# Guidelines Respecting Drilling Programs

To ensure flexibility and clarity within the regulatory regime, these Guidelines create a framework for activities in the Newfoundland and Labrador offshore area. The Guidelines provide specific direction where the Board has been given the authority to prescribe and guidance where the Board may approve certain activities. Further, direction is also given on how the Board interprets the broadly-based legislative requirements governing the offshore area. To ensure responsiveness, these Guidelines may be reviewed from time to time, and where necessary, updated. As part of any planning process for activity in the offshore area, contact should be made with the appropriate departments of the Board to confirm the status of any particular Guideline and any legislative requirements.

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**Attachments**



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## LIST OF REFERENCED DOCUMENTS

### Acts

- Canada-Newfoundland Atlantic Accord Implementation Act, S.C. 1987, c.3
- Canada-Newfoundland Atlantic Accord Implementation Newfoundland Act, R.S.N. 1990, c.C-2
- Canada Shipping Act
- Coasting Trade Act
- Customs Tariff and Excise Tax Act
- Canadian Laws Offshore Application Act
- Immigration Act
- Occupational Health and Safety Act, R.S.N. 1990

### Regulations

- Canada-Newfoundland Offshore Oil and Gas Spills and Debris Liability Regulations SOR/88-262
- Newfoundland Offshore Petroleum Drilling Regulations SOR/93-23, 28 January, 1993
- Newfoundland Offshore Area Oil and Gas Operations Regulations SOR/88-347
- Newfoundland Offshore Certificate of Fitness Regulations SOR/95-100, 21 February, 1995
- Newfoundland Offshore Petroleum Installations Regulations SOR/95-104, 21 February, 1995
- Petroleum Occupational Safety and Health Regulations (Draft), November, 1989
- Newfoundland Offshore Petroleum Diving Regulations SOR/88-601

### Guidelines

- Exploration Benefits Plan Guidelines: Newfoundland Offshore Area, April, 1987
- Guidelines Concerning Financial Responsibility for Drilling in the Newfoundland and Nova Scotia Offshore Areas, May, 1999
- Guidelines for Drilling Equipment, March, 1993
- Guidelines Respecting Physical Environmental Programs During Petroleum Drilling and Production Activities on Frontier Lands, April, 1994
- Offshore Waste Treatment Guidelines, September, 1996
- Offshore Chemical Selection Guidelines, January, 1999 (DRAFT)
- Geophysical, Geological, Environmental and Geotechnical Program Guidelines, January, 1999

- Joint Guidelines Respecting Data Acquisition and Reporting for Well, Pool and Field Evaluations in the Newfoundland and Nova Scotia Offshore Areas, June, 1999

**Standards**

- Standards Respecting Mobile Offshore Drilling Units (TP6472) December 30, 1985.
- Standards Respecting Standby Vessels (TP7920), October, 1988

**Other**

- Canadian Offshore Petroleum Industry Qualifications, Safety, Training and Certification (Drilling), November, 1990

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## GLOSSARY OF ACRONYMS

- ADW Approval to Drill a Well
- AEB Atmospheric Environment Branch
- BOP Blowout Preventer
- CAODC Canadian Association of Drilling Contractors
- C-NOPB Canada-Newfoundland Offshore Petroleum Board
- CCG Canadian Coast Guard
- COF Certificate of Fitness
- DOF Declaration of Fitness
- DPA Drilling Program Authorization
- EL Exploration Licence
- FA First Aid
- HUET Helicopter Underwater Escape Training
- IADC International Association of Drilling Contractors
- LOC Letter of Compliance
- LTI Lost Time Injury
- MA Medial Aid
- MODU Mobile Offshore Drilling Units
- OD Outer Diameter
- OHS/OSH Occupational Health and Safety
- OIM Offshore Installation Manager
- PL Production Licence
- POB Personnel on Board
- RT/KB Rotary Table/Kelly Bushing
- RW Restricted Work
- SDL Significant Discovery Licence
- SF Seafloor
- TVD True Vertical Depth

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## 1.0 INTRODUCTION

The Canada-Newfoundland Offshore Petroleum Board (the Board) is responsible for the administration of regulations pertaining to exploration and production of petroleum in the Newfoundland offshore area.

The Guidelines have been prepared to assist operators planning to conduct a drilling program within this area by providing information and explanation of the requirements contained in the *Canada-Newfoundland Atlantic Accord Implementation Act,* the *Canada-Newfoundland Atlantic Accord Implementation Newfoundland Act* (the Acts[1]) and subordinate legislation.

The **Drilling Program Authorization (DPA)** and the **Approval to Drill a Well (ADW)** are the primary regulatory approvals necessary to conduct drilling operations.

The DPA authorizes the operator to conduct a drilling program, consisting of one or more wells within a specified area and time using one or more drilling installations, and includes all operations and activities ancillary to the program. The drilling program commences upon spudding the first well in the program and ends when the last well in the program is terminated.

The ADW permits the operator to drill a particular well using the drilling and evaluation procedures described in the application and accompanying well prognosis.

Prior to authorizing a drilling program, the Board has a duty to ensure that:

- the operator is a registered holder of the necessary licences;
- an approved Canada-Newfoundland Benefits plan is in place;
- satisfactory evidence of financial responsibility has been furnished;
- a duly executed Declaration of Fitness has been provided;
- a valid Certificate of Fitness has been obtained for the drilling installation(s);
- suitable standby vessel(s) will be provided;
- an appropriate safety assessment of the operator's facilities, equipment, operating procedures, contingency plans and personnel has been performed;
- the requisite information regarding drilling and well evaluation has been provided; and
- an environmental assessment of the proposed program has been performed.

