

**UNITED STATES DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE
GULF OF MEXICO OCS REGION**

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**NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS LEASES
OUTER CONTINENTAL SHELF, GULF OF MEXICO OCS REGION**

**Guidelines for Tie-downs on OCS Production Platforms
for Upcoming Hurricane Seasons**

This Notice to Lessees and Operators (NTL) provides guidance on the evaluation of tie-downs that you will use on your OCS production platforms to secure drilling and workover rigs and permanent equipment and facilities during hurricane season.

As required by 30 CFR 250.900(a), you must design, fabricate, install, use, maintain, inspect, and assess all platforms and related structures on the OCS to ensure their structural integrity for the safe conduct of drilling, workover, and production operations, considering the specific environmental conditions at the platform location. Accordingly, the Minerals Management Service (MMS) Gulf of Mexico OCS Region (GOMR) endorses the guidelines in the American Petroleum Institute's *Bulletin 2TD, Guidelines for Tie-downs on Offshore Production Facilities for Hurricane Season, First Edition (API Bulletin 2TD)*, to assist you in your review and evaluation of the information and data that demonstrate the ability of the tie-downs to perform during a hurricane. The MMS GOMR highly recommends that you follow the guidelines in API Bulletin 2TD as you prepare for operations during upcoming hurricane seasons.

Background

The effects of Hurricanes Ivan, Katrina, Rita, and Ike during the 2004, 2005, and 2008 hurricane seasons were detrimental to oil and gas operations in the OCS. These effects included structural damage to fixed production platforms, platform rigs, semi-submersibles, jack-up rigs, quarters, helidecks, and other permanent equipment and facilities. During Hurricanes Ivan, Katrina, Rita, and Ike, there were seven platform rigs that experienced a total failure or were significantly damaged. Additionally, there were numerous reports of platform facilities, equipment, and drilling units that were tied-down but shifted.

Fortunately, these hurricanes did not cause any loss of life or significant pollution because of industry's ability to secure wells and evacuate personnel successfully. However, the MMS GOMR is concerned about the loss or damage of these platforms, rigs, and equipment, as well as the potential for catastrophic damage to key infrastructure and the resultant pollution from future storms. In an effort to reduce these effects, real and potential, the MMS GOMR has set forth guidance to ensure compliance with 30 CFR 250.900 and to improve performance in the area of

securing tie-downs and potentially reducing the environmental loading that will be experienced during hurricanes.

Industry and MMS have worked together to develop an bulletin for performing tie-down operations to ensure that consistent proper assessments are performed and in an effort to decrease the amount of tie-down failures during hurricanes. These guidelines are set forth in API Bulletin 2TD. The MMS GOMR has determined that the level of detail and recommendations set forth in the API Bulletin 2TD will help to bring about the sought after improvement in performance for hurricane season.

In addition, MMS funded a study on the *Assessment of Drilling and Workover Rig Storm Sea Fastenings on Offshore Floating Platforms During Hurricane Ivan*. Information on this study can be located at: <http://www.mms.gov/tarprojects/551.htm>.

Scope

This NTL covers any drilling units and permanent equipment and facilities that are attached to an OCS production platform with tie-down components during hurricane season. All OCS equipment or facilities that you expect to have in use are subject to the specifications set forth below.

Tied-down Drilling and Workover Rigs

Each year before hurricane season begins:

1. Visually inspect all tie-downs to confirm that they are in good condition and are constructed in accordance with the design drawings.
2. Verify that all tie-downs can be properly installed and that no obstructions exist that might prevent installation (e.g., stiffeners on plate girders).
3. For bolted tie-downs:
 - a) Verify by visual inspection that the bolts are in good physical condition;
 - b) Verify that bolts meet the required material specifications, and the specifications are suitable for this application. (ASTM 325 or 490 high strength bolts are not recommended, since re-torquing of these bolts is not permitted per AISC specifications.);
 - c) Verify that the number of bolt torquing cycles does not exceed the design allowable;
 - d) Verify that the required bolt torque is defined, and required equipment/tools are available to achieve the required torque; and
 - e) Install new bolts if you cannot verify the above items.
4. For mechanical/hydraulic tie-downs:
 - a) Verify that the tie-down system is in good working condition;
 - b) Verify that operating personnel are familiar with the operating procedures of the equipment; and
 - c) Verify that equipment is fail safe (tie-down force is maintained in the event of equipment failure).
5. For welded tie-downs, verify that plans, weld size, welding procedures, and inspection procedures are adequate.
6. Verify that welded components of tie-downs have been properly inspected.

