

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

NTL No. 2005-G05

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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

Deepwater Ocean Current Monitoring on Floating Facilities

This Notice to Lessees and Operators (NTL) supersedes NTL No. 2005-G02, issued January 6, 2005. It specifies that you will report ocean current data to the National Oceanic and Atmospheric Administration (NOAA) National Data Buoy Center (NDBC) Internet website. The NDBC has agreed to receive, store, and redistribute the ocean current data for the Minerals Management Service (MMS). It provides information on obtaining a user ID and password for the NDBC Internet website and specifies the criteria for data submittal. It delays the implementation date of the NTL one month to April 30, 2005, and makes other technical changes.

Background

The MMS regulation at 30 CFR 250.904(c) requires you to make a thorough assessment of all design and operating environmental conditions expected to occur at the platform site over the life of the platform. The regulations at 30 CFR 250.107(c) and (d) require you to 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. The MMS regulation at 30 CFR 250.300(a) requires you to take measures to prevent unauthorized discharge of pollutants into the offshore waters.

Ocean current speeds now used by industry in the design, operation, and function of mobile offshore drilling units (MODU's) and floating production platforms and their ancillary equipment (i.e., drilling and production risers, tendons, mooring systems) may be underestimated. At some locations, 10-year loop current events have been exceeded. In certain instances, deeper ocean currents were not empirically measured. In other cases, underestimated current speeds were considered in designs. Recent incidents have demonstrated to the MMS Gulf of Mexico OCS Region (GOMR) a need for more site-specific data for use in hindcasting and forecasting ocean currents that may affect structural design, fatigue criteria, or daily operations.

Implementation

The MMS GOMR must ensure that you comply with the aforementioned regulatory requirements and that you consider the site-specific environmental conditions in the design of your OCS floating structures and in your daily operations. To accomplish this goal, accurate and up-to-date ocean current data must be accessible so that appropriate design and operating criteria can be established.

Therefore, pursuant to the authority granted to the MMS Regional Director in 30 CFR 250.203(o) and 30 CFR 250.204(s), 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. For 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 Acoustic Doppler Current Profile (ADCP) current monitoring system or comparable equipment. Mount the ADCP or comparable equipment as near the ocean surface as practicable. Adjust your system for maximum water penetration and then for maximum resolution. At least once every 12 hours, report the data from the ADCP to MMS via the publicly available 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.

2. For floating MODU operations in water depths greater than 1,100 meters (3,608 feet), install a current meter, preferably an upward-looking ADCP, near the ocean bottom (~100 meters (328 feet) from the seafloor). This current meter 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. Within 30 calendar days of data retrieval, report the data to MMS via the publicly available 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, the latitude and longitude, the OCS area/block, a time series of 20-minute averaged speed and direction, and other information.

3. If, during drilling operations, you measure currents with speeds greater than 0.75 knots at the maximum range of the ADCP or comparable equipment for more than 24 hours, monitor and gather all current data below the maximum range of the ADCP while you conduct your normal remotely operated vehicle (ROV) operations or inspections. Within 30 calendar days of data retrieval, report the data to MMS via the publicly NDBC available Internet website. Use the criteria described in Appendix No. 2 of this NTL for your data submittal, including the monitoring equipment type, the latitude and longitude, the OCS area/block, and other information.

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.

B. For planned floating production facilities

1. Prior to installing a floating production facility after April 30, 2005, collect at least one year of site-specific current data at the planned floating production facility location (see Exclusion B below if one year of data is not available for your planned facility). You may deploy a full water column mooring to collect current data from near the ocean surface (~30 meters (100 feet)) to near the bottom (~100 meters (328 feet) from the seafloor). On the mooring, install point current meters spaced no more than 500 meters (1,640 feet) apart, an ADCP array, or some combination of point current meters and ADCP's. Time average the data at least every 20 minutes. Within 30 calendar days of data retrieval, report the data to MMS via the publicly available 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, the OCS area/block, a time series of 20-minute averaged speed and direction, and other information.