Additional information and copies of relevant application forms may be obtained from the Board at:
Canada-Newfoundland Offshore Petroleum Board,
Suite 500 TD Place,
140 Water Street,
St. John's, Newfoundland, A1C 6H6
Tel: (709) 778-1400
Fax: (709) 778-1473
E-Mail: postmaster@cnopb.nf.ca

## 2.0 EXPLORATION/SIGNIFICANT DISCOVERY/PRODUCTION LICENCE

The exclusive right to drill for petroleum is conferred to interest holders by an exploration licence, a significant discovery licence or a production licence. The statutory requirements pertaining to these licences are in Part II (sections 47 to 134) of the Act. Information on these matters may be obtained from the Board's Legal and Land department.

## 3.0 OPERATING LICENCE

The statutory requirements pertaining to operating licences are specified in sections 137 and 138 of the Act and in the *Newfoundland Offshore Area Oil and Gas Operations Regulations* SOR/88-347.

An operating licence is a prerequisite for any drilling program. Any individual or corporation may apply to the Board for an operating licence by completing and forwarding one duly executed copy of the application form to the Board. A sample of the operating licence and the instructions for applying for the licence are provided in Appendix A. An operating licence is valid from its commencement date to March 31st next following its date of issuance.

## 4.0 DRILLING PROGRAM AUTHORIZATION

### 4.1 Application

In accordance with section 5 of the drilling regulations, an application for DPA may be made by completing and forwarding three duly executed copies of the application form to the Board. Each form must be signed by the senior operator's representative responsible for the program.

The lead time for submission of DPA applications is not specified by regulations, however, operators are encouraged to apply for a DPA three to four months prior to the anticipated spud date of the first well in the drilling program. The DPA will be issued for a specified period of time, depending on the proposed drilling schedule.

A sample DPA form is provided in Appendix A. The typical information which should be provided to the Board with the application, or made available to the Board's staff during the review of the application, is listed in Appendix B.

### 4.2 Canada-Newfoundland Benefits Plan

Pursuant to section 45 of the Act, a Canada-Newfoundland Benefits Plan must be submitted to and approved by the Board prior to authorizing any drilling program. Further information on this matter is provided in the *Exploration Benefits Plan Guidelines: Newfoundland Offshore Area* , April, 1987.

### 4.3 Evidence of Financial Responsibility

Section 163 of the Act and section 72 of the drilling regulations require that an operator provide proof of financial responsibility, in a form and in an amount satisfactory to the Board. This is required as a contingency against potential petroleum spill or debris related claims, to ensure that the operator completes the drilling program and terminates the well, leaving the drill site in a satisfactory condition, and to satisfy the Board that it is able to meet other financial liabilities. The limits of absolute liability for spill and debris related claims are prescribed by the *Canada-Newfoundland Offshore Oil and Gas Spills and Debris Liability Regulations.*

Additional information on financial responsibility is provided in *Guidelines Concerning Financial Responsibility for Drilling in the Newfoundland and Nova Scotia Offshore Areas,* May, 1999.

### 4.4 Declaration of Fitness

Prior to the issuance of a DPA, an operator is required to provide a duly executed copy of the Declaration of Fitness form as specified by section 139.1 of the Act. This document attests that,

insofar as the operator is concerned, the equipment and installations to be used in the drilling program are fit for purpose, appropriate operating procedures will be used and qualified personnel will be employed.

The execution of this form, and the provisions of the *Occupational Health and Safety Act,* places onus on the operator to ensure the health and safety of personnel. The Board expects operators to exercise due diligence prior to signing the declaration and during the execution of the program.

The prescribed Declaration of Fitness form, a sample of which is provided in Appendix A, is available from the Board.

**4.5 Certificate of Fitness**

Pursuant to section 139.2 of the Act and section 6 of the drilling regulations, an operator is required to obtain and provide to the Board a certificate of fitness for the drilling installation issued by one of the recognized Certifying Authorities, i.e., American Bureau of Shipping, Bureau Veritas, Det Norske Veritas or Lloyd's Register of Shipping. It is a requirement of the Act and a condition of the DPA that the certificate remain valid and in force throughout the drilling program.

The Certifying Authority may issue the certificate upon determining that the installation is fit for purpose and meets the relevant provisions of the following regulations:

- the *Newfoundland Offshore Certificate of Fitness Regulations,*
- the *Newfoundland Offshore Petroleum Installations Regulations,*
- the *Oil and Gas Occupational Safety and Health Regulations*[2],
- the *Newfoundland Offshore Petroleum Drilling Regulations* and
- the *Newfoundland Offshore Area Petroleum Diving Regulations,* if there is a diving facility on the drilling installation.

The Board has also issued *Guidelines for Drilling Equipment* March, 1993 to clarify the requirements of sections 15 and 21 of the drilling regulations. This document may be used by the Certifying Authority to assess the drilling equipment on the installation.

Canadian flagged drilling vessels must meet the requirements of the *Canada Shipping Act,* administered by the Marine Safety Division of Transport Canada. Owners of foreign flagged vessels must obtain a **Letter of Compliance** from Transport Canada attesting that the vessel to which it applies conforms to the relevant requirements of the *Canada Shipping Act.* Pursuant to this Act, the **Standards Respecting Mobile Offshore Drilling Units (TP6472) December 30, 1985** have been adopted as the standards applying in respect of the design and construction of drilling units.

**4.6 Standby Vessels**

Sections 11 and 12 of the drilling regulations specify that a standby vessel be provided and equipped in accordance with the *Standards Respecting Standby Vessels (TP7920)*, October, 1988. Operators are responsible for obtaining a "Letter of Compliance" from Transport Canada, Marine Safety attesting that the standby vessel(s) meets these standards.

**4.7 Safety Assessment**

The safety of the proposed program is assessed by the Board's staff prior to the authorization of any drilling program. This assessment is made pursuant to section 138.2 of the Act which requires that the Board, prior to issuing a DPA, consider the safety of the program by reviewing the system as a

whole, as well as its components, including structures, facilities, equipment, operating procedures and personnel.

Operators are expected to demonstrate that a systematic approach to safety management will be in place throughout the program and to describe how safety management, including the co-ordination of the safety management programs of the major contractors, fits within the overall management of the program. The Board expects operators to identify all hazards associated with a drilling program and to ensure that appropriate measures are in place to control the hazards.

