

Amendment
Section 3.12 Marine Riser System
Drilling Equipment Guidelines, March 1993

July 30, 2007

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On July 30, 2007, the Canada-Newfoundland and Labrador Offshore Petroleum Board approved an amendment to the *Newfoundland Offshore Area Guidelines for Drilling Equipment*. Section 3.12 Marine Riser System of the guidelines has been amended to include the requirement for the telescopic joint to have a redundant sealing system. The amended section 3.12 Marine Riser System is as follows:

3.12 Marine Riser System

3.12.1 The marine riser system on floating drilling installations should

- a. be capable of withstanding the differential pressure of the drilling fluid relative to the sea; [Ref: DR 59(1)(c)]
- b. be equipped and supported in a manner which effectively isolates the riser from the motion of the drilling installation; [Ref: DR 59(2)]
- c. possess sufficient structural strength to withstand the maximum stresses to which it may be subjected; [Ref: DR 59(1)(c)];
- d. be equipped, where necessary, to prevent excessive vibrations due to waves or current and;
- e. permit the drilling fluid to be returned to the drilling unit without discharge to the ocean. [Ref: DR 59(1)(e)].

3.12.2 Except as otherwise stipulated by these requirements, the marine riser system should be designed and constructed in accordance with

American Petroleum Institute **Recommended Practice for Design and Operation of Marine Drilling Riser Systems**, API RP 2Q, Second Edition, April, 1984; and

American Petroleum Institute **Recommended Practice for Design, Rating and Testing of Marine Drilling Riser Couplings**, API RP 2R, First Edition, May, 1984.

3.12.3 The marine riser system should be designed such that

- a. the maximum stress intensity for all operating modes is not exceeded;
- b. the maximum stress, fatigue resistance, deflection and column buckling are considered in the design; and
- c. lateral deflection during normal drilling operations does not interfere with the passage of downhole tools.

3.12.4 The marine riser tensioning system should

- a. be capable of maintaining the minimum allowable tension in all operational conditions; and
- b. in the case of dynamically positioned vessels, be equipped to prevent damage of the marine riser system following disconnection of the lower marine riser package from the blowout preventer stack under high tension.

3.12.5 The telescopic joint should

- a. have a stroke of sufficient length to compensate for heave during all normal operations as well as all operations which may be undertaken prior to disconnect from the blowout preventer stack, and should, in every case, be greater than 45 feet (13.7 m); and
- b. be equipped with a redundant sealing system to allow for drilling fluid to be returned to the drilling rig in the event of failure or partial failure of one sealing system. A telescopic joint having two separate independent seals is considered a redundant sealing system.

3.12.6 An operating envelope should be established for the operation of the marine riser system which should include

- a. limitations in terms of vessel offset or ball/flex joint angles, vessel motions, lateral deflection of the riser or any combination thereof, or any other limitation on the system, which, if exceeded, will necessitate suspending operations and disconnecting the marine riser from the blowout preventer stack;
- b. the effects of various combinations of tension, mud density, water depth and environmental loads, or any combination thereof, and any other variable affecting riser performance, and the optimum tension which should be used for the various factors affecting riser performance under various operating scenarios.

3.12.7 The operating envelope for the marine riser system described in 3.12.6 should be contained in the operating manual for the marine riser system or otherwise readily available to the persons responsible for the operation of the system.