

## **ENVIRONMENTAL STUDIES PROGRAM: Ongoing Studies**

**Region:** Headquarters

**Planning Area(s):** Western, Central and Eastern Gulf of Mexico

**Title:** A Study to Improve Oil Spill Risk Analysis in the Gulf of Mexico  
Using a Multi-model Approach

**BOEM Cost:** \$120,000

**Period of Performance:** FY 2012-2014

**Conducting Organization(s):** Naval Research Lab (M12PG00030)

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### **Description:**

#### Background:

The Bureau of Ocean Energy Management (BOEM) is responsible for analysis of potential oil-spill impact to the environmental resources prior to a lease sale for oil and gas exploration in the Gulf of Mexico Outer Continental Shelf (OCS). To estimate the probability of potential oil spill contacts with environmental resources in the Gulf of Mexico OCS, the high-resolution gridded surface current and wind products in the Gulf of Mexico are needed to drive the oil-spill trajectory model. Currently, the Bureau's Oil Spill Risk Analysis (OSRA) model relies on the surface currents generated by one of the Gulf of Mexico circulation models. The deterministic approach with one set of surface current and wind input to the OSRA model could be improved by incorporating several sets of input from different proven ocean models to run the OSRA model, as the ocean model output might be subject to uncertainty in surface winds from various atmospheric re-analysis products.

#### Objectives:

The objective of this study is to provide more accurate information for the BOEM on oil spill risk management and contingency planning in the Gulf of Mexico.

### **Importance to BOEM:**

This study proposes a multi-model approach by conducting ensemble OSRA model runs that include different sets of surface currents simulated by other well-validated Gulf of Mexico ocean circulation models, and their corresponding wind forcings. The outcome of this study will improve the accuracy of the oil spill risk analysis in projected areas of OCS operations. The method developed for this study could be employed in other OCS Regions.

**Current Status:** The contract was awarded on 7/23/2012. The post-award meeting was held at Herndon on Sep 7, 2012.

**Final Report Due:** Aug 1, 2014

**Publications:**

**Affiliated Web Sites:**

**Revised Date:** Sep. 11, 2012

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[http://www.data.boem.gov/homepg/data\\_center/other/espis/espisfront.asp](http://www.data.boem.gov/homepg/data_center/other/espis/espisfront.asp)