

ARCTIC OIL POLLUTION RESEARCH AND DEVELOPMENT

Workshop report

BODØ, NORWAY
3 JUNE 2019



EMERGENCY PREVENTION,
PREPAREDNESS AND RESPONSE

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Arctic oil pollution research and development Workshop report

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Cover photograph

Godafoss accident, Rune Bergstrøm, Kystverket

1. INTRODUCTION

1.1 BACKGROUND

In 2017, the EPPR and the U.S. Department of the Interior's Bureau of Safety and Environmental Enforcement (BSEE) hosted a workshop to share information and discuss the latest advances in oil spill response technology and best practices relevant to the Arctic region.

Both the U.S. interagency and international R&D communities recognized this workshop as a successful first step towards building a better platform for sharing and advancing efforts to enhance oil spill response.

At the second annual meeting of the EPPR in December 2018 in New Orleans, Norway offered to hold a one-day forum at EPPR I in June 2019 to discuss next steps specific to international Arctic R&D collaboration. This workshop was held June 3, 2019 in Bodø, Norway and is the subject of this report. A planning group lead by Canada and Norway held several teleconferences and prepared the program for the workshop.

1.2 PURPOSE

The purpose of the workshop was to address the Goals and Objectives approved by the EPPR. The goal was to exchange information on oil spill response research for Arctic and other cold water environments being conducted across the globe. The Objectives were to:

- Summarize R&D by participating states and organizations focused on the fate and behavior of spilled oil in cold water and ice environments
- Identify and discuss strategies, plans and knowledge gaps related to oil spill response focused on non-mechanical recovery strategies
- Explore joint plans and fields for research opportunities

The workshop did not focus on oil spill response technology (e.g. existing and newly developed oil spill response equipment)

1.3 STRUCTURE OF MEETING

The workshop was chaired by Kent Lien from the National Energy Board of Canada and Rune Bergstrøm of

the Norwegian Coastal Administration. The workshop delegates were welcomed by Rune Bergstrøm. Kent Lien reviewed the agenda (annex 1) and initiated a round table presentation of the delegates (see annex 2 for list of participants). The country presentations were held in alphabetical order. Following the presentations, the workshop split in three groups which answered four discussion questions relating to the way forward for cooperating on R&D in the EPPR. The work in groups was summarized in a plenary session and there was discussion on the way forward.



Godafoss accident, 2011, Kystverket

2 PRESENTATIONS

The presentations summarized R&D by member states and focused on the fate and behavior of spilled oil in cold water and ice environments. The states of Canada, Kingdom of Denmark, Norway and the USA gave presentations. In addition, the Norwegian based independent research organization SINTEF gave a presentation of their research on the topic. The presentation slides are shared on EPPRs SharePoint site.

2.1 COUNTRY PRESENTATION – CANADA

Presented by Dr. Kenneth Lee, National Science Advisor for Oil Spill Research, Preparedness and Response at Fisheries and Oceans Canada.

Title: Arctic Oil Pollution Research & Development Activities: Canada

2.2 COUNTRY PRESENTATION – KINGDOM OF DENMARK

Presented by Cdr Nils Westergaard at the Joint Arctic Command.

Title: Oil Spill Research & Development – How to counter and prepare for the task within the Arctic Region

2.3 COUNTRY PRESENTATION – NORWAY

Presented by Rune Bergstrøm, Senior Adviser at the Norwegian Coastal Administration.

Title: Research and Development – Norwegian Coastal Administration

2.4 COUNTRY PRESENTATION – UNITED STATES

Presented by CAPT Kirsten Trego of the U.S. Coast Guard and Doug Helton of the National Oceanic and Atmospheric Administration (NOAA).

CAPT Kirsten Trego: Oil Pollution Research and Development: The United States Approach

Doug Helton: State-of-the-Science of Dispersants and Dispersed Oil in U.S. Arctic Waters

2.5 SINTEF PRESENTATION

Per S. Daling, Senior Research Scientist at SINTEF delivered two presentations. The titles were:

Examples from recent R&D within Oil Spills at SINTEF in Norway and Behaviour, Fate, Toxicity and Response Options for “New Generation” of Low Sulphur Marine Fuel Oils.



