Shell Oil and NOAA Sign Agreement to Enhance Meteorological and Oceanographic Observations in the Gulf of Mexico

On Wednesday, February 13 2008 VADM Conrad C. Lautenbacher, U.S. Department of Commerce, Undersecretary of Commerce for Oceans and Atmosphere and the National Oceanic and Atmospheric Administration (NOAA) Administrator and Mr. John Hofmeister, President of Shell Oil Company signed a Collaborative Agreement to enhance meteorological and oceanographic observations in the Gulf of Mexico.

Shell Oil will acquire and install sensor packages on five off-shore platforms and three near shore stations. NOAA will provide in-kind technical expertise in High Frequency Radar (HFR) and in data formatting, data distribution, and quality assurance and control of new data.

This partnership is envisioned as a long-term collaboration for the collection, processing and distribution of atmospheric and oceanographic data as part of the on-going development of the U.S. Integrated Ocean Observing System (IOOS). The goal of this partnership is to advance observational quantity, quality and diversity to meet shared interests in improving operational forecasts and understanding of the Gulf of Mexico environment.

This agreement goes above and beyond current oil and gas industry observing and data sharing requirements set forth by the Department of Interior's Minerals Management Service. Shell Oil is trailblazing new and innovative approaches to ocean and atmospheric observation and industry-government partnerships. NOAA's National Ocean Service (NOS) and National Weather Service (NWS) share responsibility for this partnership: the IOOS program is the overall project manager and the National Data Buoy Center is the technical lead.

Project List:

1. Upgrade weather stations on 5 Shell Tension-Leg Platforms (TLP) to include GOES transmission and battery backup. Currently these platforms are powered down and evacuated approximately 3 days before a projected storm. At the time of evacuation communications are shut down. GOES transmission and battery backup will enable delivery of meteorological data to the National Weather Service (NWS) global telecommunications system at the onset of a storm and during evacuations and is a critical step forward in ensuring the flow of in-situ weather information when it matters most. The continuous flow of these data in the days leading up to and during the onset of tropical storm and hurricane conditions will enable NOAA forecasters to better evaluate storm intensity, monitor changes in trends, and assess the accuracy of forecasts and warnings as the storms approach the coast. The forecast impacts will be especially important for convective storms that develop over the Gulf of Mexico and nearby Coastal Regions. Such storms not only pose a threat to operations on the rigs, but are also a significant weather hazard for coastal communities. Target completion: December 2008

2. Install, collect and share meteorological information from two new Shell Oil continental-shelf locations off the Louisiana coast. Currently, there are no meteorological packages (wind speed/direction, barometric pressure and air temperature) at these Shell sites and no existing NOAA observations. The addition of the two new Shell stations in Louisiana's coastal waters will help fill gaps in the observing network in the western Gulf of Mexico. These stations will provide the "ground truth" necessary to capture the local effects of the continental shelf and marine-coastal interface, enabling NOAA forecasters to improve forecast and warning specificity and accuracy. Target completion: April 2008.

3. Upgrade existing instrumentation to include the collection of wave data, and the transmission of Acoustic Doppler Current Profile (ADCP) data through GOES on one Shell Oil TLP located off the Louisiana coast. This upgrade will enable the reliable and routine supply of oceanographic information through established NOAA communication paths. ADCP data can be assimilated into operational ocean circulation models. Although still years away, wave data are ultimately expected to improve forecasts of total water levels on landfall. The sharing and distribution of these reliable, real-time observations also improves the safety and efficient operation of the marine industry. Commercial and recreational fisherman use this information to validate the forecasts and plan their voyages, and tug and towing operations use the information to calculate transit times to save on fuel costs. Waves data may also be useful for coastal restoration efforts in Louisiana. Target completion: June 2008

4. Collect ocean heat measurements of upper thermocline from one of the Shell Oil TLPs. Although thermistor technology is not new, the installation of thermistor strings on a fixed oil rig platform to a depth of 100m and without the use of a diving team is novel. NOAA's National Weather Service is exploring ways to use ocean current data (surface or subsurface) in ocean models. Research to operations transition efforts will be aimed at developing service products (nowcasts), as well as potential ways to incorporate these data into ocean models. Target completion: Fall 2008

5. Install High-Frequency Radar (HFR) bistatic transmitters off the Texas coast to expand ocean surface current measurements. The expansion and increase of the number of current measurements along the Texas (Galveston) coast will be integrated with local radars (funded by the Texas General Land Office and operated by Texas A&M) and delivered to the national server at NOAA's National Data Buoy Center for use by NOAA Office of Response and Restoration Hazmat, US Coast Guard search & rescue and other applications. Target completion: Spring 2009.

6. Conduct a feasibility study to assess the scientific value of installing an atmospheric microwave profiler on a Shell TLP. Atmospheric profiler data could impact model performance for depicting timing, position, and intensity of the formation of storm centers over the Gulf. NOAA estimates that potential profiler data could result in as much as 30% improvement in model performance for short term (12-24 hr) forecasting of these episodic significant weather events. This data would also be useful in modeling for longer term predictions of cyclones developing in the Gulf of Mexico and affecting the Gulf Coast and the Eastern Seaboard. The rate at which the winds change with height (wind shear) is a major factor in tornado development. Profiler data from the Shell platforms will give forecasters an entirely new data source to observe wind shear and thus improve the quality of tornado watches and warnings in coastal areas. Target completion: Spring 2009.

Mr. John Hofmeister, President of Shell Oil Company and VADM Conrad C. Lautenbacher, U.S. Department of Commerce, Undersecretary of Commerce for Oceans and Atmosphere the National Oceanic and Atmospheric Administration (NOAA) Administrator