk tolerance. And in my head the similarity or the metaphor I was trying to say was to rethink that.

3951. I'm not sure that the NEB needs to do anything particularly differently. I think they have a similar framework. I think they get that idea that this is different and the level of risk or the -- the likelihood of an event needs to be much lower than it maybe would be onshore, so it needs to do more for that.

3952. And the purpose of the analogy was to really make it clear that this is different and the consequences are so much greater.

3953. I don't know if I've answered that question now but that's what I was trying to say, was that I don't think the regulations will change but I think we need to be very present-minded that working in this environment is different and it's useful, at least for someone like myself who's not from here, to try to think of something similar.

3954. So in my mind a spill out here would be similar to a nuclear event in Point Lepreau in New Brunswick. I would have to leave Nova Scotia and so would everybody else and that's what would happen, potentially, here.

3955. So that was what my analogy was for.

3956. **MR. MICAK:** Max, can you respond to the second question from Will?

3957. **MR. RUELOKKE:** Yes. Max Ruelokke.

3958. We currently release the operator's emergency response plans and have been doing so for some time. However, we are confined to a certain extent, and constrained by the legislation which was imposed by -- was developed by governments back in the early 1980s.

3959. And in the past year or so I have written both the Ministers of Natural Resources for Canada and the Natural Resources for Newfoundland and Labrador requesting that they make changes in the legislation, in particular with respect to section 119 of the *Atlantic Accord Acts* which deems certain information provided by the operators to be privileged. We've asked them to change that and we wait for their response.

3960. **MR. MICAK:** Thanks.

3961. Duane, your comment, question?

3962. **MR. SMITH:** Yes. Ublaami. Good morning. Duane Smith.

3963. I just want to go back, I guess, a bit to Lyne's question for further clarity I guess, because myself, I'm not fully familiar with the NEB requirements or standards and with Lyne's question I guess it sounds like the practice -- or the question that she was inquiring about is presently a voluntary practice, that it sounds like industry is apply globally in regards to this stand-down, stand-up, whatever you want to refer to it as.

3964. But that was exactly what I was touching on, that the NEB should be looking as a -- one of its mandatory requirements; to look at, to make it applicable, at the very least, within the Arctic as establishing a higher standard, a higher practice that should be applied especially since it sounds like industry is already doing it anyways or so they say. Maybe not all of them, but I think -- I would think it should be considered by the NEB.

3965. And in regards to Gaétan's comments, I guess, saying that the NEB makes concluding reports and going back to Bob's comments, I would think and hope that out of these discussions throughout the week that the NEB would also consider making recommendations that may not be fully in the mandatory -- or the confines of the NEB because it does have some areas where INAC, or whatever they call themselves now, have to demonstrate to NEB that there are some agreements in place with people within whatever respective region that you're dealing with.

3966. So I would think that in that area, you may want to look at making some recommendations that Bob has touched on such as social impact issues, et cetera, or socio-cultural.

3967. And lastly, I guess, I would reiterate what Mr. Fleming over there said because that's exactly what we have been trying to suggest to, you know, the limited industry that's in the region right now, is to collaborate, develop some collusion to work with each other so that they can more effectively address, you know, their operations within the region instead of in isolation because of the limited infrastructure, especially in regards to preparedness.

3968. Thank you.

3969. **MR. MICAK:** Thank you, Duane.

3970. Gaétan?

3971. **THE CHAIRMAN:** Just to acknowledge, thank you, Duane. We accept as your recommendation the question of mandatory stand-downs and the -- you're urging us to recommend to government; so we'll -- we'll accept that as your recommendation.

3972. Thank you.

3973. **MR. MICAK:** Okay. Great. We're going to -- we're going to break now, and Mark and Max are -- will be here after the break.

3974. I know that there are -- there are two that want to follow up with some of the things that have been said. I've got Rod, and I've got Will that want to follow up. And after that, we're going to move on to the next theme which is Drilling Safety.

3975. Thank you very much.

--- Upon recessing at 10:44 a.m./La session est suspendue à 10h44
--- Upon resuming at 11:04 a.m. /La session est reprise à 11h04

3976. **MR. MICAK:** Okay, I had mentioned before the break that we had two additional questions as follow-up. Over the break the questions have been answered. So we are concluding now the Roundtable discussion on Learnings.

3977. And I just wanted to acknowledge, Mark, and Max and Claudine, their presentations. Their presentations, I think, were extremely informative to the Roundtable and helped add to the knowledge of the Roundtable in a rather considerable way.

3978. So thank you very much to Claudine, Max and Mark.

--- (Applause/Applaudissements)

3979. **MR. MICAK:** Okay, I'm going to hit it over to Andy and Andy is going to -- or Vicki and Vicki will speak to where we're going from here.

3980. **MS. McCULLOCH:** Thanks.

3981. I just wanted to quickly review where we're at in the agenda and where we're going to be going over the next couple of days. Basically we're right on target, I think, in terms of keeping with the schedule that we had proposed from the outset.

3982. We'll just quickly run through this here. So Day One, we did our opening and introductions, we heard with respect to what the NEB had heard out in the communities; we had presentations from non-industry and industry participants in two Roundtable discussions related to that.

3983. We then moved into Part II, how to do things right, Theme Number 1, related to the unique Arctic environment; Theme Number 2, the regulatory overview, we dealt with yesterday.

3984. We began the Theme 3, Learnings, as well yesterday and continued that Roundtable discussion into this morning.

3985. So we're on target, as I mentioned. We're continuing to move forward with the last two remaining themes, Theme Number 4, Drilling Safety. We're going to start in a few moments. We have a couple of presentations related to risks, mitigation, and Same Season Relief Well capabilities and that's going to take us, basically, the rest of today.

3986. Theme Number 5 deals with responding effectively when things go wrong. We'll initiate that tomorrow, unless we get through the Theme Number 4 today but we'll see, but that is scheduled to begin tomorrow morning. And then again we will have a number of presentations and an opportunity for Roundtable discussions.

3987. Tomorrow we'll also have a wrap-up session where participants will be providing their final comments and inputs to the National Energy Board and we'll close the meeting tomorrow afternoon.

3988. So as I mentioned, we're right on schedule. There's still a lot of time for conversations to occur and we look forward to that.

3989. So just while the presentations are getting lined up for Theme Number 4, we've got two presentations this morning. The first is from Dr. Bharat Dixit on

drilling safely. He's going to talk about risks and mitigations and then the second presentation relates to Same Season Relief Well capabilities, the historical context, and that will be provided by Terry Baker.

3990. So we did introduce Dr. Bharat Dixit yesterday but I'll just give a few notes in terms of his biography while we set things up.

3991. Bharat is the Technical Leader in Exploration and Production at the NEB. He's worked there for almost 20 years. You've heard from him several times over the course of the meeting so I won't get into the details of his career but as we know, he's -- lots of experience in the North.

3992. Anyway, we look forward to hearing his comments with respect to drilling safely, risks and mitigation.

3993. Thank you.

3994. **MR. DIXIT:** Thank you, Vicki. Good morning, everyone.

3995. As with my presentation yesterday, I'll be talking at a high level on risks associated with the drilling for oil and gas in the Canadian Arctic offshore and some approaches to how their effects could be reduced or mitigated.

3996. At the start I wish to note that offshore oil and gas drilling programs are complex operations. And to quote Senator Bob Graham, the Co-Chair of the U.S. National Commission, "*complex systems fail in complex ways*". So we'll be looking at some of that during my presentation.

3997. So after providing some examples of some failures I'll be looking at four key areas where risks could originate and how they may be mitigated. I wish to emphasize, as I have done before, that it's the operator who must identify all hazards and evaluate and eliminate or reduce the effects of these risks.

3998. It is only when the National Energy Board is satisfied that drilling can take place safely while protecting the environment would a regulatory decision be made. In the case of an authorization there would likely be terms and conditions associated with an authorization.

3999. So I'll start with three illustrative but key major events and their implications to safe offshore drilling. These are illustrative and are not meant to be

exhaustive.

4000. The first one is the sinking of the Ocean Ranger offshore Newfoundland in 1982 with the loss of 84 lives which resulted in a complete restructuring of how oil and gas activities are regulated in the Canada's offshore.

4001. The next one, as talked about by Dr. Fleming, the fire and the resulting death of 167 people on Piper Alpha in 1988 in the North Sea resulted in the introduction of safety case and a systematic consideration of hazards and risk reduction.

4002. Finally, the explosion and sinking of Deepwater Horizon, the loss of 11 lives, and the world's largest oil spill will result in additional improvements to safety and protection in the environment.

4003. The disasters shown here are for illustration and show the consequences of the risks again as noted by Dr. Fleming. And it is critical that all factors individually and in combination that can cause harm to people and the environment are considered, risks evaluated and systems put in place to mitigate these risks.

4004. Also to pick up on what Mark was saying, while it's important to have management systems and safety culture it's how well they're implemented that makes all the difference.

4005. Further, it is important that management systems approach be implemented for continual improvement to promote safety and protection for the environment as required by the Canada Oil and Gas Drilling and Production Regulations.

4006. So in this slide I'm trying to illustrate some possible sources of risks, and on the left-hand side, I'll start with the bottom, we have the well itself, sub-sea systems such as the blow-out preventer, station keeping of the drilling platform itself and the systems, people, procedures and culture that pull it all together.

4007. In this illustration I've used a floating system but the approaches that I'm proposing here are applicable equally to floating as well as bottom founded or structures that are touching the sea floor.

4008. These sources can be examined and addressed through proper design, operations and maintenance of equipment by using robust procedures by qualified

and skilled people, and some of the factors for consideration are listed on the right-hand side, such as understanding the operating environment, designing to it, taking proper risk evaluation, having robust management system and positive safety culture we heard about, the people, processes in place to make that all happen.

4009. Moving to each of those four components then, starting with the well itself the major loss is the loss of well control that can result in the release of oil and gas, and some of the approaches to addressing this source of risk are things such as the design of the well itself based on appropriate knowledge of what to expect while drilling, the drilling activity itself, the casing and cementing as the drilling progresses, and the securing of this well.

4010. The next item in my illustration was subsea systems, and the risk is that the loss of a blow-out preventer can prevent the ability to control the well in a blow-out situation.

4011. Approaches to addressing this source of risk may include, but are not limited to, adequacy of the BOP itself, the redundancy in it, the automatic functioning of this equipment, having third-party inspection and certification, such as those that are already part of our regulatory regime and those that were introduced in the United States in October last year, and to incorporate lessons learned from Macondo and other such situations.

4012. My third area is the loss of station-keeping or the inability of the drilling system to stay on location primarily due to ice forces, and this could increase chances of a well -- loss of well control and the ability to regain control.

4013. As in the case of the well, we need to understand what the limitations are of the drilling system itself to operate that within the operating limits of that structure, to have effective ice management, to reduce the loads on the platform, to have a means of disconnecting when these loads are exceeded, and proper escape and evacuation opportunities.

4014. Finally, the risk is that inadequate policies, procedures and safety cultures and ill-prepared people can be a significant contributor to the increased risk of a blow-out, resulting in possible loss of life and spill.

4015. Eliminating or reducing these risks could be achieved through the inclusion of items shown here. And if I sound like a broken record, it's because I firmly believe that it is the robustness of a management system and how well it is

implemented, having that positive safety culture that -- that Mark was speaking about, the competencies and a process of continuing improvement.

4016. What I have provided so far is not intended to be a comprehensive list or a checklist of any sort. The intention is to increase awareness of risk areas, factors and approaches.

4017. At the end, each operator must demonstrate to the National Energy Board how its proposed plans are meeting statutory and regulatory requirements, and how drilling can take place safely while protecting the environment as well as to respond effectively when things go wrong. It is only when the NEB is satisfied would a regulatory decision be made.

4018. So I'll conclude by asking you all on input to filing requirements on the area of drilling safety, as this is the team that addresses that matter.

4019. Thank you.

--- (Applause/Applaudissements)

4020. **MS. McCULLOCH:** Thank you, Bharat.

4021. In keeping with our previous practice, if there are one or two questions of clarification, keeping in mind we still have the Roundtable discussion so you will certainly be able to ask questions and make more detailed comments for the rest of the afternoon. But before we get onto our next presenter, any questions of clarification for Bharat?

4022. All right. Our next speaker is Terry Baker, but before -- while his presentation is getting loaded up, Elizabeth Pertschy has -- oh, sorry. Oh, sorry, Will, I apologize.

4023. **MR. AMOS:** Will Amos with WWF Canada.

4024. I've just got a question for Bharat, and perhaps there's someone in the industry who could help answer this question.

4025. I'm unaware of the redundancies that are incorporated into the GIS -- GIS -- global positioning system thrusters that are used to keep a -- keep a floating rig in place. I mean, I'm wondering -- I guess what I'm wondering is, if the -- if the global

positioning system that keeps a rig in place in the Beaufort Sea somehow loses contact with satellites -- and as I understand it, satellite systems used in the Arctic are -- they're somewhat different. They're more difficult to use than they are in the South.

4026. What is there to ensure that connection with a satellite can be re-established? I don't have any technical knowledge in that regard.

4027. **MR. DIXIT:** Thanks, Will. The question, as I understood it was, what is our understanding or -- of reliability of positioning systems so that the vessel can stay on location; is that correct?

4028. So -- so in my presentation, I have chosen deliberately to be at the -- the 10,000 metre level and not talk about any specific elements. What I tried to do was to be illustrative of areas where risks could be. And certainly in terms of station keeping, the question that you pose are appropriate.

4029. What our expectation is, is that as we go along, we will get input from participants to this Roundtable on what ought to be in our filing requirements on those areas.

4030. **MS. McCULLOCH**: Thanks. And do any of the companies care to respond?

4031. I think Will had asked for both. Oh, sorry, I wasn't looking far enough over. Rod Allan, please.

4032. **MR. ALLAN:** Rod Allan with Transocean Offshore Drilling.

4033. I'd like to keep it as close to 10,000 feet as I can because dynamic positioning is a very, very complex subject, but to address Will's particular comment about backup and getting back online, when you position any vessel, whether it be a drilling vessel or a seismic vessel or a diving vessel, dynamic positioning uses multiple methods to establish the position of the vessel with respect to the location it needs to be.

4034. A satellite system dependent on GPS is one of them. Even if there are multiple GPS systems, we want to make sure that they do not use the same grounded systems or -- or backups and have their own redundancy.

4035. When loss of a signal from a GPS or a tagline wire or an acoustic system is lost, there is a very complex system of logic that goes into analyzing the weighted value of different systems to make sure that loss of any one system is not going to cause a loss in station keeping.

4036. It's very hard to put this in simple terms because it is a very complex system, and the -- and the amount of work that goes into it is pretty extensive, but I'm not going to say that there haven't been failures of DP systems because there have. They're usually attributed to a human error in overriding an automatic system, but we have pretty good confidence in this.

4037. We have been working with many of the operators over the last couple of years to -- to make it better understood how failures occur and what we can do to minimize those failures through more robust systems and better boating systems and -- and looking at the technologies. It's a continuing improvement that's going on on that side of the industry.

4038. I can certainly take it offline if we want to get into much more details, but it is a system that, I think, we're fairly confident in the -- in the experiences that we've had, especially in the last few years as we've had more and more dependence on dynamic positioning, especially in the deep water.

4039. **MS. McCULLOCH**: Thank you. Any other questions of clarification? Oh, Andrea? Oh, sorry.

4040. **MR. CAREY:** It's Kevin Carey with Chevron.

4041. **MS. McCULLOCH**: Sorry.

4042. **MR. CAREY:** Just an additional comment to that as well would be all of these DP systems have a -- once we feel like we're losing station, we've got a watch circle that -- which -- different warning scenarios where as of -- as the ship were to leave station, it functions a system where we automatically shear the pipe, seal the well, and disconnect from the -- from the BOPs to avoid damage to any of the drilling equipment, so that's -- that is a -- the -- kind of the last resort once station keeping is lost on a DP system.

4043. **MS. McCULLOCH:** All right. Any other comments from the industry folks to wrap that one up? All right.

4044. Before Terry starts, though, Elizabeth Pertschy had asked to make a comment, as she's going to be departing soon, so I just wanted to fit that in before we get Terry -- Terry's presentation underway.

4045. So, Elizabeth, please.

4046. **MS. PERTSCHY:** Thank you. It seems I'm not trying to rush anybody around here, but I have a tendency to always try to talk when -- when I think I'm not ready, but now I am ready, and I just would like to say -- I've just got my notes all over the place here, so I have to see what I'm going to read.

4047. How many of you remember the big oil sands -- the big oil sands spill where so many ducks trapped, and trying to stay alive, swimming in oil, another bad accident. The Board, are you listening to everyone?

4048. From coast to coast, let's keep Canada beautiful. Thank you.

--- (Applause/Applaudissements)

4049. **MS. McCULLOCH:** Thank you, Elizabeth.

4050. All right. So with that we will go to our second presentation on theme four by Terry Baker. He is going to be presenting on Same Season Relief Well Capabilities and providing some historical context.

4051. So by way of background, Terry is a graduate of the Nova Scotia Technical College. He has a Bachelors of Geological Engineering and a Master's of Environment -- or, sorry, of Mining Engineering.

4052. He began his work with PanAmerican Petroleum, AMICO, in 1968, and he retired from the National Energy Board in 2008. The last three years of his career were on an interchange with INAC, or Indian and Northern Affairs Canada, now known as Aboriginal Affairs and Northern Development Canada.

4053. From 1991 to 2005, he was the team leader of Exploration and Production, as well as being the designated chief conservation officer from about 1997 to 2000 and something. The number is left off here, sorry about that.

4054. Anyway, I would welcome Terry to come forward and start his presentation if he's here. There he comes. Thank you.

4055. Well, you got me on my toes anyway. Thanks, Terry.

4056. **MR. BAKER:** Good morning. Thank you for the opportunity to speak.

4057. Just clarify a couple of things -- oh. A couple of additional -- additional points; I started with PanAm in ’68; I went to Indian and Northern Affairs in ’75; I worked there until ’81.

4058. Indian and Northern Affairs and EMR got rolled together into Canada Oil and Gas Lands Administration, which was COGLA, then to the NEB, and now I belong to a very large organization called retired people.

--- (Laughter/Rires)

4059. **MR. BAKER:** So what I’m giving you today is really a historical content. I’m not speaking on behalf of any organization, the NEB or else-wise. What I’m going to explain to you is sort of to the best of my ability how the Same Season Relief Well concept came into being, how it changed over the first three or four years having to deal with drill ships, and basically how it was applied to all drilling activities in the Beaufort Sea.

4060. Okay. Sorry, I -- yeah, I will slow down.

4061. How it was applied to all drilling activities in the Beaufort Sea from ’76 on through to ’91.

4062. Okay. So I’m -- if I do this correct here -- okay.

4063. So I’m going to give you the historical context. My talk today, I’ll start with the principles, what is really defined as Same Season Relief Well Capability, some of the key decisions and recommendations that came out, how the policy was implemented, and talk a little bit about some of the changes that occurred over the years in terms of equipment and other advances made in ice management and weather forecasting.

4064. Okay. Same Season Relief Well, well, here is a definition; designed to ensure that for a well being drilled in open water in the Beaufort Sea. In the event that you have a blow-out you have appropriate equipment to complete a relief well before severe weather conditions set in.

4065. Now, what's implied here, the application and the principle, is that a second unit is to be designated and arrangements in place to use that unit to drill a relief well.

4066. Here was the decision point in my talk. I had a choice of making many slides with lots of words and speaking, or making one slide with very few words and saying the same amount of material.

4067. This gets a little bit complex and convoluted, but at the end of the day when I get down to the year 1978 that's sort of the last year in which the final conditions for Same Season Relief Well from drill ships were sort of put in place.

4068. So also you see Cabinet decision or press release. Basically the press release was the result of the Cabinet decision. For whatever reason I attended some of the early press releases for Beaufort Sea. I actually kept some of these documents. I didn't keep very much material when I left the NEB but I did have some of this in storage, so it happened to be the press release that I got my information from or it happened to be the Cabinet document that I got my information from.

4069. So in 1973 government approved in principle drilling in the Beaufort Sea. In '76 approval was given for drilling with some special safety precautions, that being that drilling once it commenced had to cease September 15th with the possibility of a 10-day extension based upon favourable weather conditions. There had to be a second rig available. There were two rigs drilling simultaneously, one to provide back-up capabilities in the event of a blow-out for the other.

4070. And then there was another section where a whole list of other terms and conditions typical and had to deal with inspections, ice monitoring compliance. It was the usual if you had to use casing, et cetera, et cetera.

4071. But I'll try just to focus on those first two issues, one the date, and the second, the back-up.

4072. September Dome Petroleum applied for an extension of the September 25th date. Cabinet decision said no, September 25th was the date for deep water drilling. What they did propose was the drilling and casing of wells up to 1,600 feet up to two days before closure of the Beaufort Sea for this class of vessel, and that date happened to be October 25th.

4073. So the Arctic shipping when pollution prevention regulations said Class II -- ice Class II vessel could commence drilling in July 1 and that vessel had to cease drilling October 25th. So that's -- so at the end of the first year, the 15th, 10-day extension, and drilling shallow wells up to 1,600 feet.

4074. As usual government and various committees, Beaufort Sea Steering Committee, there was a socio-economic committee, sub-committee, environmental sub-committee, engineering sub-committee, you put together a memorandum to Cabinet which summarized all of the material that was gained from the first drilling year, made some recommendations for what might happen in future years, and we come to the Cabinet decision of May 1977.

