NATIONAL ENERGY BOARD

HEARING ORDER MH-1-2010

Review of Policy on Same Season Relief Well Capability for Drilling in the Beaufort Sea

Written Submission of BP Exploration Operating Company Limited ("BP")

I. Introduction

- By Hearing order MH-1-2010, issued on February 5, 2010, the National Energy Board ("NEB" or "Board") indicated its intention to review the policy requiring Same Season Relief Well (SSRW) capability for drilling in the Beaufort Sea.
- Hearing Order MH-1-2010 was preceded by an application by Imperial Oil Resource Ventures Ltd. ("Imperial") for an advance ruling on the policy. The Board decided to consider that application through a generic hearing process.
- 3. Imperial's application was preceded by a determination by the Board to withdraw the delegation of power to the Chief Conservation Officer, under the provisions of the *Canada Oil and Gas Operations Act* ("COGOA"), regarding all matters dealing with SSRW.
- In its letter to interested parties, dated August 24, 2009, announcing the withdrawal of delegated power, the Board said as follows:

"SSRW capability matters may arise in the context of specific applications, and the Board will deal with those when they are filed. However, it may be that stakeholders would like to bring this SSRW capability matter to the attention of the Board in a more generic fashion. The Board wishes to convey that it would be amenable to the latter as well."

5. As part of the MH-1-2010 process, the Board has invited submissions from interested parties on the factors the Board should consider in determining the content and applicability of the SSRW capability policy, and whether it should be changed.

The following constitutes the submission of BP.

II. BP's Interest and Position

A. BP's Interest in this Proceeding

 BP holds exploration licenses 449, 451 and 453 (the "ELs") which cover property under the Beaufort Sea. Any proposed exploration activity would be subject to the SSRW capability policy.

Since issuance of the ELs in June 2008, BP has been pursuing exploration activities, including an extensive seismic program in the summer of 2009, and a planned baseline survey for 2010.

B. BP's Position in this Proceeding

- 7. As will be discussed in greater detail below, for both technological and operational reasons, continuance of the SSRW capability is not required and is problematical for BP and other operators, and may well impede further exploration in the Beaufort Sea.
- 8. BP is advocating that the policy be changed by eliminating the requirement for same season relief well capability, and any time-of-year drilling restrictions associated with that policy. In BP's view, consistent with the on-going development of goal-oriented regulation, the Board should utilize a series of goals and objectives to enhance safety and protection of the environment.

III. The Existing SSRW Policy

 In its letter to Imperial advising of the decision to adopt a generic approach, and in Hearing Order MH-1-2010, the NEB referred to a review of "its" policy on SSRW capability.

What is that policy, and where is it found? On February 8, 2010 the Board issued a "Background on the Government of Canada's Policy for Same Season Relief Well Capability for Drilling in the Beaufort Sea".

10. That document reads, in part, as follows:

"The Government of Canada's position on the requirement for same season relief well capability for drilling in the Beaufort Sea is articulated in Beaufort Sea Steering Committee, 1991. <u>Report to the Minister of</u> <u>Indian Affairs and Northern Development Regarding Issues Arising</u> <u>from the Environmental Impact Review Board Reviews of the Isserk</u> <u>and Kulluk Drilling Program Applications</u>. Canada Oil and Gas Lands Administration Vol. 1 (Section 3.2).

