

BOEM ENVIRONMENTAL STUDIES PROGRAM: Ongoing Studies

Study Area(s): Beaufort Sea, Chukchi Sea

Administered By: Alaska OCS Region

Title: Oil-Spill Occurrence Estimators for the Alaska Outer Continental Shelf (AK-16-04)

BOEM Information Need(s) to be Addressed: The Oil-Spill-Risk Analysis (OSRA) is a cornerstone to regional EISs, EAs, and oil-spill contingency planning. Oil-spill issues constitute a substantial portion of public comments submitted on sale or development EISs in the Alaska OCS Region. This study is necessary to develop oil spill occurrence estimators for NEPA analyses for oil and gas lease sales or development projects in the 2017-2022 time period, concurrent with the next BOEM Five-Year Program. The project will incorporate fault-tree spill occurrence estimators into NEPA analyses for activities in the Arctic.

Total Cost: TBD

Period of Performance: FY 2017-2022

Conducting Organization: TBD

BOEM Contact: TBD

Description:

Background: The OCS spill occurrence rates used in non-Arctic BOEM NEPA analyses are based on historical platform, pipeline or tanker crude oil-spill rates, almost entirely from the Gulf of Mexico and Pacific OCS. For analyses in the Arctic since 2002, the BOEM Alaska OCS Region has incorporated a fault-tree approach, which considers 1) differences in oil-spill occurrence factors between the Arctic and Gulf of Mexico OCS and 2) Arctic-specific factors. Recent examples of such analyses include:

Bercha Group, Inc. 2014. Updates to Fault Tree Methodology and Technology for Risk Analysis Chukchi Sea Sale 193 Leased Area. OCS Study BOEM 2014 -774. Anchorage, AK: USDO, BOEM, Alaska OCS Region. 109 pp.

Bercha Group Inc. 2013. Updates to Fault Tree for Oil Spill Occurrence Estimators, Update of GOM and PAC OCS Statistics to 2012. OCS Study BOEM 2013-0116. Anchorage, AK: Prepared by Bercha International Inc. for USDO, BOEM, Alaska OCS Region. 35 pp. <http://www.boem.gov/2013-0116/>.

Bercha, F.G. 2011. Summary Final Report Alternative Oil Spill Occurrence Estimators for the Beaufort and Chukchi Seas - Fault Tree Method. OCS Study BOEMRE 2011-030. Anchorage, AK: Prepared by Bercha Group, Calgary, Alberta, for USDO, BOEMRE, Alaska OCS Region. 48 pp. <http://www.boem.gov/BOEM-Newsroom/Library/Publications/2011/2011-030.aspx>.

Objectives:

- Update Gulf of Mexico and Pacific OCS historical oil spill statistics.
- Obtain updated fault tree spill occurrence rates and confidence intervals for NEPA analyses for any Arctic OCS Lease Sales or for OCS offshore oil and gas developments during the 2017-2022 Five-Year Program.

Methods: This study will: 1) review and assimilate oil-spill occurrence reports, data and geohazard data from alternative sources and locations as needed to update Gulf of Mexico and Pacific OCS historical data; 2) use these data together with measures of spill size and frequency variance to run the Monte Carlo fault tree model with these measures of variance; 3) provide updated fault tree analyses for Arctic oil and gas lease sales based on BOEM-supplied exploration and development scenarios, generating life-of-field oil spill occurrence rates and indicators; 4) provide additional fault-tree analyses as needed for site-specific oil and gas developments in the Arctic, taking into account site-specific geohazards and generating life-of-field occurrence indicators; 5) provide a formal report documenting each analytical or fault-tree update, and 6) provide professional support to BOEM in regard to statistical issues of occurrence rates and estimator(s) related to this study and its results.

Current Status: Planned new start

Final Report Due: TBD

Publications Completed: None

Affiliated WWW Sites: <http://www.boem.gov/akstudies/>

Revised Date: August 2016

ESPIS: Environmental Studies Program Information System

All *completed* ESP studies can be found

here: http://www.data.boem.gov/homepg/data_center/other/espis/espisfront.asp