4075. And in that decision the government accepted the principle of same season relief capability for all wells being drilled in Arctic water. So that applied not only to the Beaufort Sea, but also applied to the Eastern portion of the Arctic.

4076. And -- okay, I think this is what is relevant, and I will read part of this so that I get it correct.

> *"Same Season Relief Well Capability is to be made available by the 1980 drilling season on the understanding that..."*

4077. And it was available before 1980, but I will explain the slight difference.

> *"...evidence of this capability would be the availability of an ice breaker of sufficient capacity to operate year round as prescribed by the Arctic Shipping Pollution Prevention Regulations, but this would not exclude other and perhaps better methods of providing the same capability."*

4078. So that's the first condition.

4079. The second was any delineation and/or production well would be subject to Same Season Relief Capability requirements. The one exception is if you were drilling in a gas reservoir.

4080. And the third criterion was in the interim the Department of Transport would make a Class 4 icebreaker available, if it need be, to support relief operations.

4081. And then that decision also approved drilling for a three-year period

subject to a set of conditions, and that set of conditions typical would be preparation of an annual report, compliance, results of inspection, et cetera, et cetera.

4082. But -- and then the next condition, the drilling of the -- of wells deeper than 1,600 feet, and this is going to be a little difficult to explain, but I will do my best.

4083. Drilling of wells, and there were deep wells, any wells, had to cease 14 days prior to a forecast closure based on ice conditions in weather or 30 days prior to the closure date set by the Arctic Shipping and Pollution Prevention Regulations, which the closing date was October 25th.

4084. You're back to the September 25th date, but in the event that conditions were more severe than normal, you had a 14-day window, so, in essence, the drilling could be shut down earlier than the originally implied September 25th date.

4085. Again, Dome/CanMar applied for an extension to the drilling season from September 25th to October 25th. This was denied. They were given a 10-day extension on one well, and the rationale for that extension was the well was drilling in a gas zone, and they wanted to give the company the opportunity to set casing at a more optimum depth. So, again, the September 25th date remained fixed, but there was a modification to the -- to that condition.

4086. Okay. At the end of the year, as usual, we have another memorandum to Cabinet and another Cabinet Decision, and that's May 1978. Okay. So this is sort of the last year in which changes were made, and after this point in time, as far as the drill ships were concerned, this -- these were the conditions that would apply.

4087. Okay. So, first of all, with respect to start-up, the -- originally the start-up again was July 1st to a closing date of October 25th. The start-up was allowed basically in consultation with the Department of Transport and the designated person, who, at that time, was the chief conservation officer, to start earlier than July 1, provided that the drill ship was in an open water location, and the drilling of -- the well location was an open water location.

4088. And just for the record, out of the wells drilled in the Beaufort Sea, that's only ever happened once, so -- but there was some flexibility.

4089. The definition of "deep" and "shallow"; previously shallow -- we had the 1,600-foot depth, that was changed to 5,000 feet. And again, the rationale was based

on the drilling data that was gathered during the first couple of years, plus the seismic data. Basically they were comfortable that the 1,500 feet was a safe depth to allow them to drill after September 25th.

4090. The 14-day shutdown based on extraordinary meteorological conditions or ice conditions was changed to a seven-day period.

4091. Again, special circumstances, we had the 10-day extension on the well that was drilling in the gas zone, that particular -- again, it was a one-off decision, if a similar type situation occurred then that 10-day extension could be given again. So that would take it from, again, September 25th to October 5th.

4092. Drilling and setting casing in the shallow wells, okay, this was extended to December 5th, from the October 25th date. But again, special conditions had to apply and basically icebreaking support had to be provided to the drill ships if it were operating beyond the October 25th date. Again, it was an option, it didn't happen very often, and then the Department of Transport would have their Class IV icebreaker on standby.

4093. Again, Dome/CanMar applied for another set of exemptions, essentially no change was made to the September 25th drilling date, that special case of 10 days, but was still kept on the books.

4094. You're allowed a couple days, two or three extra days to abandon a well beyond October 5th. And then I had mentioned the option of starting prior to July 1. So at the end of -- end of '78 the conditions were basically set for all the drill ships and those conditions went from '78 until, I think the last well drilled by drill ship was 1989 and then the Beaufort drilling ceased in '91.

4095. Some other -- and I call them key events; okay, first of all the -- at the end of the '77 document which talked about Same Season Relief Well being made available by 1980. The implication there was in the early years the Department of Transport was supplying icebreaker support. The onus was put on the companies to provide their own icebreaker support. So in 1978 CanMar had the Kigoriak built in St. John, New Brunswick.

4096. It entered the Beaufort Sea in '79. So -- basically entered in '79 had its ice trials, proved to be very successful so -- and the Kigoriak was eventually at the end of the drilling era -- that first drilling era of the Beaufort Sea, there were actually five Class IV icebreakers operating.

4097. Transfer of regulatory authority from Northern Non-Renewable Resources Branch to Canada Oil and Gas Lands Administration, and like as I said before, that was the amalgamation of Energy Mines and Resources and INAC staff into one organization.

4098. Starting in the eighties, we had the special built caissons. So we had tarsuit type caisson -- Caisson Retained Island called CRI. Single steel drilling caisson which is known as the SSDC; Gulf had built the Molikpaq which was Sancor and we had the Conoco drilling unit which was the Kullock (phonetic).

4099. Now, Kullock was unique in its sense, in that it was a Class IV ship as opposed to the drill ships which were Class II. So, again, its operating season, in theory, was to January 31st.

4100. Okay. We had the policy, but also within the regulations, drilling regulations had specific requirements for relief wells. So it wasn't just a policy in terms of timing. There was a regulatory requirement that said that you had to be prepared to drill a relief well. And there was a set of supporting guidelines which went into a little more detail as to what had to be done.

4101. As I mentioned, there was some -- while the Kullock again was tagged with the September 25th date, the Kullock with proper icebreaker support, in theory, could have operated until January 31st. I don't -- it went into December one year; I think that was the only time that we had a well that went that late for that particular type of vessel.

4102. The caisson structures were considered to be year round drilling structures in the transition zone, and their same season relief well capability was evaluated on a case-by- case basis.

4103. So for any well drilled by a caisson type of structure at that particular time, COGLA would have a meeting with the operator; the operator would identify what ship it was going to use; it would identify what the backup unit that was going to used and -- so there was a very definitive procedure for ensuring that (a) the unit was identified and associated with that -- it was also a drilling time curve which the company had to produce to say that, yes, we can drill that relief well within -- within a particular amount of time.

4104. So the prerequisite for any -- any approval in -- in relief well contingency

plans identified -- always identified an alternative rig and support craft, which required -- and this actually was passed through about 10 different departments for consultation, look for feedback before anything was signed off. So in addition, while not required, both SandRidge and Ice Island applications required similar type relief well drilling programs.

4105. When I talk about advancements and -- and, I mean, the drilling technology changed. When you look at what had come off as far as ice management and remote sensing, real time transmission of ice imagery, prediction of ice movement, management of ice flows, these were all things that were developed through work with the icebreakers over the last probably seven, eight years that they were active in the Beaufort Sea. A huge change to forecasting methods and provisions which provided the operators with much better data.

4106. And the last thing that I will mention here and that ties in with that -- the decision saying -- back in '77 that says, you know, other methods of relief well capability may be considered or may be available. The amendment to the *Canadian Oil and Gas Operations Act* which allowed for equivalency, and that equivalency dealt with safety, environmental protection and resource conservation.

4107. So all these things sort of fit together. You had a policy, you had regulatory requirements, but also this requirement in the Act, it allowed you to take advantage of any changes in technology and new technology coming available all the time.

4108. So basically this just sort of takes us to -- from '76 to '91. I know it's a little bit convoluted, but if there are any questions, I'll try and answer them, but I -- like I say, I do want to make -- I'll do -- make one more comment. And I just kept a copy of it here.

4109. The AMICO drilled a King Arctic J94 in '89 and typically COGOA always had a chronology of events it went though and saying, here is the drill ship, here is the backup, and here is how it's -- how it's going to be done, and that was basically for -- for any well that they were looking after in the Beaufort Sea. So that policy was -- was followed through from '81 until 1991.

4110. Thank you.

--- (Applause/Applaudissements)

4111. **MS. McCULLOCH:** Thanks, Terry. It was helpful, I think, to hear sort of the original thoughts with respect to Same Season Relief Well back from the '70s, and then, as you've noted, things have been changing, and folks that are here today will be talking quite a bit, I think, about where things are at now, where they might be in the future from a number of perspectives to help inform the Board's discussions.

4112. So we do have a couple of minutes before the lunch break. If folks had some questions of clarification for Terry, we can certainly take those. Yes, Randal?

4113. **MR. POKIAK:** Thank you, Terry. I'm glad you're not on a shelf gathering dust with all your knowledge there. Anyway, you're like one of our Elders that we hold very important.

4114. The older you get, the more important you are with the contributions that you made, you know, for our people in the past. So it's good to see that some people are still active and -- you know, in their capability of contributing and educating some people that are just starting.

4115. Like, we are still educating our young people, not only, you know, the ones that have interest in what they are hearing. A lot of them are not here today or can't make it here because of different reasons, but there's -- you know, rest assured, there are young people that we heard that are interested in the future.

4116. Anyway, like you, like, I've been involved in quite a bit of things. Like, I'm here as the capacity as a hunter and a fisherman, and I'd like an opportunity to express, you know, those things maybe at a later time, but right now I've got -- like, a lot of the things that -- being involved with a claim as a negotiator and putting clauses in there to protect our rights, and also being involved in IDOC for six years in the initial set up of our development corporation, like, we had to deal with a lot of technical people, business people, and get professional advice from the best people we could.

4117. And it was a balance act for ourselves as Inuvialuit between following the laws of Canada, principles of different interests that people had up here, and also putting our own interests in there, and we had to change things, try to change them.

4118. And we have -- so I didn't come here to speak on those things, but I've got a -- I've got a real -- like, I really appreciate what I'm hearing. I heard that from -- you know, those kind of things that you're talking about in your -- in your speak -- you know, in the capacity of the speakers. And like I say, we also have a history, the

same -- same way that Jerry expressed, in the oil and gas activity here.

4119. We've been here a long time, and some of us have been trained to -- to listen, and we do listen. When Elders talk, we do listen. When we -- we're trying to get our knowledge and pick brains from the people that are -- pick the brains of people that are professional in their field and trying to make ourselves better understand, to be more effective when it comes down to dealing with issues that relates to their interest.

4120. Like, we got a lot of interest here. You got -- you know, it's not only us Inuvialuit harvester's interests. You've got the garment's interests. You've got the industry's interest and so there's a lot of interest here, but the question, like, I have, really I think I'd like -- I'd like an opportunity to go one on one with somebody from NEB, because there's a question -- like, for instance, but publicly right now I want to question the NEB.

4121. In this kind of activity here and what they're dealing with, there's a lot of activity, you know, like different interests, and there's -- a lot of it is also related to funds, which you heard about.

4122. And I'd just like to tell you something that I -- you know, I said when I went to a conference in dealing with geologists in Banff a few years back. And everybody -- every one of those guys went up and did their thing, hey, I'm -- my name is such and such, I'm a geologist and I work for this, and this is the countries that I work in, and it kept on going. And I was asked to speak because the Aboriginal speaker had some kind of a health problem and didn't show up and they needed an Aboriginal voice.

4123. So I went up there and I -- and one of the things that, you know, was being said at the conference was, okay, there's the Norwegian policies, a Norwegian Government in dealing with the oil and gas activity, and, you know, the processes that they had to go through in order to work in a Norwegian jurisdiction. And a lot of it was based on dollars, money, you know, money, money, money. It costs this, costs that, the potential for a return if things worked out well for the oil drilling.

4124. And I went up and I told them, when it was my turn I said, okay, I'm Randal Pokiak -- Boogie Pokiak, and I'm not a geologist, okay. But your activity is affecting our life. You guys talk about money, you guys talk about all these finances that's related to it, and I said, well, we follow the laws of Canada. In Canada, the government makes the rules and we -- all of us have to follow those rules and acts.

And -- but I want -- and I reminded them, I said look, there's the flip-side of the coin and I -- you know, and I showed a dollar. Well, this image of Queen Elizabeth is what everybody is focusing on, okay. You flip that coin around and you see a polar bear there, and that deals with the flip side of the environment. And that's so important to not only us up here, but also the rest of Canada, like we're hearing here.

4125. But the question I've got to -- to the Board of NEB and their staff, like, there's a flip-side to this for me. You're talking about, you know, saying yes or no to an activity in the Beaufort, drilling activity or whatever that comes with it before and after, like seismic and drilling and then possibly pipelines that so many young people are afraid of.

4126. But I'd like to better understand the position of the NEB because, like I say, it's good to see faces with not only the title, but what is your position? Like, does the government use you because you're dealing with environmental safety, human safety and -- that's what I'm hearing and the government is just on the back of you, and they're giving all these rights to go offshore. And now we have to deal with issues that are -- you know, that are going beyond what we're normally accustomed to.

4127. Shallow waters, like they say, it's deep right now, but they say not some -- some areas. But we're having to deal with, you know, even areas a little further away, so what -- what's the relationship that you have in advising or counselling the government to say, okay, if you're going to give those rights out for the oil and gas exploration out there what are they -- what are you going to do.

4128. Like right now Oceans Canada is -- we don't even see them hardly; Fisheries they might have an office here but we don't know their positions out there with regards to habitat protection, environmental or marine-protected areas that -- you know, we're really thankful for.

4129. And you know, for the announcement a couple years ago of recognizing the whale estuaries that -- you know, that we had in our agreement saying we got it, take care of this, and it took over 25 years to do that, okay.

4130. So but there are other areas with other species that are out there in the area that you're drilling or you're planning to drill. And so I'm just wondering, like, was your capacity in protecting the environment as much as possible, are you dialoguing with the Government of Canada before they do -- you know, give out these drilling rights to the oil industry?

4131. Thank you.

4132. **THE CHAIRMAN:** Thank you, Randal.

4133. I'll start with a story, Randal, of the Gulf of Mexico. Last year, you know, there's a blow-out, 11 people die and Andrea was kind enough earlier this week to name them by name, one after the other. That was a -- it was an important thing for us to hear. And then the Gulf of Mexico has a large ecosystem, was affected.

4134. One of the first things that the President of the United States of America did right after that -- there was government involved in that, you know, they were called the Materials Management Services (MMS). And in MMS in that department, in that government body there was this, there was that, there was safety, there was rights, there were leases, there was taxation.

4135. And one of the first things the President of the United States did he said I'm going to split that, we're going to have one body which is doing safety and environment. That's all they're going to do. And someone else will look after the taxes and the leases and the rights and someone else would do this and that.

4136. So when the President of the United States of America did that they were talking about moving to the gold standard of regulation. They were listening to what other countries are doing and they were moving to the gold standard, and they were moving to where Canada has been.

4137. So the answer to your question, Randal, -- I'm finished with my story about President Obama -- is that we have in Canada the Government of Canada, and they do their thing. One of the things they do is they decide when it's time to allow companies to bid for drilling rights.

4138. The government does that and Michel Chenier can tell you a whole lot more about that. He's already started to talk about it and he can say more.

4139. But just like in the United States the NEB is independent from government. We talk with them, you know, we exchange information but we're independent. The government cannot tell us what to do and we like not to tell them what to do in their policy area.

4140. So when the government decides to release a decision about the right to

drill in an area they're doing their job. When an application comes to us for a well it's a different job, it's the independent NEB.

4141. And as you -- you talk about the laws of the country, the NEB likes to follow the laws of the country and there's a law that says that the NEB, when it looks at the well, it can only look at one thing -- well, a few things; safety of workers and communities and the environment, and that's what we do.

4142. So what I can tell you, Randal, is that we're implementing the wishes of the laws of the country. Her Majesty the Queen in Right of Canada, you know, approved laws passed by Parliament and one of them is about the NEB doing its thing separate from the government and that's what we're doing.

4143. And I think what we're doing is about what you're looking for; the protection of the land, the animals, the ocean, and the way of life.

4144. Thank you.

4145. **MS. McCULLOCH:** Thank you, Gaétan.

4146. What I'd like to do is suggest we break for lunch until 1:30. When we come back obviously the Roundtable discussion will begin. So get some nourishment, come back prepared to ask your questions of each other in the room, make your comments and your recommendations to the National Energy Board.

4147. We'll see you at 1:30.

4148. Thank you.

--- Upon recessing at 12:04 p.m./La session est suspendue à 12h04
--- Upon resuming at 13:29 p.m./La session est reprise à 13h29

4149. **MS. McCULLOCH:** ... discussion for Theme Number 4 Drilling Safety under way.

4150. Just as we're getting folks down to their seats, just another reminder that if you are one of the folks that received letters from the National Energy Board regarding your travel arrangements, if you haven't yet spoken with Susan at the back of the room, if you could do so to finalize your paperwork, that would be very much appreciated.

4151. I think with that, I'll turn things over to my colleague, Dr. Swiderski.

4152. **MR. SWIDERSKI:** Good afternoon. Andy Swiderski here with DPRA Canada. We're going to get underway in terms of the roundtable discussion following up from our theme of this morning, Drilling Safety.

4153. Before we do that, we have a -- one public service announcement. Gaétan?

4154. **THE CHAIRMAN:** Thank you, Andy. Yeah. I'd like to make a public service announcement. When I turned 50, it was a few years ago, I was in Norman Wells. It was during the Mackenzie Gas Project hearing, and Chairman Volman -- not 20 years ago, David.

--- (Laughter/Rires)

4155. **THE CHAIRMAN:** Chairman Volman didn't tell me, and he announced on the transcript that I had turned 50, and he wished me a Happy Birthday. So today I don't have a number. I don't know how young he is, but today is my colleague Mr. Hamilton's Birthday, and I just wanted to say, Happy Birthday, David.

--- (Applause/Applaudissement)

4156. **MR. SWIDERSKI**: Thank you. And congratulations, Mr. Hamilton.

4157. We had some very, very good questions before our lunch break today. Picking up on the two presentations, one -- the first one dealing with -- with the broader approaches on drilling safely by Bharat Dixit, and then we had a perspective on the context, a bit of the history, dealing with the same season relief well policy by Terry Baker.

4158. The rest of the day is dedicated to this -- this overall theme of drilling safely. As we have done in the previous ones, we've set the base, shared some information. We now move into your perspectives, your comments, questions.

4159. There's no need to elaborate very much on the process that we'll follow. It is consistent and has served us well to this point. I will give everybody an opportunity to speak. We have a good block of time through the afternoon.

4160. Let's follow the same general process, make your point as clearly as possible in the context of how would it help in forming the filing requirements for the National Energy Board. And if you know a specific question that has been posted in advance, if there is a reference number or from a call for information reference, that would be helpful.

4161. And lastly if you are directing your comment or question to a specific organization or individual, let me know, and as we did before, we will find the right routing. Is that pretty clear?

4162. Then as I set the floor open for questions, I thought a little bit over the lunch break about part of the message that I was hearing from late yesterday and certainly this morning. A lot of it seems to revolve around this aspect of certainty and prediction.

4163. When I sort of cast my back to some general readings in history of this has been perceived, in 1922, Niels Bohr, who won the Nobel Prize for physics was asked a similar question about being able to predict where technology and knowledge is going or where it might go. He had a very candid response. He said that prediction is so, so difficult, particularly about the future.

4164. Let's open it up. Questions, comments on the theme of drilling safely.

4165. **MEMBER HABIB:** I can start if you like.

4166. **MR. SWIDERSKI:** Sorry, Frank, are you ready to go?

4167. **MEMBER HABIB:** Oh.

4168. **MR. POKIAK:** I'm not sure right now.

4169. **MR. SWIDERSKI:** Okay. Then we'll -- then Georgette, we'll start with you to warm us up.

4170. **MEMBER HABIB:** Only if no one wants. I can start until people get all warmed up.

4171. **MR. SWIDERSKI:** Please proceed, Georgette.

4172. **MEMBER HABIB:** Thank you.

4173. Of course my question goes to everybody. Anybody from the industry is welcome to respond.

4174. You have received a set of questions back in August 29th, just to provide you with a line of questioning. My first question is related to Question 11.1 for ease of reference for you.

4175. Now, over the course of the Arctic Review the Board has posed a lot of questions for you and sub-questions and so forth in the CFI. I would like your perspective as to what extent -- to what extent the Board should find that these questions are relevant to the future applications, and if there are any areas that in your mind are not relevant I would like if you can describe those to me and to why.

4176. **MR. SWIDERSKI:** Thank you.

4177. **MR. PEACOCK:** Mike Peacock.

4178. Georgette, that's a hard question for industry to answer. I know you've requested input on the guidelines for a submission. We have different approaches to what the Board needs to do. We're certainly prepared to help the Board in any way we can to provide any relevant information the Board needs that we have.

4179. As I look at what the filing requirements should be that the Board would require, one of the things that I think is critical for a regulator to be able to do is to analyze the systems that a company has to get that confidence and particularly in the management systems and the systems that are in place.

4180. And I know our company has been prepared in the past to share those systems with the regulator and we have made that offer previously for the regulator to come and look at some of the training we do, this well control school that I referred to the other day, some of the training that we put our drilling engineers through, come visit an offshore operation.