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Other background documents related to the subject of Same Season Relief Well Capability include:

Canada Oil and Gas Lands Administration (1990) The Prospect of an Oil Well Blowout in the Beaufort Sea – a discussion paper

Canada Oil and Gas Lands Administration – Engineering Branch (1989) Policy on *Relief Well Drilling "Beaufort Sea" – A Commentary*

. . . "

11. Section 3.2.1, Volume 1, of the Beaufort Sea Steering Committee Report contains the following:

"Since floating offshore drilling operations commenced in the Beaufort Sea in 1976 it has been the policy of the Government of Canada that an operator not drill into a potentially hydrocarbon-bearing zone, (the risk threshold) without the ability to drill a relief well in the same season in the event of a blowout. This policy is meant to significantly reduce the damage to the environment that would result if an oil blowout continued to release oil through the winter season unchecked. The policy has the effect of curtailing a drilling season for an operator drilling only one well as he must shut down his operation before weather and ice conditions normally would dictate." 12. In the "Policy on Relief Well Drilling – "Beaufort Sea" – a Commentary", the following appears on page 1:

"The policy of "same season relief well capability" was formulated in the mid 1970's and approved by Cabinet. It was designed to ensure that when a well was being drilled in the Beaufort Sea during the open water season, there would be appropriate drilling equipment in the area that, in the event of a blowout, could be moved to the site to complete a relief well before the ice conditions became so severe that the drilling equipment could no longer operate. The overall objective, therefore, was to avoid the situation where blowout control measures could not be implemented until the next open water season."

13. That policy is not included in any of the regulations made under COGOA. Nor has BP been able to locate an Order-in-Council or related documentation. Nonetheless, the statements quoted above appear to accurately describe the policy, and in the past it has been applied, and is considered to be currently applicable to, any proposed Beaufort drilling program.

IV. Current Regulatory Framework for Drilling in Northern Canada

- 14. As discussed above, exploration in the Beaufort Sea is governed by COGOA, and regulations made thereunder, under NEB jurisdiction. Certain of the Board's powers may be delegated to certain officers under COGOA, and as noted earlier, that delegation may be withdrawn.
- 15. Effective the beginning of this year, a new regulation was made under COGOA dealing with drilling, production and conservation. Previously there had been two separate regulations. The new regulation (*Canada Oil and Gas Drilling and Production Regulations*) is far more than a consolidation of the old. The intent was to eliminate duplication; to improve regulatory efficiency and effectiveness by replacing prescriptive rules; and to adopt a management system-based model to better manage risk of operations.

16. The new regulations have been written in a goal-oriented style, and combine goal-based, performance-based and prescriptive elements, depending upon the circumstances.

V. Goal-Oriented Regulation

17. The Board has moved aggressively forward with a goal-oriented approach to regulation over the past decade. The roots of goal-oriented regulation in the oil and gas industry are found in incident investigations arising from prior events or near misses, both in Canada and abroad.

In 1999, the NEB promulgated its first goal-oriented regulation, the Onshore Pipeline Regulations, and three years later the National Energy Board Processing Plant Regulations.

18. In a speech given by Board Member Vergette to the NEB Forum 2009, he said:

"Regulation can be thought of as a spectrum ranging from regulations which are entirely prescriptive to those that are completely goal based. The Board has adopted the term "goal-oriented" to refer to regulations that are a hybrid. That is, regulations that are somewhere between entirely prescriptive and entirely goal based.

In Canada, the view is that where appropriate, moving from a prescriptive regulatory structure to one where the details of how to comply with the regulations are increasingly the responsibility of the regulated entity results in more effective regulation."

The "new" drilling and production regulations represent a further evolution of this form of

regulation.

19. In the "Regulatory Impact Analysis Statement" issued by the Board with the new regulations (but not forming part of them) the following is set out:

"Goal-oriented regulation is a hybrid approach that includes prescriptive and goal- or performance-based elements. Prescriptive regulation dictates the means by which compliance is achieved, including what is to be done, by whom and how it is to be accomplished. Goal- or performance-based regulation sets regulatory goals or performance objectives to be achieved and allows companies to identify the means to meet them. Since the development of the existing regulations, the frontier and offshore oil and gas industry has been exploring for, and planning to exploit hydrocarbons from, more technologically complicated and physically challenging environments with more varied hazards and risks. Advancements in equipment, techniques, safety management and environmental management have also occurred.

Prescriptive regulations, by their nature, are written to address a specific set of circumstances and generally cannot address each circumstance, activity or facility design that can create hazards and that should be managed.

