

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

NTL No. 2009-G02

Effective Date: January 27, 2009
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NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS
LEASES AND PIPELINE RIGHT-OF-WAY HOLDERS
ON THE OUTER CONTINENTAL SHELF, GULF OF MEXICO OCS REGION

Ocean Current Monitoring

This Notice to Lessees and Operators (NTL) replaces NTL No. 2007-G17, effective May 7, 2007, and expired April 30, 2008.

Authority

Pursuant to 30 CFR 250.900(a) you must consider the specific environmental conditions at the platform location.

In accordance with 30 CFR 250.107(c) and (d), you must use the best available and safest technology whenever practical during all exploration, development, and production operations to avoid equipment failure that would have a significant effect on safety, health, or the environment.

In accordance with 30 CFR 250.901, you must meet the following standards when you plan, design, and construct OCS production platforms:

- API RP 2A-WSD, Planning, Designing, and Constructing Fixed Offshore Platforms – Working Stress Design
- API Bulletin 2INT-DG, Interim Guidance for Design of Offshore Structures for Hurricane Conditions
- API Bulletin 2INT-EX, Interim Guidance for Assessment of Existing Offshore Structures for Hurricane Conditions
- API Bulletin 2INT-MET, Interim Guidance on Hurricane Conditions in the Gulf of Mexico
- API RP 2FPS, Planning, Designing, and Constructing Floating Production Systems
- API RP 2RD, Design of Risers for Floating Production Systems and Tension Leg Platforms
- API RP 2SK, Design and Analysis of Station Keeping Systems for Floating Structures
- API RP 2SM, Design, Manufacture, Installation, and Maintenance of Synthetic Fiber Ropes for Offshore Mooring
- API RP 2T, Planning, Designing, and Constructing Tension Leg Platforms

Background

The goals of NTL No. 2007-G17 and its predecessors were to:

- Provide the necessary ocean current data needed for planning, designing, and operating mobile offshore drilling units (MODU's), floating production platforms, and their ancillary equipment (i.e., drilling risers, production risers, flowline and pipeline risers, tension leg platform (TLP) tendons, mooring systems).
- Provide the necessary ocean current data to evaluate drilling risers, production risers, TLP tendons, and mooring systems for fatigue.
- Ensure the sharing of ocean current data to develop a better understanding of ocean currents and bathymetry.
- Allow for the tracking of loop currents and eddy currents.

From the knowledge gained through implementation of NTL No. 2007-G17 and its predecessors, the Minerals Management Service (MMS) Gulf of Mexico OCS Region (GOMR) has determined that it is no longer necessary that you gather one year of site-specific ocean current data before you install a new floating production facility or that you monitor near-bottom ocean currents except in areas near steep topography.

However, the MMS GOMR has determined that it is necessary that you continue to gather ocean current data for MODU's and new and existing floating production facilities so that you can evaluate the potential for failure due to fatigue of drilling risers, production risers, flowline and pipeline risers, TLP tendons, and mooring systems.

Ocean Current Monitoring and Data Collection

Therefore, pursuant to the authority granted to the MMS Regional Supervisor in 30 CFR 250.282, the MMS GOMR hereby establishes and implements the following program to monitor ocean currents and share the data for *all floating MODU's and production facilities* operating or installed in water depths greater than 400 meters (1,312 feet).

A. Floating MODU's

1. For floating MODU operations, continuously monitor and gather ocean current data on a real time basis from near the ocean surface (~30 meters (100 feet) to ~1,000 meters (3,280 feet)) using an appropriate current monitoring device (CMD). At least once every 12 hours, report the data from the CMD to the National Data Buoy Center (NDBC) Internet website. Information on obtaining your user name and password from NDBC is included in Appendix No. 1 of this NTL. Use the criteria described in Appendix No. 2 of this NTL for your data submittal, including the monitoring equipment type, latitude and longitude (derived from a GPS signal), the OCS area/block, a time series of 20-minute averaged speed and direction, and other information. Update the latitude and longitude derived from the GPS signal at least every 20 minutes so that any measurements taken inadvertently while the MODU is in motion can be identified and removed from the NDBC data.

