NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL, AND GAS LEASES AND PIPELINE RIGHT-OF-WAY HOLDERS IN THE OUTER CONTINENTAL SHELF (OCS), GULF OF MEXICO OCS REGION

Assessment of Existing OCS Platforms and Related Structures for Hurricane Conditions

Authority

This Notice to Lessees and Operators (NTL) is issued pursuant to 30 CFR 250.103. It provides guidance to ensure that certain existing OCS platforms and related structures are assessed to ensure their structural integrity by considering the specific environmental conditions at the platform location as required by 30 CFR 250.900(a).

Background

Hurricanes Ivan, Katrina, and Rita during the 2004 and 2005 hurricane seasons were detrimental to oil and gas operations on the OCS. Effects included significant structural damage to fixed and floating production platforms (123 fixed platforms and 1 floating platform were destroyed and dozens more suffered significant damage) and significant damage to semi-submersible and jackup drilling rigs. Even though most of the approximately 3,000 OCS platforms that were exposed to hurricane force winds during these storms performed well, the Mineral Management Service (MMS) Gulf of Mexico Region (GOMR) is concerned about the platforms that suffered significant structural damage, as well as the potential for future damage to key energy infrastructure on the OCS.

As a result of significant damage and destruction caused by these hurricanes, MMS and the oil and gas industry have worked collectively to understand better the specific metocean conditions (winds, waves, surges, and current) that occurred during past hurricanes and to study the impact of these storms on the characterization of the Gulf of Mexico (GOM) metocean environment. Based on this better understanding, MMS and the oil and gas industry have updated the metocean criteria for use in assessing existing OCS platforms and related structures.

Accordingly, in May 2007, the American Petroleum Institute (API) issued Interim Guidance on Hurricane Conditions in the Gulf of Mexico (API Bulletin 2INT-MET) to replace the hurricane metocean conditions in the GOM presently contained in Section 2.3.4 of API Recommended Practice for Planning, Designing and Constructing Fixed Offshore Platforms—Working Stress

In an effort to reduce the potential for future damage, improve platform survivability, ensure structural integrity, and comply with the requirement of 30 CFR 250.900(a) that you must consider the specific environmental conditions at the platform location for existing platforms and related structures, the MMS GOMR hereby provides the following guidance:

Definition

Central Region and its adjacent transition regions means that area of the Gulf of Mexico seaward of the State-Federal boundary located between 90.5º W and 85.5 º W (see Section 3 of API Bulletin 2INT-MET).

Fixed Platform Assessment Initiators

The MMS regulation at 30 CFR 250.901(a)(4) requires that your fixed OCS platforms conform to the provisions of API RP 2A-WSD. API Bulletin 2INT-MET updates the hurricane metocean conditions in the GOM presently contained in Section 2.3.4 of API RP 2A-WSD. These changes significantly increase the environmental loading on some existing platforms. Under Section 1.9 of API RP 2A-WSD, these changes necessitate that you perform an assessment of these platforms to determine their continued fitness for purpose.

Therefore, by June 1, 2008, conduct an assessment of the fixed platforms identified in Section 2.2 of API Bulletin 2INT-EX. This applies to all platforms with an exposure category of L-1 or A-1 located in the Central Region and its adjacent transition regions (see definition above) or any other platform designated by the MMS GOMR.

Under Section 1.7 of API RP 2A-WSD, exposure categories are determined by the more restrictive level for either life-safety or consequences of failure. Section 1.7.2.a of API RP 2A-WSD describes the L-1 consequences of failure category, and Section 17.3 of API RP 2A-WSD describes the A-1 high assessment category as referring to those platforms that

1. Are major;
2. Have the potential for well flow of either oil or sour gas in the event of platform failure;
3. Where the shut-in of oil or sour gas production is not planned or is not practical;
4. Support major oil transport pipelines and/or storage facilities; or
5. Are designed for installation in water depths greater than 400 feet.