4181. Max alluded to the fact that the CNLOPP went over to the Stena Caron when it was operating in the West of Shetlands for Chevron. We would make similar opportunities available.

4182. And to really get into the safety culture of a company, and that's not achieved by a single half day visit, one day visit, when the management or the

executives from town come out to the rig, that doesn't achieve anything. You know, everybody's aware that most people are going to be on their best behaviour if a situation like that happens.

4183. But if somebody comes out and spends a week, spends two weeks on a platform or on a drilling operation, that's when you get to see the management systems in place and in action and then you can get a very good gauge on how effective those management systems are.

4184. So I would encourage the regulator to be more interactive in the participation of some of the programs.

4185. **MR. MAIER:** Georgette, yes, with respect to the questions that were outlined in the CFI, certainly from Chevron's perspective we thought that they were appropriate questions, the appropriate elements that needed to be asked.

4186. There is probably an opportunity for some further binning of those specifics under -- under, you know, specific topics as we had outlined, I guess it was, on Tuesday in our presentation under the Prevention heading, for example.

4187. The well integrity and design, of course, it would be a key focus area; enhanced well control, a key area, and as we talked about extensively safety management systems and safety culture would be critical from the prevention side of things.

4188. And then on the intervention side, marine capability would be -- be absolutely critical, well intervention, and as well oil spill response and cleanup so -- under those broad headings.

4189. Certainly we'll be in a -- in a position to provide probably more detailed feedback on the specifics once we sort of see the draft filing requirements come out, and we'll certainly offer extensive commentary at that particular point in time.

4190. **MR. SWIDERSKI:** Thank you.

4191. Mr. Sykes.?

4192. **MR. SYKES:** Yeah, Gary Sykes, ConocoPhillips.

4193. Thank you for the question, Georgette. I think from our perspective again

in the context of not having a specific application in front of the Board at this time, our only feedback would be it's a good list of questions; it's a good discussion. It's not immediately obvious to us if there's any huge, you know, gaps or omissions in the dialogue, and you were always willing and happy to engage in this dialogue at anytime.

4194. So it looks like a good list of questions to us, and we're happy to engage on these matters.

4195. **MR. SWIDERSKI:** Thank you.

4196. **MEMBER HABIB:** Thank you. So I will engage you further then. My next set of questions, I'm not just going to go to each and single one, I'm going to combine question 4.5, 4.1, and 6.1. It's just because the theme is similar, and I wanted to connect it altogether.

4197. Industry submission had been very clear. They told us, focus on prevention. For example, on Monday, Mr. Peacock said, "All tools should be available to the operator."

4198. Imperial, in its submission, talked about goal number one and goal number two, and I'll speak to that later on. And ConocoPhillips also talked about their preference and not to go to the relief well and so forth. You told us, "Focus on intervention."

4199. My question is, why should it be one or the other? Why can it not be all of that, including in your toolbox, for example, Mr. Peacock, the same season relief well?

4200. **MR. PEACOCK**: Mike Peacock, Imperial.

4201. Thank you, Georgette. Yeah. We're very prevention focused, and that is the key to our strategy.

4202. I think as I mentioned before -- and I'm going to talk specifically now about the two blocks that we're concerned about, which is 446 and 449, and their location, which is obviously in the deepwater, and the deeper drilling targets than some of the targets that we've had on the shelf, and we won't be able to drill those wells in one season.

4203. It's going to take us -- if we do submit a drilling application, if the NEB does approve the drilling application, it's going to take us multiple seasons to -- to drill these ones.

4204. If we're drilling multiple season wells, it's unachievable for us to drill a relief well in the same season due to the short duration of that season due to the weather that we have.

4205. So we prefer to focus on prevention as the main method. And then in the very, very unlikely event that an incident occurs, then we would concentrate on regaining control of that well bore in the same season. That remains our strategy, and we would attempt to regain that control of that well bore.

4206. I think it's been ably demonstrated in Macondo through some kind of well intervention and capping mechanism.

4207. **MR. SWIDERSKI:** Thank you.

4208. **MEMBER HABIB:** Rod?

4209. **MR. MAIER:** Thank you, Georgette.

4210. Certainly Chevron would absolutely agree with you, that we need to have all of the tools within the toolbox, and I think that's exactly what we are advocating. Certainly let me be clear that we are not saying that a relief well should not be in the toolbox.

4211. It must be in the toolbox, it's just one of the components that we would utilize. But in the Same Season Relief Well equivalency box, we must also look at other tools that offer the same or equal capability when it comes to respect to well intervention.

4212. Bill, did you want to elaborate?

4213. **MR. SWIDERSKI:** Sorry, just again for those who are responding in respect of the translators and interpreters, just a little slower.

4214. **MR. SCOTT:** Bill Scott. All right. There's a number of things to consider here, Georgette, because you've mixed some questions and it's a complex issue, but let's address and follow up from what Mike said.

4215. There will be areas where we can't drill Same Season Relief Well, and we've mentioned this to the Inuvialuit and to the Energy Board very early on in the process. The one thing that makes this overall process strong in the North, and people have touched on it already, but I think it's important to reiterate it, is the relationship between the NEB and the Inuvialuit through the IFA.

4216. People forget that we've gone through this process. Somewhere not close to this room, we were all here in 1990 and went through a similar review. The Process does work.

4217. We looked at this problem fairly deeply, and the more we looked at it, the more we became convinced that from Chevron's perspective there's only one thing that a relief well does; it guarantees a very large spill. A relief well is going to take 90 to 100 days, so you've guaranteed a large spill, and with today's technology we don't think that need be the case.

4218. We approached the problem both proactively before in the prevention side, as Mike said, and reactively, and we designed our approach in terms of our drilling system to address both of those issues.

4219. Engineer the risk to as low as reasonably possible, but accept the fact that we have to demonstrate that we can shut the flow in in the same operating season.

4220. We don't believe, however, the most efficient or responsible means of doing that is via a relief well. If we go back to the Macondo incident and you dissect what actually happened, from the capping BOP being available and removing the junk around the wellhead to shutting the flow in was seven days.

4221. Everybody thinks of Macondo as a 90-day event, which it was. That was largely because the equipment was not at-hand and the equipment to run it wasn't readily available either.

4222. What we're talking about is a situation where that equipment will be at-hand in the field and ready to go. So here is a case where the Macondo flow was stopped, not by a relief well, by a capping BOP. And our contention is, had that equipment been available in a timely manner in situ, then that flow would have been reduced to a couple of weeks maximum.

4223. So our focus is on duration, duration, duration, because once you reduce

the duration of the flow, all of the downstream problems from that get smaller, the clean-up, everything.

4224. So we would agree with you -- circling back to your original question, we would agree with you that you have to look at both sides of it. But we have been clear, and I think industry has been clear from the outset, that there are areas where we can't do this.

4225. I would also stress that this is not a unique Arctic problem. It's unfortunate Max wasn't here, but this is a remote exploration problem. Where a rig goes into a new basin to drill a well, it could just as easily be in the Arctic or somewhere else. It's a question of support and what you can do.

4226. So I think we've addressed those issues and we would agree with you, it needs to be a holistic solution, both at the front end and at the tail end. We do not believe the relief well is the most responsible way to go.

4227. **MR. SWIDERSKI:** Thank you.

4228. **MEMBER HABIB**: Can I continue?

4229. **MR. SWIDERSKI:** Do you want to -- want to hear from Mr. Sykes?

4230. **MEMBER HABIB:** Oh, absolutely.

4231. **MR. SYKES:** Would you like to hear from me?

4232. **MEMBER HABIB:** Of course.

4233. **MR. SYKES:** So, again, similar to my industry colleagues, you know, our submission talks to the preference for source control. And just to be clear, our submission refers to the shallow waters of the Beaufort, but we also believe that it's more important to refocus on source control such that -- in -- on the -- in the very unlikely event we have an issue, that we can manage that within -- within a few moments.

4234. **MEMBER HABIB:** Since -- it's Bill, right, from Chevron? Since Bill talked about the capping and containment, I have a few questions about that that I'd like to follow up with you. And you did make a reference to the Macondo and that the capping and containment is what stopped the flow, but that the equipment wasn't

available readily, and that's why it took time to -- to build it and so forth.

4235. Have this capping and containment technology that was used then been used before, or is it brand new? And then the next question would be, how wise would it be for the Board to consider changes of policy based just on something that was just in -- in -- very new?

4236. **MR. SYKES:** Good question. So as far as a capping BOP is concerned, the concept itself is not new, and, in fact, there's many movies, if you go back to the old John Wayne movies of Hell Fighters and things like that, they've done this sort of thing onshore for years.

4237. It goes back to what -- probably what Dr Fleming said earlier today. There have been so very, very few large blow-outs that people were not necessarily -- had the equipment at hand because they thought the risk was -- was too low.

4238. The BOP -- the capping BOP itself is not really new technology. The application of it in the system is new. Now, if you go back to the NEB regulations that Mr. Baker referred to earlier, the NEB had foresight many, many years ago to put in an equivalency phrase.

4239. And I remember sitting in Terry's office many, many years ago. I can say that because of the benefit of my age. And I said, well, why did they put the equivalency in, and he said, well, we knew that in the future there would be better technological solutions, so consequently, we had to, other than rewrite the regulations, allow room for people to do that. And we see this as one of those cases.

4240. The question is, can you reduce the risk in terms of safety, environmental protection, and conservation of the resource to a lower level than that required by a relief well, and that's why we'd like to go that way.

4241. To the second part of your question, now, I'm glad Gaétan corrected us this morning because I've always said goal based, so thank you. Goal oriented regulations are a work in progress. We're always looking for better solutions.

4242. So the question you've asked is, would it be a good idea to legislate this? Some may say yes, other people might say, well something better may come along tomorrow, let's leave ourselves open to whatever is going to be the best solution.

4243. So I would suggest that that would be the approach you take, but if you

were to frame the question in terms of what should you have in your submission, what is the means of controlling the flow as quickly as possible and shutting it off in the same operating season.

4244. That then drives you towards looking at solutions and presenting them to the Board that are geared in reducing the duration and the size of the spill. It may -- the best technology right now may be a capping BOP. Five years from now, it may be something else.

4245. There was always a reticence to say it's this piece of technology or another because technology changes.

4246. I don't' know if that answers your question, Georgette?

4247. **MEMBER HABIB:** Partly, but I have several follow-up on this.

4248. **MR. SCOTT:** I was concerned that you might.

--- (Laughter/Rires)

4249. **MEMBER HABIB:** You can count on me.

4250. So what I heard you say is that we cap and contain until we go back in and do whatever we need to do, and I get you, I understand what you are saying. But then a question comes to my mind is will the well integrity hold, what if it doesn't hold, you know. And you don't have a contingency of having another drill ship close by or, you know, plan to get in right away. So what happens at that point?

4251. **MR. SCOTT:** Well integrity is the key.

4252. Now, there are two types of issues with regard to well integrity. A shallow loss where the formation may fracture to the surface, okay, and then a deep loss where it may fracture down the hole and those are generally called underground blow-outs, where it would flow from one zone to another.

4253. Well, in an emergency situation an underground blow-out is not such a large concern from an environmental point of view. So we wouldn't be overly worried about that. The major concern is a fracture that goes to the seafloor. Now, how do you deal with that?

4254. Just to put it into perspective; we've drilled somewhere like 39 offshore wells in the Canadian Beaufort and no hard or fracture of the surface casing.

4255. Now, the interesting point that Terry mentioned today about Tingmark is an interesting case. We basically make sure that the first two casing strings are put in deep and well cemented. The key beyond that is to operate what we call a "kick tolerance program". And in simplistic terms what it says is -- and it's regulated by the NEB -- you do not drill too deep and encounter pressures that can fracture the shallow formation.

4256. That was the problem at Tingmark but a combination of appropriate casing and cementing designs and the kick tolerance would ensure that that doesn't happen. We see that risk as being so low as to be, you know, acceptable.

4257. **MEMBER HABIB:** Another thing that I read from the press during the Macondo incident -- the Macondo incident -- is that when they put the cap their difficulty was -- is it make it fit because something happened I suppose that wasn't the regular design or the -- how do you go about that, how do you know if you are in the Arctic something happens similar and how do you make sure that the cap that you speak about that is ready to go is going to fit?

4258. I'd like your perspective on this and I'd like to ask Transocean if they can respond to this question as well.

4259. **MR. SCOTT:** Right. The first answer to your question I think -- and we mentioned it in our submission in passing. Clearly the answer to that solution is to have a pre-engineered solution there.

4260. One of the -- and you're right to highlight it as an issue because it wasn't foreseen to be something that would require to be disassembled sub-sea, so it was all bolts and this and that. We would have to be looking at a reasonably quick connect and disconnect in the anticipation that something like this could happen again.

4261. So essentially this would be a learning from Macondo that would be introduced to the design of the upper portion of the BOP stack to avoid the issue that you just discussed.

4262. **MR. SWIDERSKI:** If I can just jump in for a moment with the groups' concurrence here. I asked a couple of the groups that were scheduled to go first to hold off because we need to kind of start at the broader level -- there are some

fundamental larger questions -- and then we'll work -- with your agreement, we'll work our way down to the more specific detailed technical engineering ones.

4263. If that's acceptable, if Transocean wants to respond to the second part of that question we will come back to that, but I would like to sort of make sure that everybody here, as part of our commitment to share information, make sure we have an understanding of what these drilling safely encompasses from high level moving now to the details.

4264. Is that acceptable? Thank you.

4265. Frank, if I can ask you to start off the discussion. We'll get the IGC to talk. I'm going to open up -- we've got a long list of people who want to comment on what they've heard so far. Everybody will get a chance to speak.

4266. Frank, thank you.

4267. **MR. POKIAK:** Thank you, Andy. My name is Frank Pokiak. I'm the Chair for the Inuvialuit Game Council.

4268. I'd just like to mention that we did send a copy of letters. One letter was sent in April to Gaétan on a public review of Arctic safety and remedial offshore drilling requirements. And also another letter that was sent to Ms. Erickson on offshore drilling review.

4269. What we would like to do is at this time I'd like to turn the floor over to our -- to Steve Baryluk to collaborate more on these issues.

4270. But just before I do that I'd just like to welcome my grandson and some of his students are here listening at this time. So I'd just like to welcome them too.

4271. So at this time, if you don't mind, I'll just turn the floor over to Steve.

4272. **MR. SWIDERSKI:** Thank you, Frank.

4273. Steve Baryluk, please.

4274. **MR. BARYLUK:** Thank you. Good afternoon, everyone.

4275. And I guess I can start off by saying happy birthday to Mr. Hamilton and

later on he can let us know how many bumps he's needed to get today and I'll offer to grab one of his hands or legs and help out with that.

4276. **MEMBER HAMILTON:** That will be a risk assessment I think.

--- (Laughter/Rires)

4277. **MR. BARYLUK:** So as my chairman Mr. Pokiak pointed out, the Game Council has outlined a number of issues in the correspondence they put in for the review. I'm hoping through a number of questions I've developed that we can try to get some discussion going and elaborate on some of these concerns that have been brought forward.

4278. I do have quite an extensive list of questions but in the interest of sharing time I've tried to put some off into Theme 5 where it may be more appropriate to deal with them there, and I'm willing to maybe just even ask one or two questions at a time and then open it up to other people to have an opportunity so I don't take up too much of the microphone this afternoon.

4279. With that I guess, hopefully, given what you've just said too, I can start off with some questions that are a little more general in nature, although they may have some details associated with them so hopefully we still follow along what you've just requested.

4280. I guess the first one would go out to any of the companies to respond collectively or separately. But given the advances in technology that have occurred since the last wave of drilling, we're curious to see if there are any increased risks anticipated with re-entering wells that have been suspended or abandoned in the SDLs from 20-plus years ago should they be developed in the future.

4281. And an example of something like this could be, from my understanding, when they went into -- re-entered the well at the Ikhil site they found that the well had collapsed and it created some difficulties that they hadn't anticipated getting into that program.

4282. So is there increased risks anticipated with the re-entering a lot of these older wells, and does the industry feel that they may be prepared to deal with some of these issues which could be unexpected?

4283. **MR. SWIDERSKI:** That's very good. I appreciate the clarity, one

question at a time; otherwise it will get a bit hard to follow. Thank you for that opportunity to respond.

4284. **MR. PEACOCK:** Mike Peacock, Steve.

4285. Clarity here, a number of those wells that we drilled -- again I can only speak for Imperial here -- were drilled in the '70s and '80s and we abandoned those wells. So we won't use those for re-entry. And if we went back to develop -- commercially develop those discovered resources we'd drill new wells.

4286. **MR. SYKES:** Gary Sykes; ConocoPhillips.

4287. Our position on that, Steve, is exactly the same.

4288. **MR. MAIER:** As is Chevron's.

4289. **MR. SWIDERSKI:** Thank you, gentlemen.

4290. Steve?

4291. **MR. BARYLUK:** Thank you. That was a nice easy answer. Those are always good.

4292. I guess the next question I have is related to blow-out preventers possibly -- hopefully in a more general sense. Also, I'll put this in the context that we understand that the companies don't have current applications before the Board but we're hoping to get some discussion and elaboration from them that could speak about some of these issues in a more general sense or even provide examples from other operations they have elsewhere in the world.

4293. So with that context I was hoping that we may be able to get a description of potential options for blow-out preventer configurations and how they could be set up to either cut off and/or seal a well in any situation, such as the capability to cut or seal around pipe collars and casing, and to function properly when activated in a scenario of high pressures during a blow-out.

4294. So hopefully that's clear as well.

4295. **MR. SWIDERSKI:** Thank you.

4296. **MR. SCOTT:** Bill Scott, Chevron. I only remember because Rod just told me to say that.

4297. As you well know, Steve and Lisa, of -- in the early days, before we actually even picked up acreage, we started to evaluate some of the key issues associated with drilling BOPs. While the modern BOP functions fairly well when it's maintained and used under proper operating conditions, we recognized that there were improvements that could be made.

4298. In 2006 we commenced a program with Cameron Iron Works and we're designing a new BOP called the Alternative Well Kill System. We've had some delays in that project due to the Macondo incident and delays with obviously all the BOP manufacturers have been working to assist industry in the Gulf of Mexico.

4299. But we are looking at a BOP which can shear and seal simultaneously on casing and drill pipe. This would represent a first in the industry. It's an R and D project, I want to stress that. But as I said to Frank and several of the Game Council members, we've reached a fairly important milestone in that project and we would like the Game Council to attend some tests in Houston in November and we'd like to show them progress in it. So yes, we've been working in that area.

4300. And as to the sub-part of your question, Steve, how you would configure the BOP, there's been a lot of discussion about this, as to whether you would accommodate new rams and new designs into a stack. I think most drilling people would like to work with the stack that they're used to working with, the main stack.

4301. So what we're looking at is if we adopt an AWKS package, we may use it as a completely separate safety BOP stack that will be attached to the bottom of the main BOP stack, and thereby providing 100 percent redundancy and control, and that's the direction in which we're going.

4302. So maintain the product that works and people are familiar with, design additional redundancy through a better BOP if we can develop it, and that's the route we're going.

4303. I don't know if that answers your question, Steve?

4304. Wait a minute. Kevin has something.

4305. **MR. CAREY:** Yes, Kevin Carey with Chevron. I guess in addition to

Bill's comments, there's been -- there's been quite an influx in technology now around -- associated with BOPs and their ability to shear tubulars and that sort of thing.

4306. The equipment that will be utilized on the deepwater wells in the Arctic has not been built yet. The rigs haven't been built yet. The BOPs haven't been built yet. It takes about a year to build a BOP stack.

4307. So assuming we don't drill for at least another five years, we have got four years of technology development that will be -- that will go into and likely be in stacks long before they ever hit the Arctic to be tested and trialed. So I think the good news is there could be significant changes in the current configurations.

4308. Now, with that said, I think the current configurations could certainly be utilized because we've drilled thousands of wells utilizing those stacks very safely, but, you know, we would likely up our game through redundancy here.

4309. **MR. SWIDERSKI:** Thank you. Mr. Peacock?

4310. **MR. PEACOCK:** Mike Peacock. Steve, yeah, I fully support what Chevron said about redundancy. You know, we're drilling now globally with the same equipment we basically had before Macondo.

4311. I think key to any drilling performance is the management system, it's the training of the people, it's running the drills, it's going through the processes, it's kick preparation, it's the training and it's the -- it's really critical that you have the correct training and you go through these drills. So I think that's another key component that we've got to remember as well.

4312. **MR. SWIDERSKI:** Thank you.

4313. Mr. Sykes, any perspective?

4314. **MR. SYKES:** Yes. Gary Sykes, ConocoPhillips.

4315. So, Steve, for us the selection of the BOPs is one of the careful considerations as part of the overall approach to well design. So that's when, you know, we consider the various different options and configurations.

4316. I would point you in the direction of our submission, which will give you

an idea of our -- of our minimum requirements at this point in time. But, again, the final configuration and the final selection would be as part of the overall well design.

4317. **MR. SWIDERSKI:** Thank you.

4318. Steve, is there a follow-up to that? Because I've one person waiting who wants to comment on an earlier response. Is there a follow-up to this?

4319. **MR. BARYLUK:** Yeah. I guess I would just point -- I don't think I heard much about the ability of the BOPs at this point to function properly under -- obviously, granted, prevention is the key thing that's going to be done as part of a larger overall program, but in that unlikely event that a blow-out does occur and it's blowing out under high pressure and you activate your BOP, will they be able to properly function under a high pressure situation?