The hazards which need to be examined include, but are not limited to:

- Blowouts
- Fires
- Explosions
- Heavy Weather
- Icebergs and Pack ice
- Loss of Ballast Control
- Loss of Stability
- Helicopter Transportation
- Use of the Personnel Transfer Basket
- Ship Collisions
- Structural Failure
- Dropped Objects

During the Board's safety assessment, staff will pay particular attention to the various safety issues identified in Appendix E. In particular, the Board expects operators to demonstrate that the best practicable evacuation technology available is used on drilling installations.

The information which is typically requested to be submitted, or made available to the Board's staff, in connection with this review is listed in Appendix B.

Operators are also advised that an audit meeting is normally held with the operator and its major contractors following the C-NOPB's review of the documentation supplied for the safety assessment. This meeting is normally timed to occur approximately one month prior to spud. A field verification audit is normally performed onboard the drilling installation and at least one standby vessel immediately prior to spud.

**4.8 Occupational Health and Safety**

In accordance with a Memorandum of Understanding, the Board administers certain sections of the Newfoundland *Occupational Health and Safety Act* which apply to the offshore area. In this regard, operators must be aware of the duties imposed on "employers" by sections 4 and 5 of this Act and of their duty as "principal contractor" pursuant to section 10 of the Act. Further, operators must become familiar with the requirements for "Joint Occupational Safety and Health Committees" in sections 37 to 44 of this Act and with a workers "right to refuse dangerous work" as specified by sections 45 to 52 of the Act.

Additional information on this matter is provided in Appendix E.

It should also be noted that requirements related to "Joint Occupational Safety and Health Committees" on marine vessels are governed by Part II of the Canada Labour Code and that these requirements are consistent with those of the Newfoundland *Occupational Health and Safety Act.*

### 4.9 Environmental Assessment

The operator should provide with its DPA application, sufficient information to permit an assessment of the potential environmental effects of its proposed activities, and should identify any measures which it proposes to mitigate these effects.

For operations on the Grand Banks, the following information should be provided:

- an estimate of types and quantities of substances which are expected to be discharged from the drilling installation during the drilling program and a description of equipment and procedures which will be in place to treat these discharges. The Board's expectations regarding drilling chemical selection are described in the *Offshore Chemical Selection Guidelines*, January, 1999 (DRAFT) and its expectations regarding waste treatment are described in the *Offshore Waste Treatment Guidelines*, September, 1996.
- contingency plans for environmental emergencies, which are typically combined with those for potentially hazardous occurrences (refer to Appendix C). An operator is required to conduct a field exercise of oil spill countermeasures each year.
- proposed arrangements for the measurement, observation and forecasting of environmental conditions. The Board's expectations in this regard are described in *Guidelines Respecting Physical Environmental Programs During Petroleum Drilling and Production Activities on Frontier Lands*, April, 1994. At an early stage in the drilling program, the operator should arrange for the Port Meteorological Officer of the Atmospheric Environment Branch (AEB) of Environment Canada to inspect the meteorological instrumentation on the drilling installation.

An operator which plans to conduct a drilling program in an area that has not been previously subject to environmental assessment is encouraged to consult with the Board as early as possible in its planning process, to permit the identification of any additional information that the Board may require. The operator should also plan to provide relevant information to the public and to consult with interested members of the public. In particular, the operator should provide for the advance notification of persons engaged in fishing activities in the proposed area of operations and the measures to be put in place to eliminate any potential mutual interference.

### 4.10 Other Requirements

Pursuant to the requirements of the Coasting Trade Act, all drilling installations and supply vessels engaged in Coasting Trade in Canadian waters, which activity includes oil exploration, must obtain an appropriate licence from Revenue Canada Customs, Excise and Taxation based on advice from the National Transportation Agency. For foreign vessels temporarily operating in Canada, this Act requires that duties and taxes be paid as specified by the *Customs Tariff and Excise Tax Act.* Revenue Canada is the authority responsible for this matter.

Additional information on these matters may be obtained from:

Revenue Canada Customs, Excise and Taxation,
Carrier Control Section,
Transportation Division,
Connaught Building,
Mackenzie Avenue,
Ottawa, Ontario, K1A 0L5
Tel: (613) 954-7204
Fax: (613) 957-9717

**OR**

National Transportation Agency,
Ottawa, Ontario, K1A 0N9
Tel: (819) 997-6667
Fax: (819) 953-5686

The Canadian Laws Offshore Applications Act, which came into force in February, 1991, extends the Immigration Act to offshore installations.

Information regarding foreign personnel who wish to work temporarily in Canada may be obtained from:

Citizenship and Immigration Canada,
Bldg 223, Pleasantville,
P.O. Box 13667,
St. John's, Newfoundland, A1B 4G1
Tel: (709) 772-5388
Fax: (709) 772-2929

**OR**

outside Canada, from any Canadian consulate.

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## 5.0 APPROVAL TO DRILL A WELL (ADW)

### 5.1 Application

Pursuant to section 68 of the drilling regulations, an application for ADW may be made by completing and forwarding three duly executed copies of the application form approximately 21 days prior to spud (six weeks is preferred). The application must be signed by the operator's senior representative responsible for the program. The ADW is conditional upon the operator commencing drilling within 120 days of the day the ADW was granted.

The operator is expected to make an oral presentation to the Board summarizing the geological prognosis, the drilling, environmental and operational considerations and Canada-Newfoundland benefits matters in respect of the well. This presentation is normally timed to occur around the time of the ADW submission.

### 5.2 Seabed Survey

The submission of an application for ADW is preceded or accompanied by documentation showing that the operator has investigated the nature of the seafloor and underlying sediments to identify any potential surface or subsurface hazards such as shallow gas. As these surveys are usually conducted using geophysical methods, an application for Geophysical/Geological/Environmental/Geotechnical Program Authorization should be made to the Board at least 30 days in advance of any Well Site Survey. Please refer to the Board's publication *Geophysical, Geological, Environmental and Geotechnical Program Guidelines*, January, 1999.