You may use the data you collected during the drilling phase as part of your one year of site-specific current data. The one year of data does not need to be collected for 365 continuous days or at the same location as long as it is representative of different seasons and is collected within 30 kilometers (18.6 miles) of the facility site. For sites near steep topography (e.g., the Sigsbee Escarpment) or where the water depth varies by more than 20 percent between the monitor location and the planned facility site, the distance limit is 8 kilometers (5.0 miles) instead of 30 kilometers (18.6 miles).

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

3. If your full water column equipment fails before one year of data is collected, you may either continue your program until one year's data is collected, or you can request an exclusion from the MMS GOMR. To request an exclusion, submit to the MMS GOMR Technical Assessment and Operation Support (TAOS) Section for review and approval a written request that includes a full explanation of the equipment failure, the amount of data that has been collected, and any plans to collect additional data.

4. A full year of data is not required prior to initiating design. The MMS GOMR does not generally intend that current monitoring impede the installation of new facilities. However, if you complete your design activities before a full year of data has been collected, please be advised that you may need to make modifications if those data indicate currents that exceed design expectations.

C. For existing floating production facilities

1. For existing floating production facilities (those installed before March 31, 2005), 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 ADCP current monitoring system or comparable equipment. Mount the ADCP or comparable equipment as near to the ocean surface as practicable. Adjust your system for maximum water penetration and then for maximum resolution. At least once every 12 hours, report the data from the ADCP to MMS via the publicly available 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.

2. For existing floating production facilities located in water depths greater than 1,100 meters (3,608 feet), in addition to the ocean surface monitoring system prescribed in Item No. 1 above, install a current meter, preferably an upward-looking ADCP, to monitor continuously the near-bottom current (~100 meters (328 feet) from the seafloor) as follows:
 - a. Continuously record the near-bottom current speed and direction;
 - b. Once every 6 months, retrieve and examine the data. Also, if another monitoring station located within a 30-kilometer (18.6-mile) radius reports near-bottom currents greater than 1.0 knot for a 24-hour period or if models predict that such an event may have occurred at your facility site, retrieve and examine the data within 30 calendar days of the event;
 - c. Whenever average currents greater than 1.0 knot are measured for more than 24 hours by any component, immediately notify the MMS GOMR TAOS Section and install a full water column mooring that contains point current meters spaced no more than 500 meters (1,640 feet) apart, an ADCP array, or some combination of point current meters and ADCP's; and
 - d. Time average the data at least every 20 minutes. Within 30 calendar days of data retrieval, report the data to MMS via the publicly available NDBC Internet website. Record the data with at least one measurement every 20 minutes. If you use an ADCP array, make sure that the data are a time series of 20-minute averaged speed and direction. 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, and other information.

Additional Current Data

If you collect any current data not specified by this NTL, the MMS GOMR requests that you voluntarily report that data to MMS via the publicly available NDBC Internet website within 30 calendar days of data retrieval. If you do, please (1) time average the data at least every 20 minutes, (2) make sure that all ADCP data are a time series of 20-minute averaged speed and direction and, (3) 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, and other information.

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.

Exclusions

A. If you had a 75-kHz system on order or in use prior to September 30, 2004, that does not meet the provisions of this NTL, you may continue to use that ADCP system until it fails or until you find a current speed greater than 1.0 knot at the maximum range of your system. If your system is not capable of measuring currents near the seabed, the MMS GOMR may require you to install a current monitor capable of capturing near-bottom currents (within 100 meters (328 feet) of the seafloor). To obtain an exclusion, submit to the MMS GOMR TAOS Section for review and approval a written request that includes a description of the system including its operating range, a brief explanation citing your reasons for requesting the exclusion, and any plans to collect additional data.

B. If you plan to install a floating production facility before June 30, 2006, you may request an exclusion from collecting one full year of current data before you install the facility. To obtain an exclusion, submit to the MMS GOMR TAOS Section for review and approval a written request that includes a record of the ocean currents you have collected, a brief explanation citing your reasons for requesting the exclusion, and any plans to collect additional data.

C. After you have obtained two (2) years of data on floating production facilities from the near-bottom monitor or, if prescribed, the full water column monitoring equipment, with at least a 70 percent data return rate and with no currents with a speed greater than your facility design standard, you may request an exclusion from further monitoring of the near-bottom and mid-water currents. To obtain an exclusion, submit to the MMS GOMR TAOS Section for review and approval a written request that includes a record of the ocean currents during the past two (2) years and a brief discussion of your reasons for requesting the exclusion.