A prescriptive approach is also unable to adapt quickly to technological changes and improvements to best practice. Changes relating to outdated requirements must be affected through regulatory amendment. Alternatively, operators must apply, pursuant to the Acts, for exemption from, or equivalency to, specific provisions in the Regulations. However, the Acts restrict exemptions to requirements related to equipment, methods, measures or standards.

The goal-oriented approach retains the regulatory objectives of safety, protection of the environment and conservation of resources while enhancing regulatory clarity and efficiency. The majority of the Drilling and Production Regulations are written in a goal- or performance-based style with clear regulatory objectives or goals."

VI. SSRW and Goal Oriented Regulation

A. Preliminary Comments

20. Related to SSRW, the goals under discussion here relate to safety and protection of the environment. SSRW capability is not the goal; rather it is one of a suite of after-the-fact tactics to deal with a well control problem. In BP's view, the preferable approach is to focus on measures, systems and processes that achieve the goals on a preventative basis. Set out below is a description of BP's approach to achievement of the goals of safety and environmental protection in a deepwater context. The measures described are consistent with the approach laid out in the Canada Oil and Gas Drilling and Production Regulations, including their "prescriptive" requirements for management systems and various plans, such as safety and environmental protection. The new regulations may be viewed as a basis for, and a precursor to, further goal-oriented changes.

- 21. To be clear, BP is not rejecting the concept of a relief well as a possible mitigation measure; rather, given the factors set out below, BP is saying that it is statistically unlikely that relief well could be entirely carried out in the same season. As a consequence, at this stage of the planning process, BP is concerned that it will not be possible to commit in its authorization application to successfully complete execution of a relief well in the same drilling season.
- 22. BP's conclusion is based upon an assessment of well drilling duration, a statistical estimate of operating season length, water and reservoir target depth, and a preliminary assessment of drilling rig (and related support) capability to safely operate in heavy ice conditions.
- 23. While BP continues to improve its understanding of rig capabilities to operate in ice, and in predicting operating season length, it has concluded that a more credible approach to achieving safety and environmental protection objectives will be to focus on preventative measures and mitigations against a blow-out in the design and execution of the original well. Those measures are discussed below.

B. Blow Out Prevention

24. The environmental and social consequences arising from losing control of a well, resulting in a major oil spill, are risks that are faced by all operators, including BP in all of its worldwide activities. BP understands that BP's privilege to operate depends on BP's maintaining the confidence of the public and regulators, and that a blow-out - however mitigated - could seriously undermine this confidence. From this clear understanding, BP has determined that the preventative approach to managing this risk is the best way for all stakeholders to satisfactorily avoid the severe consequences of failure. This preventative approach has been successfully applied by BP in its well operations for years, and has included experience at some very challenging wells all over the world.

- 25. BP's worldwide operations are conducted under its *Operating Management System (OMS)* which encompasses defined and recommended practices for all phases of planning and drilling a well, through to preventing a well from taking an unplanned influx of fluids into the well bore ("kick"), and subsequently to maintaining control of a kick should one occur. OMS also sets expectations related to developing and maintaining the competency of personnel to carry out the process of well design and construction in accordance with BP policies.
- 26. Well design and construction is governed by a series of policy defined Engineering Technical Practices ("Practice" or "Practices") and under the authority provided for by the OMS. These contain mandatory requirements for design, and establish minimum expectations for the practices to execute all critical aspects of a well through its entire life cycle from planning and drilling to permanent abandonment. Any planned deviation from these policies and practices requires formal risk assessment and must go through a rigorous change management process approved by BP experts, independent of the operation. Adherence to these Practices is assured both by formal mechanisms such as compliance auditing, and expectations established for personnel competency. For those aspects of design work critical to safety, the Practices also establish the verification requirements by designated technical authorities, most of whom are recognized in industry as experts in their field. It is also worth noting that the well design software deemed critical for integrity of the well is managed under strict guidelines and controls governing change and integrity.