Based on these criteria, the MMS GOMR has determined that the following fixed platforms are either in the L-1 exposure category or the A-1 high assessment category:

1. Platforms that are subject to the Platform Verification Program (see 30 CFR 250.910), and any other platforms installed in water depths greater than 400 feet;
2. Platforms that produce or handle sour gas (H₂S concentrations greater than 500 parts per million);
3. Platforms located 10 miles or less from the coastline that store more than 2,000 barrels of liquid hydrocarbons at atmospheric pressure or with blanket gas;
4. Platforms located more than 10 miles from the coastline that store more than 5,000 barrels of liquid hydrocarbons at atmospheric pressure or with blanket gas;
5. Platforms that produce greater than 5,000 barrels of liquid hydrocarbons per day;
6. Platforms that have a liquid hydrocarbon throughput (production plus pipeline transport volume) greater than 15,000 barrels per day;
7. Platforms that produce greater than 25 million cubic feet of natural gas per day; and
8. Platforms that have a natural gas throughput (production plus pipeline transport volume) greater than 75 million cubic feet of natural gas per day.

Assessment of Fixed Platforms

Conduct the assessment of the identified fixed platforms by performing an Ultimate Strength Analysis using the methods described in Section 3.3 of API Bulletin 2INT-EX. You may also use other valid methods, if appropriate and defensible for the platform. In performing these assessments, substitute, for hurricane conditions, the metocean conditions derived from a valid site-specific study, or the more severe of either (a) the individual parameters for winds, waves, surges, and current indicated in API Bulletin 2INT-MET or (b) the individual parameters for winds, waves, surges, and current indicated in API RP 2A-WSD. Conduct any site-specific study of hurricane metocean conditions according to the guidance provided in Section 9 of API Bulletin 2INT-MET.

If you use the Linear Ultimate Strength Analysis method, make sure that the member and punching shear unity ratios are less than or equal to 1.0. Use a rational and defensible engineering approach when you use mean material strength instead of nominal material strength. If you use the Nonlinear Ultimate Strength Analysis method, make sure that the reserve strength ratio (RSR) is greater than or equal to 1.2, as described in Section 3 of API Bulletin 2INT-EX. If you use the Prior Exposure method, properly account for the platform’s orientation. Do not use this method to justify the assessment unless the measurements or calibrated hind-casts are specific to the platform’s weakest direction, and the platform survived the prior storm event with no significant damage.

Please be advised API has posted errata for API Bulletin 2INT-MET on their Internet website at http://www.api.org/Publications/addenda/add-ep.cfm.

Mitigation of Fixed Platforms

The acceptance criteria for a fixed platform assessment are described in Section 3.4 of API Bulletin 2INT-EX. If your structure meets the acceptance criteria, continue to operate within the conditions described in Section 3.5 of API Bulletin 2INT-EX. For fixed structures that do not meet the acceptance criteria, consider the guidance for mitigation as described in Section 3.4 and Section 5 of API Bulletin 2INT-EX.
Other Fixed Platforms

While API Bulletin 2INT-EX does not specifically define an assessment for platforms in the L-2 and L-3 exposure categories and the A-2 and A-3 assessment categories, you may consider some of these platforms as critical, and a risk assessment may be warranted if the platform is located in the Central Region or an adjacent transition region. Section C.2.3 of API Bulletin 2INT-EX provides guidance for this type of risk assessment for an L-2 structure.

Assessment of Floating Platforms

The MMS regulations at 30 CFR 250.901(a)(5) through (9) require that your floating OCS platforms conform to the provisions of various API recommended practices. These documents require the use of available statistical data and/or realistic statistical and mathematical models to develop the description of extreme environmental conditions. API Bulletin 2INT-MET updates the hurricane metocean conditions in the GOM for these documents. These changes significantly increase the environmental loading on some existing floating platforms.

Therefore, by June 1, 2008, conduct an assessment of all floating platforms identified in Section 2.2 of API Bulletin 2INT-EX. This applies to all platforms located in the Central Region and its adjacent transition regions (see definition above).

