MARINE MINERALS ADMINISTRATION

SAFETY ALERT

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Secure Work Strings During Milling Operations to Prevent Slippage



Damage from the two incidents.

Background:

The Marine Minerals Administration's Gulf of America Region has identified an increased number of decommissioning-related drill string incidents. Two recent incidents highlight the risk during decommissioning activities across the Outer Continental Shelf, including work string slippage through rotary dies, traveling slips, or bar clamps, resulting in dropped pipe events.

Incident 1:

During milling operations, unexpected torque fluctuations caused the unit to buck and jump. The work string slipped through the milling bar and traveling slips and dropped approximately 25 feet into the well. The event damaged equipment, including the cutter bar.

Incident 2:

During milling operations, the rotary dies and bar clamp lost grip, allowing the work string to drop approximately 26 feet until stopped by a tool joint. The investigation found that the crew used S135 pipe instead of XD105 pipe. The pipe selection reduced die grip effectiveness and contributed to the failure.

Findings:

- **Improper pipe selection.** The use of higher-hardness pipe (e.g., S135) reduced die penetration and, therefore, grip. The correct pipe was available but not used.
- **Equipment limitations.** Equipment that was not optimized for the operation was unable to maintain sufficient grip under dynamic loads.
- **Sudden torque changes.** Sudden torque changes during burnishing operations caused instability.
- **Equipment condition or compatibility issues:** Worn, damaged or mismatched dies, clamps or slips may reduce grip and compromise load-bearing components.

Therefore, operators and their contractors should consider the following as appropriate:

- Ensure the pipe grade and hardness are appropriate for the operation.
- Pipe usage that allows adequate die penetration and grip.
- Verify the condition and compatibility of rotary dies, slips and bar clamps before operations begin, and replace worn or damaged components before starting milling of burnishing operations.
- Developing written procedures and contingency plans for securing the string during milling or burnishing operations, including how crews should respond to loss of grip indicators.
- Address dynamic load risks, equipment limitations and pipe/die material compatibility during job planning and hazard analysis and incorporate those findings into job safety analyses.
- Ensure employees understand pipe grade and hardness differences, die and slip limitations, and indicators of potential slippage.

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As of July 10, 2026, the Department of the Interior has reunified the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement into the Marine Minerals Administration, which will oversee the responsible development of the nation's offshore energy and marine mineral resources with an integrated focus on safety, environmental protection and efficient oversight. For more information, visit Transition to the Marine Minerals Administration | U.S. Department of the Interior.

A Safety Alert is a tool used by the MMA to inform offshore oil and gas industry of the circumstances surrounding a potential safety issue. It also contains recommendations that could assist in avoiding potential incidents on the Outer Continental Shelf.

Category: Decommissioning, Lifting, Well Operations