C. Pore Pressure Prediction and Detection

- 27. The fundamental principle in BP policies for well design and execution is ensuring safe containment within the well bore of all fluids under their expected pressures throughout the lifecycle of the well. So it must begin with reliable pore pressure prediction and detection. Pore pressure prediction techniques utilized by BP can be broadly categorized into three areas: seismic velocity derived, basin modeling and analog approaches.
- 28. A variety of analysis methods are employed, such as using BP proprietary algorithms, validated and improved from its experience predominantly in the Gulf of Mexico, for converting seismic velocity and log measurements to pressure. Basin modeling uses 3D modeling tools to generate a geological based predictive model of pressure. This technique provides particular insights to understanding secondary pressure caused by hydrocarbon migration or water flow, and the pressure in the permeable formations where hydrocarbons are expected. In the analog approach, relevant log, formation pressure, leak-off and drilling data are analyzed to give a view on pore and fracture pressure.
- 29. The individual results from velocity, basin modeling, and analog methods are all employed and the results integrated to provide a uniform, reinforced conclusion and some of their differences are used to characterize remaining uncertainty.
- 30. A similarly rigorous process is applied using seismic and other tools to identify and manage or avoid potential shallow gas zones when drilling the surface hole section before the Blowout Preventor ("BOP") is installed.

- 31. From this thorough understanding of the expected pressures and uncertainty, the actual well design process begins with determining the wellhead system pressure rating and design of the casing program to hold the maximum expected formation pressure. It must also provide contingencies for dealing with the uncertainties. The casing design process best illustrates how well design is governed by BP's policy.
- 32. The casing design Practice contains prescribed methods for determining design criteria and safety factors to safely contain all fluids within the well bore at the worst-case pressure extreme to which the casing might be subjected. For a well in the Beaufort Sea this worst-case scenario for internal pressure would be when the well has been evacuated to contain only low-density reservoir fluids (gas) hydrostatically opposing the formation pressure. The casing chosen will be rated to safely contain this pressure with a suitable factor of safety. The Practice requires that final casing design must also undergo verification of the design by the casing design Technical Authority, and the procurement process must follow strict requirements aimed at quality assurance so that the casing procured meets all of its design ratings.
- 33. Each critical aspect of well design is governed by a Practice, and policy requires a documented basis of design which shows the design criteria such as pressure and basic assumptions, including formation fracture gradient used in the design. It also includes requirements for acceptance testing that must be conducted pre- and post-installation. Throughout the remainder of well planning and execution, any deviation or variation from the basis of design must go through risk assessment and a change management process before it can be carried out. BP would provide full detail of the basis of its design and its design documentation, as required by the NEB in the review of the drilling application.

D. Blow Out Barriers

34. One of the cornerstones of the containment principle in practice is the rigid policy requirement to maintain two independent barriers capable of controlling the maximum anticipated pressure in the well at all times.

(1) Barrier One - Hydrostatic Barrier

- 35. The first barrier requires that the hydrostatic pressure from the drilling fluid exceeds the formation pressure by a margin sufficient to control the well, even if it is subjected to swabbing pressures while tripping. Maintaining the right mud density is the underlying objective in the policies and procedures governing pore pressure detection.
- 36. BP utilizes qualified experts on the rig, skilled and experienced in delivering a real-time analysis of formation pressure while drilling, utilizing BP approved techniques and applications. In the Beaufort Sea, BP would also plan to utilize measurement while-drilling tools in the drill string to take downhole measurements as an aid in pressure analysis. In the deeper intervals BP would also plan to utilize tools for directly measuring the permeable formation pressure as we drill. This combined analysis of indicators is used to determine the required fluid density. This is paired with an assessment of the tolerance for taking an unexpected influx (kick tolerance) from exposed formations defined as being able to shut in on a kick and then safely circulate out through a choke to kill the well.
- 37. Policies dictate that drilling may only continue under previously approved minimum kick tolerances and so contingencies for setting additional casing either as a full string or liner will be included in the well design.