7. Determine if there is a preferred well position for stowing the rig. If so, verify that this is clearly defined in the platform hurricane evacuation procedures.
8. Verify that proper tie-down procedures are part of the platform evacuation procedures and are carried out before evacuation.
9. Verify that other procedures such as setting down of all drill pipe, handling of setback load, emptying of tanks, etc. are clearly defined in the evacuation procedures and have been considered in engineering of the tie-down procedures.
10. Verify that all necessary tie-down tools, equipment, and labor, including all spares will be available before evacuation. Prefabricate any new components for quickness and ease of connection.
11. Verify that hurricane evacuation procedures allow time for proper tie-down before evacuation.
12. Where feasible, install an engineered, welded stop at the end of skid beams to prevent skid packages from skidding off the end of the beams. Welds should be of structural quality and properly inspected. Size stops to withstand shear associated with wind and platform tilt (on floating structures) in combination with a lower bound friction assumption.
13. Verify that all rig packages are properly tied down based on risk appropriate environmental and dynamic loads.
14. After each hurricane evacuation, visually inspect the tie-downs before returning the rig to normal service. Evaluate any damage found to determine if any design or procedural modifications are required. Damage that is repeatedly discovered indicates a need for design and/or procedure change, and should result in more frequent inspections until such inspections indicate that the cause(s) of the fault(s) has been resolved.

Each year after hurricane season ends, but before the beginning of the next season:

1. Review design calculations of all tie-downs with updated site-specific environmental and dynamic loads and document the results. Analysis and results should be approved by an engineer experienced and qualified in offshore structures.
2. Assess clamps for all appropriate well positions. Give special care to calculations that show either no predicted uplift or only a small uplift when compared to the gravity reaction. In such cases, there may effectively be no reserve against slightly higher wind forces.
3. Consider replacement of tie-downs if proper documentation is not available. Otherwise, make an assessment based on conservative assumptions of material and weld properties.
4. Review derrick or mast and substructure design based on site-specific environmental and dynamic loads and document the results. Analysis and results should be approved by an engineer experienced and qualified in this area.

Tied-Down Permanent Equipment and Facilities

Each year before hurricane season begins:

1. Visually inspect all tie-downs to confirm that they are in good condition and are constructed in accordance with the design drawings. If any doubts exist, conduct appropriate non-destructive testing (NDT). If no design drawings exist, verify that required tie-down strength exists using appropriate engineering analysis.
2. After each hurricane evacuation, visually inspect the tie-downs as soon as possible. Evaluate any damage found to determine if any design or procedural modifications are necessary.

Each year after hurricane season ends, but before the beginning of the next season, review design calculations of all tie-downs with updated site-specific environmental and dynamic loads and document the results. Analysis and results should be approved by an engineer experienced and qualified in offshore structural engineering.

Guidance Document Statement

The MMS issues NTL's as guidance documents in accordance with 30 CFR 250.103 to clarify, supplement, and provide more detail about certain MMS regulatory requirements and to outline the information you provide in your various submittals. Under that authority, this NTL sets forth a policy on and an interpretation of a regulatory requirement that provides a clear and consistent approach to complying with that requirement. However, if you wish to use an alternative approach for compliance, you may do so, after you receive approval from the appropriate MMS office under 30 CFR 250.141.

Paperwork Reduction Act of 1995 Statement

The information collection referred to in this NTL is intended to provide clarification, description, or interpretation of requirements contained in 30 CFR 250, subpart I, Platforms and Structures. The Office of Management and Budget (OMB) has approved the information collection requirements in these regulations under OMB Control Number 1010-0149. This NTL does not impose any additional information collection requirements subject to the Paperwork Reduction Act of 1995.

Contact

If you have any questions regarding this NTL, please contact Mr. B. J. Kruse, Chief, Office of Structural and Technical Support, by telephone at (504) 736-2634 or by email at bernard.kruse@mms.gov.

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