2. For floating MODU operations located within 10 kilometers (6.2 miles) north and 25 kilometers (15.5 miles) south of the Sigsbee Escarpment or near other areas of steep topography

and for which you suspect bottom currents with speeds 1.0 knot or greater, install a CMD near the ocean bottom (~100 meters (328 feet) from the seafloor). This CMD is in addition to the ocean surface monitoring system prescribed in Item No. 1 above. Record the data with at least one measurement every 20 minutes. At least once every 6 months (and when you bring the near-bottom CMD to the surface), retrieve and examine the data. Within 30 days after data retrieval, report the data to the NDBC Internet website.

3. If, during drilling operations, you measure currents with 24-hour averaged speeds greater than 1.0 knot at the maximum range of the CMD, monitor and gather all current data below the maximum range of the CMD while you conduct your normal remotely operated vehicle (ROV) operations or inspections. Within 30 days after data retrieval, report the data to the NDBC Internet website.

4. During rig moves or non-stationary operations such as drifting, do not report the current data. Notify the NDBC via email that your system will be out of service with an estimate of when the rig will be back on location. You do not need to notify the MMS GOMR that the CMD is out of service.

B. New and Existing Floating Production Facilities

1. For new and existing floating production facilities, continuously monitor and gather ocean current data on a real-time basis from near the surface (~30 meters (100 feet) to ~1,000 meters (3,280 feet)) using an appropriate CMD. At least once every 12 hours, report the data from the CMD to the NDBC Internet website. Information on obtaining your user name and password from NDBC is included in Appendix No. 1 of this NTL. Use the criteria described in Appendix No. 2 of this NTL for your data submittal, including the monitoring equipment type, latitude and longitude (derived from a GPS signal or manually input), the OCS area/block, a time series of 20-minute averaged speed and direction, and other information. You do not need to notify the MMS GOMR whenever the CMD is out of service.

2. For new and existing floating production facilities located within 10 kilometers (6.2 miles) north and 25 kilometers (15.5 miles) south of the Sigsbee Escarpment or near other areas of steep topography and for which you suspect bottom currents with speeds 1.0 knot or greater, install a CMD near the ocean bottom (~100 meters (328 feet) from the seafloor). This CMD is in addition to the ocean surface monitoring system prescribed in Item No. 1 above. Record the data with at least one measurement every 20 minutes. At least once every 6 months (and when the near-bottom CMD is brought to the surface), retrieve and examine the data. Within 30 days of data retrieval, report the data to the NDBC Internet website. You do not need to notify the MMS GOMR whenever the CMD is out of service.

3. In your deepwater operations plan (DWOP) for a floating production facility, include information on both the type of monitoring equipment and the depth range of the monitoring equipment you plan to use to collect ocean current information.

Exclusions

A. The MMS GOMR will consider for exclusion from near-surface (~30 meters (100 feet) to ~1,000 meters (3,280 feet)) current monitoring those MODU's and floating production facilities

located within 30 kilometers (18.6 statute miles) of an existing monitoring system as described in this NTL if (1) the water depth at the site does not vary by more than 20 percent from the water depth at the monitoring location, and (2) the owner of the monitoring system agrees with the dispensation and use of its data.

B. The MMS GOMR will consider for exclusion from near-bottom (~100 meters (328 feet) from the seafloor) current monitoring those MODU's and floating production facilities located within 10 kilometers (6.2 statute miles) of an existing monitoring system as described in this NTL if (1) the water depth at the site does not vary by more than 20 percent from the water depth at the monitoring location, and (2) the owner of the monitoring system agrees with the dispensation and use of its data.

C. To obtain an exclusion from conducting near-surface or near-bottom current monitoring, submit to the MMS GOMR Technical Assessment and Operations Support (TAOS) Section for review and approval a written request that includes:

1. The location and water depths of the existing monitoring system;
2. The location and water depths of the floating MODU or production facility to be excluded;
3. The water column depths that are covered by the existing monitoring system;
4. The maximum current velocities for all recorded depths at the existing site; and
5. A letter from the owner of the monitoring system granting permission to use the information.

