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MMS Announces Research Projects To Assess Effects Of Hurricane Lili On Offshore Facilities

The Minerals Management Service has awarded four new research contracts to Oceanweather, Inc., ABS Consulting, Global Maritime and Onshore Risk and Technology for projects to assess the impact on offshore facilities by Hurricane Lili. General details of the contracts are located at the end of this release.

In September 2002, Hurricane Lili, a full category four storm, moved through the U.S. Gulf of Mexico with extreme winds and large waves exceeding or matching the 100-year design criteria of the oil and gas facilities in her path. Of the 4,000 offshore oil and gas facilities in Federal waters of the Gulf, about 1,200 were in the path of Hurricane Lili.

MMS received numerous damage reports from a range of offshore facilities including mobile drilling rigs, offshore platforms, producing wells, sub-sea wellheads, topside systems (including wellheads and production and processing equipment), risers and pipelines systems that transport oil and gas ashore from offshore facilities. Remarkably, there were no fatalities or injuries to offshore workers and there were no fires nor major pollution caused by the hurricane. MMS attributes this in part to the tough design standards it has established through its regulations, as well as technological advances in damage prevention and the outstanding response of offshore operators to the hurricane.

To ensure the integrity of existing facilities, MMS issued a Notice to Lessees and Operators (NTL) requiring all offshore oil and gas facilities subjected to hurricane force conditions be inspected for structural damage, including possible damage below the water line. After the extent of damage is determined, as noted in the NTL, decisions are made on whether to repair or replace damaged components and systems, or abandon the facility. Repairs, replacement and abandonment must be done in accordance with industry standards and MMS regulations.

Assessment and analysis of the damage to offshore facilities as a result of Hurricane Lili, combined with the knowledge gained from the MMS Hurricane Andrew Research Program conducted in 1992, will provide an opportunity to further evaluate the reliability of current industry standards and MMS regulations in mitigating future damage to oil and gas facilities.

Additionally, several newer deepwater floating facilities were subjected to their maximum design criteria during Hurricane Lili, and their performance under these conditions will be assessed and may benefit the designs of future deepwater floating facilities.

The research projects conducted by MMS to assess damage associated with Hurricane Andrew led to many changes in design guidelines and standards used by the offshore industry. The new Hurricane Lili research initiative will allow an assessment of the effectiveness of these revisions under different storm conditions. The four projects will cover existing fixed platforms as well as the effectiveness of such standards for the newer, deepwater floating facilities to include mooring systems, sub-sea production systems, risers, manifolds and related equipment.

MMS has strengthened its platform design standards several times since the 1960's. Current design standards require industry to design facilities to withstand 100-year storm criteria. Nonetheless, the extreme winds, currents and wave loads placed on some of the older and newer facilities in the Gulf during Hurricane Lili resulted in failures and extended damage. Information on the performance of these facilities during Hurricane Lili interests MMS since some were designed under older guidelines where others, especially the newer deepwater facilities, were designed under current standards.

The following Hurricane Lili research projects are being funded through MMS's Technology Assessment & Research Program:

1.) **A Hind-cast Study for Wind, Waves and Currents – Oceanweather, Inc., Cos Cob, Connecticut** - The intent of this study is to develop a consistent set of data to be used in the analysis and assessment of the performance of offshore facilities that were damaged or for facilities that were not damaged, but experienced hurricane force conditions. The purpose is to gain insight into why some failed while others did not and to see if any regulatory changes are deemed necessary.

2.) **Evaluation Study for Fixed Steel Jackets - ABS Consulting, Houston, Texas** - To determine the performance of offshore steel jackets during Hurricane Lili and to see if changes in industry standards and MMS regulations as a result of the Hurricane Andrew Projects were effective or if they need to be further revised.

3.) **Assessment of Deepwater Floating Production Facilities – Global Maritime, Houston, Texas** - To assess the performance of the newer types of facilities, i.e. SPARS, and TLPs, subject to actual hurricane conditions and to see if current standards and guidelines are sufficient.

4.) **Assessment of Drilling Rig Failures - Offshore Risk and Technology, Houston, Texas** - To asses damage to drilling rigs, i.e. MODU and Jack-up Facilities, to see if additional mitigating conditions might prevent such failure in the future.

MMS's Technology Assessment and Research Program was established in the 1970's to ensure that industry operations on the Outer Continental Shelf incorporate the use of the Best Available and Safest Technologies (BAST), as subsequently required through the 1978 Outer Continental Shelf Lands Act amendments.

MMS is the federal agency in the U.S. Department of the Interior that manages the nation's oil, natural gas, and other mineral resources on the Outer Continental Shelf in federal offshore waters. The

agency also collects, accounts for, and disburses mineral revenues from federal and American Indian leases. These revenues totaled over $6 billion in 2002 and nearly $127 billion since the agency was created in 1982. Annually, nearly $1 billion from those revenues go into the Land and Water Conservation Fund for the acquisition and development of state and federal park and recreation lands.

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MMS Internet website address: **http://www.boem.gov**