D. The MMS GOMR will consider for exclusion from current monitoring those facilities with at least five (5) years of continuous service in a field without any current-related issues or incidents and less than five (5) years of remaining service anticipated. To obtain an exclusion, submit to the MMS GOMR TAOS Section for review and approval a written request that includes the history of the ocean currents at your facility, proof and certification that you have had no current-related issues or incidents at your facility, and a brief discussion of your reasons for requesting the exclusion.

E. The MMS GOMR will consider MODU's and floating production facilities located within 30 kilometers (18.6 miles) of existing locations with monitoring systems as described in this NTL for exclusion from the ocean current monitoring prescribed in this NTL (except near-surface monitoring) 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. For sites near steep topography (e.g., the Sigsbee Escarpment), the exclusion distance is 8 kilometers (5.0 miles) instead of 30 kilometers (18.6 miles). To obtain an exclusion, submit to the MMS GOMR 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 MODU or 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.

Operational

A. 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. Additionally, pursuant to 30 CFR 250.904(c), use your site specific current data for the planning and design of production facilities.

B. 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 to interfere with existing acoustic systems used on dynamically positioned vessels, such as position measurement systems or blowout preventer (BOP) controls.

C. Make sure that all current time series and data collected as part of implementation of this NTL are submitted to MMS via the single publicly available 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 by April 22, 2005.

D. 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.

E. Should any part of your monitoring system fail or be taken out of service for maintenance or repair for a period of 14 days, immediately contact the MMS GOMR TAOS Section with a written explanation of the situation and an estimate of the time before the system is back on line. Make every effort to return the equipment to service as soon as practicable.

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. If you are unable to restore the system within 14 days from the time that you discover a data problem, contact the MMS GOMR TAOS Section immediately with a written explanation of the situation and an estimate of the time until the system is returned to normal.

G. In the future, it may be possible for the NDBC to send you automatic e-mail notifications when your system is down or not reporting. Please specify by e-mail to the NDBC if you would like to request this service.

H. 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 monitor your compliance with the provisions of this NTL and 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 you submit to the MMS GOMR to drill a well using a floating MODU in water depths greater than 400 meters (1,312 feet):

1. A description of the specific current speeds that will cause you to implement rig shutdown and/or move off procedures; and
2. 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.

General

A. Pursuant to 30 CFR 250.141, you may use alternate procedures and/or equipment to comply with the provisions of this NTL if you receive prior approval from the MMS GOMR TAOS Section.

B. Begin implementing the current monitoring and data reporting program established by this NTL no later than April 30, 2005. If you will be unable to implement the program fully by this deadline, notify the MMS GOMR TAOS Section with a full explanation of your reasons for being unable to implement the program in a timely manner.

C. The MMS GOMR will hold a workshop with industry to review new technologies, the state of the industry, and the applicability and continued need for this NTL sometime in early 2006.

D. This NTL expires on April 30, 2007.

Contacts

A. If you have any questions regarding this NTL, please contact Mr. Fred Hefren of the Technical Assessment and Operations Support Section by telephone at (504) 736-2924 or by e-mail at fred.hefren@mms.gov.

B. Provide your system out-of-service notifications by e-mail to o@mms.gov. If that address is not operable or available, send the notifications to Mr. Fred Hefren of the Technical Assessment and Operations Support Section by fax at (504) 736-2941 or by e-mail at fred.hefren@mms.gov.

C. Provide detailed information of your systems as described in Appendix No. 2 of this NTL to the NDBC at ndbc.mms@noaa.gov. Other information, out-of-service notifications and

reports can also be sent to this address. Send a copy of the detailed system information to o@mms.gov.

D. 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. Fred Hefren
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

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 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 1010-0049, 1010-0141, and 1010-0058, respectively. This NTL does not impose additional information collection requirements subject to the PRA.

[original signed]
Chris C. Oynes
Regional Director

Appendix No. 1 (Obtaining Your Internet ID)

The 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#nYYYYMMDDHHmm.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, ndbc1.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.