### 5.3 Well Prognosis

A copy of the well prognosis and tentative survey plan of the well location, as specified by section 68 of the drilling regulations, must be provided with the application. A suggested format for the well prognosis is provided in Appendix B.

## 6.0 RECORDS AND REPORTS

### 6.1 Drilling and Lithology Reports

Pursuant to subsection 153(2) of the drilling regulations, a report summarizing drilling and related operations, weather and sea conditions and lithology must be provided daily to the Board. This report(s) is required from the spud date until operations are terminated at the wellsite. The format used by operators for their internal reporting purposes is normally acceptable for the Board's monitoring purposes.

### 6.2 Weather Forecasts and Ice Reports

The Board normally requests that a copy of the site-specific meteorological forecast and a report of ice conditions also be provided daily to ensure the Board is fully informed of the status of conditions in the event of an alert or emergency situation.

### 6.3 Tour Sheets

One copy of the Tour Sheets should be submitted weekly to the Board. Please refer to subsection 149(2) of the drilling regulations.

### 6.4 Routine Notifications

Operators should establish routine contacts with the Canadian Coast Guard's Vessel Traffic Services in St. John's and the Department of National Defence Search and Rescue in Halifax for notifying these agencies of marine activities and operational matters such as:

- Rig moves due to pack ice, icebergs, inspection or any other reason;
- A change in location of the drilling installation due to well termination; and
- Formation flow testing operations involving flaring of hydrocarbons.

Daily radio communication checks should be conducted with the appropriate CCG radio station. Operators should also notify AEB of rig moves.

### 6.5 Significant Events and Hazardous Occurrences

Any serious injury, loss of life, significant event or hazardous occurrence as specified by subsection 145(1) of the drilling regulations or section 15.4 of the occupational health and safety regulations must be reported to the Board immediately. The Board maintains a 24 hour answering service at 778-1400 for this purpose. The reporting procedures for such events should be in accordance with the procedures established in the operator's contingency plan.

The Board's *Hazardous Occurrences Notification Form* must be completed and submitted in accordance with the instructions provided on the form. A sample of this form is provided in Appendix A.

Monthly summaries of accident statistics should also be provided to the Board. Suggested reporting formats for these statistics are also provided in Appendix A.

### 6.6 Well Evaluation and Data Acquisition

The requirements pertaining to well evaluation and data acquisition, including the submission of cuttings, cores and fluid samples, are specified in the *Joint Guidelines Respecting Data Acquisition and Reporting for Well, Pool and Field Evaluations in the Newfoundland and Nova Scotia Offshore Areas,* June, 1999.

### 6.7 Formation Flow Tests

If the well is to be tested, a detailed testing program is required to be provided to the Board, as specified by section 171 of the drilling regulations. Written approval of the Board is required prior to conducting any formation flow test. Please refer to the *Joint Guidelines Respecting Data Acquisition and Reporting for Well, Pool and Field Evaluations in the Newfoundland and Nova Scotia Offshore Areas*, June, 1999 for additional details respecting formation flow testing requirements.

Preliminary test results, including data such as flow rates, fluid type, gravity and other readily available information, should be reported to the Board by telephone as soon as possible followed up by a written report of the test results.

### 6.8 Well Termination

One (1) copy of the proposed well termination program must be forwarded at least 24 hours before termination operations are scheduled to commence in accordance with sections 177 and 178 of the drilling regulations. The termination program must be consistent with Part VII of the drilling regulations. The Board's approval of the program is required prior to terminating any well.

Three (3) copies of the Well Termination Record form, each signed by the senior operator's representative responsible for the program, is required to be forwarded to the Board within 21 days of the well termination date as specified by section 158 of the drilling regulations. A sample of the Well Termination Record is provided in Appendix A.

### 6.9 Final Well Reports

The Board requires three (3) copies of the Final Well Report for exploratory wells and two (2) copies for development wells. In accordance with subsection 201(1) of the drilling regulations, the report is to be submitted within 90 days of the rig release date in the case of an exploratory well and within 45 days in the case of a development well. The contents of the reports required for exploratory and development wells are specified by subsections 201(2) and 201(3) of the drilling regulations, respectively. A suggested format for this report is provided in Appendix D. In addition, please refer to Appendix D of the Joint *Guidelines Respecting Data Acquisition and Reporting for Well, Pool and Field Evaluations in the Newfoundland and Nova Scotia Offshore Areas*, June, 1999 for final well reporting requirements related to evaluation programs.

The reporting requirements associated with physical environmental and oceanographic data are specified in the *Guidelines Respecting Physical Environmental Programs During Petroleum Drilling and Production Activities on Frontier Lands*, April, 1994.

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## APPENDIX A

**Sample Forms**

In order to view Appendix A, Adobe Acrobat Reader version 3.0 or higher is required.

Samples of the following forms are provided in this Appendix:

- Operating Licence
- Drilling Program Authorization
- Declaration of Fitness
- Approval to Drill a Well
- Hazardous Occurrence Notification
- Operator's Monthly Injury Statistics Report
- Well Termination Record

Originals may be obtained from:

Canada-Newfoundland Offshore Petroleum Board
5th Floor TD Place,
140 Water Street
St. John's, Newfoundland,
A1C 6H6

Telephone: (709) 778-1400
Telecopier: (709) 778-1473
E-Mail: postmaster@cnopb.nf.ca

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**APPENDIX B**

In order to view Appendix B Adobe Acrobat Reader version 3.0 or higher is required. Click on the image below to view Appendix B.


