Responding to Oil Spills in Arctic Marine Environments

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Marine Board Spring 2013 Meeting
10 April 2013

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine
National Academy of Sciences
National Academy of Engineering
Institute of Medicine
National Research Council

Statement of Task

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Assess current state of the science regarding oil spill response and environmental assessment in the Arctic.

1) **Scenarios**. Identify potential oil spill "hot spots" in U.S., adjacent waters.

2) **Preparedness**.
   - **Describe anticipated operating conditions,** evaluate the state of hydrographic and charting data for higher risk areas.
   - Assess **infrastructure, manpower, training**
   - Identify **avenues for participation**, communication with indigenous communities, regional governmental entities
   - Build on existing agreements, **id gaps for international cooperation** in establishing locations for incident command management, staffing, supplying oil spill response infrastructure

Statement of Task

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3) Response and Clean Up.

- Assess utility of **technologies** to detect, map, track and project **spill trajectories** under anticipated operating conditions

- Evaluate **effectiveness of oil dispersal, removal, and recovery technologies** under several criteria

- Assess **response and rehabilitation potential for separating and recovering spilled oil from water, ice, rocks, and sediment,** including fate and effects of unrecovered oil left to biodegrade and weather in Arctic environments.

4) Strategies for Establishing Environmental Baselines for Spill Response Decisions.

- Characterize types of **baseline information** needed,
- Evaluate **pre-spill strategies,**
- Identify additional **protection measures**, and
- Identify **sampling and monitoring priorities**.

Committee / Staff

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Committee

Martha Grabowski (Chair) - Le Moyne College/Rensselaer Polytechnic Institute
Tom Coolbaugh - ExxonMobil Research and Engineering
David Dickins - DF Dickins and Associates, LLC
Richard Glenn - Arctic Slope Regional Corporation
Kenneth Lee - Fisheries and Oceans Canada
Lee Majors - Alaska Clean Seas
Mark Myers - University of Alaska, Fairbanks
Brenda Norcross - University of Alaska, Fairbanks
Mark Reed - SINTEF
Brian Salerno - BIMCO
Robert Suydam - North Slope Borough
JimTiedje (NAS) - Michigan State University
Mary-Louise Timmermans - Yale University
Peter Wadhams - Cambridge University

Staff

Deborah Glickson, *Senior Program Officer*
Lauren Brown, *Research Associate (PRB)*
Heather Chiarello, *Senior Program Assistant*

Input, Workshops

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NRDA workshops

- Kotzebue (Sept), Barrow (Nov 2012)

Meeting 1 Dec 2012

- Bias, Conflict, SOT
- Open Session
  - Study Sponsors
  - Other NRC Board Liaisons
  - Fran Ulmer, Chair U.S. ARC

Meeting 2 4-5 Feb 2013

- *Kulluk* Incident
- Arctic ERMA
- Charting, Hydro Data
- Commercial Shipping
- Alaska Maritime Industry
- Field Studies

Meeting 3 Fairbanks 3/13

- Physical Conditions: Sea ice, Physical Oceanography, Meteorology,
- Physical Conditions: Permafrost, Geochemistry, Coastal Erosion
- Biological Productivity & Sensitivity :Upper and Lower Trophic
- Technology, Baseline Data
- Oil Spill Response in Arctic
- Community Perspectives

Meeting 4 June 18-19, 2013

- Environmental impacts
- NGO Perspectives
- Gaps and Shortfalls

Draft Schedule

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2012

- Meeting 1: December 17-18, 2012

2013

- Meeting 2: February 4-5, 2013
- Meeting 3: March 19-21
- Meeting 4: June 18-19
- Meeting 5: September 17-18 (writing only)
- Submit draft report for review - Fall
- Committee responds to review - Winter

2014

- Report delivery - Spring
- Dissemination - Spring and Summer