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BOEMRE Releases Study on Incorporating Climate Effects into Oil-Spill Risk Analysis

WASHINGTON – The Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) today released a new report evaluating how climate change may affect the environmental conditions measured and used in mathematical modeling for oil-spill trajectory analysis in the Arctic region. Key findings from the study include recommendations on the scientific methodology to use in explaining recent, rapidly changing Arctic conditions.

"As we make decisions regarding potential energy development in the Arctic, we need the best scientific data available to understand the impact of the changing climate," said BOEMRE Director Michael R. Bromwich. "This study will help improve our computer modeling and analyses and adds to the growing body of research regarding effects of climate change on the Arctic marine environment."

The two-year study included a literature review of the most current oceanographic knowledge available on the Arctic, particularly with respect to the Beaufort and Chukchi Seas, and focused on the effects of climate change on sea ice, circulation, river discharge, and other environmental conditions in the Alaska Arctic. The report includes a summary of results and feedback from leading oceanographic and atmospheric scientists who attended a three-day workshop held in March 2011 as part of the project.

The report recommends that BOEMRE organize a data archive that includes information from national, international and industry sources for atmospheric, sea ice and oceanic conditions in the U.S. Arctic in order to document major environmental changes. Other recommendations include that the agency conduct analyses to determine how the expected path of a hypothetical oil spill may change with respect to changes in climate variability; and run multiple hindcast models using statistics over a five-year period to see the impact of the different models on movement of a hypothetical oil spill. BOEMRE uses hindcasting for oil-spill trajectory analyses when making decisions regarding lease sales and uses the analyses in other *National Environmental Policy Act* (NEPA) documents.

Ocean current patterns in the Arctic, especially in near shore regions, are strongly influenced by factors such as winds, precipitation and evaporation, river runoff and sea ice coverage. Rapid changes in any of these could lead to alterations of the currents.

Funded by BOEMRE and conducted by Science Applications International Corporation (SAIC), the report, *Evaluation of the Use of Hindcast Model Data for Oil-Spill Risk Analysis (OSRA) in a Period of Rapidly Changing Conditions*, is available at:

<http://www.gomr.boemre.gov/PI/PDFImages/ESPIS/4/5118.pdf>

BOEMRE funds approximately \$30 million per year for scientific studies in the Gulf of Mexico, the Atlantic, the Pacific, and the Arctic and is responsible for regulating energy and marine minerals activities on the 1.7 billion acres of U.S. offshore area on the OCS. As part of this national program, the Alaska Region manages research in physical oceanography, biology, ecology and the social sciences. For information on the BOEMRE Environmental Studies Program, go to <http://www.boemre.gov/eppd/sciences/esp/index.htm>

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