APPENDIX B

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**APPENDIX C**

**Contingency Plans Introduction**

Section 64 of the drilling regulations and section 17.9 of the occupational health and safety regulations requires operators to ensure that contingency plans have been formulated and that equipment is available to cope with any reasonably foreseeable emergency situation that may arise during a drilling program, including:

a. serious injury to or the death of any person;
b. major fire;

c. loss of or damage to support craft;
d. loss or disablement of a drilling installation;
e. loss of well control;
f. drilling of a relief well;
g. hazards unique to the drill site;
h. spills of oil or other pollutants; and
i. criminal activity or threats of criminal activity

With reference to item (g) above, hazards unique to the Newfoundland offshore area include:

- heavy weather;
- pack ice and icebergs; and
- ship collision with the drilling installation.

Operators are encouraged to submit a draft "contingency plan" for the C-NOPB's review. The C-NOPB will consult with the appropriate departments of the provincial and federal governments and provide the operator with a consolidated list of comments. Ten (10) copies of the draft plan are required for this review.

Operators have found it convenient to prepare the following documents in respect of this matter:

- Alert/Emergency Response Plan; and
- Oil Spill Response Plan.

**Format**

Response plans should be prepared on letter-sized paper suitably bound to allow for revisions. The documents should have clearly labelled tabs or other reference aids and a sheet for recording revisions. The names and phone numbers of key personnel and organizations should be provided in a separate section.

**Contents**

Because response plans are intended to guide on-site personnel in responding to emergency situations, it is appropriate to limit the contents to:

- an organization chart depicting key positions of the operator, drilling contractor, supply vessel contractor and helicopter contractor;
- the responsibilities of key personnel in the management of emergencies;
- the procedures for responding to each emergency;
- reporting and notification procedures; and
- alert criteria and the procedures for responding to alerts.

Any necessary support documentation should be provided in appendices or separate documents. Support documentation may include a description of:

- on-site first aid and backup medical support;
- communications equipment and facilities;
- flight following and overdue aircraft procedures;
- any self-help equipment such as a standby helicopter, life rafts and other sea rescue equipment;
- arrangements for the drilling of a relief well;

- the ice management program including ice detection, monitoring and avoidance procedures; and
- a description of the mooring quick release system and procedures.

**Alert Criteria**

The following criteria for declaring an alert and implementing precautionary measures, including possible down manning, have been established:

- wind speeds at the drilling installation are forecasted to exceed or actually exceed 80 knots;
- wind speeds exceed 45 knots with sea ice or icebergs present in the vicinity of the drilling installation;
- a kick or well control problem is being experienced;
- a ballast control, flooding or stability problem is being experienced; or
- a vessel on a possible collision course with the drilling installation.

**Standby Vessels**

Under normal conditions, the standby vessel should remain within one nautical mile of the drilling installation.

Under storm conditions, this distance can be increased in consideration of the safety of the standby vessel itself, but it should generally remain within 20 minutes of the installation, unless a greater distance is approved by the installation manager. In such cases, the reasons for this approval should be logged.

The vessel should attend close to the installation under the following circumstances:

- helicopter landings and take-offs;
- diving operations in progress;
- drill stem testing;
- well control operations; or
- personnel working over the side.

The standby vessel should also participate in any abandon ship or person overboard drills.

**Standby Helicopter**

Operators on the Grand Banks are expected to maintain a standby helicopter dedicated to search and rescue on a 24-hour per day basis. This helicopter should be equipped with a rescue winch and survival equipment suitable for deployment from the helicopter. Personnel trained in the operation of the winch and deployment of the survival equipment should also be available. Provision should be made for helicopter training time sufficient to ensure that the helicopter and rescue crews can develop the necessary co-ordination to operate effectively.

**Resource Sharing Arrangements.**

When more than one operator is active in an area, operators are expected to put in place mechanisms to facilitate the rapid exchange of information and, if necessary, to share resources such as boats and helicopters in order to prevent or respond to emergency situations. Operators are also expected to maintain a common flight following and vessel tracking capability.

**Relief Well Drilling Arrangements**

Operators are expected to identify an alternate drilling installation for relief well purposes and provide a description of its operating capability, its location, contractual commitments, state of readiness and the schedule for mobilization to the wellsite. The source of supply for a backup wellhead system and all consumables required to set conductor and surface casing for the relief well should also be identified.

**Oil Spill Response Plan**

The operator is expected to identify and confirm its arrangements for mobilizing oil spill countermeasures equipment to the wellsite and to document its procedures for responding to an oil spill. The qualifications of personnel responsible for the management of oil spill response should also be documented. The plan should also:

- include a description of the procedures for responding to small spills;
- describe the containment and cleanup strategy for shoreline and any ice covered areas; and
- provide confirmation of the operator's capability to implement an oil spill trajectory model using real time wind and current data.

Environmental reference material necessary to establish oil spill cleanup priorities should be included as an appendix or referenced separately. This material may include a description of:

- biological sensitivity charts (with texts) identifying the area containing flora and fauna that are sensitive to spills as well as natural preserve areas;
- socio-economic sensitivity charts indicating local industry and the probable impact of oil spills;
- physical sensitivity charts of coastline areas which identify shoreline types, coastal currents, ice forms and movement, and the nature of the littoral zone; and
- when oil spill trajectory analysis are required, for each month, a three month projection for spills originating at the wellsite and followed until the slick volume is reduced to 5%; the shoreline is reached; or the slick moves out of the modelled area. This analysis should include contours or envelopes of 90%, 50%, and less than 50% probability of the extent of oil migration from the release point.

**Exercises**

Operators are encouraged to periodically test the effectiveness of their emergency response plans by conducting appropriate exercises and drills. In particular, it is recommended that a "table-top" exercise be conducted shortly after spudding the first well in the drilling program.

Pursuant to paragraph 125(d) of the drilling regulations, operators are required to ensure that a practice exercise of oil spill counter measures is held at least once in each year that the operator is engaged in a drilling program. Accordingly, the operator is requested to outline the arrangements for this exercise upon application for a DPA. A summary report of this exercise should be prepared upon completion of the exercise.