38. To minimize the risk of taking an influx (kick), BP well control policies also cover drilling practices and detection equipment to minimize the volume of a kick should one occur. Equipment employed for drilling in the Beaufort Sea would include downhole detection in the suite of measurement while-drilling tools. Procedures in the hole intervals where hydrocarbons might be expected include best practices to detect and minimize kick volume adopted from our experiences drilling in High Pressure/High Temperature environments with narrow margins between pore pressure and formation fracture gradient.

(2) Barrier Two - Blow Out Prevention System

39. The secondary barrier for containment when drilling is the rig's BOP system. It is landed atop the subsea wellhead after setting the surface casing, to be used to restore control of a well in a situation where the fluid hydrostatic barrier was not sufficient and the well is trying to flow (kick). The system would be rated to 15,000 psi (103 MPa) and it would include a number of features such as multiple ram elements to close the wellbore and/or seal around pipe, as well as cut-off drill pipe and deep casing strings in the event of an emergency; multiple redundancies both in terms of functions and actuation capability; and remote actuation by an acoustic signal and remote functioning capability using a remotely operated underwater vehicle. Furthermore, considering the unique operating conditions in the Beaufort Sea, it is expected that the rig would be equipped with two complete BOP systems and sufficient riser to deploy the second BOP while leaving the first one attached to a well at the seabed.

40. The policies and best practices related to assurance of fitness and reliability for BOP equipment, used by both BP and the drilling contractors it employs, are extremely rigorous and fully documented, befitting such safety-critical equipment. In addition to predeployment and installed testing requirements, BOP equipment is subject to comprehensive requirements for certification, maintenance and repairs by, and in accordance with procedures from the original equipment manufacturer.

E. Well Planning Process

41. BP's overall well-planning follows a prescribed process for well project design and execution. This process includes requirements aimed at fully understanding and managing risks, such as expert assessment of potential problems in the overburden (for example shallow hazards and potential for well bore stability problems). It provides for management assurance of compliance, requiring that well planning teams carry out planning peer assists and formal peer reviews of the design and operational plan prior to approval by management to execute the drilling project. In the case of such remote exploration as the Beaufort Sea, related aspects such as logistics, emergency response and even the work to develop the predicted pore pressure will be subjected to peer review among experts in the relevant field.

F. Personnel Competency

- 42. With the right equipment and well design, BP recognizes that the most important element of well control is the people carrying out the work on the rig. BP and the drilling contractors it employs manage this risk through a set of standards referred to as control of work. Standards for control of work are also provided under the authority of the OMS. Simply put, control of work requires that all work carried out on the rig installation be controlled using written procedures developed by competent personnel and approved by competent supervisors, in accordance with policies and best practice guidelines. It further requires that prior to execution, the planned work undergo a comprehensive and thorough risk assessment to review plan risks and identify hazards previously not recognized (if any) in the planning, and ensure that everyone involved understands the plans and is comfortable moving forward.
- 43. Control of work is essential for the safe, day to day operation on the rig. Detailed procedures for work are prepared by qualified engineers and geoscientists in the form of a written and signed drilling program governed by document control, and containing step by step instructions for each stage of the well. Tasks related to completing the work laid out in the drilling program must be carried out under written plans prepared by qualified well site supervision and, before carrying out the task, a job risk assessment is conducted by the people doing the work.