D. After you have obtained two (2) years of near-bottom current data on a floating production facility, you may elect to discontinue monitoring the near-bottom currents as long as (1) the return rate was at least 70 percent and (2) the 10-year return interval current you calculated from the measurements is within 20 percent of that in the facility design standard. If you elect to discontinue near-bottom current monitoring, you do not need to notify the MMS GOMR.

Additional Current Data (Optional)

If you collect any current data not specified by this NTL, the MMS GOMR requests that you voluntarily report that data to the NDBC Internet website within 30 days of data retrieval.

Weather (Optional)

The MMS GOMR encourages you to supply other ocean and meteorological information to the NDBC. Wind, weather, and wave data will supplement the NDBC's information available to the offshore industry. If you are interested in supplying data, please notify the NDBC by e-mail.

Site Photo (Optional)

The NDBC includes photos of their monitoring stations on each Internet website post. If you would like to include a photo of your facility, please send an electronic copy to the NDBC.

Operational

A. Install and begin operating the current monitoring system as soon as practicable, but, for MODU's, no later than 7 days after arriving at the drilling site, and for floating production platforms, no later than 30 days after production begins. You do not need to notify the MMS GOMR when the CMD becomes operational.

B. The MMS GOMR encourages you to use the current data you obtain for your daily operations, forecasting, and hindcasting as necessary during all ongoing drilling and production activities.

C. Make sure that the technology and equipment you use for these current monitoring systems are optimized to avoid interference from risers, moorings, and thrusters. Additionally, design these systems so that they do not interfere with existing acoustic systems used on dynamically positioned vessels, such as position measurement systems or blowout preventer (BOP) controls.

D. Make sure that all current time series and data collected as part of your current monitoring activities are submitted to the NDBC Internet website. Further, make sure that all data meet the standards and protocols mutually agreed upon by industry, MMS, and the NDBC for current monitoring data gathering, reporting, dissemination, and QA/QC as described in Appendices Nos. 1 and 2 of this NTL. If you are currently conducting operations in water depths greater than 400 meters (1,312 feet), submit the information described in Appendix No. 1 of this NTL to the NDBC for each of your systems.

E. If you are unable to publish in a timely fashion the oceanographic data to the publicly available NDBC Internet website because of communications or equipment failure, do so as soon as communications are reestablished or the equipment has been repaired. You do not need to submit system failure information to the MMS GOMR.

F. If you find that data are corrupt or suspect, notify the NDBC immediately. NDBC will insert a flag on the web page to identify that the data are suspect. Make every effort to determine the validity of the data and rectify any situation that may be causing corrupted data.

G. In hurricane or other evacuation conditions, gather the oceanographic data where possible and publish it when activities have returned to normal. You do not need to provide emergency power or additional equipment to keep your current monitoring system operational during hurricane or other evacuation conditions.

Applications for Permit to Drill (APD's)

So that the MMS GOMR can ensure that you have specific operational plans to deal with current events, provide (pursuant to 30 CFR 250.417(e)) the following in each APD (Form MMS-123) you submit to the appropriate MMS GOMR District Office to drill a well using a floating MODU in water depths greater than 400 meters (1,312 feet):

A. A description of the specific current speeds that will cause you to implement rig shutdown and/or move off procedures; and

B. A discussion of the specific measures you will take to curtail rig operations and move off location when such currents are encountered.

You may use criteria such as current velocities, riser angles, watch circles, and remaining rig power to describe when these procedures or measures will be implemented.

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 alternate 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 (PRA) Statement

The information collection provisions referred to in this NTL are intended to provide clarification, description, or interpretation of requirements in 30 CFR 250, Subparts A, B, D, and I. The Office of Management and Budget (OMB) has approved the information collection requirements in these regulations and assigned OMB Control Numbers 1010-0114, 1010-0151, 1010-0141, and 1010-0149, respectively. This NTL does not impose additional information collection requirements subject to the PRA.

