

PUBLICATION

Proposed Amendments to Outer Continental Shelf Regulations Clear Up the Meaning of a Safe Drilling Margin

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On April 17, 2015, the Bureau of Safety and Environmental Enforcement (BSEE) published proposed amendments to regulations for offshore well operators in the Outer Continental Shelf (OCS). The proposed amendments address numerous issues, including what constitutes a "safe drilling margin." Anyone may submit comments to the BSEE on the proposed amendments by June 16, 2015.

Currently, well operators in the OCS must, while drilling, maintain a safe drilling margin identified in an approved Application for Permit to Drill (APD). This safe drilling margin is required in order to ensure that mud weights are capable of controlling the pore pressure and formation fluids while not fracturing the formations. If an operator cannot maintain the safe drilling margin, it must "suspend drilling operations and remedy the situation."

Federal regulations do not define the safe drilling margin, but the industry standard is generally considered one-half pound per gallon (0.5 ppg) between the mud weight and the fracture gradient. What is unclear under current regulations is the appropriate data or estimates operators should use to determine whether they are maintaining the safe drilling margin. For example, may an operator solely rely on data taken from higher in an interval to determine if it is maintaining a safe drilling margin while drilling lower in the interval?

The proposed amendments answer this question in the negative and also codify the 0.5 ppg as the safe drilling margin between the mud weight and the fracture gradient. In sum, the proposed amendments put the onus on the operator to evaluate downhole conditions using all available data when determining whether it is maintaining a safe drilling margin. An operator cannot solely rely on data taken from higher in the interval. If an operator fails to maintain a safe drilling margin consistent with the requirements of the proposed amendments, it may be subject to enforcement actions by the BSEE, civil penalties and other civil damages claims.

The pertinent current and proposed amendments to those regulations are below:

30 C.F.R. § 250.427 What are the requirements for pressure integrity tests?

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(b) While drilling, you must maintain the safe drilling margin identified in the approved APD. When you cannot maintain this safe margin, you must suspend drilling operations and remedy the situation.

(Proposed) (b) While drilling, you must maintain the safe drilling margins identified in § 250.414. When you cannot maintain the safe margins, you must suspend drilling operations and remedy the situation.

30 C.F.R. § 250.414 What must my drilling prognosis include?

Your drilling prognosis must include a brief description of the procedures you will follow in drilling the well. The prognosis includes but is not limited to the following:

...

(c) Planned safe drilling margin between proposed drilling fluid weights and estimated pore pressures.

(Proposed) (c) Planned safe drilling margins between proposed drilling fluid weights and the estimated pore pressures, and proposed drilling fluid weights and the lesser of estimated fracture gradients or casing shoe pressure integrity test. Your safe drilling margins must meet the following conditions:

(1) Static downhole mud weight must be greater than estimated pore pressure;

(2) Static downhole mud weight must be a minimum of one-half pound per gallon below the lesser of the casing shoe pressure integrity test or the lowest estimated fracture gradient;

(3) The equivalent circulating density must be below the lesser of the casing shoe pressure integrity test or the lowest estimated fracture gradient; and

(4) When determining the pore pressure and lowest estimated fracture gradient for a specific interval, you must consider related hole behavior observations.