- 44. BP and its contractors also devote a great deal of time and training to ensure people are competent to perform the tasks expected of them to prevent a kick from occurring, and the appropriate response in a well control situation. BP's well control policy requires that all responsible personnel on the rig maintain a valid certification in well control from an approved training facility. BP ensures that people know how to respond to a well control event by holding tripping drills, and kick drills on a routine basis. These are primarily aimed at minimizing the kick volume by early detection and rapid shut-in using the BOP so that the kick can be safely circulated out of the well under controlled conditions. The personnel working on the installation must be found to be competent through a verifiable assessment system.
- 45. Personnel competency development and assessment are processes which BP works to refine and continuously improve in concert with improving technology and knowledge management systems, to assure it is deploying a workforce that is both capable and trusted by stakeholders to meet the challenges where BP operates.

G. Beaufort Sea Conditions

- 46. The process, policies and practices outlined so far represent BP's approach to well control everywhere it operates. One of the implicit assumptions in this approach would be that the rig stays on location. For the Beaufort Sea, BP knows from experience that plans and contingencies must also manage the risks that moving ice will pose. To handle such risks, BP and its drilling contractor will apply additional controls, such as the T-time approach (see paragraph 47 below) to operations previously used in the Beaufort, and as it is currently used in operations in Sakhalin for ice, and the Gulf of Mexico during hurricane season.
- 47. The system would control whether operations may continue by comparing the estimated time for the safe and orderly securing of the well to the estimated time before an unmanageable ice floe would arrive at the rig.

- 48. The rig's well-specific operating guidelines will include operating windows consistent with the Green-Yellow-Red alert system for dynamic positioning. Operations would be limited or suspended based on status condition.
- 49. For late in the drilling season, BP will be proposing that this system become the basis for end-of-season decision-making, in preference to the calendar cut-off dates provided under the current policy (which cut-off dates are determined in part by the Same Season Relief Well requirement).
- 50. It is understood that drifting floes of ice can be unpredictable, capable of changing direction and quickly changing the hazard time. So, as with all floating drilling systems that BP utilizes, this rig would be equipped with a BOP control system designed to cut drill pipe as well as casing in sizes expected to be used when the hydrocarbon bearing formations are exposed. The rig would have an emergency disconnect actuation system and the sequence would enable pipe to be cut and the well to be sealed so that the rig can be disconnected in a matter of minutes. This would be backed up by remote actuation mechanisms.

H. Underground Blow-Out

- 51. With the level of preparation, rigor and assurance which will be applied, a blow-out with release of hydrocarbons is extremely unlikely when drilling an exploration well. A much more realistic worst-case scenario is the one sometimes referred to as an underground blow out. This occurs when a well is shut in on kick and the pressures exceed the strength of the overlying formations below the last casing shoe. The well flows from the higher pressure zone into these weaker formations. Well casing programs are designed in such a way that the pressure ratings of the casing and BOP wellhead system are stronger than any formation that is open below the casing. This is to protect both people and the environment in the case where unforeseen pressures are encountered, or when the rig goes into an ice alert forcing it to disconnect at the same time a kick is taken. It is reinforced by a Practice governing design and placement of cement behind the casing to prevent formation fluids from flowing to surface behind the casing.
- 52. In this scenario, it will always be preferable to re-establish and remain working with the existing well rather than initiating a relief well. The rig is equipped to deal with the pressures and reestablish well control much more quickly and reliably than would be the case through a relief well.

I. Emergency Planning Response

- 53. Nevertheless, BP policies for Emergency Response Planning will require that a Blow-Out Contingency Plan be developed. It would cover planning and preparations that would be made for drilling of a relief well. In this case it would assume use of the same rig taking advantage of its second BOP. Sufficient quantities of casing, mud and cement materials would be kept available throughout the drilling season to drill a relief well. Preplanning would include identification of at least two alternate relief well locations cleared for use by met-ocean and shallow hazards experts. These plans are intended to go into action quickly so that, depending on the kick severity, they would specify immediate action such as notification and alerts to suppliers. The BP blow-out contingency plan put into place becomes but one part of what would be the Emergency Response Plan for the Beaufort Sea.
- 54. BP knows that, as a member of the communities in which it operates, it must be prepared to immediately and effectively respond to an emergency like a blow-out or major oil spill. BP also knows from its own experiences that to be adequately prepared, it must understand how quickly it can escalate its response but in a way which is consistent with the highest values for safety of people and protection of the environment.
- 55. As noted elsewhere, BP conducts under-seabed operations on a world-wide basis.