Contacts

A. If you have any questions regarding this NTL, please contact Mr. Russell Hoshman of the Technical Assessment and Operations Support Section by telephone at (504) 736-2627 or by e-mail at russell.hoshman@mms.gov.

B. Provide detailed information of your systems as described in Appendix No. 2 of this NTL to the NDBC at ndbc.mms.gom@noaa.gov. Other information and out-of-service notifications and reports can also be sent to this address.

C. Send all letters with system details and requests for exemption to:

Minerals Management Service
Regional Supervisor, Field Operations
Technical Assessment and Operations Support Section (MS 5220)
Attention: Mr. Russell Hoshman
1201 Elmwood Park Blvd.
New Orleans, Louisiana 70123-2394

[original signed]

Lars T. Herbst
Regional Director

Appendix No. 1 (Obtaining Your Internet ID)

The National Data Buoy Center (NDBC) will store and post the reported current data for MMS on its Internet website. You should contact the NDBC via e-mail at ndbc.mms.gom@noaa.gov and provide the following information for each of your locations. After you have submitted this information, the NDBC will issue an FTP Account ID, a Station ID, and GTS Routing Identifiers and will provide you with a password for access.

1. Operator Information

Operator Name

Operator URL (Optional, will be hyperlinked from NDBC website to Owner)

Name of Operator Contact

Phone Number of Operator Contact

E-mail address for future NDBC notification of outages and for MMS contact

IP address of FTP delivery server

2. Unique Station Information

Station Type (e.g., SPAR, TLP, SEMI, MODU, Mooring)

Platform/MODU/Project Name

OCS-G Block and Area (e.g., High Island - HI-334B)

OCS-G Lease Number

Latitude (deg min sec)

Longitude (deg min sec)

Datum used for Lat/Long

Water depth (ft)

3. Instrument Information (for *each* unit at your site)

Instrument ID or Serial Number

Instrument model (e.g., RDI 75 kHz BB)

Recovery time (real-time; recovered bi-annually, etc.)

Transducer depth (meters)

Coordinate system of data (beam, inst or earth)

Compass reference (True required)

Specify if the heading of the transponder is fixed. If fixed, specify if the actual compass value is used for orientation or if it is manually set.

Vertical Datum Reference – Degrees from vertical looking down (i.e., 0 degrees = downward, 90 degrees = horizontal, 180 degrees = upward)

Specify if the angle of the transponder is fixed and the tilt value is calculated when installed or if the tilt sensor value is used for orientation.

Number of bins

Bin size (meters)

Specify first bin depth (meters). Bin depth is assumed to represent center of bin.

Indicate if otherwise (top or bottom).

Time data reference (GMT required)

Number of sampling periods per hour

Specify sampling period (minutes).

Specify if clock time represents middle, beginning, or end of period.

List any obstructions such as risers, moorings, tendons, or umbilicals that may affect the ADCP information.

Specify any beams that have been taken out of service to accommodate obstructions.

Appendix No. 2 (MMS NDBC File Format)

The format is based on the RDI broadband ADCP binary format as described in the RDI broadband ADCP Technical Manual. The files must contain for each ensemble: a Header, a Fixed Leader, a Variable Leader, and Velocity Profile data as described in the Technical Manual. The velocity data must be stored in earth coordinates and include echo amplitude, correlation magnitude, and percent good field for all beams.

The MMS GOMR strongly encourages you to store individual ping data in beam coordinates on your local data acquisition computer for at least 180 days from date of retrieval. Individual ping data can be used to verify system integrity and for in depth analysis of current anomalies. In addition, make sure that an MMS/NDBC Leader data block (described below) accompanies each ensemble. In this data block, include ancillary data such as location of measurements, type of instrument, platform name, and operator. Existing RDI software is able to display the data from these files, although it will not display information within the MMS/NDBC Leader Block.

