

The Regulatory Regime for Subsea Well Control, Spill Readiness and Spill Response

C-NLOPB Mandate

The Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) was established in 1985 under the Atlantic Accord to regulate offshore oil and gas activity on behalf of the Governments of Canada and Newfoundland and Labrador. It is a seven person Board. Three members are appointed by the Government of Canada and three are appointed by the Government of Newfoundland and Labrador. The Chair and CEO is appointed jointly by both governments. The Board's mandate is to interpret and apply the provisions of the Atlantic Accord Implementations Act and regulations to the Newfoundland and Labrador offshore industry in respect of worker safety, environmental protection, resource management, and industrial benefits.

There is a rigorous and exhaustive regulatory process, which focuses first, and foremost, on worker safety, and protection of the environment. Currently there are 75 staff with expertise in areas including, but not limited to, safety, well operations engineering, geology, geophysics, reservoir engineering, petrophysics, and structuring engineering. In addition to the legislation, the Board provides guidance to industry, which is developed on the basis of experience and expertise here and best practices from around the world.

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The Board's mandate encompasses four key areas - worker safety, environmental protection, resource management, and industrial benefits

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The Board has no role in fiscal matters beyond the provision of required data and information to government. The Board has no part in the establishment or administration of royalties or taxes for any offshore activity. It does not promote the industry. Its role is one of regulatory oversight of Operator activity. The term 'Operator' refers to companies who hold operating permits issued by the Board.

The Atlantic Accord legislation defines a Chief Safety Officer with broad powers and responsibilities for worker safety, as well as a Chief Conservation Officer with powers over resource management. The legislation stipulates that an order made by the Chief Safety Officer cannot be overruled by the Board and it prevails over a decision of the Chief Conservation Officer. The Atlantic Accord legislation therefore already separates responsibilities for safety from resource management. In short, the legislation provides that in matters of safety versus resource management and production issues, safety is paramount.

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Offshore Safety and Environmental Protection Regime

Regulations and regulators are designed to require that the risk of an offshore incident occurring is reduced to a level that is “as low as reasonably practicable”. The optimization of safety offshore was stated quite well in the 1985 Report of the Royal Commission into the *Ocean Ranger* Marine Disaster when it said: “**High standards of safety in the workplace are achieved when well-designed equipment is operated properly by well-managed and trained persons. Occupational safety is maintained by keeping these factors in a state of positive balance, in what is normally a highly dynamic situation.**” However, equipment failure and human error does occur, which leads to tragedies like the *Ocean Ranger* and more recently the *Deepwater Horizon*. This is a reality that safety regulators deal with as part of their responsibilities. It is precisely for this reason that safety regulators focus on ways to improve safety and prevent accidents from occurring.

When discussing environmental protection in the offshore area, two concepts must be considered - **protection of the environment** and **protection from the environment**. Operators work in a harsh environment where such things as icebergs and storms present substantial challenges. Environmental protection is governed by two pieces of legislation – the *Atlantic Accord Implementation Act* and the *Canadian Environmental Assessment Act*.

The Regulatory Approval Process for Drilling Programs

The Board’s oversight of an offshore drilling program commences at the early planning stage, typically 18 months or more in advance of any proposed program. A key step in the oversight model is to ensure that the various statutory and regulatory requirements are communicated effectively to prospective Operators so that these matters can be taken into account throughout the contracting and procurement phases. This is particularly important to the acquisition of the drilling installation, supply vessels, helicopters, and numerous other long-lead aspects that affect the safety of the program.

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Before drilling programs are even contemplated and before the relevant licences are issued in a potential area of exploration, the Board undertakes a Strategic Environmental Assessment, or SEA, of potential operations in that area. This involves a public consultation process. This initiative is over and above the requirements of both the Accord Legislation and the current federal environmental assessment legislation. For example, the SEA for the Orphan Basin area was undertaken in 2003 and included solicitation of public comments on both the scoping document for the SEA, at the outset of the process, and on a draft of the final report. The final report was posted on the Board's Web site in November 2003 and still is available there today. The SEA, while necessarily more of an overview nature than subsequent project-specific assessments, included consideration of potential blowout risk and fate. These assessments typically identify any mitigative measures necessary in respect of the environmental risks identified. These measures are included as conditions to the Board's Operations Authorization for greater certainty with respect to the legal obligation of the Operator to abide by these requirements

Particular oversight is provided in respect of drilling and well control matters. This involves a review of the Operator's well planning and technical capabilities in respect of well and casing design, marine riser analysis, well control matters, kick prevention and detection, mitigation of hydrate hazards, establishment of severe weather operating

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limits, a review of emergency disconnect requirements and an assessment of the relief well drilling arrangements. Emphasis is also placed on ensuring that all personnel have the requisite certificated training in well control and blowout prevention. Marine issues associated with the dynamic positioning system are also assessed and a review is conducted to ensure suitable redundancy of the blowout preventer (BOP) control systems in the event of any situation that could result in a disconnection from the well.