- 56. Emergency Response Plans are mandated by BP's OMS and must be developed individually for assets all over the world to cover major accident risk for the project. They establish clear accountabilities in the organization at all levels for preparation and managing BP's response to an emergency. The ERP envisioned for a Beaufort Sea project would necessarily include oil-spill containment and clean-up plans that would have to recognize the unique environmental considerations in the Arctic. Response plans typically follow a three tiered approach to aid timeliness and effectiveness of early response and escalation. Escalation tiers include such factors as identification of additional resources and issues with their mobilization, i.e. logistics, import/export regulations, customs and immigration, as well as ancillary support such as aviation, marine and communications and spill tracking systems.
- 57. The emergency response plan is considered a living document throughout the project, to enable improvements from lessons learned during exercises, or table-top drills, or updates to such things as escalation support assurances obtained from regulatory, law enforcement and military agencies.
- 58. The Canada Oil and Gas Drilling and Production Regulations mandate, among other things, the creation of contingency plans, including emergency response procedures. Any application by BP for required approvals and any future operations would, of course, be compliant with the regulations and legislation.

VII. Summary

59. Over the past twenty years, regulators involved in the oil and gas industry, including the NEB, have moved toward goal-oriented regulation over multiple aspects of oil and gas operations. Goal-oriented regulation (described in some detail above) better achieves objectives related to the efficiency and effectiveness in the discharge of regulators' mandate; and enhances achievement of the paramount objectives of safety and protection of the environment.

- 60. Most recently, the NEB has promulgated new drilling and production regulations applicable to northern Canada, including the Beaufort Sea. The new regulations are fundamentally goal-oriented, mandating the creation of systems, plans and procedures to be developed by an operator, for oversight and approval by the Board. (For example, sections 8 and 9 set out the requirement for safety and environmental protection plans, which must set out the procedures, practices, resources and monitoring necessary to "ensure the safety of" and "protect the environment from" the proposed work or activity. The regulations lay out what must be addressed in each plan.)
- 61. The subject-matter of this proceeding is whether the prescriptive policy requiring same season relief well capability should remain in place; or, whether the underlying goals of the orderly development of resources while ensuring safety and protection of the environment can be better met by an alternative approach.
- 62. BP has identified above the difficulty with committing to the successful completion of a relief well on a same-season basis. It has proposed an alternative approach, consistent with the Canada Oil and Gas Drilling and Production Regulations, which, in BP's view, does a better job of meeting the underlying objectives of the SSRW Policy.
- 63. BP recognizes that cost implications <u>per se</u> should not be a driving force in this review. It is worth noting, however, that proposed operations in the Beaufort could require commitments in excess of \$1.5 billion before the regulatory processes are complete. Thus, additional certainty and clarity on dealing with the approach to well control generally, and relief wells in particular, are required now.
- 64. BP has developed expertise in the matters at hand. Using its extensive undersea experience and expertise, it has developed the required systems, plans and procedures, and several of those key measures are highlighted earlier in this submission. They are not exhaustive.

- 65. In BP's view, the SSRW Policy ought to be rescinded, and replaced by a series of goaloriented regulations that authorize operators to use preventative and mitigative measures (including relief well measures) to deal with well control exigencies. Such measures include the various systems, design criteria, and operations' protocols and responses currently used by BP in its world-wide operations. Not only is this approach contemplated by the Canada Oil and Gas Drilling and Production Regulations, but those regulations, as currently drafted, essentially provide the required framework.
- 66. BP intends to participate in the technical conference and welcomes the opportunity to discuss these issues further.

Dated at Calgary, Alberta, the 22nd day of March, 2010.