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**APPENDIX D**

**Final Well Reports**

The requirement to prepare and submit a Final Well Report is specified by subsection 201(1) of the drilling regulations. The contents of the reports required for exploratory and development wells are specified by subsections 201(2) and 201(3) of the regulations, respectively. Additional details regarding the content and format of these reports are provided in this appendix. Throughout this document, the applicable sections (§) of the drilling regulations are provided in parenthesis for ease of reference.

Please note that this appendix deals with the drilling and operational aspects of the final well report. Please refer to Appendix D of the *Joint Guidelines Respecting Data Acquisition and Reporting for Well, Pool and Field Evaluations in the Newfoundland and Nova Scotia Offshore Areas*, June, 1999 for final well reporting requirements related to the geological and well evaluation aspects.

Three (3) copies of the Final Well Report must be submitted to the Board within ninety (90) days of the rig release date in the case of an exploratory well and two (2) copies are required within forty-five (45) days in the case of a development well.

Final well reports should be prepared on letter-sized paper, suitably bound. Measurements should be given using the S.I. system unless otherwise approved. Dates and times should be given as year/month/day/hour. The subjects that should be addressed in the reports for exploratory and development wells are identified by **Exp.** and **Dev.**, respectively. **If information pertaining to a particular heading does not exist, will not become available, or, is not applicable to the particular well, a statement to this effect should be made.**

**1. General**

**1.1 Title Page (Exp. & Dev.)**
Full name of the well, name of the operator's representative responsible for the report and the date that the report was prepared.

**1.2 Introduction (Exp. & Dev.)**
A recapitulation of approximately 200 words giving the nature and purpose of the well, name of the operator and drilling contractor, name and type of drilling unit, a summary of operations at the well site, the formations penetrated, the results of any formation flow testing and the current status of the well i.e., suspended, completed or abandoned.

**1.3 Map (Exp.)**
A single page map showing the location of the well with respect to an identifiable shoreline or topographical feature(s).

**1.4 General Information (Exp. & Dev.)**
Include well name, co-ordinates and a description of the surveying system used to determine the final well position. Only the well name and co-ordinates are required for development wells.

**1.5 Difficulties and Delays (Exp. & Dev.)**
Provide a summary of any problems encountered and the steps taken to overcome the problems. An estimate of the total time delay associated with each problem should be provided. In particular any down time due to weather, pack ice or icebergs should be provided, broken down into hours-per-month.

**2. Drilling & Completion Operations**
The following data should be provided:

**2.1 Elevation (Exp. & Dev.)** - elevation of rotary table above mean sea level.

**2.2 Water Depth (Exp. & Dev.)** - water depth and the distance from the rotary table to seafloor.

**2.3** **Total Depth (Exp. & Dev.)** - specify drilled depth (both measured and TVD, in the case of deviated wells), logged depth and, if applicable, plugged-back depth.

**2.4** **Spud Date (Exp. & Dev.)** - date and hour spudded.

**2.5** **Date Drilling Completed (Exp. & Dev.)** - date and hour total depth of the well was reached.

**2.6** **Rig Release Date (Exp. & Dev.)** - date and hour the drilling rig last conducted operations on the well.

**2.7** **Well Status (Exp. & Dev.)** - suspended, abandoned or completed.

**2.8** **Hole Sizes and Depths (Exp. & Dev.)** - bit diameters and total depth drilled for each section of hole.

**2.9** **Bit Records (Exp. & Dev.)** - as per IADC/CAODC codes and format.

**2.10** **Casing and Cementing Records (Exp. & Dev.)** - for each casing string, indicate size, weight, grade, number of joints, type of thread/connection, depth of shoe and make and type of casing hangers and seals. With respect to cementing details, indicate location of centralizers and scratchers, sacks of cement, type and amount of cement additives, the intervals cemented or top of cement behind each casing string and the basis for the estimated top of cement, i.e., calculations or cement bond log.

**2.11** **Sidetracked Hole (Exp. & Dev.)** - describe any sidetracked hole, the reason for sidetracking, the method used and the effectiveness of the operation.

**2.12** **Drilling Fluid (Exp. & Dev.)** - type of drilling fluid and summary of the properties maintained for each phase of the hole. If an oil based drilling fluid was used, provide information on the total quantity of oil based mud consumed during drilling; a calculation of the total amount of mud-derived oil discharged with cuttings; a description of the effectiveness of cuttings treatment with reference to weekly measurements of oil retention on cuttings, i.e., grams of oil per 100 grams of cuttings, types and sizes of cuttings, and number of samples; a summary and description of any losses of base oil or oil-based mud; and, a summary of any monitoring program.

**2.13** **Fluid Disposal (Exp. & Dev.)** - details of any fluid disposal downhole, including volumes, rates, pressures, dates, nature of the fluid.

**2.14** **Fishing Operations (Exp. & Dev.)** - details of any fishing operations, a description of any fish left in the hole and a statement regarding the probable cause of the problem.

**2.15** **Well Kicks (Exp. & Dev.)** - details of any kicks encountered including volumes, pressures and a summary of associated well control operations.

**2.16** **Formation Leak-Off Tests (Exp. & Dev.)** - details of each leak-off test including depth, mud density, applied surface pressure, mud weight equivalent and last casing depth. Copies of the leak-off test reports and graphs should be included.

**2.17** **Time Distribution (Exp. & Dev.)** - a table of the hourly activity as recorded on the IADC/CAODC Daily Drilling Reports from the hour the well was spudded to the time the rig was released, showing the total hours for each type of operation.

**2.18** **Directional and Deviation Surveys (Exp. & Dev.)** - a summary of the directional and deviation surveys and the bottom hole co-ordinates, referenced to surface location. A plan view showing the location of the well bore with respect to the well head for a discovery well and any well that deviated more than 10° from the vertical over any part of the hole should also be provided.

**2.19** **Abandonment/Suspension Plugs (Exp. & Dev.)** - type and depth of plugs including, for cement plugs, the type and amount of cement and additives. The nature of fluids remaining between plugs should also be provided.