4320. Because -- and I ask that again partly because -- and I may be wrong on this. My understanding is that during the Macondo activation, part of the reason why the BOP there didn't work is it wasn't able to handle the pressures that were coming through at that time for that BOP.

4321. So do the current configurations have the ability to have the hydraulic pressure necessary to both cut those pipes and casings and collars and to do it under a high pressure situation?

4322. **MR. SWIDERSKI:** Thank, Steven.

4323. Bill Scott?

4324. **MR. SCOTT:** No, not this time.

4325. **MR. CAREY:** Kevin Carey, again, with Chevron.

4326. Steve, you're partially right in your statement and that, I guess, you've got to go back a long ways to realize that that well flowed for hours prior to being in the situation that they had to close that well in, so -- and even before that, there was design issues, but there was a lot of opportunities not to be in the current scenario that

BP found themselves in.

4327. But if we make the assumption that all of those types of -- of mechanisms that keep us from being in that position fail again, the -- actually, it wasn't a pressure issue as much as it was a velocity issue, and it was not a fluid actually passing by the stack.

4328. The assumption, I think -- I think they've made some calculations that it was 100 barrels a minute going by the BOP stacks, which, you know, we currently don't test our stacks for that type of flow rate pass, so that's a very -- as a matter fact, I don't know that we've ever seen a situation where we've seen that flow rate through a stack when it was closing.

4329. And so I think what you'll see is likely some additional testing of stacks. There will be modifications in stacks.

4330. The stack actually functioned as it was supposed to, but it was more of an erosion issue than it was a failure of the stack to actually function.

4331. **MR. SCOTT:** And I think just an addition, just so that we're clear about this, the flow rate was a function of leaving the well flow too long. And it built up and built up and got faster and faster and faster. So if the well had been shut -- and as per our normal operating procedures and the way we operate, and I'm sure Exxon operations, then it wouldn't have been an issue.

4332. So it goes back to what Dr. Fleming said, the root cause of all of this was a failure of management systems.

4333. **MR. SWIDERSKI:** Thank you, Bill Scott.

4334. Mr. Peacock, Mr. Sykes, anything to add to your earlier comments?

4335. Thank you, gentlemen. Lonnie?

4336. **MS. WILMS:** Yeah. Lonnie Wilms, Greenland Bureau of Minerals and Petroleum.

4337. I just have one comment to add to relief well policy. For those of you who are -- who aren't aware of what policy we have in regards to that in Greenland, in Greenland we have a dual rig policy, meaning that there has to be two rigs in the area and they can't be drilling in hydrocarbon-bearing layers at the same time.

4338. And also the drilling has to stop well in advance before the sea ice settles so there is enough time to drill a relief well in the same year.

4339. So that was just for those of you who don't know. I know the NEB should be aware of this, as they had -- as they had observers at the Greenland Drilling Program last year, so just to inform the rest of you.

4340. **MR. SWIDERSKI:** Thank you, Lonnie.

4341. Frank and Steve, are there any other questions at this point? We'll cycle around, come back. But was there anything else that you wanted -- you wanted to pose in your very clear and eloquent way?

4342. **MR. BARYLUK:** Yeah, I do have still a number of questions. And, again, I don't want to hog the mic this afternoon. So if there are other people in the queue, I'd definitely be willing to let them have a few more questions from others before you come back to me.

4343. **MR. SWIDERSKI:** Proceed first, please.

4344. **MR. BARYLUK:** Okay, I guess I'm on. This one, I guess, can be tied to the previous question I just asked. And, again, this is set in the context of -- from what I understand from what happened with the Gulf of Mexico blow-out at Macondo -- was that the blow-out preventer -- after it was delivered from the manufacturer had modifications done to it by other companies and, again, you can confirm whether that's true or not.

4345. If it is, I just was curious to see whether it was regular practice for companies to modify the blow-out preventers after they've been delivered from manufacturers and, if so, do those modifications change any warranties, guarantees or insurance from the manufacturers with respect to the performance of the BOPs that they've manufactured?

4346. **MR. SWIDERSKI:** Thank you, Steve.

4347. In fairness, I'll just give them a moment to collect their thoughts. And while that's being done, Jennifer was on deck next if it's a follow-up, if you clarify, please?

4348. **MS. DAGG:** It's not a follow-up. It's going back to the previous question.

4349. **MR. SWIDERSKI:** Proceed please.

4350. **MS. DAGG:** Okay. With their permission, I'd like to direct this to you, the representatives of Statoil, considering that Statoil has long experience in drilling in Arctic waters in many countries of the world.

4351. I was wondering if they could give their -- provide their comments on the alternative well-kill system or the capping BOPs as some of the alternative methods proposed by Chevron and others to control a well ---

4352. **MR. SWIDERSKI:** Jennifer, if you could tell us what organization you're from, please?

4353. **MS. DAGG:** Sorry, I'm with the Pembina Institute. Just whether they've been considered in Norway or ever used.

4354. **MR. ALM:** The well capping systems --

4355. **MS. McCULLOCH:** Introduce yourself.

4356. **MR. ALM:** Okay, sorry. My name is Dagfinn Alm.

4357. The well capping system has never been used in Norway. As far as we're concerned, it's new technology and it has to be proven to work, although it worked on Macondo, but I think there is a lot of research that has to be done to be sure that this system is good enough to be utilized.

4358. **MR. SWIDERSKI:** Thank you, Mr. Alm.

4359. Jennifer, is that -- did that respond? Then let's come back to the response

from industry to Mr. Baryluk's question.

4360. **MR. SYKES:** Gary Sykes, ConocoPhillips.

4361. So, Steve, our current policy does not allow any modifications to the BOPs, you know, other than by the original equipment manufacturer. Any BOPs that we used in the Beaufort are independently certified before they're used.

4362. **MR. PEACOCK:** Mike Peacock. Steve, the same.

4363. **MR. CAREY:** And Kevin Carey, Chevron.

4364. And the current Gulf of Mexico requirement is that all BOP stacks now are required to be certified -- or re-certified since the Macondo incidents and all modifications to the BOPs and all the equipment associated with it have to be brought back to the original specifications of the stacks. So I think it's -- it'd be a very rare occasion now to see a modified stack in any future work.

4365. **MR. SWIDERSKI:** Acceptable, Steven, as far a response for now?

4366. We have Lawrence first.

4367. **MR. RUBEN:** Lawrence Ruben, Inuvialuit Game Council.

4368. This goes back to -- well, everybody's referring to the incident in Macondo; it's a part of history now and where things have changed. Back in 2009, and sitting with Imperial Oil, they said to us in the Game Council meeting that within five minutes they were able to cut and shear from a blow-out.

4369. And at that time, Chevron was developing some technology where things were looking better for Chevron than it was for Imperial Oil and it seems it's still that way. I haven't heard anything from Imperial Oil in terms of their BOPs or their technology. And do they still stand by the time issue of cutting and sheering in five minutes?

4370. **MR. SWIDERSKI:** Mr. Peacock?

4371. **MR. PEACOCK:** Thank you for the question. Yeah, that -- we still stand with that. That's what we would call an emergency disconnect situation, where we -- we sheered the pipe and we moved off location, so we would still stand by that

we could do that in a very rapid response.

4372. **MR. SWIDERSKI:** Lawrence, does that respond to your question? Thank you.

4373. We had one more, and then we're going to come back, please.

4374. **MR. EMAGHOK:** Good afternoon. Lennie Emaghok from Tuktoyaktuk.

4375. About two years ago in November, we were pulled together in Ingima Hall (phonetic), that Esso had a workshop on -- on offshore drilling or deepsea drilling. And to my understanding at the time, when they left, they said that if they reached a certain distance and they had problems with their -- if they had a blow-out, to my understanding, they said it would take three years to correct.

4376. Is that still the case or -- because three years of something going off is -- it's just too long.

4377. **MR. SWIDERSKI:** Just for clarity, do you remember what industry or organization was involved in that workshop?

4378. **MR. EMAGHOK:** Imperial Oil put the workshop on.

4379. **MR. SWIDERSKI:** Thank you.

4380. Mr. Peacock?

4381. **MR. PEACOCK:** Yeah. In response to that, that comes back to --I think what we're trying to say there was, if -- if you had to drill a relief well, it would take you that long to drill a relief well because you'd have to design the well, you'd have to -- if it's a multi-season well, it could get you two seasons to get down to the target.

4382. And that's why again, that's why we think that Same Season Relief Wells are unachievable in most situations, and that's why we come back to gaining control of that well in the same season.

4383. **MR. SWIDERSKI:** Thank you. Now, I want to -- if I can ask for indulgence of those who have -- are on the order here. You were good enough to let me take us back to some of the broader questions.

4384. You heard Georgette speak to some of the more technical ones, and there's -- there's a bit of a good alignment, so what I'd like to do is offer the opportunity for Georgette to return to her question, and then we'll keep going to others as well.

4385. Georgette, is there something that -- that you can connect with this?

4386. **MEMBER HABIB:** I'm going to try to ask all the other questions I have. I'll bring them up to the higher level, but I only have one question of you, Bill, on the capping and containment, and I promise you I'll stop on that -- on that part.

4387. So by the very -- by the very nature it's capping and containment, so what I understand from the containment to mean is that there has to be a ship there to -- you get the stuff, and to what extent that is possible in the Arctic environment, if you were to be containing the well -- capping and containing for a year or so until you drill the relief well?

4388. **MR. SCOTT:** Excellent point. What we're proposing and what most people are proposing is capping, but not containment. Obviously it goes back to what we've all been saying. If we can't station keep and it takes three years to drill a relief well, we're not going to be able to station keep with a dome over the well and tankers around. That's not going to happen.

4389. And our view is that once the cap is on, the issue is solved. Again, it goes back to what we're saying about duration, duration, duration. If we get this well capped off in seven days or ten days, or let's -- two weeks, let's say, we've immediately reduced the spill to the minimum.

4390. The strategy then is, the well is safe and secure, we would depart, monitor the well all winter, come back in the next summer, and then finish off killing the well.

4391. Now, at first sight, that may seem very strange, but every drilling rig -- every floating drilling rig that went into the Beaufort Sea since the '70s had two BOP stacks. Why did they have two BOP stacks? Because there were situations -- there were situations that a drill ship would be operating late in the season, and as Mike was talking about an emergency disconnect, sometimes you would disconnect and move off location safely, you leave the BOP on the sea floor.

4392. Sometimes the ice conditions got worse and you couldn't come back. So

the BOP, which is essentially a big capping stack, was left there all winter, that's why we had two. So there's a precedent for that behaviour and no issues associated with it.

4393. So, what are the two steps? The first step is to cap, stop the flow quickly, and then return to deal with the well at an appropriate time when you've got everything ready.

4394. And to a large extent that also allows you to better handle your logistics when you come to do the second re-operation. Does that -- so there's no containment per say and part of the reason they had containment in the Gulf -- I'll go back to the original point -- is because they didn't have the capping BOP built.

4395. So they were containing while they were building something. We will have it built, on location ready to go and if -- I believe, if it had been ready to go in the Gulf they wouldn't have been containing much, they would have been getting the capping BOP down there and shutting that flow off as soon as possible.

4396. I hope that is clear.

4397. **MEMBER HABIB:** Thank you, Bill.

4398. I lied. Before we went on with the second set of questions I did pose a question and I said maybe Transocean would want to respond to. I don't know if they wish to do so and that was related to the fit to measure of the capping.

4399. And what if you are confronted with this situation similar to what happened in the Gulf of Mexico what do you do in an Arctic environment facing these severe circumstances where the already-made equipment may not fit?

4400. **MR. SWIDERSKI:** Would Transocean like to provide a perspective on that?

4401. **MR. ALLAN:** Rod Allan with Transocean.

4402. I'm not sure that I completely under the question about what equipment you're talking about.

4403. **MEMBER HABIB:** We were talking -- Bill and I were talking about the capping that was used in the Macondo and how it was made fit to measure because of

something that -- and I don't know the technical wording for it but that they had to ensure that the capping fit the very specific particular circumstance that happened then.

4404. And Bill has been talking about having a capping equipment that is already done and located somewhere that would be just a matter of installing it if in the unlikely scenario, I hope, a blow-out happens.

4405. And my question was what if you were confronted with a similar situation where that already-made equipment wouldn't fit, that you would need something to fit that particular circumstance. What happens in that situation in the Arctic?

4406. **MR. ALLAN:** I think we can kind of coordinate our response because our efforts would be coordinated well in advance. And we talk about well control equipment and a standardization of well control equipment and certification of well control equipment. We're talking about equipment that can be utilized in situations that have been pre-planned and predetermined.

4407. I'll just give an example of this that we have worked with Chevron on on a project five years ago where this dual BOP concept was put forth on a new class of drill ships that they've talked and have utilized.

4408. And for many of the same reasons there were two complete BOPs with two complete upper marine riser packages, everything was interchangeable and it was tested in advance and it was all matched up so that any of the pieces could be mated and known that they were going to work when it happened.

4409. And it was for some of the reasons that they've talked about, plus many other reasons regarding leaving part of a BOP on the bottom in the Gulf of Mexico.

4410. It might be related to currents and having to come off the location, but you could always go back with another compound and make sure that it matched, and I think that's the same thing we're talking about here, is that everything would be coordinated well in advance, and any capping equipment matching a BOP would have to be certified, tested in advance.

4411. **MR. SWIDERSKI:** Mr. Allan, just before we go on, just for the benefit of others, could you just indicate where you fit into the Transocean Company?

4412. **MR. ALLAN:** Transocean is obviously -- you know, is an international

drilling company. We have operations around the world, including Norway, Eastern Canada. And the opportunities that have arisen in the last few years to extend those capabilities into the Arctic regions, we've been working on that.

4413. We have a small group that has been working in Arctic drill ship design development. We've worked with most of the operators here. We came to this event to listen. We really didn't come to talk, but expected we might have to.

4414. So I hope we're prepared to answer any questions like that, but we've come here really to listen to what is needed in the Arctic, but we've been working behind the scenes with the operators in their plans in making sure that we understand what we can contribute to that to make it a safe operation.

4415. **MR. SWIDERSKI:** Thank you, Mr. Allan.

4416. Over to your colleagues to follow up on that on coordination.

4417. **MEMBER HABIB:** Let's move on to something else. And thank you very much; I didn't mean to put you on the spot. I was just trying to test the well control that was proposed. Yes?

4418. **MR. ALM:** Dagfinn Alm. I just want to clarify that Statoil of course fully supports the capping and containment research and development as an excellent extra tool.

4419. **MR. SWIDERSKI:** Thank you.

4420. **MEMBER HABIB:** I wonder if industry can comment on what we -- they experienced in Greenland with respect to having another ship in the area? We just heard from Greenland about their experience, and is there any feedback from industry?

4421. **MR. PEACOCK:** I'll take a first go at this. Mike Peacock, Imperial Oil.

4422. Again, Georgette, I'm going -- I'm going to focus you back onto the two blocks of interest for Imperial Oil, which is EL 446 and EL 449. And where they are located, the ice conditions that we're going to have to deal with and the depth that we're going to drill at, a Same Season Relief Well is unachievable in the same season, so I will just come back to that. Even with a second ship.

4423. **MEMBER HABIB:** I just have a couple of clarification questions, and I can refer you to the questions as were sent to you on August 29. One is 4.3 -- question 4.3. Imperial speaks in its submission about several same well vertical intervention methods that had shown to be effective, and my question is, were these methods available and effective in the case of Macondo?

4424. And my second part to the question, can you speak about the feasibility of these methods in Arctic conditions?

4425. **MR. PEACOCK:** Mike Peacock, Imperial Oil.

4426. Georgette, good question. I think as you more -- as you read more and more of the reports that have come out from Macondo you will see that if industry best standards had been followed, we most probably wouldn't be talking about Macondo today.

4427. So our answer is yes, I think those processes were in place. If the appropriate management systems, if the appropriate testing, if the appropriate training had taken place, then I don't think there would have been the incident. And those systems would most probably be very applicable in the Arctic. There needs to be some modification to those, but the general principles will be the same.

4428. **MR. SWIDERSKI:** Thank you.

4429. **MEMBER HABIB:** My very last question. And, again, this is of clarification. It's question 4.6. I think it was Chevron that spoke of redundancy for individual well control devices that would be critical for safety systems, and you went to describe them the manual, the dead man, and so forth. Again, my question is similar to the previous one.

4430. Were these four activation methods available for the Macondo and any comments about their reliability in the Arctic environment?

4431. **MR. CAREY:** Yes, Georgette. This is Kevin Carey at Chevron.

4432. Yes, all four of these particular mechanisms for activation of the BOPs were available and utilized in the Macondo Well. And it wasn't a function of activation that was a problem; it was the internal works of the -- of the BOP in itself that didn't allow these to actually, you know, shut off the flow. So, yes, they're all available, and the fact is that they all work, and they will be available in any Arctic

work.

4433. **MR. SWIDERSKI:** Thank you. I've had very patient people wanting to enter the discussion. We're going to ask James. You've been very, very patient. James, please.

4434. **MR. POKIAK:** Thank you very much, Andy, and, once again, thanks for the opportunity to voice some of my concerns. You know, we've heard from a lot of different people, the youth, Elders, industry, the NEB, but in one of the presentations yesterday, they had a number up on the screen of 17 offshore incidents.

4435. And, you know, I think you -- you've heard very clearly that the Beaufort Sea is very precious to our people. And I came up here representing the Hamlet of Tuktoyaktuk, but, as you know, a lot of us wear different hats at different times, and right now, I want to address the NEB and industry and those involved as a father and a grandparent and a subsistent harvester of the Beaufort Sea.

4436. A lot of precautions are being looked at in order for industry to go off in the deepwater area of where they want to go, but there's just -- there's just too much unanswered questions that are being thrown at you guys, you know. You've got all your BOPs; you've got your relief well systems. And apparently the relief well system will take longer to do than -- than a regular project for one well. So, you know, all these things come into play.

4437. I'm very proud to be Inuvialuit. And yesterday I gave a copy of a book that I co-authored to the NEB staff just to show them the importance of the Beaufort Sea and how important it is to our people. I want to be around a little bit longer to watch my grandchildren harvest on that sea like I have been able to, you know.

4438. Like I said the other day too, you know, we can't stop progress. I know you guys are trying everything in your power to ensure that when you do work out there, you're going to try and do it to the best of your ability and environmentally friendly, but everything that we do is a risk. No matter whether you're drilling for oil or you're jumping on your snowmobile going on a bear hunt. I mean, there's risks involved with those things, and we all try to take precautionary methods in order for us to return back home safely.

4439. You know, I really believe that a lot of our Elders that are not with us today, they had a vision for our people, and their number one vision was to ensure that animals and the marine mammals and all those around this beautiful land that we

have is going to be there for the future generation.

4440. I mean, we can't -- I can't stress enough that we can't stop progress, but, you know, it looks like everybody's trying to do it in a way that's going to benefit everybody.

4441. But I just don't want to see the Beaufort Sea being number 18 on that screen up there as a deep offshore incident.

4442. I mean, there are other incidents that happened in the Beaufort Sea in the past people don't know about, and thank God for our IFA we have been able to sit down and consult with the people who are associated with those areas in the Beaufort Sea offshore and onshore.

4443. You know, for many years -- I don't know how many of you people know this, but you know, when somebody -- companies used to come up here people that were out there working actually got killed by polar bears. So we put measures in place to ensure that industry had wildlife monitors available so that that wouldn't happen.

4444. Whenever an animal is taken away from us it's put on our tag and then that's taken away from an individual who can go out and make use of that. I mean, we all adapt to the environment and adaptation is one of the things that our people have been able to do for generations and I believe we're going to continue to do that.

4445. You know, I'm really glad that I can go home, turn up the thermostat and have warm heat in my home, but I still burn a lot of firewood. Of course it takes a little bit more work to do that, but you know, it's nice to come in a warm home when you're out on the land for a whole day traveling around, you've got a nice warm place to stay. A lot of us have lived in tents. I camped in an igloo one time with one of my brothers and that was a challenge in itself.

4446. But, you know, nowadays with all the infrastructure and stuff that are in place everybody is progressing. And I just want to make sure that if there is approval to go to that deep offshore area that they want to that it's going to be done so that the Beaufort Sea will be preserved forever for our people.

4447. I mean, like I said the other day, I've traveled the coastline and whenever I jump in my boat I'm taking a risk. You know, winds pick up. I mean, these are things that as a people these are the things that we take into account.

4448. Some people don't have sense enough to stay put sometimes when there's a big wind come up and they try and travel and that's just not the way to do it. And it's the same thing with doing offshore work out there, those are the types of risks that are going to be in place.

4449. The area you guys are talking about it's 10, 12 miles offshore of Atkinson Point. I've seen ice built up three, four, five stories high. And the area that's in question right now it's never continually frozen out there. There's always an ice movement back and forth. And once that wind starts pushing that slush ice around anything in its way is going to be buried underneath that rubble. I've seen it with my own eyes. I've experienced that.

4450. And I really thank the opportunity to say a few words here, but like I said, a lot of us wear different hats and today I'm speaking as a father and a grandfather who wants to see that Beaufort Sea for the future generations.

4451. Thank you.

4452. **MR. SWIDERSKI:** Thank you, James Pokiak.