Convert narrowband RDI ADCP data to broadband binary format. For non-ADCP instruments, the owner can use an XML format specified by NDBC or the same binary format described above. In the case of single point instruments, the binary files would only include a single "bin" of data, and many of those fields such as echo amplitude would be blank.

MMS/NDBC Leader Data Format

| Binary Byte | Size (bytes) | Field | Description |
|--------------------|---------------------|---|---|
| 1-2 | 2 | MMS/NDBC Leader ID | MMS/NDBC Leader identification word (1861h) |
| 3 | 1 | MMS/NDBC version | Version number of the MMS/NDBC Leader data (01h) |
| 4-33 | 30 | Operator (e.g., Universal Oil Corp.) | Name of the ADCP operator (Null-terminated ASCII string) |
| 34-63 | 30 | Platform Name (e.g., Perseus Spar) | Name of the ADCP deployment platform (Null-terminated ASCII string) |
| 64-67 | 4 | Latitude (decimal degrees) | Nominal latitude of observations. Range: -90.0000 to +90.0000 (4-byte IEEE floating point) |
| 68-71 | 4 | Longitude (decimal degrees) | Nominal longitude of observations. Negative longitudes indicate western hemisphere. Range -180.0000 to +180.0000 (4-byte IEEE floating point) |
| 72-75 | 4 | Water depth (meters) | Nominal water depth at observations site (4-byte IEEE floating point) |
| 76-79 | 4 | Transducer depth (meters) | Depth below surface of the ADCP transducer head (4-byte IEEE floating point) |
| 80-99 | 20 | Reserved | User option |
| 100-119 | 20 | ADCP model (e.g., RDI 75 kHz BB) | Model of ADCP (Null-terminated ASCII string) |
| 120-126 | 7 | Transducer Serial No. | Not mandatory |
| 127-131 | 5 | Station Number | NDBC Station Identifier supplied by NDBC |
| 132 | 1 | Bad Beam Indicator | = to show all beams are good; Other number indicates bad or out-of-service beam location |
| 133-134 | 2 | Reserved | User option |

Submit the files using the following naming convention:

```
FILE NAME
421010200105120600.bin

Stat#nYYYYMMDDHm.bin
|   |   |   |   |   |   |
|   |   |   |   |   |   |   ADCP extension
|   |   |   |   |   |   | minute
|   |   |   |   |   |   | hour
|   |   |   |   |   |   | day
|   |   |   |   |   |   | month
|   |   |   |   |   |   | year
|   Instrument No. at that site (0, 1, ...)
Site ID assigned by NDBC (5 bytes)
```

NDBC will assign the Station Number after a request by the owner/installer of the ADCP's. Set the instrument number, *n*, to a value of "0" for the near-surface ADCP. If there is more than one ADCP located at the site, number them sequentially. Send the data to the NDBC FTP Internet website, comms.ndbc.noaa.gov. The site is password protected so the user will need to request a password and user ID from NDBC. Each owner will be assigned only one user ID and password, regardless of the number of sites they own.

The date and time contained in the filename should correspond to the start time of the data contained within the binary file, in GMT. All time references within the file should be GMT.

NDBC will retain all original binary files in their historical database.

You can enter latitude and longitude for the site included in the header manually for production platforms, but for MODU's, the data must be derived automatically from a GPS connected to the logging computer/ADCP.

When possible, transfer the data to NDBC at the end of each 20 minutes sampling period, although the NTL only specifies transmission every 12 hours.

Delayed Mode Data (Non-Real-Time or ROV Recovered Data)

Send delayed mode data (non real-time) using the same format and headers as you use for the real-time data. This information will be stored as "historic data." Reformat single point information to the same format as the ADCP data and submit it and store it in the same manner as you store delayed mode data. Alternatively, NDBC will accept the data in their XML format. See *MMS/NDBC Data File Format* section for more details.

ROV Monitoring

Should you acquire data during your ROV operations (whether required or voluntary), you may provide them in the same format and headers as the real-time data. Alternatively, NDBC will accept the data in their XML format. For required ROV monitoring, keep a copy of the data onboard the MODU as long as the drilling rig is working in that field.