Conduct the assessment of these floating platforms using the three-step process described in Section 4.3 of API Bulletin 2INT-EX. Ensure that you complete all three steps for each platform. In performing these assessments, use, for hurricane conditions, the metocean conditions derived from a valid site-specific study. Conduct the site-specific study of hurricane metocean conditions according to the guidance provided in Section 9 of API Bulletin 2INT-MET.

The three steps of the assessment process for floating platforms are:

1. **Design level check** – This step is defined in Section 4.3.1 of API Bulletin 2INT-EX. The acceptance criteria for the design level check are described in Section 4.4.1 of API Bulletin 2INT-EX. If the platform does not meet the design level check acceptance criteria, immediately consider modifications to your hurricane and damage control procedures to mitigate the additional risk while manned.

2. **Survival check** – This step is defined in Section 4.3.2 of API Bulletin 2INT-EX. The acceptance criteria for the survival check are described in Section 4.4.2 of API Bulletin 2INT-EX. If the platform does not meet the survival check acceptance criteria, consider the guidance provided in Section 4.4.2 and Section 5 of API Bulletin 2INT-EX.

3. **Robustness check** – This step is defined in Section 4.3.3 of API Bulletin 2INT-EX. The acceptance criteria for the robustness check are described in Section 4.4.3 of API Bulletin 2INT-EX. There are no particular pass or fail criteria for this check; rather, the intent is to identify and evaluate critical components for overload that could cause structure failure in extreme


conditions. Use these results to manage the risk of the structure, such as possible areas for mitigation or limits for configuration changes.

Submittals

1. By November 1, 2007, submit a list of all of your L-1 exposure category platforms, A-1 assessment category platforms, and floating platforms in the Central Region and its transition areas, as described above, to the MMS GOMR. For each fixed platform, include the information listed in Attachment No. 1 to this NTL. For each floating platform, include the information listed in Attachment No. 2 to this NTL.

2. By June 1, 2008, prepare a report of the results of each of your platform assessments and submit it to the MMS GOMR. In each report, include a cover letter and summaries of the assessment process you followed, metocean conditions and loadings you used, and the engineering analysis (including relevant structural drawings, post-hurricane inspection reports for inspections you conducted under NTL No. 2005-G20, and model outputs) you performed. Also include a mitigation plan for each platform that did not meet the acceptance criteria referenced above that describes the actions you plan to take to address the deficiencies with a schedule of activities.

3. If you intend to make any major modifications or repairs to your platform because you do not meet the acceptance criteria referenced above, you must submit an application under 30 CFR 250.901(b) and obtain MMS approval before you perform the work. In your application, make sure you provide the information required by 30 CFR 250.905. In addition, pursuant to 30 CFR 250.910(c), any major modification or repair of a platform originally subject to the Platform Verification Program (PVP) is also subject to the PVP. Make sure that you comply with the requirements for design, fabrication, or installation verification (as appropriate) in 30 CFR 250.911 through 918.

Paperwork Reduction Act of 1995 Statement

The information collection referred to in this NTL provides clarification, description, or interpretation of requirements contained in 30 CFR 250, Subpart I - Platforms and Structures, and NTL - Hurricane Damage. The Office of Management and Budget (OMB) has approved the information collection requirements and assigned OMB Control Numbers 1010-0149 for Subpart I and 1010-0164 for NTL - Hurricane Damage. This NTL does not impose additional information collection requirements subject to the Paperwork Reduction Act of 1995.

Contacts

1. Submit all lists, reports, plans, and applications described in the Submittals section above in electronic format to

    Minerals Management Service
    Gulf of Mexico OCS Region
    Office of Structural and Technical Support (MS 5210)
2. Please contact Fung C. Hassenboehler of the MMS GOMR Office of Structural and Technical Support at (504) 736-2893 or at fung.chan@mms.gov if you have any questions regarding this NTL.

[original signed]

Lars T. Herbst  
Acting Regional Director

Attachments
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### OSTs Assessment Report for API Bull 2INT-EX - Floating Structures

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