**2.20** **Well Schematic (Exp. & Dev.)** - showing casing, tubing, plugs and any other equipment installed in or on the well. For development wells, provide details of the completion operations including a

schematic of the well, details of the production tree configuration and specifications of the subsurface safety valve.

**2.21 Fluid Samples (Exp. & Dev.)** - a listing of any fluid samples collected including depths, type, number and volume, tests conducted and final disposition.

**2.22 Composite Well Record (Exp. & Dev.)** - a chart summarizing all relevant drilling and geological data on a suitable depth scale, including the following information:

- time-depth plot denoting all major operational activities;
- major lithological units;
- rates of penetration;
- gas detection curves;
- hydrocarbon shows;
- cores;
- bit record;
- casing points;
- test intervals; and
- plugs.

**2.23 Final Legal Survey Plan (Exp. & Dev.)** - a copy of the final legal survey plan, approved by the Surveyor General's office, should be forwarded to the C-NOPB, when available.

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## APPENDIX E

### Guidance on Specific Regulatory Requirements Evacuation Systems

With reference to section 22 of the *Newfoundland Offshore Petroleum Installation Regulations* (the installation regulations), it is the Board's expectation that operators demonstrate that the best practicable evacuation technology available be used on drilling installations. Unless otherwise approved, the Board expects operators to ensure that the drilling installation is equipped with an enhanced evacuation system.

### Maintenance of Evacuation Systems

Paragraph 63(1)(k) of the installations regulations requires that operating and maintenance instructions for all lifesaving appliances be available on the installation and section 12.3 of the *Petroleum Occupational Health and Safety Regulations* (the OSH regulations) specifies that all protection equipment be inspected and tested by a qualified person.

Information published by the International Maritime Organization and others indicates a significant number of incidents related to the improper maintenance of evacuation systems. As a result, the Board expects operators to review the adequacy of the planned and preventative maintenance system for evacuation systems, lifesaving appliances and rescue craft and to monitor and audit these maintenance programs to ensure that they are operating effectively and in compliance with all regulatory requirements. It is also expected that the manufacturer's maintenance instructions for the lifeboats, release mechanisms and launching equipment be available onboard the installation.

During field audits, the Board's safety officers may request documented evidence that evacuation systems are being inspected, tested and maintained in accordance with the manufacturer's instructions. Tests recommended by the manufacturer typically include lowering tests, release gear function tests and launch tests. It is the Board's expectation that release gear be function tested at least every six months and that boats be launched annually. Since some testing procedures involve risk of personnel injury, operators are expected to ensure that all appropriate safety precautions are in place prior to conducting these tests.

**Training of Lifeboat Coxswains**

Pursuant to section 17.13 of the OSH regulations and section 124 of the drilling regulations, operators are required to ensure that personnel are adequately trained in emergency procedures. At least two persons assigned to each lifeboat should hold a Lifeboat Man, Survival Craft or equivalent certificate. These certificates should be renewed every three years to ensure a high degree of proficiency. Lifeboat coxswains should receive training specific to the evacuation systems used on the installation and should participate in at least one lifeboat launch each year, either at the installation, or, at a shore based facility.

**Materials Handling Equipment**

Part XIV of the OSH regulations specifies the requirements for the design, operation and maintenance of materials handling equipment and requires that the employer establish inspection, testing and maintenance routines. The regulations also reference the applicable codes and standards respecting inspection, testing and maintenance programs.

Pursuant to these requirements, the Board expects all materials handling equipment to be inspected and tested by a competent and independent third party to verify that the equipment is suitable for use. Such inspections should be documented and must be traceable to individual items of equipment. Except as otherwise required by the regulations, or by the codes and standards referenced by the regulations, these inspections should begin not more than six months prior to an installation beginning work offshore Newfoundland and every six months thereafter.

Please note that these third party inspections do not relieve the equipment owner of the duty to properly inspect, maintain and operate the equipment. Operators are expected to review the drilling contractor's planned/preventative maintenance system for this equipment to ensure that it is satisfactory. Operators are further expected to monitor and audit these maintenance programs to ensure they are operating effectively and in compliance with all regulatory requirements.

The third party inspections and tests noted above should pay particular attention to any equipment used to transport personnel. This equipment must be certified by the manufacturer for this purpose and meet the requirements of section 14.34 of the OSH regulations.

**Freight Containers**

Freight containers should be designed, constructed, inspected and maintained in accordance with an appropriate standard for offshore petroleum freight containers. One of the following standards is recommended:

- Det Norske Veritas Standard 2.7-1
- European standard - *Offshore Containers Design, Construction, Testing, Inspection and Marking*, prEN 12079 August 1995 (Draft).

The Board notes that no Canadian standard currently exists for offshore containers.

**Transfer of Personnel by Crane Basket**

Section 4.3 of the OSH regulations sets out the minimum requirements for the use of personnel transfer baskets. As noted above, all cranes and baskets used for personnel transfer must be appropriately designed and certified for that purpose. Operators are reminded that personnel transfer baskets should only be used in emergencies or when alternative means of transferring personnel are unsafe or unavailable.

Subsection 4.3 (2)(a) specifically requires that safe procedures be established for the transfer of personnel. These procedures should, as a minimum;

- define the duties and responsibilities of personnel;
- clearly define all communications requirements such as;
    - crane operator and vessel master to be in direct radio contact;
    - signal person in visual or radio contact with crane operator; and
    - vessel master in radio contact with deck crew;
- require written agreement from the crane operator, vessel master (ships log) and personnel to be transferred;
- outline the safety checklist to be used prior to the transfer, including the instructions to be given to personnel and the personal protective equipment that must be used;
- specify that personnel to be transferred must wear approved protective suits that provide for flotation and thermal protection while allowing for good manual dexterity (for example, helicopter transportation suits are recommended, whereas marine abandonment suits that limit dexterity should not be used); and
- explicitly require the authorisation of the OIM.

The Board expects that operators will review, approve and monitor the implementation of personnel transfer procedures.