--- (Applause/Applaudissements)

4453. **MR. SWIDERSKI:** I'm going to keep cycling back. We've got several people here. Steve, and then Fons I certainly haven't forgotten, then Elizabeth, you're on my hearts list here.

4454. Steve, first to you.

4455. **MR. BARYLUK:** Thank you very much.

4456. And I realize before I've been neglecting to mention who I was at the start of my questions. So it's Steve Baryluk, a staff with the Inuvialuit Game Council.

4457. I do have a couple of questions here that are related to put to industry. And then just to show I'm not picking on them, I also have another one for later to address to the NEB, and a follow-up question from one of the previous days to AANDC or previously INAC.

4458. So I'll start with these two here again directed to our industrial folks in the

room. And this is just following up on some of the discussions related to well capping equipment.

4459. Now, the first one I'll just put out there quickly. It should be a short quick answer, which has already been alluded to but I want to make sure I'm absolutely clear. With respect to the well capping equipment that's being discussed, where would this equipment be expected to be stored for timely access if needed?

4460. I just want to be certain I understand. Would the equipment be located on the drill ship or possibly a support ship, or maybe nearby on shore, such as, in the case of the Beaufort, in Tuktoyaktuk where it would be much more rapid access.

4461. So I just want to be clear on exactly where this equipment may be if it's needed to be called upon.

4462. **MR. SWIDERSKY:** Response from industry. Mr. Scott?

4463. **MR. SCOTT:** Bill Scott, Chevron. The issue that you've raised, Steve, is a very important one. Now, we are a very -- I think we said, in fact, in our application, we're at a very early stage. We haven't acquired a seismic yet. We haven't worked out all the details, but one of the hardest things to do is address what the issues are and what the problems are.

4464. I mean, Andy likes some quartz, and Edison once said he loves solving problems, especially when he didn't know what the problem was. So in terms of the BOP, we wouldn't necessarily -- we wouldn't put it on the drill ship because obviously the drill ship could be damaged and you wouldn't want the capping be on the vessel that could be damaged.

4465. The BOPs quite often, depending on the configuration, could be too heavy to take offshore. We had situations like that at Tarsier Island where we had a pile driving hammer that we tried to take out by boat, couldn't get out by boat, and then had to bring a helicopter from the south, a Sky Queen to do it. So what we've been looking at, at these very preliminary stages, having a dedicated vessel for both oil spill and well capping operations that would have all of that equipment on board.

4466. It would normally function as a marine support vessel, do a little bit of ace management, but its primary function would be to be in the field with the emergency equipment. Take one to cap the well and stop the flow, and two to deal with any residual spill and our initial thoughts are to assist in a dispersant injection operation.

4467. Dispersant, we feel, is a good way to go. We think dispersant injection will be a good way to go. So the minute the flow starts, we would like to start dispersing it, and Ken Lee will be able to talk about that in some detail. We need a ship to do that. We need some equipment to do that.

4468. So all of the emergency equipment, to answer your question, will be in the field on such a vessel.

4469. **MR. SWIDERSKI:** Thank you. Any input from -- Mr. Peacock?

4470. **MR. PEACOCK:** Yeah, Steve, good question. Similar response to Bill. We certainly wouldn't locate it on the drill ship. It would be in the north. Could be -- could be Tuk, could be on a supply vessel. That's the type of detail that we would include in our drilling submission to the NEB.

4471. **MR. SWIDERSKI:** Thank you. Mr. Sykes?

4472. **MR. SYKES:** Gary Sykes, Conoco Phillips. So, Steve, for us, just in terms of clarification, you know our submission talks to the shallow waters of the Beaufort Sea, and at this point in time, what we are proposing is that we would have a surface BOP, and in addition to that we`d have an auxiliary safety isolation device.

4473. Again, in the absence of a specific project application, I can`t give you all the details, but most likely, you know, that would sit on the seabed. So a little bit different from some of the deepwater applications, but that`s what our submission references.

4474. **MR. SWIDERSKI:** Steve, I know you've got one question, you've got three questions. Can I ask you, before I cycle back, to perhaps give people a chance to hear from the NEB. Could you change the order of the questions? You had one for the NEB?

4475. **MR. BARYLUK:** Actually, if you don't mind, the other question is sort of related to that previous one, and I just wanted to thank everyone for your answers. It's sort of the answer I expected to get, and obviously appreciating that things are still in the preliminary stages for everybody involved, but I appreciate you being willing to offer some possibilities.

4476. But if you don't mind, I would like to ask the other question to them

because it is sort of tied into the well capping equipment issue. And it sort of picks up on what Georgette had been mentioning earlier, and I guess I ask in a bit more of a general sense, is what research and development has taken place since the Macondo incident to improve the well capping equipment technology?

4477. Because, again, my understanding was, the first attempts they had to cap those wells with the -- I think it was called the top hat, failed, and it was, I think, the second or third attempt that finally succeeded.

4478. So what learnings have been taken away from that and what developments have been taken in that type of technology to prepare for future wells, again, not just in the Beaufort, but anywhere in the world, to ensure that there's a higher -- a higher expectation of success.

4479. Because again, it was also mentioned before, every well is going to be a little different, every situation is going to be a bit different, but you want to be able to have a piece of equipment that can cover off a range of situations.

4480. So hopefully there's been some work or continuing work on well-capping equipment to develop pieces that would be usable in many situations. So I'd like to hear a little bit more about that. And, again, just speaking more in a general sense, understanding that no one has any specific wells or applications yet.

4481. **MR. MAIER:** Rod Maier, Chevron. Steve, good question and I will try and be general, but I may have some specifics if that's all right.

4482. Certainly, I guess -- first of all, one of the key learnings from Macondo, I mean, it was an unprecedented call to action for really everybody involved in the offshore drilling. Regulators, we've seen certainly the US form a number of task forces and overhaul their regulatory environment and go more towards a safety case regime. We've seen things such as this review.

4483. And certainly industry has made significant efforts in terms of upping the game and ensuring such an incident never occurs again, and in particular around -- around capping systems. One of those elements has been the formation of what's called the Marine Containment Company that you may have heard about, which is specifically for the Gulf of Mexico.

4484. So that's a one billion dollar project to look at capping systems, and Chevron was a founding member of that, as I believe ExxonMobil, as I believe

Conoco was also a member of it, and Statoil I also believe is a member of that particular project now. Of course they're looking at developing intervention capping capability exclusively for the Gulf of Mexico, so that is one project there.

4485. There is also the Helix Containment Company that's also looking at an option, a private vendor, Wild Well Control, and then one that -- I guess of the most global extent, there's been a number of projects launched by the -- what's called the International Association of Oil and Gas Producers, or OGP, which would be analogous to CAPP, the Canadian Association of Petroleum Produces.

4486. It represents most of the global oil and gas companies, Chevron, ExxonMobil, ConocoPhillips, and they commenced three projects: one to look at well design; one to look at surface oil response -- surface oil spill response; and the third project is a sub-sea well capping and containment project that they've also launched as well, which they've formed into a separate company. And there's nine participants right now.

4487. All of the four companies here today are members of that particular project as well, where they're looking at a potentially global mobile toolbox capping system that could be deployed anywhere around the world, excluding the Gulf of Mexico because they will have their own system in place. And so work is advancing on that as well.

4488. As part of their oil spill they're looking -- oh, and I guess as well, one other project that industry is also working on, there's -- API is looking at leading a dispersant injection project as well.

4489. So those are the collaborative ones. In addition, a number of the major operators are also advancing various levels of their own proprietary or systems -- capping systems as well. So there are a large number of these systems going in place right now. A lot of research and development going into it. Thank you.

4490. I'd also -- I wouldn't call it -- research and development is maybe the inappropriate term. I think really it's an adaptation of existing proven technology.

4491. Georgette, to loop back, I think, to your earlier query about how reliable are these things to connect and disconnect all the time, it's utilizing largely technology that we use every day to connect the existing BOP systems and the riser systems that are used -- utilized on a regular basis in deepwater drilling systems today and have been used for some time, so it's really adaptation of existing technology.

4492. Kevin, do you want to maybe amplify what -- on some specifics?

4493. **MR. CAREY:** Yeah, Rod, I'd like to add into this. This is Kevin Carey with Chevron.

4494. And one specific difference, there's at least six companies right now that are developing the capping stacks, and I suspect there's more than that, but their development is around building a capping stack that can be utilized on anyone's equipment.

4495. So they have to build a capping stack that is capable of mating up with a wide variety of stacks and configurations and connections. The simplistic -- simplicity of our system would be that we only have one stack to deal with and we only have one type of connection to deal with so, you know, we could be very specific about the design and design it for multiple connections on that specific stack.

4496. And as Rod had indicated, you know, as far as -- Georgette on latching up subsea, that is a very frequent event, to unlatch and re-latch onto BOP stacks; that's very, very common. Under -- you know, in 10,000 feet of water, 8,000 feet of water, it probably feels like the Arctic up there, so -- you know, and it's very dark and so it's a very common practice to do that, to latch and unlatch.

4497. **MR. SCOTT:** Just one -- looping back just a little bit because I sensed your concern about different rigs.

4498. Certainly in the deep Beaufort -- and everybody refers to the deepwater. Now, the deepwater in itself is not the issue. The issue is the shortness of season and the fact that we're further north and we have less of a season and more ice.

4499. That in itself probably means that there's a strong likelihood we'll have a new build drilling system going in there. And if that ends up being the case, it will be the same rig that will be coming back to do the work, not necessarily different rigs because it has to have that ice capability to be able to do that work, so it's not like any rig's going to arrive from anywhere to do the work.

4500. **MR. SWIDERSKI:** Mr. Peacock, Mr. Sykes, anything to add to that?

4501. **MR. PEACOCK:** Mike Peacock here. No, I think Chevron have responded very thoroughly to that question.

4502. Perhaps the only other addition I'd have is that, you know, the opening up of the Gulf was conditional upon getting that marine well containment system running before they allowed drilling back in the Gulf.

4503. **MR. SWIDERSKI:** Thank you.

4504. **MR. SYKES:** Gary Sykes, ConocoPhillips. No, again, we're comfortable, I think, with the very thorough answer from Chevron.

4505. **MR. SWIDERSKI:** Thank you.

4506. Mr. Allan, just for a complete closure on that, is there anything you'd care to contribute?

4507. **MR. ALLAN:** No, I think they've answered that perfectly adequately.

4508. **MR. SWIDERSKI:** Thank you. Steve, does that answer your question?

4509. We're going to pick up with Fons right after the break. We're going to pick up sharply at 3:15.

4510. Thank you very much. Good questions, good discussion.

--- Upon recessing at 2:57 p.m./La session est suspendue à 14h57
--- Upon resuming at 3:16 p.m./ La session est reprise à 15h16

4511. **MR. SWIDERSKI:** I've got a rolling list of those who've been extremely patient. I'm going to run down the list of who's on the list right now and then I have one question before we proceed.

4512. We have Fons, Elizabeth, Billy, Lindsay, Boogie, Joshua, Lawrence, Robert, Eugene. We've got several others. We're going to -- we're going to follow in that order. We're going to start with Fons in a second, but I want to begin with Fons and then after Fons is finished, we're going to ask -- I'm going to ask for one point of assistance, perhaps from industry, given that I'm a pretty simple guy and I got lost a little bit in the discussion about BOPs and things of those nature.

4513. So if you'll indulge me, but Fons, let's hear from you, please.

4514. **MR. SCHELLEKENS:** Okay. I'm Fons Schellekens and I'm with Natural Resources Canada.

4515. My comment -- it's a comment in follow-up to Bharat's presentation of drilling safely, risks and mitigation. And the comment has to do with risk assessment.

4516. I would like to bring to the attention of the NEB something. NR CAN was involved in the environmental assessment review of a project proposal, of a project by an oil and gas company in Alberta, and that oil and gas company proposed a risk assessment -- or had done a risk assessment along a model -- a company model that they called the butterfly model.

4517. And I'm not familiar with the risk assessment procedures of all companies present here, but that butterfly model seemed to me very useful model that perhaps the NEB should know about.

4518. So in that model on the first level all risks were identified. So everything that possibly could go wrong was identified. Then as a second step the company looked at okay, if this thing would happen what would be the first thing that we would do to fix it and they listed that mitigation measure. And if that mitigation measure would not work what are we going to do next and they listed that.

4519. And so they kept on listing measures 'till they couldn't think of anything anymore. Then the third step was looking at the risks and probabilities associated with events happening, and then the last step was looking at risk tolerance.

4520. Yeah, I just wanted to mention this and I think that this model, since it was in an environmental assessment review, and I can actually ask the proponent of this project to put it in the public domain, so to my knowledge it is in the public domain.

4521. **MR. SWIDERSKI:** Thank you, Fons.

4522. Would the NEB like to respond?

4523. **THE CHAIRMAN:** Just a brief comment. I'd like to thank you for these comments.

4524. Obviously in our method of regulation the assessment of risk is that proposed by the operator, and the role of the NEB is to be satisfied with it, challenge

it and seek to supplement it. So I think these words of advice and information are helpful for all in this room including industry.

4525. The question of a risk assessment also was a notion -- or in it is the question of how we go about doing it and the framework.

4526. I know WWF Canada earlier this week was proposing a model and I can't help to think that in addition to thinking of a model from I'd say from the top down in terms of a theory of risk assessment and landing at the bottom of the architecture with tolerable or acceptable and things like that, perhaps a different way to get to the same place is to ask questions such as that we've asked in CFI 151, for instance O -- letter O -- where we're asking -- well, the series of questions.

4527. Not only O, but we've asked the people answering this question to assume that there is a blow-out and ask to inform the Board of what is the outcome of the blow-out if it were of a same scale as the Gulf of Mexico and tell us about the impact on people on the land, on people's ways of life, on future revenues. And maybe that's an alternative to having a theoretical model of risk assessment where we look at the thing after you've simulated something like a blow-out.

4528. So I'm just leaving that as a thought that people might want to talk about when we wrap up tomorrow if anybody cares to talk about risk. But I'm personally interested in the whole topic raised by what we just heard, and the method of approaching risk.

4529. But the bottom line though is that it is the operator's in their application tasked to persuade us that they've done hazard and risk identification, they mitigate that and they persuade us to take a course of action.

4530. **MR. SWIDERSKI:** Thank you.

4531. It's with some humility and trepidation that I ask for some help from colleagues from industry and I understand now why I didn't go into engineering and went into dance instead.

4532. Could we get a plain-language interpretation of what a BOP is?

4533. **MR. CAREY:** Kevin Carey with Chevron.

4534. In its simplest terms a BOP stack is a series of valves. And, you know,

before I describe the valves I want to make sure that everyone understands that a BOP is a secondary means of well control. So that's your second line of defence for well control.

4535. Your primary line of defence is always the mud that you have in the well or the hydrostatic fluid. So in the perfect scenario the BOPs are never utilized for a well control situation because you always maintain the mud weight that you need to keep the well under control.

4536. But getting back to just kind of the definition of the BOP and there's some pictures in the back of some BOPs, they're not very close up but you can see -- one of the pictures in the back is -- on the right-hand side of the room is a control system for a subsea BOP which is easily the most complex of the BOP components.

4537. But in its simplest form a BOP can be one valve, and in the case of a lot of deepwater rigs, can be upwards of eight valves. And these valves are designed for different reasons to close on different size pieces of pipe. Some are designed to seal around pipe, some are designed to shear pipe off and cut it in half, and some are designed to actually seal when there is no pipe in the hole at all.

4538. So that's the very simplest definition of a BOP stack. But, it's got a lot of -- you know, there's a lot of things we do with BOPs that have nothing to do with well control.

4539. We utilize BOPs because there's a lot of plumbing in piping that goes into them as well, to add mud to the well, to allow fluids to be taken out of the well at a controlled rate. So it has a lot of functions other than in its -- when you're really mad and you got to press that button and things are getting exciting, that's the last time we really want to use that BOP stack.

4540. **MR. SWIDERSKI:** Most helpful. Thank you very much.

4541. Elizabeth, you have an observation to share with us on the topic at hand?

4542. **MS. PERTSCHY:** Yes. I hope so.

4543. **MR. SWIDERSKI:** Tell us your last name and where you're from, Elizabeth. Not everybody here ---

4544. **MS. PERTSCHY:** Elizabeth Pertschy from Tuktoyaktuk.

4545. But does anybody on the Board there know where Bailey Island is? Could you put your hand up, from the Board?

4546. Anyway, I just had to ask that because I just -- Bailey Island is where the polar bears are.

4547. Anyway, thank you to the National Energy Board. Quyannani. I heard that word quite a bit so I wanted to say it myself.

4548. And this is for our six communities, were not able to be here so on behalf of all of you I'll try to be your voice from coast-to-coast.

4549. The land, oceans and rivers and lakes are our big gardens. If they do not drill safely Mother Nature might get mad at us. Slow down. If we take care of what we got on our -- the hearings earlier on with Justice Berger, our people said, "Wait and wait" and the oil company waited.

4550. We have come a long way, turn your dial and your place gets heated. My back is sore just thinking about energy. I had to keep the fire going, gather wood in the beach for firewood, and haul wood with my dad's sled dogs.

4551. And before I close here I was going to say, the previous speaker, I'm proud to be Inuvialuktun too and we are all Canadians and I like singing "Oh Canada".

4552. Thank you.

4553. **MR. SWIDERSKI:** Thank you, Elizabeth.

--- (Applause/Applaudissements)

4554. **MR. SWIDERSKI:** Billy, you're next.

4555. **MR. ARCHIE:** Billy Archie; Aklavik.

4556. This is probably one question to industry and another one to NEB. Just on existing wellheads that are out there right now, I mean it's -- some are -- probably been there for the last 30 years but the whole thing of -- especially the ones with SDL licence attached to them.

4557. When Merven mentioned the other day about earthquakes out there, has industry or NEB has ever assessed or monitored the existing wellheads that are out there? I mean the potential of seeping.

4558. And then James' observations of ice piling up three, four stories high and the risk of ice covering, I mean that's -- I remember leaving the rig, going back to Tuk and -- there used to be a pipe, I think I had a picture of it somewhere -- a pipe sticking out of the water in the Arctic Ocean and it begs the question of how many of these wellheads are there. And the regulatory requirements back then to shut a well versus today, I think there's a risk right there, right now.

4559. So I mean just -- is there a monitoring program in place with these existing wells?

4560. Thanks.

4561. **Mr. SWIDERSKI:** Thank you, Billy.

4562. Perhaps I'll ask the NEB to respond first and then views from industry, if any.

4563. Give industry just a second.

4564. Mr. Peacock, thank you.

4565. **MR. PEACOCK:** Yes. Mike Peacock; Imperial Oil.

4566. Billy, it's again a good question that needs clarifying. As I mentioned before, these old wells even though they're discoveries, we abandon -- the term is we abandon the well, so we put a number of cement plugs in the well to seal off the well and the number of cement plugs is decreed by the NEB on the abandonment procedure, and then the wellheads are cut off and retrieved. So there shouldn't be any wellheads left on these old wells.

4567. **MR. SWIDERSKI:** Anybody else from industry?

4568. **MR. SCOTT:** Yes, Bill Scott with Chevron.

4569. I think you raise another couple of points about ice cover. All the

wellheads in the Canadian Beaufort Sea and all the BOPs were placed below the maximum depth of ice cover in the area so there was no issue or later issue with ice cover impacting with the wellheads.

4570. As Mike said, I believe nearly all of the wells, if not all of them are abandoned properly, so there should be no issue there. And when you add on to that the fact that we have no intention of going back to any of them to open up, that's an additional factor.

4571. You also referenced Hershel Island; I was around, as some other people in the room were, at that time. Hershel Island was abandoned, the conductor casing which ran through the island was cut at the seafloor and the pipe was pulled through the island and retrieved.

4572. Now, there were periods, as you say, during that operation where the pipe would have been sticking out while we were trying to retrieve it, but it was retrieved and put to one side properly and the well was properly abandoned.

4573. So although there are a variety of different means of abandonment all of those wells are properly abandoned and there should be no reason to go back to them and have to monitor them.

4574. **MR. SWIDERSKI:** Thank you.

4575. Back to the National Energy Board. Mr. Caron.

4576. **THE CHAIRMAN:** Thank you. I'd just like to make a brief comment before Bharat talks a bit more on the topic.

4577. We keep saying we're a life cycle regulator, so I just wanted to confirm to you, Billy, that we are accountable for the situation with these wells. We are there as long as the well is there, so we have responsibility for that. I wanted to acknowledge that very clearly.

4578. We, ourselves, ask questions in the calls for information. It was number 2.2.3. So for those who want to navigate through all the documents we have, this is a topic of interest to the Board, and we've explored that in this Arctic Review. And Bharat might have a bit more to say about the subject matter.

4579. **MR. DIXIT:** Bharat Dixit with the National Energy Board. Thank you,

Mike and Bill and Gaétan, for responses to Billy.

4580. And, Billy, I don't really have very much to add. A couple of things that perhaps may not have been as addressed as explicitly as you had asked. One was around seismicity. The current regulations ask for all hazards to be identified and risks evaluated and solutions proposed. In the earlier days, the wells had been properly abandoned, as was referenced by Mike, and so seismic factors were accounted for in the well abandonment process.

4581. The last one is to build on what Gaétan has said regarding the lifecycle. It's actually the responsibility of the operator after that they have -- after they have abandoned the well, that they are continued to be responsible for it. So when things go wrong, they are accountable for going back and fixing it.