Oversight of these matters is achieved in a systematic manner through the Board's Safety Assessment System. This system includes a comprehensive checklist addressing all key regulatory elements and requirements. The safety assessment system includes a review of the Operator's safety management system and confirmation that the Operator has identified the hazards and the measures to be put in place to reduce the risk from these hazards to a level that is as low as reasonably practical.

The regulatory approval process is a two tiered process that requires firstly, authorization of the overall drilling program in the form of an Operations Authorization, and secondly,

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a well approval, in the form of an Approval to Drill a Well for each well to be drilled as part of the drilling program.

Tier 1 – Operations Authorization (OA)

Prior to receiving the Operations Authorization a number of statutory obligations must have been met. The applicant must have completed the environmental assessment process required by both the Canadian Environmental Assessment Act as well as the Atlantic Accord Act. The operator must have obtained a Certificate of Fitness from an

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independent third party Certifying Authority. The Certifying Authority is an agency that reviews installations to ensure they are fit for purpose, function as intended and meet the requirements of the regulations. There are only a few of these in the world and under the legislation, only a few of them are allowed to operate in our offshore. As well, the operator must obtain a Letter of Compliance from Transport Canada for the drilling installation; and, they must file a Safety Plan, an Environmental Protection Plan and a Contingency Plan that includes an Oil Spill Plan. In addition, they must submit documentation respecting financial responsibility, obtain approval of the Canada-Newfoundland and Labrador Benefits Plan, and finally,

they must provide a Declaration of Fitness, in the form and manner prescribed by the Board attesting that the equipment and facilities to be used during their program are fit for purpose, the operating procedures relating to them are appropriate, the personnel employed are qualified and competent and the installation meets all necessary Canadian standards. Only after all this documentation has been presented to and approved by the Board can an Operator proceed with an application.

The Certificate of Fitness required by both the Act and by Regulations. This must be issued by one of the Certifying Authorities listed in the Certificate of Fitness Regulations before the installation can be used to conduct any activity in the offshore area. Although it is the ultimate responsibility of the Operator to ensure that the program, including the facilities, comply with the regulations and to ensure that the program can be conducted safely without polluting the environment, the purpose of this additional certification is to provide an independent third party assurance and verification that the installation is fit for purpose, functions as intended and meets the requirements of the regulations. Of particular interest is the fact that the certification explicitly includes the BOP stack and other related well control equipment.

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The scope of work to be executed by the Certifying Authority explicitly requires the approval of the Board's Chief Safety Officer. The scope of this work addresses the maintenance, inspecting and testing programs of the facilities and equipment with a particular focus on safety critical elements. During this process, surveys are conducted prior to the issuance of the certificate and on an ongoing basis as part of the need to periodically verify the continued integrity of the installation. In addition, all modifications or repairs to the installation that affects its strength, stability, integrity, operability, safety or regulatory compliance needs to be reviewed and accepted by the Certifying Authority to ensure the continued validity of the certificate. It is a condition of the Operations Authorization that all required certificates remain valid in order to maintain the validity of the Operations Authorization.

An additional marine safety measure for our offshore area arises from a Memorandum of Understanding between the C-NLOPB and Transport Canada. The MOU requires the

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issuance of a Letter of Compliance verifying compliance to the Mobil Offshore Drilling Unit code for any foreign flagged drilling installations. While the Canada Shipping Act only requires this for Canadian flagged vessels, the C-NLOPB insists that this be in place for any foreign flagged vessels as well, in addition to the Certificate of Fitness, as an added measure for marine safety.

Tier 2 – Approval to Drill a Well (ADW)

The second tier of the approval process involves the requirement to obtain an Approval to Drill a Well or ADW. This approval is required for each and every well drilled. The ADW must provide detailed information on the drilling program and well design, including the BOP equipment and the casing and cementing program as well as the geologic prognosis and identification of structures and targets.

The application for this approval must identify and discuss drilling related hazards including matters pertaining to well control and blowout prevention. The depth and nature of formations where problems such as high pressure and other hazards are anticipated must be identified. The program must include a description of the casing and cementing program as well as details of the casing design, the proposed casing pressure testing program, the drilling fluid program, the directional drilling and survey plans and information respecting pressure testing and function testing of the well control equipment. This application is reviewed by a multi-disciplinary team within the C-NLOPB consisting of engineers, technicians, geologists, geophysicists and environmental scientists prior to the issuance of the ADW.

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The expectations respecting the various cement plugs that need to be set and pressure tested at the end of the well are also described in the Board's guidelines. These requirements reflect the practices and procedures for plugging and abandoning wells that have been successfully used in the Newfoundland and Labrador offshore area since the Board's inception.

The drilling and production guidelines speak to all critical matters in relation to well barriers, blowout prevention and well control including BOP stacks, casing and cementing matters as well as detailed requirements and expectations pertaining to the plugging and abandonment of wells. These guidelines reflect high standards and modern thinking with respect to drilling, cementing and well control matters. The guidelines can be updated as required to incorporate lessons learned from audits and inspections as well as technological advances and improvements to best practices.