Transfer operations may only be carried out in suitable environmental conditions as decided by the OIM and Vessel Master. Guidelines on maximum wind & sea states and minimum visibility should be provided but it should be clearly stated that these guidelines do not, in any way, diminish the responsibility of the OIM or Master for a safe transfer.

The standby vessel must be in close attendance and the crew of the fast rescue craft should be placed on alert during all transfer operations.

**Helicopter Operations**

Section 9 of the drilling regulations specifies that all support craft be designed and constructed to operate safety and to provide safe and efficient support for drilling operations. Consistent with this regulation, it is the Board's expectation that operators have systems in place to ensure that helicopters meet the following requirements:

- All helicopters must be certified by Transport Canada.
- All pilots must be licenced by Transport Canada.
- Helicopter crews, including first response technicians, should have experience with the aircraft being used and experience with offshore operations in similar environments.
- Adequate flight time must be provided for first response practice and drills.
- Aircraft should be of multiple-engine design and should be capable of landing on the water in at least moderate sea states.
- Aircraft must be capable of communication with
    - the shore base,

    - the drilling installation,
    - supply vessels, and
    - lifeboats.
- All aircraft must be equipped with externally mounted life rafts.
- Aircraft interiors should be configured to allow the emergency egress of passengers.
- Suitable upper torso passenger restraints should be used in the aircraft.
- All passengers must receive Helicopter Underwater Escape Training (HUET) and be suitably briefed prior to transport. All passengers must also wear approved helicopter transportation suits.
- Passengers and freight should not normally be carried on the same aircraft.
- Operators must give proper consideration to weather and helicopter load limits when planning flights.
- Flying at night should be avoided to the extent possible.
- Operators must specify the amount of reserve helicopter fuel to be kept on board the MODU and provide the rationale used to arrive at this amount.
- Consideration should be given to providing goggles and appropriate breathing devices to assist in underwater escape.
- Maintenance systems and activities are expected to meet the highest possible standards. Proven automated usage and monitoring systems should be utilised where practicable.

Please refer to Appendix C (Contingency Plans) for requirements related to an emergency standby helicopter and flight following requirements.

**Helideck Operations**

Procedures for helideck operations onboard the drilling installation should be clearly defined in consultation with the helicopter contractor. All helideck operations must be under the supervision of a formally trained and designated Helicopter Landing Officer.

**Joint Occupational Health Safety Committee**

Operators must ensure that all contractors' employees are represented by a Joint Occupational Health and Safety Committee pursuant to sections 37 to 44 of the Newfoundland *Occupational Health and Safety Act*. On drilling installations, where more than one contractor is present, the operator should encourage a single committee with representation from the various subcontractors. Operators also have an obligation to monitor the functioning of these committees.

**Right to Refuse Dangerous Work**

Operators must ensure that all employees are made aware of their right to refuse dangerous work and the procedures to be followed in the event of such a refusal pursuant to sections 45 to 52 of the Newfoundland *Occupational Health and Safety Act*. Operators must ensure that the employee's right to refuse is understood by management and may be exercised without fear of discrimination.

It should be noted that, in emergency situations, where a worker's refusal threatens the safety of the installation or other employees, the OIM has the power, pursuant to section 193.2 of the *Canada-Newfoundland Atlantic Accord Implementation Act*, to issue orders superseding a worker's right to refuse.

**Qualifications and Certification**

Pursuant to the requirements of the OSH regulations, which define a qualified person as someone who has the necessary knowledge, training and experience to perform a specific task safely and

properly, and, section 124 of the drilling regulations, which requires that operators ensure that every person employed on a drilling program is properly trained and instructed and capable of doing the duties assigned, the Board expects operators to be able to demonstrate that all personnel employed on a drilling program are properly trained and qualified.

In addition to the positions explicitly identified in the *Qualifications, Certification, Safety Training and Certification (Drilling)*, November, 1990 and the requirements specified above for lifeboat coxswains and helicopter landing officers, operators are requested to pay particular attention to the competence of individuals employed to do electrical, materials handling, mechanical, welding and other technical work. Crane operators, electricians, welders and other trades persons should have interprovincial journeymen's certificates or equivalent.

Operator's and contractor's managers should be formally trained in safety management and a trained safety professional should be available to advise them.

It is also the Board's expectation that the *Crewing Regulations* and the *Marine Certification Regulations* proclaimed pursuant to the *Canada Shipping Act* will be applied to foreign flag drilling MODUs to the extent practicable.

**Control of Work**

Operators are expected to ensure that contractors have in place an effective system of work permits to control hot work activities, electrical and mechanical isolation and entry into confined spaces. These permits should reflect the requirements of Part VIII of the OSH regulations (dealing with electrical safety), Part XI (dealing with confined spaces), Part XIII (dealing with tools and machinery) and Part XVII (dealing with the safe occupancy of the work place). The work permit system must also define responsibilities of personnel, the procedures to be followed for the work and specify the precautions for the physical lockout of hazards. Operators are expected to monitor and audit the effectiveness of the work permit system.

**Inspection, Testing and Maintenance**

Operators are expected to review and be satisfied with contractor's planned/preventative maintenance system for all safety critical systems onboard the drilling installation. Operators are further expected to monitor and audit these maintenance programs to ensure they are operating effectively and in compliance with all regulatory requirements.

**Lighting, Sound and Hygiene Surveys**

A formal lighting survey, a formal sound survey and a formal health and hygiene survey should be conducted onboard the drilling installation for the purpose of confirming compliance with Part VI of the OSH regulations (dealing with minimum required levels of lighting), Part VII (dealing with maximum permissible levels of sound) and Parts IX and X (dealing with sanitation and hazardous substances, respectively).

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[1] **References to specific sections of the Accord Acts are to the Federal version for ease of reference.**

[2] **The *Newfoundland Offshore Certificate of Fitness Regulations* refer to the federal *Oil and Gas Occupational Health and Safety Regulations* since the *Newfoundland Petroleum Occupational Health and Safety Regulations* are still in draft form.**