4582. One illustrative example in the Central Mackenzie Valley, one well that had been abandoned in the 1930s has now become exposed as a result of erosion of this natural island. And that company is now going back and re-abandoning that well. So the accountability of that well continues to be with the operator.

4583. **MR. SWIDERSKI:** Thank you. Billy, does that respond to your question?

4584. **MR. ARCHIE:** Yeah, thanks.

4585. **MR. SWIDERSKI:** Thank you very much.

4586. Lindsay, you're on deck, and I'm so envious of your hair.

--- (Laughter/Rires)

4587. **MR. STAPLES:** Wow.

--- (Laughter/Rires)

4588. **MR. STAPLES:** Well, looking around the room, it may be white, but I've still got some so --

--- (Laughter/Rires)

4589. **MR. STAPLES:** Not to be chippy. Anyhow, with that, my name is Lindsay Staples. I've been on the margins of this relief well discussion for some time so forgive me with this question. It may be naïve, but I'm interested in the statement or clarifying the statement that -- from industry reps that a relief -- that the relief well policy is not achievable because a relief well cannot be drilled in the same season.

4590. And my question is this: Is this statement predicated on the assumption that the relief well drilling wouldn't commence until a blow-out occurred, and it wouldn't be drilled before that for reasons of costs? In other words, the costs are viewed as prohibitive.

4591. **MR. SWIDERSKI:** Mr. Scott?

4592. **MR. SCOTT:** Nope.

4593. **MR. PEACOCK:** Mike Peacock.

4594. Lindsay, and, again, I'll talk specifically on 446 and 449 because that's what I was referring to. It's not a cost matter. It's just a function of it being unachievable because of the length of the drilling season that we have in that -- in that particular location.

4595. And so if you -- if you have to drill a relief well, obviously to drill a relief well, you have to encounter a problem, and then you have to understand that problem to propose a solution when you drill the relief well.

4596. So I know there's been -- people have said, well, you could have two rigs out there, and you could be drilling one well, and you could be drilling your other well, and you drill them down together. But for us that doesn't achieve anything because if you hit a problem in that first well, you've designed the second well the same as the first well, and you most probably can't eradicate the problem.

4597. So it's not a cost issue, it's just that you're -- and, again, I'm speaking to you about 446 and 449 and the limitations that we have with the length of the season we have to work with.

4598. **MR. SWIDERSKI:** Lindsay?

4599. **MR. STAPLES:** Thanks very much for that.

4600. **MR. SWIDERSKI:** We just want to make sure that he's had a follow-up to that.

4601. Other views?

4602. **MR. SCOTT:** Yeah, Bill Scott; Chevron.

4603. I think there's an important distinction, Lindsay, in what you said. You said relief well policy. Mike said relief well. The issue is the regulations ask for a relief well or a suitable equivalency.

4604. So we can still meet the aims of the National Energy Board guidelines and policy it just doesn't mean to be with a relief well. So that's the first point.

4605. The second point is this business of drilling two wells at the same time. If you're drilling a well and your blow-out's down here, you can't drill this well down very far because you don't know when you have to turn it to intersect the other well.

4606. So the second well will always be a long way behind the first well if you were to do that. So any time savings in doing that are actually minimal and certainly takes longer to drill the remaining portion of any relief well then it would to do a capping operation.

4607. So it's an extremely important distinction, because if you drill both wells at the same time in the same depth they can't intersect each other. So one well is always significantly lagging so you have a lot of that well left to drill, and we see in every situation that capping BOP will be able to respond to that situation quicker than any reasonable relief well.

4608. **MR. SWIDERSKI:** Thank you.

4609. Lindsay, back to you.

4610. **MR. STAPLES:** Thank you.

4611. I just have one question -- a follow-up -- maybe I could put this question to our friends from Greenland. Perhaps you could just refresh my memory with respect to your statement regarding the relief well arrangements in Greenland.

4612. As I understand it there is the possibility of the arrangement for concurrent

drilling, or if there is a lag time between the relief well and the primary well, what is that lag time or what is that relationship between the two?

4613. **MS. WILMS:** Yeah, I'll try and answer as best as I can. I'm not an engineer so this is what I've been told from my engineers.

4614. Well, of course, it's based by a case-by-case basis and this year the maximum amount of time in a worst-case to drill a relief well is, as far as I remember, it's 45 days or 47 days. That's the worst-case scenario. And that includes mobilizing the rig from the most southern part where one of the drilling locations is to the most northern part.

4615. They're not drilling simultaneously. What they are doing is that they have selected several locations where they want to do exploration wells.

4616. So what one rig is doing is that it will be doing the trap holes, so we are assessing that it's not in a hydrocarbon bearing layer, and then the other rig will take over and finish. And so there will only be one in a hydrocarbon bearing layer at one time.

4617. But I'm just going to say I think we have a lot less ice than you have, so just to bear that in mind.

4618. **MR. SCOTT:** Just a point of -- just a clarification -- just a follow-on ---

4619. **MR. SWIDERSKI:** Mr. Scott, go ahead.

4620. **MR. SCOTT:** Mike mentioned correctly the issue in the Beaufort is the length of drilling season and the severity of the ice. In Northwest Greenland where the rigs are drilling there's an open water season of 165 days. So we're comparing apples and oranges in terms of operating conditions.

4621. However, as Greenland goes to development drilling they'll find themselves in the same situation as we are now.

4622. **MR. SWIDERSKI:** Thank you.

4623. I'm going to again keep in the spirit of opportunity for all to speak; I'm going to ask Boogie to share his views with the plenary.

4624. **MR. B. POKIAK:** Thanks again. My name is Boogie Pokiak. I'm from Tuktoyaktuk. Harvester.

4625. I've got a question for industry here and one for the Game Council. So the question that I've got is, you know, like when you hear -- when Macondo first -- experience first happened and it dragged on for, you know, a while.

4626. There was a publication saying, well, you know, one -- another oil company coming and saying, well, if it was us this is what we would do, we would have stopped it.

4627. Well, my question is, what kind of cooperation does industry have, because to us, you're just another animal, you know, a very same kind of animal to us. I mean, you are a third party interest, you've got the same interest and so -- how come there was no cooperation with engineers of the industry going in there, and especially if it was a human error, and trying to correct it? And not just having one, you know, the oil company that had that bad incidence to deal with it.

4628. Was there any cooperation there? And I know in the past here if something happened in the offshore drilling in the Beaufort Sea there was, you know, at least mention of cooperation here, so I think that's the first question.

4629. **MR. SWIDERSKI:** Okay. Can we -- can we take that one first and get a response?

4630. **MR. CAREY:** Yes, Kevin Carey with Chevron.

4631. You know, prior to the incident there was limited communication since it was a BP well, but from the point of the -- once the incident occurred, there was a significant amount of resource brought to bear from all of the major oil companies.

4632. BP opened up a -- opened their shop up for all of us to come into, and I know Exxon, Chevron, Shell, all the majors and a lot of other individuals sent their experts in to BP's offices and worked in their for months collaborating with BP building plans on how to minimize the damage and restore the stack and build the capping stack.

4633. So several of the employees that work for me actually were seconded into BP's staff.

4634. Now, that's all after the fact. You know, there's -- there is collaborations through joint technology agreements with a lot of the oil companies. A lot of us actually even share training organizations, so it may look like we're a pack of lone wolves, but I'd like to think that we're a little bit more collaborative than that.

4635. **MR. SWIDERSKI:** Thank you.

4636. **MR. POKIAK:** Yes, thank you for that information and the answer. The other comment I'd like to make is, you know, like, the -- you're talking about BOP, you know, your worst case scenario, and to me, the worst case scenario is if there was a -- you know, a lot of pressure, a large volume of a discovery down there and it just -- and it was crude oil.

4637. And, like, you know, the Greenland representative here saying, well, the ice conditions are a little bit -- are different from the Beaufort here, and as far as the information gathering which I do, and being involved with having heard some experiences and -- of Norway because they work in ice-infested waters, and they've had some major oil spills over there, and there's the cooperation there with -- with different industry. And because of it being ice-infested waters and, you know, the character of the leak, the fluids, well, they change with time and temperature.

4638. And I'm just wondering how -- how much preparation has been made to -- you know, to try to understand the -- you know, those characters by the industry because I'm sure the Game Council is trying to put something together with the Arctic Council to make it a universal requirement as to how to deal with it.

4639. And just a question I have for the Game Council, how far have they come with that with the Arctic Council, you know, as to the planning and, you know, the ice movements out here with the -- the Oceans Canada, with Fisheries, just the migration and the currents out there and the movements of the ice out there at the surface and the different current movements and the migration of the -- of something, that just goes on, you know for months.

4640. So because as hunters, we can speak quite well about the character of the ice and the character of the water movements because our people has used those for -- you know, to make life a little bit easier for them because you do work with elements, and you use the forces of the elements, you know, in your favour. You don't go against them; you flow with them.

4641. And when you're going offshore, I mean, further offshore, like really deep

water there, the character changes. I mean -- I mean, just the environment changes. So we can do a lot of reading. Like, we try to do our -- our homework.

4642. You know, you can go far back -- it's the first time that somebody like Stevenson left Alaska and ended up in, you know, Banks Islands and, you know, did some -- or exploration work in the High Arctic right from that time to today where -- when the industry come, they -- you know, they did a lot of research on -- you know, and Environment Canada too did a lot of research on ice and tried to understand it. I don't know how far they've come or how they've put it together.

4643. **MR. SWIDERSKI:** Well, let's -- a great question. Let's get -- let's hear from the IGC, if they can. Great question.

4644. **MR. BARYLUK:** Hi. It's Steve Baryluk here.

4645. The Chair has asked me just to try and respond to that. I guess the one thing to say would be the Game Council is not directly involved in the Arctic Council or -- itself. However, that being said, it does follow along with the work that the Arctic Council is doing.

4646. Sorry, I shouldn't say we're not involved. The Game Council does have some involvement in one of the working groups that comes under the Arctic Council, which is the Emergency Prevention Preparedness and Response Working Group. They are involved in that working group of the Arctic Council.

4647. But just as an example, you know, we do get information from them, and I just received two big, heavy reports in the mail this week, which is the AMAP, Arctic Marine Assessment Program report. And the subtitle being, Oil and Gas Activities in the Arctic, Effects and Potential Effects.

4648. So, I mean, we get this type of information from Arctic Council and other sources, and we do our best to try to interpret and understand what they contain and, you know, incorporate that information into the work that the Council is doing and how it's looking at some of these issues.

4649. So I hope that answers the question that Boogie's put forward.

4650. **MR. SWIDERSKI:** Thank you. Boogie, does that work?

4651. **MR. POKIAK:** Yes. I think I'd like to hear -- to see -- I'm sure industry

has been following along, you know, with -- with the character of oil spills, crude or -- and the kind of changes that goes on. You know, like, I'd like to -- I'd like to hear a little bit about -- just to see what -- you know, what do they know and -- and how they're going to react to it, not only trying to get their -- under control -- a blow-out, but also at the same time trying to -- you know, to containment.

4652. **MR. SWIDERSKI:** We'll provide an opportunity to respond. We've got -- I want to keep us moving, give everybody a chance.

4653. So is there sort of a high level response to the question from anybody in industry?

4654. **MR. PEACOCK:** Boogie, some of that will actually be covered tomorrow when we talk about oil spill response and what we've learned. So I know we'll get into that tomorrow. I don't want to deflect your question or anything, but I do think we'll cover some of that tomorrow.

4655. **MR. SWIDERSKI:** Is that acceptable, Boogie?

4656. **MR. POKIAK:** That's fine. Thank you very much.

4657. **MR. SWIDERSKI:** Thank you for your question. Joshua, you're next. And then I'm going to come back to the IGC.

4658. **MR. OLIKTOAK:** Thank you, Andy. Josh Oliktoak from the Alikatuktuk Community Corporation.

4659. My question is to industry on relief well. As they mentioned earlier, they can't do it in one season. So my question to them, with a short season for drilling up here in the Beaufort Sea, can they drill in ice -- with new ice forming on the Beaufort Sea -- and what's the minimal thickness they can drill at safely?

4660. And if they do leave for the year, if they do cap it for the off season, can they monitor that well during the wintertime?

4661. Thank you.

4662. **MR. SWIDERSKI:** Thank you. There's three questions -- related questions. Can industry respond, anybody?

4663. **MR. PEACOCK:** Yeah, Mike Peacock. Again, I'll concentrate on 446 and 449. We have a limited drilling season just to the location of those blocks because they're the most northerly blocks that have been licensed.

4664. When we talk about drilling, it's not just a drill ship that we're taking -- taking there for the operation. It's what we call a drilling system, so it's going to require ice breaking support as well as supply vessel support to execute that operation.

4665. We won't keep the rig in the Beaufort over the winter, so as soon as the ice encroaches too much, we will move the boat out of the Beaufort Sea.

4666. So, you know, our drilling window is, at most, probably eight to ten weeks in a good season.

4667. **MR. SWIDERSKI:** Thank you.

4668. Mr. Scott?

4669. **MR. SCOTT:** Yeah. I think you had asked about thicknesses and capability. Just to give some historical perspective, Terry had mentioned previously about the Gulf Kulock (phonetic) system. It was a Class 4 system, which meant that it could stay in location in four feet of level ice coming through it constantly without any ice management support.

4670. With ice management support, it was able to operate in ridges and thick ice into December. Now, likely in that location, we'll be looking at a more capable drilling system and marine fleet, as Mike has mentioned, than the Kulock (phonetic). So we're looking at very, very capable equipment.

4671. I believe the second part of your question asked, could we monitor the wells after we've gone. We've put in place -- our thoughts are that if we have high class marine support and it speaks back to the question -- the issue, the two parts, to secure the well, and then to deal with it the next season. But having secured the well, we think there may be a requirement to monitor it throughout the winter to see if there are any issues.

4672. So the marine vessels have to be capable for year-round operation is our belief at this point in time, and I think that probably addresses both of your questions.

4673. **MR. SWIDERSKI:** Thank you.

4674. Mr. Sykes?

4675. **MR. SYKES:** Joshua, thanks for the question. I'm going to talk a little bit about the shallow waters of the Beaufort and, again, the caveat there would be that we don't have any applications, you know, in process at the present time. But in terms of our current thinking for the shallow waters, we wouldn't plan to be drilling when there's any ice in the area. We would want to come in and drill and leave before -- before the ice moves in.

4676. And, again, what we envision at the moment would be to have an auxiliary safety isolation device. So, again, in the very unlikely event that we had to activate that device, it is designed to close off the well, you know, within a few moments of a well control incident.

4677. If we did have to leave because of encroaching ice, that auxiliary safety isolation device is something we could use to monitor the well over the winter.

4678. So I hope that answers your question with respect to the shallow waters.

4679. **MR. SWIDERSKI:** I think we're good.

4680. John?

4681. **MR. STUART:** Thank you. John Stuart, Tuktoyaktuk Community Corporation. I believe industry sort of answered this on Boogie's question, but it kind of scares me and I know a bit about it. It's -- I've heard dispersant quite a bit today.

4682. Is it an integral part of your contingency plan? And also, has it been tested in a real ice environment, and what percent did it pick up or disperse? Thank you.

4683. **MR. SWIDERSKI:** Thank you. Again, we'll provide an opportunity to respond, keeping in mind that a good chunk of tomorrow is dedicated to pursuing this in even more detail. But if we can get an initial perspective.

4684. Gentlemen?

4685. **MR. HALL:** Yeah, this is James Hall with Imperial Oil.

4686. I think Mike and others have alluded to the fact that we've still got quite a long way to go and so we have a firm drilling plan and an oil spill response plan with details that support our drilling application.

4687. But I think it's fair to say that dispersant application is a key part of our response currently in our thinking and subsea dispersant application is something that we'll give full consideration to and consider building into our contingency plans.

4688. But we have plenty of time before us, before we have to firm up our -- you know, our choices, but, of course, what we will do and what we've done in the past and we always do with our projects, is we'll be consulting with all the Northern communities on a regular basis as we progress our plans and we'll be getting input and making sure that you're familiar and that you have every opportunity to comment on our plans.

4689. **MR. SWIDERSKI:** John, that's good.

4690. **MR. STUART:** Good. Thank you.

4691. **MR. SWIDERSKI:** Thank you for the question and the response. Lawrence. Yes, sir?

4692. **MR. RUBEN:** Hi. Lawrence from the Game Council.

4693. Just to further respond to Boogie's question on what GC is doing with the current knowledge. Well, current knowledge, as I see it for myself, is people at my age, of 50 years old. We have current knowledge, but traditional knowledge, as you know, goes with the Elders and we're using that as much as we can.

4694. As Frank is always stating in meetings that we attend, traditional knowledge is coming to the forefront, so we're trying to ensure that companies, industry and the National Energy Board is putting traditional knowledge at the forefront also.

4695. And I'd like to say a bit -- or make a comment anyway on Chevron. Now, back in 2006 and '07, I could say at that time they were nowhere to be seen, Bill. And at that time, Imperial Oil, Exxon, British Petroleum were taking the lead in consulting with communities, but now I see that Chevron is kind of speaking on behalf of all companies involved here and, Bill, thank you.

4696. My question is, why are you -- why are you guys -- industry -- dismissing Same Season Relief Well capability? As you know, Greenland has made it a requirement to have that.

4697. So, in saying that, my question is, are you willing to drill safely no matter the cost, such as having two ships with all the supporting capacity such as tugs, icebreakers, supply ships, barges which are -- by 2015 should and will be required to be double-hulled.

4698. BOPs, as Bill stated earlier, they're -- he says they're at least -- they have 100 percent redundancy now as opposed to two years ago where -- he stated that there were quadruple redundancy at that time, so now it's at 100 percent, so there's some improvement in technology there.

4699. But my question is, are you willing to drill safely, with a simple answer of yes or no would suffice?

4700. **MR. SWIDERSKI:** Thank you, Lawrence.

4701. **MR. MAIER:** Lawrence, thank you very much. Rod Maier, Chevron.

4702. I believe your question is, would we be willing to drill safely? We will not proceed with any drilling program unless we can do it safely and without harm to the environment; that's a given.

4703. **MR. SWIDERSKI:** Thank you.

4704. **MR. PEACOCK:** Mike Peacock, Imperial. And that's the same response for Imperial and ExxonMobil.

4705. **MR. SYKES:** And, Lawrence, from ConocoPhillips to honour your request, our answer's yes.

4706. **MR. SWIDERSKI:** Thank you, Mr. Sykes.

4707. Again, keeping with our approach, I've got Robert Powell's perspective on this and then we're going to come back to the Game Council because they've been patient. I've asked them to wait with some of their questions. Robert?

4708. **MR. POWELL:** Thank you, Andy. Robert Powell, WWF.

4709. I have a couple of remarks perhaps and a question about capping stacks for the industry. I wonder if you would indulge me also. Chairman Gaétan alluded to our recommendation to the Board that the Board adopt a tolerable risk framework.

4710. And as I understood his remark -- or, Gaétan, I'll direct -- address you directly. As I understood your remark, you were contrasting that to an objective assessment of risk, and I'd just like to clarify that that's not how we see it.

4711. In fact, we believe that an objective evaluation of the likelihood and consequences of risks, to the extent that that can be done, is absolutely essential.

4712. Where the tolerable risk framework comes in is in interpreting those results. And so, for example, the Health Service Executive in the UK, came up with the tolerable risk framework in relation to its study of the risks of the nuclear industry there, and this sort of framework has been adopted by organizations that deal with dam safety and a number -- well, quite a number of other federal agencies all over the world, and, in fact, was commended to your sister organization in the United States recently in an issue of risk analysis. I believe it's January 2011.

4713. What -- and what this does mean to us is that when someone says that they're prepared to take a risk, what they're really saying is that they're prepared to suffer the potential adverse effects of the decision in the expectation that that's not likely to happen and that there are benefits to be had that they want to have.

4714. Now, in this discussion that we've had over the last several days, people have been expressing, to the best of their ability, and quite well actually and quite passionately, what they regard as a potentially acceptable level of risk or tolerable risk, as it's called in this framework, that there are some things that are unacceptable, and that there are some things that are tolerable, provided that people do everything they can possibly do to reduce the risk.

4715. So that's the -- that's the sense, and that's all I meant to say about that, if that's enough on that.

4716. **MR. SWIDERSKI:** Gaétan?

4717. **THE CHAIRMAN:** And I am thankful to you for these comments. My earlier musings were in the general -- in the same general space. I was simply making reference to when our -- to one of our calls for information, where we have

asked a question about please tell us what the thing -- the thing looks like if such a thing happens.

4718. Industry has told us they find these kinds of questions appropriate, and they are willing to continue to answer that kind of question. And your suggestion is on top of that, I understand, Rob, to superimpose those factual or simulated outcomes, considerations, with the model that helps the person forced to make a judgment call at the end to do a good judgment call.

4719. Am I getting this right? I see your head nodding, so I think the answer is yes?

4720. **MR. POWELL:** Indeed, that is what we believe. Yeah, that's right.

4721. **THE CHAIRMAN:** And your references to the US situation is helpful, and this is something that the members and the staff were -- we are acknowledging and taking in as part of what we are learning during the Arctic Review, and we thank you for that.

4722. **MR. POWELL:** Thank you. Andy, can I now ask a question of industry about capping stacks?

4723. **MR. SWIDERSKI:** In English?

4724. **MR. POWELL:** It will be actually. I don't think we need to get too technical here.

4725. **MR. SWIDERSKI:** Go ahead, Robert.

4726. **MR. POWELL:** First of all, I would like to say that WWF, I think, shares the enthusiasm of some other organizations here on all sides of this issue for technological improvements that could reduce the likelihood and duration of any spill that might happen.

4727. But I want to pursue something that was raised by Board Member Georgette, where she was noting that one potential consequence of capping a blowing well is to potentially interfere or damage the integrity of the well.

4728. And, indeed, this was a significant concern and a matter for discussion amongst those who were trying to decide whether the Macondo well should be

capped. So there may be circumstances in which you would like to cap a well, but in fact it may be ill-advised, is our understanding.

4729. Another circumstance in which you would not be able to use a capping well, as we understand it, is if the blow-out is in fact outside the casing. In that case it would be rather like sealing off the end of a garden hose while it was leaking somewhere further down, so not necessarily very helpful.

4730. And there's also a circumstance, as we understand it, when a capping stack would not be something that you could attempt to do. So for example in the Montara blow-out off the northwest coast of Australia the rig there, the West Atlas Rig was -- the blow-out also involved gas emissions, and the National Offshore Petroleum Safety Authority in Australia directed that no one should get within a distance of the well, which made it impossible to undertake that kind of same well intervention under those circumstances.

4731. In each of these cases, as we understand it, a relief well is a necessary option to have available. So we are frankly mystified as to how industry can claim that a capping stack or something comparable to that could be equivalent to a Same Season Relief Well.

4732. So my question really is can industry explain how a capping stack or anything that requires -- or anything like that -- well, let's just say how a capping stack could be equivalent to a Same Season Relief Well.

4733. **MR. SWIDERSKI:** Thank you, Robert.

4734. Opportunity to respond?

4735. **MR. SCOTT:** Bill Scott at Chevron.

4736. I think we talked about well integrity earlier. I thought I had addressed that but we'll go through it again.

4737. There are two situations as WWF correctly points out. There is a situation if you lost well integrity and you breached the casing into the surface and that certainly -- and we do not deny it -- would require a relief well.

4738. And I think we also made the comment that a relief well will be part of our plan, we just do not see the risks ever getting to a point where you would have to do

that.

4739. But let's go back to the release to the seafloor. The situation is that we've drilled 39 wells in the Beaufort Sea with appropriate cementing and casing programs and with the use of kick tolerance we do not see a fracture around the seafloor. So we do not see that as a reasonably acceptable risk that could occur.

4740. We can get fracture at depth which would -- unlikely, but would result in an underground blow-out which means -- simply means it sounds worse than it is. It means that the oil and gas flows from one zone to the other. The most important thing is it never comes to surface; so that's not an issue.

4741. A gentleman then raised the -- and I'm only saying that because I can't remember -- oh it's Robert, sorry. I'm getting old, Robert.

4742. Robert then mentioned the situation of gas escaping. Now, not unlike ExxonMobil or Imperial, we're looking at the deep waters, we're looking in R block in particular, there's somewhere around 1,000 to 1,500 metres of water. You will not get a gas plume interfering with operations on the surface in that water depth, just the same as you did not get a gas plume interfering with operations at Macondo.

4743. Now, I think you made one more point, Robert, I'm missing it, I can't quite remember. What was it?

4744. **MR. CAREY:** Kevin Carey at Chevron.

4745. You had mentioned Macondo and the concern around a capping stack on Macondo. And the design on that particular well included burst disk which were literally designed to fail in case the location pressure exceeded a certain pressure on the casing which gave BP some concerns about their ability to actually cap the well.

4746. In addition, through the prolonged flow of the mud and the oil and gas through the BOP stack there was concerns of erosion in the stack itself. So again, it was a concern about whether or not by capping it the pressures would be too great for that equipment to withstand that pressure.

4747. In the Gulf of Mexico we've made significant design changes in our current well designs to on containment around higher pressure containment for our casing designs to be able to withstand all the pressures in the well. So that's an issue that's been covered, and I'm certain it would also be designed the same way for any

Arctic type wells.

4748. **MR. SWIDERSKI:** Thank you.

4749. Anybody else from industry to respond to that before we move on?

--- (No response/Aucune réponse)

4750. **MR. SWIDERSKI:** Thank you.

4751. I note, John, you had a comment on this last exchange; so the floor to you and then we move on.

4752. Thank you.

4753. **MR. STUART JR:** Thank you. John Stuart Jr.; Tuk Community Corp.

4754. This is for NEB. Does industry or anyone else doing research on spill clean-up or spill prevention share their research findings with you for future reference?

4755. Thank you.

4756. **THE CHAIRMAN:** Thank you, John.

4757. I assume they do, but Bharat would have first-hand knowledge of that, or someone on the team. Robert Lemay seems to have the answer. I knew we had it.

4758. **MR. LEMAY:** Robert Lemay with the NEB.

4759. Yes, there is people, you know, around the world who make research. We are in contact with some of them, not all of them, and they do sometimes share. We do participate also to the Oil Spill Conference every three years in North America and where we meet with manufacturers and we receive some information about different type of equipment and things like that.

4760. **MR. STUART JR:** All right, thank you.

4761. **MR. SWIDERSKI:** Thank you.

4762. Back to the IGC?

4763. **MR. POKIAK:** Thanks, Andy.

4764. I have to leave in a few minutes so I'll just -- my name is Frank Pokiak. I'm with the Inuvialuit Game Council.

4765. The question Boogie had on the Arctic Council -- IGC has been a member of the EPPR Working Group on a Canadian delegation for about 10 years.

4766. The Arctic Council Minister in the Copenhagen delegation, a declaration in May this year charged the EPPR Working Group with taking the lead in preparing a report on overall Arctic nation stays, capability in dealing with major offshore -- if there's any spill offshore in the Arctic offshore.

4767. The first meeting, just to let you know, is going to be happening in Oslo next month and the report should be ready in the next two years or so. So just a comment surrounding Boogie's concern. I just thought I'd let him know that.

4768. **MR. SWIDERSKI:** Thank you, Frank.

4769. **MR. POKIAK:** And it's always, you know, like older brothers are always picking on younger brothers, so thank you.

--- (Laughter/Rires)

4770. **MR. SWIDERSKI:** Steve, back to you for one or two and then I'm going to come back to others who've been really patient.

4771. **MR. BARYLUK :** Thank you. It's Steve Baryluk again, a staff with the Inuvialuit Game Council.

4772. I guess I have one more question that's relevant to this session, and I do have another one I wouldn't mind to get out of the way today, which is clarification from an earlier question from yesterday or the day before, which will be directed to Aboriginal Fairs and Northern development. We can do that towards the end of the day today.

4773. This next question I have for the Board is particularly in relation to the Same Season Relief Well and this whole issue of equivalency.

4774. I just wanted to start this sort of context setting off by reading out a motion the Game Council passed in December of 2009, and it is contained in the correspondence that's been provided as part of this review to the National Energy Board. But for those who may not have read that yet I'd just like to sort of read it into the record and for those listening on line.

4775. And it basically states that the Game Council -- Inuvialuit Game Council has always supported the Same Season Relief Well policy for the Beaufort Sea. The Inuvialuit Game Council continues to support the requirement for same season relief well capability, or an equivalency that provides an equal or greater level of protection on the natural resources -- of the natural resources in the Inuvialuit settlement region. The Inuvialuit Game Council does not support any exemptions from the Same Season Relief Well policy.

4776. And again that's from the April 2005 2011 letter on the registry for this review. I just wanted to read that out to set the context of this question. It's an issue that's been discussed a lot.

4777. Mr. Baker had a good presentation this morning which introduced where that equivalency provision comes from in the legislation. It does allow for it and I guess it's worded in such a way it leaves it fairly open as to how that equivalency may be achieved.

4778. So it's been something, I think, on the minds of people for a number of years so I would like to think that people have spent some time thinking about this from time to time.

4779. And I'm going to direct the question to the National Energy Board, probably most appropriately with its staff but I think the Game Council would likely welcome any comments or input from the industry representatives here today as well.

4780. So the question is; could the NEB provide examples of criteria that may be used in determining or approving something as an equivalency for Same Season Relief Well? That's put in the context of saying there is no expectation that anything they say today is what would -- the final determination would look like but I think we really need to understand exactly what would go into determining something as an equivalency to a Same Season Relief Well.

4781. The second part of this question would just be, in the context of the

Beaufort Sea I think the Inuvialuit Game Council would like to get an indication of how Inuvialuit may be involved in making those determinations in partnership with the NEB.

4782. So again, all that stated in the context for the Board and for the industry representatives is that we're not trying to lock anyone into any particular criterion but we do want to have a good discussion on what would actually -- what it would mean for something to be approved as an equivalency.

4783. Are there criteria that would have to be met and how would you determine what those criteria are and what would they be, what are some examples of what some may be?

4784. **MR. SWIDERSKI:** Thank you, Steven.

4785. Mr. Caron?

4786. **THE CHAIRMAN:** Thank you, Steven.

4787. I will initiate the answer and our staff may want to top it up or modify.

4788. I need to start though with an affirmation that our Same Season Relief Well policy is a policy, it is not a regulatory requirement. So in that sense, Steven, the authority we have under 16.1 of COGOA need not even be invoked. The policy is a policy and must be examined one application after the other by a panel who is independent in their exercise of the discretion and may be persuaded that that policy need not be applied because something even better has been found and can be implemented for that particular well.

4789. Your question as initially framed -- and let me put on the record as you did, the definition we have provided in this Arctic Review of our policy and it appears in the context for Question 1.6.1, it's only three lines so I think we can afford to have it put onto the record and it says:

> *"In Arctic offshore the NEB has a policy that the operator demonstrate within its contingency plan, relief well capability to kill an out of control well during the same drilling season."*

4790. That's the end of the quote from 1.6.1. So it is a policy, not a regulatory requirement and it is applied as a policy by independent Board members looking at

the case, one case at a time, or the Chief Conservation Officer when the matter has not been elevated to the Board.

4791. I must say, given the profile now that offshore wells would have in deep offshore context that it would be -- it could be envisaged that as a norm the Members, as opposed to the Chief Conservation Officer, would take that file for decision-making purposes.

4792. Now, your question was could we provide examples of equivalency and we cannot give you examples in the future because it would be speculating on the discretion of a future panel.

4793. If these examples exist they would exist because an equivalency has been found to be acceptable in the past, and I will invite our staff to tell me or tell you whether we have in the past have found an equivalency in lieu of a Same Season Relief Well policy. ...

4794. **MR. DIXIT:** Bharat Dixit with the National Energy Board. Thank you, Gaétan. Thank you Steven for that question.

4795. Gaétan has very articulately captured the statement regarding where Same Season Relief Well fits into the scheme of things, so I won't repeat it. And recognizing that we cannot fetter what the future panels will decide, I can only look back historically in terms of how that Same Season Relief Well Capability was demonstrated in the past.

4796. And an example would be, as was the case during the Gulf and the Dome days, where they had multiple drilling platforms available and wells drilled over different seasons, having, for instance, a top section drilled in the fall, and then subsequent well completion taking place the next year having a drill rig available to intervene earlier on in the season, so that's an example of how it had played out in the past.

4797. **THE CHAIRMAN:** Steven, I knew you wanted to jump in, and you have a second question which I will answer, but you may have something in between?

4798. **MR. BARYLUK:** Yeah, thanks. It's Steve Baryluk again with the Inuvialuit Game Council.

4799. Sorry, I just wanted to be clear, I wasn't asking for the NEB to give

examples of what is a Same Season Relief Well equivalent. I'm asking for examples of what some of the criteria may be to -- that could be applied to making a determination whether something could become a Same Season Relief Well equivalent. So it's a bit of a distinction there, but I think it's an important one in this context.

4800. **THE CHAIRMAN:** Yeah. Well, I don't know if the staff can add more than what has been discussed already at this Roundtable. We heard from industry, their perspective on it, and we will welcome any other perspective.

4801. The policy has, as the outcome, these aren't in the policy, the killing of an out of control well during the same drilling season. I think I am hearing as you're saying that's not good enough, you want to not wait for the rest of the season to regain control or to -- to stop the flow of oil. And I won't try and summarize the record as we have it so far, it has been rich so far.

4802. I don't know if our staff can articulate specific considerations, but the Board, in a goal oriented regime, is focussed on the performance of the action proposed by industry, and in this case, the performance is about can the oil please stay in the well, and if it cannot, how short can it be before the out of control well has regained control, killing it through a relief well or otherwise.

4803. So I don't know that we could go into a discussion of the how to achieve that end state when our goal oriented regime is about how best to do that, resulting as our discussion with WWF Canada would suggest, in a tolerable risk acceptance.

4804. I see our staff are not in a position to be more helpful than I can be, Steven, on that.

4805. On your second question, equal important, how can the Inuvialuit people remain engaged with us? I will copy and paste the past and make it the future, Steven, where we have a long tradition of working with your land claim institutions, including your own, and we have received assurance, and I'd like to repeat that a second time today, that the information to be provided in support of applications will be largely public, save for information which is either commercially sensitive or subject to Privacy Act consideration. So there will be a public body of knowledge available to chew on as people are participating in our reviews as initiated by panels of the Board.

4806. So I would suggest to you, Steven, that there will be ample opportunities

to do it in the pursuit of the outcomes that COGOA requires us to achieve.

4807. **MR. SWIDERSKI:** Thank you. I'd like to give industry an opportunity to respond to Mr. Baryluk's question about equivalencies and criteria.

4808. **MR. SCOTT:** Bill Scott, Chevron.

4809. I think actually, if you look in the regulations, the wording is very, very similar to what you said, Steve. It's any solution, tool or technique, I believe, that derives a similar or lesser level of risk than what it is designed to replace.

4810. And it's assessed in terms of safety, environment and conservation of the resource. And I think it's been left reasonably vague to allow for a wide range of solutions to be applied. So I think your letter more or less states it correctly.

4811. **MR. SWIDERSKI:** Scott? Anybody else from industry? Thank you.

4812. One supplementary and then there's others. We'll come back. Go ahead.

4813. **MR. BARYLUK:** Thank you. No. I appreciate that. I guess for myself, I would say I'm not -- I don't think I'm quite satisfied with the answers we've got. I think this is an issue that's been around for a long time and there's a very -- there's a lot of very smart and thoughtful people, I think, who put a lot of time and energy into this issue.

4814. And I think I had been really looking forward to having a more thorough discussion on it, you know, again with the understanding that it's very open in how this issue of equivalency can be achieved.

4815. And, again, not wanting to put the Board in the position of precluding any decisions they may make, which is why I thought it was most appropriately dealt directly towards the staff, and that still keeps the Board free to make a decision as it sees fit under advisement of their staff.

4816. And I guess maybe had expected after the NEB gave their statements that the industry folks may have had a bit more to say on it as well on some of thinking that they've put into this as far as what they may bring forward because, again, there's a lot of smart and intelligent people who have done a lot of work on these issues.

4817. And, again, it's sort of talked about a lot, but I think at least in the region,

it requires a lot more detailed and thorough discussion. And, again, all of it is with the understanding you guys don't have any projects applied for yet, but they're coming.

4818. And particularly in the case of the early onset of development in the Beaufort, you know, we had the examples of what was done previously where you had, you know, more than one drill ship in the Beaufort.

4819. But in the early onset of development in this case, which likely would be EL 446 and 449, you may only have one operator in the region and one drill ship, so that doesn't accomplish what was used in the past to gain the equivalency requirement.

4820. So, again, this is -- this is the big show on these issues and I think I would really appreciate more discussion on this particular issue because I think it's probably one of, if not, the more important issue of this whole review.

4821. Some of that is my personal feeling, but I hope it somewhat reflects the feelings of the Council as well.

4822. **MR. SWIDERSKI:** Steve, let's not -- let's not back away from that because obviously this is an important issue.

4823. Dagfinn, I think, has something to share with us.

4824. **MR. ALM:** Well, it's not directly related to what we are discussing here, but I was asked to say some words from our perspective and our experience of this Roundtable. So I will have to read it because I can't remember what I have written.

4825. We were thrown -- I was thrown into this at very short notice.

4826. Anyway, my name is Dagfinn Alm. I'm working for Statoil in the Town of Harstad, Norway.

4827. Our mission here were and are to listen and learn to find out what implication this Roundtable -- slower. Okay, sorry -- could have on our upcoming Alaskan operations, to get insight in how the various stakeholders view oil and gas activity in this region, and finally how other operators prepare for operation in these kind of Arctic environments.

4828. Statoil do not have any direct interests in the Canadian Arctic at present. I have found it more correct to listen and learn and to let the stakeholders do the discussions.

4829. We were not asked to hold any presentation, but, nevertheless, I would at least like to say a few words related to this Roundtable -- more or less pressured to.

4830. As you probably know, Norway is a small country that has been and will be strongly dependent on our natural resources. Offshore oil and gas extraction is a very important part of our economy, but so are also the rich fisheries, especially in the northern part of the country.

4831. Even though Norway is a small country compared to Canada, the Norwegian coast including 150,000 islands, is 80,000 kilometres or 50,000 miles long, and with most of the people living close to the coast, so we have a lot to protect, including rich wildlife.

4832. And we know, as you do, that one day all the oil and gas will be produced and gone; and, thus, we need a sustainable development of these resources. That is a development that meets the need of the present without compromising the ability of future generations to meet their own needs as defined by the United Nation Brundtland Commission in 1984. Brundtland is our previous Prime Minister, as you might know.

4833. I believe that is in our backbone and one of the core elements in how we conduct our business. Additionally, I would say that the way we have organized things in Norway, we -- the vast majority of the wealth generated by the oil and gas production ends up to the benefit to the entire population.

4834. As the Norwegians state, this is by far the largest receiver of oil and gas revenues.

4835. With regards to environmental risk analysis, the Norwegian government do thorough analysis and have public hearings before they open up and offer new areas to the oil industry. In that process, some area are not open to the industry based on the result of the analysis, and some areas have special restriction with regards to when and how you can drill.

4836. Nevertheless, we, as an industry, are required to and do our own environmental risk analysis and oil spill emergency analysis on every location we

want to drill. These are centered in Norwegian Pollution Control Authority for Approval and are, of course, open to public hearings and response.

4837. As for the oil spill contingency, the oil industry in Norway has pooled their resources in the Norwegian Clean Seas Association for operating companies that works in cooperation with the Climate and Pollution Authority, the Norwegian Coastal Administration, the Coast Guard, and the Inter-municipal Corporation Against Acute Pollution.

4838. Training of people and exercises are held at regular intervals throughout Norway. And, of course, research and development is ongoing and never ending to improve the efficiency of the oil spill -- oil spill contingency.

4839. And everything is readily available on the internet for people who are interested in how we do this kind of oil spill contingency.

4840. We do not have a zero discharge policy because that is impossible, but we do have a zero harmful discharge policy, which, among other, has meant a relentless search for substitution of harmful chemicals to environmentally friendly chemicals. That is chemicals with either very short-lived to no adverse effect on the environment.

4841. Common sense is also needed to find the best solution with the least environmental impact.

4842. We Norwegians like to think that we are the best in some areas, but that is often because we don't know better.

--- (Laughter/Rires)

4843. **MR. ALM:** This is a global industry, and if others can learn and improve something from our ways of doing things, that's excellent, but they certainly learn a lot of others, not least in areas we are not too familiar with, like the Canadian North. Here it is you the Northerners, the National Energy Board, and the operators with previous experience that has the greatest knowledge, and it is in that context we are here, to listen and learn.

4844. I do recognize similarities between the NEB or National Energy Board and our own Petroleum Safety Authority. I worked in the industry for 28 years, and I remember the system change in the PSA as well. We had to stop asking what do the

PSA want us to do, but rather, what do we want to do to insure the best outcome. And that is how it should be, because at the end of the day, we are the ultimate responsible.

4845. NEB would like me -- would like me to comment on how they could improve, but in the spirit of the PSA -- PSA, I return that question and ask, what can you do to improve? That's a -- I recognize that a question is just because one important way to improve is to learn from others if you recognize that they are performing well.

4846. I'm not going to tire you with a description of our management system. As Statoil is a global company and part of a global industry, the similarities of how we conduct our business is greater than the differences. Foreign operators learn about the system we use and we learn about the system used by other operators and in other countries and try to improve continually.

4847. I do like to stress, though, that management commitment to all values, management system and safety culture is vital from top to bottom, and it is, as far as I am concerned -- and it is as far as I am concerned. We all have to live the values and adhere to the governance system, including our subcontractors, not just talk about them.

4848. We strongly believe that transparency, honesty, openness, and co-operation with all stakeholders are vital to achieve trust, correction, safe operation, and a successful outcome for all, not only for the company as such.

4849. And this is for Andreas -- as for unions, we regard them as a co-operating partner and vital to our safety work.

4850. I just added another thing. As for capping system and the Norwegian Shelf, Bill thought my answer was a little negative. So I would like to assure him and you that the system that can stop a blow-out and limit spills faster and before a relief well can be drilled is much to be preferred no matter where and when it is utilized.

4851. And at last or at the end, I would like to thank the National Energy Board for letting us be here, our friends in the industry for sharing their views and knowledge, and finally the Northern communities for their hospitality. I've been deeply moved by the statements from the local communities about their ordeals and love of their land. It really strikes a silver bell in my nature-loving heart.

4852. Additionally, I met a descendant of one of the Sami Reindeer herders that moved to Alaska from Norway with their animals in the late 1800s and early 1900s. Being from Northern Norway, I do have some Sami blood in my veins.

4853. So we might have common ancestors in the distant past which proves to me that we live in a small world, share common concerns, and that we all have a common responsibility to leave this world in the same or preferably better condition than when we entered into it.

4854. Thank you.

4855. **MR. SWIDERSKI:** Thank you, Dagfinn.

--- (Applause/Applaudissements)

4856. **MR. SWIDERSKI:** We -- we have a small elephant in the room here, and we simply can't walk around it. I think in fairness to everybody who's hung in there for four days, this question deserves a little bit more attention.

4857. And I'm going to put the external presenter, probably the most knowledgeable with regards to the history, the evolution of the same season relief well policy -- you have no choice, but I'm going to put you on the spot anyway.

4858. The question that Steve put forward, Terry, is there anything that you can shed light on as -- as to that aspect of criteria equivalency, anything you can offer as an independent expert?

4859. **MR. BAKER:** All right. Are you comfortable with me speaking up? Okay.

4860. It never got off the ground. We had -- we had discussions. The issue came up. It was the drilling season with respect to the Devon Well. Okay. And because of ice conditions, et cetera, et cetera, if -- if the well was going to go to beyond a certain depth, okay, there became an issue. If we had an ice island as the backup site, have to bring a rig in, there was an issue that we wouldn't have sufficient time to meet the same season relief well capability.

4861. Now, we had some preliminary discussions as to what could be done, and the idea of the alternate well kill system came up. We agreed to entertain it. We call it an equivalency, and you can call it what you want. We really hadn't gotten --

gotten it off the ground.

4862. The first step that we took is we said, okay, and we had a fair number of guys with drilling backgrounds. So if you're going to build a system, what should it do? So we specified certain criteria that we wanted met.

4863. The second criterion we put in is that if such a system were going to be put in place, we expect a very conservative casing program. And part of that reason is just my early experience with K-91, which, I think, you talked about the other day, and Rich Hoos had espoused an answer on it. He was partially correct, not entirely correct, but -- but close enough.

4864. So the first step was (a) to develop the system. The second step was to prove that the system worked and the third step we were looking at, which we all agree to, is to hire and engage an independent third party to do an evaluation of this system with the view in mind that if it would work and it could shut off the well as per, then perhaps we would have some flexibility in the timing with respect to drawing up a relief well.

4865. It was never meant to replace the relief well, it was -- it was not Same Season but it was next door but the system, as you know, worked on preliminary on four of the five criteria that we set up.

4866. As far as testing was concerned it failed on the fifth and I think it was probably as much as metallurgical problem than it was a mechanical problem. And Bill Scott can correct me on some of this, this is in the timeframe between when I was working for the Board and actually left the Board to go work in Ottawa.

4867. So that's as far as Same Season Relief Well, as far as equivalency for Same Season Relief Well, it was, again, not meant to replace it, it was meant to supplement and it became a timing issue because things in the Beaufort, in 2007, were not the same as thing as things in the Beaufort when we left it in 1991 and that's as far as it got and no more.

4868. Hopefully that sort of shed some light. So we hadn't gone down the road and accepted anything.

4869. **MR. SWIDERSKI:** Thank you very much.

4870. Mr. Scott, was there anything you wanted to add on this focused response?

4871. **MR. SCOTT:** Yeah, just to fill in where Teddy left off.

4872. I was actually -- as Terry referred to -- working at Devon at the time and -- working at Devon at the time and Terry is correct, we were trying to shear drill collars at the time and had a mechanical problem.

4873. Unfortunately we were under a very tight timeframe and we didn't have time prior to the commencement of drilling to resolve this problem. Devon subsequently dropped the project.

4874. After I moved to Chevron we discussed it internally at Chevron and Chevron picked it up as a long-term project and I think this is where the difference is; it's taken us a long time to get over some of these issues but we worked the issue and we continued on and we're making strong progress.

4875. It was just unfortunate in the Devon situation we were in a tight timeframe and simply didn't have the appropriate time to develop the technology.

4876. **MR. SWIDERSKI:** Thank you.

4877. Mr. Peacock?

4878. **MR. PEACOCK:** Mike Peacock.

4879. Steve, I really like your question and it does warrant some more debate and discussion. I don't have all the answers here today but I do have some thoughts. I'm going to come back a little bit to the fact that I heard from Gaétan that the Same Season Relief Well capability is a policy.

4880. So it's within the Board's discretion to apply or not to apply; that would be my interpretation of that.

4881. Looking at it slightly differently, you know, our objective here, if we got into the unfortunate situation where we had an incident, where we had a blow-out, where we -- perhaps people thought we needed a Same Season Relief Well.

4882. To me it's about protecting the environment and I think we should be moving away from this Same Season Relief Well capability and terming it more like environmental protection capability.

4883. And if we focus on the environment and protecting the environment then what we should be focusing on then is how can we safely, quickly, and effectively clear the well. And I think you've heard from Bill, you've heard from ourselves, drilling a relief well is not the fastest way and the quickest way to resolve that issue; some kind of capping mechanism is. And I think if we look at it from an environmental protection perspective, that's the way I would encourage the Board to look at it.

4884. **MR. SWIDERSKI:** Thank you. Thank you.

4885. Before I ask the Board to respond, Steve, you raised a question which is obviously important to the IGC, as well as others, from everything that I've heard.

4886. You heard the response from Terry Baker. Does that go anywhere close to you hearing some aspects of the criteria considerations?

4887. **MR. SYKES:** Steve, can I -- sorry, can I just ask for one moment just to make a comment as well? And, again, it's in line with Steve's question. I think it's similar to what you've heard, Steve, but trying to again get back to giving you an answer to what I think is fundamentally, you know, a very, very important question.

4888. I mean, I think, in our submission, what we propose to try and boil it down to its simplest -- in its simplest form is that source control is better than reliance on relief wells. That's really the heart of our submission.

4889. And our submission, we talked to -- for use in the shallow waters of the Beaufort, the use of something called an ASID or an Auxiliary Safety Isolation Device.

4890. So, again, this is only for use in the very, very rare circumstances where your primary and secondary barriers have run into some type of problem and is designed to be activated within a few moments to regain control of the well.

4891. But I think to answer your question, you know, the debate around equivalency, what does that mean and what the criteria is, I'm not sure if it's helpful to think as -- about -- what our submission talks to is source control -- is, as I say, better than reliance on the relief wells.

4892. **MR. SWIDERSKI:** Thank you, Mr. Sykes. My apologies for having

missed you. I was -- my eyes were in several different places.

4893. Steve, first to you, and then to the Board. Do you hear any criteria, anything that at least starts to respond to the IGC questions?

4894. **MR. BARYLUK:** Thanks. Yeah, it's Steve Baryluk here again with the Inuvialuit Game Council staff.

4895. I guess, you know, Mr. Baker's, Mr. Peacock's, Mr. Sykes' comments and Mr. Scott's, that's really, I guess, the start of the conversation I think had been anticipating myself coming into this.

4896. You know, I guess, my personal expectations had been an open and, perhaps more importantly, likely a non-binding conversation on these issues. This is a Roundtable. It's not a hearing. We're here to put ideas out and have a discussion on them.

4897. And, again, I think from the Game Council perspective, from my understanding, the Same Season Relief Well issue is one of the most important ones. And, again, the whole issue around equivalency is a very broad topic.

4898. Basically, again, the important points being that whatever is put out there is equal or greater protection of the natural resources in the ISR, from their perspective, based on the motion they passed.

4899. So I think there's a lot of different ways that it can be approached and I think that it was really hoped that some of those ways that have been thought about could be brought forward and discussed.

4900. And, again, no one's here to make decisions on anything. Everybody, including the Game Council, has to take information away and think about it, process it and have further direct discussions on these issues.

4901. So, again, I think I would just like to press people to be open to putting things out there. And I don't think anyone has the expectation that things that are put on the table during this session are binding and will be held -- people will be held to account for what they put out there as ideas, but I think, again, people need to have time to discuss and digest and think about these issues and it does take time.

4902. And this is a good forum where you have a lot of players around the table

from all different sides who can put their collective brains to work and discuss these issues and get the dialogue going between each other and within their own organizations to think about these issues and have, hopefully, a lot more productive dialogue on these with each other in the future.

4903. So, again, these are a lot of my personal views being put out which, I hope, are reflective of the Game Council. I haven't discussed any of this with them ahead of time, but coming into this, I guess I had some expectations. And, again, the comments that just came out, I think, were the start of what I had hoped to happen during this Roundtable.

4904. Unfortunately, they started coming out right at the end of the day today but, you know, we may have some opportunity tomorrow morning to come back to some of these things.

4905. So I guess I'll leave it at that for now and hopefully other people in the room feel the same way.

4906. **MR. SWIDERSKI:** Thank you, Steven.

4907. To the Board and then there's been two really patient people that I want to give a chance for brief comments before we wrap up, and that's Eugene and Vince, but to the Board first.

4908. **THE CHAIRMAN:** Thank you, Andy.

4909. I am still quite pensive about where you are, Steven. You say very clearly that you think this is just the beginning of a central issue in the Arctic Review and Mike echoed your comments by saying that you felt that this warranted further discussion.

4910. We're at the end of the day and we have quite a full day tomorrow about other topics also of great importance and I'll just throw the question out there as to where does that leave us as a Board having identified that as an issue?

4911. That issue, to make it clear, you recalled my words correctly, Mike. It is a Board policy. A policy is an affirmation of how we intend to approach issues in the future without binding independent panels but it is an intention to apply the policy. And it is not the Board, Steven, who is seeking to find ways to depart from its own policy.

4912. So we haven't addressed our mind substantively as to what would satisfy us to replace what we want to do. So I say this dialogue is happening; it has to be fed I think into as of what are these criteria by those who want to depart from that policy or want to persuade us to depart from that policy because it is our policy as we speak today in writing in 161 and as expressed several times notably in front of parliamentary committees in Ottawa.

4913. So that's where we are and I think I share your -- I don't recall the word you used, Steven -- not disappointed but it sounded like disappointed or not satisfied entirely and I wonder where that leaves us in our task and in our final report.

4914. It could be that -- and we're not here for consensus but it could be that a thing that the Board could do is to acknowledge that further dialogue is necessary beyond the Arctic Review or at least beyond tomorrow in the Arctic Review for fleshing out what might be criteria that have more meat perhaps than we've been able to articulate so far, or at least meat that we could comprehend so far in the discussion for that.

4915. So this is not a very satisfying comment on what's going on. I'm just sharing the discomfort that has been manifested so far by others and I share that discomfort. And I hope that with a good night of sleep we can come back tomorrow with some concrete ideas to make a step forward in respect of that central issue in the Arctic Review.

4916. **MR. SWIDERSKI:** Thank you.

4917. I want to hear -- we've got several people. This conversation is not finished. We'll make some time in the morning to continue before we move into the last theme.

4918. Eugene and Vince, and then we're going to call it a day and pick it up in the morning.

4919. **MR. PASCAL:** Good afternoon. My name is Eugene Pascal. I'm from Aklavik.

4920. Interesting listening here is that -- is that especially with this same season relief -- what is it called -- but it's too bad that money can’t be made on stopping it. It's like technology. In 1975, I went to business school. I was working on a computer

that you had to put a four-inch floppy disk and save it and all that other stuff, and then take it out. And if you didn't, you know, it's gone.

4921. So it's too bad technology can't be as fast as that, especially when it comes to a worst-case scenario like the Gulf. And, you know, that is something that we are looking at or we don't want to see but it's something in the planning that the Same Season Relief Well is not adequate. I think that's what we're saying.

4922. You know, it took how many days; 90 days to finally stop what's happening in the Gulf. If that happened here, you would be destroying a lot of lives, a lot of cultures, a lot of food.

4923. We rely a lot on -- on the land, and to go out on the land nowadays and because of technology, we need fuel. You know, we pay in Aklavik $1.79 a litre, here it's up to 1.77, so it takes me -- it's over about 150 litres to go back and forth, so you add that up with fuel.

4924. But even to go in the bush to the coast, I have to take at least 45 gallons, and that's 205 litres, 210 litres, so it's -- the cost is there, and that's just only on fuel alone, but that's what we rely on.

4925. And we harvest from that, but it's too bad that -- I guess my point is that too bad there isn't any money to make in blow-out prevention and things like that. It's too bad it's saved, that's it.

4926. You know, once it happens I think -- you know, what happened in the Gulf, it brought every -- all industry together to work at something like that, that should have been done a long time ago. You know, 1975 they started this policy on blow-out prevention or whatever, and, you know, we're 35 years here and it's still the same thing.

4927. You know, it's -- to us, spilling a few hundred million litres of fuel or crude or whatever on the land is -- is -- is not acceptable, and I think that's what the Game Council is trying to push is that, you know, we're not against development, we're not against exploration, but we're for making sure that the environment is not damaged. We're for making sure that if there is damage it's minimized, you know.

4928. And, you know, we don't have the expertise to work on the drill ships. We may have one or two, half a dozen, but that's it, so that's not where our benefit is going to come. We pay the market rate for fuel, so we're not going to get any benefit

from that.

4929. We may get some benefits through our businesses, but in the end, as people are saying, we are going to be here once all -- once it's all developed and taken out, we are going to be here. And we want to make sure that we're able to harvest the fish, the whales, but I think instead of just trying to pass a buck to each other saying that you are the regulator, you are the developer, you know, just do it.

4930. Come up with the best technique, you, as industry, to say okay, it's going to flow for five seconds and that's it, you know, come up with that and tell the regulator, well, this is what it does. Prove it, you know.

4931. That's what we want to see, is that we want to see the best practices with a minimal impact because, you know, certain areas in the Beaufort are very critical, and any kind of spill way out there, it comes to the land and those critical areas are going to be impacted, and that's what we don't want to see.

4932. So if -- you know, invest in your research and development and do it. You know, just do it.

4933. You know, you don't need government to tell you, you don't need -- you know, this is your conscience. This is your responsibility to be a developer. You develop things, but not on the backs of other people. Develop it honestly, truthfully, economically.

4934. You know, it's unfortunate that certain things look at the bottom line, you know, governments or the NEB has their laws to follow; businessmen have their bottom line to follow but, you know, nowadays good business is environmentally friendly business and I think that's something that both industry and government should know is that, you know, we are cooperating people.

4935. But don't do that on our -- don't do that for we are paying at the end. You know, develop it, you know, if you got an idea go for it and if it's going to help save time there'll be a few litres less that's going to be dumped, go for it. You know, just do it and then work with the regulators or lawmakers or your subcontractors or whatever and put it into practices, best practices.

4936. You know, we talk a lot about -- or you talk a lot about management, management systems and risk analysis and all that but when it comes to the end if something happens we want to see it minimized and that's all we want, you know.

We know that people out there need that oil, that fuel, you know, for transportation, for heating, for power, you know, we are used to that now too so we're paying for it.

4937. So, you know, just do it; whatever it takes just do it and do it right, do it properly.

4938. Thank you.

--- (Applause/Applaudissements)

4939. **MR. SWIDERSKI:** Vince, to you, please.

4940. **MR. TEDDY:** Okay, thank you. My name is Vince Teddy from the Tuktoyaktuk Community Corporation.

4941. And I just want to just talk about everything in the frame of drilling safety. In my opening address in the opening of this Roundtable I told you who I was, where I came from, what the Arctic Ocean means to me and my people, and I told you that I wanted to have a frank and open discussion. Not only for myself but for the regulators and oil industry, developers, the Proponents that want to exercise that EL licence that they received from the Government of Canada.

4942. So in terms of drilling safety, in my opening address I spoke about the Gulf of Mexico experience. In the last few days I heard, as Eugene, the speaker before me, said, management systems, safety culture, to me that's good, I appreciate that. That goes a long ways in a human capability and a manpower capability.

4943. The other part of management and the other part of safety is the hardware that you're going to use. Part of that hardware in the Gulf of Mexico was a BOP, blow-out preventer.

4944. From Imperial Oil's response in terms of blow-out preventers, BOPs, their basic response was "Well, we'll have a boat, we'll carry around that BOP, along with other emergency equipment"; that doesn't go far enough. What good is it if a Gulf of Mexico incident happens in the Beaufort Sea?

4945. So to me that's -- you know, that's not a good enough management system response in terms of the blow-out preventer.

4946. Secondly, a lot of discussion around the Same Season Relief Well, much, I

learned a lot and that was good. I need more assurance than what was responded by both, I guess, licence holders for 460 and the other two licences that's going to be -- where Imperial Oil is going to be the operator. I need more assurance from you guys in terms of equivalency.

4947. I heard capping; well that's good, the hardware. Capping is good but I also heard that, "Well, it may not be the best thing but at least we'll have that". So that doesn't meet -- to me that doesn't meet equivalency in terms of Same Season Relief Well. So it's not equivalent my assumption is that -- that's my assumption.

4948. I heard that fellow over there, he didn't introduce himself but he began talking about well kill contingency. He said experiments or whatever the work on it was -- continued to carry on when he left NEB. So to me that's hardware-related.

4949. So I want to see some hardware out there, management system, safety culture in terms of human beings, that's good, but if they have no hardware out there to follow up on a worst-case scenario we're in deep trouble.

4950. So get that hardware out there also because to me the best management system without the hardware out there, such as the BOP, capping, well kill contingency equipment, that's required. To me that's a big separation and just a human experience. You need that hardware in order to do things properly.

4951. So all I'm saying is well, good, I'm glad safety culture, management systems are talked about but without the hardware, you know, how far can you go with that?

4952. This lady from Greenland, one way of Greenland handling hardware was dual drilling systems. To me that's good, you know, continuous management safety, continue the safety culture. That's good, but without the hardware, you know, I don't think you can go down there with your finger and stop it.

4953. So thank you very much.

--- (Applause/Applaudissements)

4954. **MR. SWIDERSKI:** Thank you, Vince.

4955. The fellow, Terry Baker, introduced himself as part of it, there was just a lot going on. I apologize if you didn't have a chance to hear it.

4956. In terms of where we are -- and I want to keep my commitment to all those who've been very patient, we are -- nobody falls off the list. We have Ethel, Kendra, Charles, Andrew and Adam on the list so far and that will continue in the morning.

4957. There are a couple of important things that I wanted to share in terms of how we move forward tomorrow. I would like to suggest, subject to your agreement of course throughout this week, is this is an important discussion, we need to have a little bit of additional time tomorrow. I'm proposing that we start half an hour earlier tomorrow, at 9 o'clock on this.

--- (Applause/Applaudissements)

4958. **MR. SWIDERSKI:** You're not a tough group to please at all.

4959. It's -- you know, even what you just did there is a reflection of how significant a discussion that this is and how important this is to everybody here. So we're going to start at 9 o'clock to begin with.

4960. I know that the Board has a comment or question before. And David, once you're finished I just have one closing point and everybody goes home.

4961. **MEMBER HAMILTON:** And in the same line as Vince had brought it kind of gave me an "Aha" moment and that maybe that we should have -- I'd like to set some homework to us for tonight, if it's acceptable.

4962. It's in response to Steve getting me going, Steve and his question. And I note in your submission, Steve, in the IGC's submission that they would like to gain a better understanding of what could be considered as an equivalency to the SSRW requirements.

4963. And then in your submission you also indicated that in several of the responses to the -- the calls for information that -- in Chevron, they had mentioned the alternative well kill system. And in your submission also the -- the Game Council had said that should -- could this be considered an example of possible equivalency in the future.

4964. So I think I would offer a challenge, and maybe some homework for us all tonight, to come and start tomorrow and still hear from everybody else of some draft criteria you would like to see considered, if that's at all possible, because I think

you're challenging us to do that, Steve. That's what you've said in your submission.

4965. So I would like to put that out, Andy, and if you can word it better to some draft criteria of equivalencies that we -- that we would like to put for discussion.

4966. **MR. SWIDERSKI:** I don't think anybody could put it clearer than you just did. It's fairly basic. If you had to come up with an equivalency, what would it begin to look like? What are the considerations? What should it do? Steven, I point to you, and then I'm going to close it up.

4967. **MR. BARYLUK:** Hi, I'm Steve Baryluk with the Inuvialuit Game Council. Thanks for giving me one last opportunity to speak. I wanted to just make one last comment while my previous comments were fresh in everyone's mind. And, first of all, I apologize for giving everyone homework tonight.

--- (Laughter/Rires)

4968. **MR. BARYLUK:** But I wanted to make sure people understood that my comments were made with the utmost respect for the answers that have been given already. In the review I think they've all been very informative, particularly for people like me who don't have a lot of background in oil and gas development, but I think they have set a good context for discussions again with our homework tonight.

4969. And, again, I wanted to make sure people understood that I have the utmost respect for the knowledge and hard work they've all done, and I haven't -- didn't want to feel -- people may -- I may have been disrespecting anyone's answers that they given already to date during the Review. I think they've all been very helpful and beneficial, and we're just hopefully now going to take that extra step to the next level in our discussions.

4970. **MEMBER HAMILTON:** And I -- if I may, Andy. Vince, you've already done your homework; you can have the night off,

4971. **MR. SWIDERSKI:** Thank you, Steven. There's really no way to summarize what happened today in the discussion other than it was incredible and exceeded expectations, certainly what I was hoping.

4972. Thank you so much. We'll see you in the morning.

--- Upon adjourning at 5:15 p.m./La session est ajournée à 17h15