Photo by Linnea Nordström

3 GROUP WORK AND PLENARY DISCUSSION

The round table and plenary discussion was organized as group work where the participants were divided into three groups. Eleven workshop discussion questions (Annex 4.3) had been distributed ahead of time along with the agenda. Due to time restrictions, four of these questions were prioritized and handed out in the workshop. All groups answered all four questions and the answers were then presented from each group in a plenary session. The four questions were:

1. What do we need to know from a science perspective to most effectively influence or make regulatory changes regarding oil spill prevention, preparedness and response?
2. How do we increase cooperation and collaboration in research activities?
3. How do we increase cooperation and collaboration in regulatory development?
4. How does the EPPR specifically move forward with the results of the workshop?

The group's answers are summarized in the following sections and are based on the original notes compiled by the groups. The answers have been edited somewhat for clarity and consistency but for the most part, have been left as is to capture what was communicated in each group's notes.

3.1 WHAT DO WE NEED TO KNOW FROM A SCIENCE PERSPECTIVE TO MOST EFFECTIVELY INFLUENCE OR MAKE REGULATORY CHANGES REGARDING OIL SPILL PREVENTION, PREPAREDNESS AND RESPONSE?

NEEDS ON RESEARCH TOPICS

- There is a need for increased knowledge on environmental consequences
- We need to establish a timeframe for in-situ burning

- Better process to develop a list of approved countermeasures
- Show which measures are most cost-effective and what gives the greatest environmental benefit
- Ensure that knowledge on dispersants are based on good science to facilitate public approval of dispersant use
- We need better data in order to better impact policy, and we should work with operators to disclose their data

GENERAL REQUIREMENTS FOR RESEARCH

- Share research internationally to reach broader consensus and credibility
- Increased level of transparency in the research process and call for peer review
- Invite and encourage scientists to get more involved in exercises to have them more aware of operations and “end-users”

NEEDS REGARDING DISSEMINATION OF RESEARCH

- There is a need to communicate better to the public and to regulators and to translate results to a more common language
- There is a need to communicate the science to the regulators in a way that makes it readily available and easily digestible to help impact policy
- There is a need to create better base level of education of the public regarding risk and the regulatory process. We need to ensure that we reach the right audience with applicable stakeholders, for example to communicate to the public what we are willing to accept as risk regarding recovery time for impacted resources

3.2 HOW DO WE INCREASE COOPERATION AND COLLABORATION IN RESEARCH ACTIVITIES?

IDENTIFYING AND AGREEING ON AREAS SUITABLE FOR INCREASED COOPERATION

- Member states should note the areas where they need collaboration
- The issues identified should be big enough to foster collaboration
- For example:
 - Collection of data, finding gaps, and then cooperating to close these gaps
 - Share information on planning for research facilities and coordinating activities with field trials.

HOW TO ACHIEVE SUPPORT FOR INCREASED COOPERATION

- Leverage EPPR to develop inclusive conference on oil spill research
- Bring attention to the needs for the scientific community by initiating a consensus document from the Arctic Council showing the needs within the R&D community.

ORGANIZATION OF INCREASED COOPERATION

- Consider testing a new model for a broader Trans-Arctic knowledge of current and proposed research, for example the US Interagency Coordinating Committee on Oil

- Pollution Research (ICOPR) model or an extended version of Environment and Climate Change Canada's annual AMOP Workshop
- Select a topic for an EPPR-workshop, discuss the topic thoroughly, and identify the most important challenges to address in the future.
- Invite each other to exercises and have researchers at some exercises

3.3 HOW DO WE INCREASE COOPERATION AND COLLABORATION IN REGULATORY DEVELOPMENT?

HOW SHOULD WE WORK TO ACCOMPLISH THIS?

- Scientists and authorities/regulators need to cooperate
- It is important to work across the working groups in the Arctic Council
- We need to find ways to influence policy makers (e.g. International Maritime Organization (IMO)) by providing a white paper from the Arctic Council that identifies the issues and provides recommendations
- Condense the recommendations down to a consumable approach for political leadership, prioritizing those recommendations that best relay what the scientific community conclude as most emergent and most actionable.

SHARING OF REGULATIONS

- Share the regulations in each country, describing how they work and why they are put in place. Regulations regarding use of dispersants were especially discussed. It was proposed that each nation give a summary of their approach and policies regarding use of dispersants.
- Sharing of regulations is mostly needed when countries share borders and potential for transboundary consequences

HARMONIZING PROTOCOLS

- Develop harmonised protocol in testing and monitoring

3.4 HOW DOES THE EPPR SPECIFICALLY MOVE FORWARD WITH THE RESULTS OF THE WORKSHOP?

NEED, MANDATE AND GOALS

- Each country in the Arctic Council has gaps/limitations within their own R&D programs that this type of effort could benefit from
- The Arctic Council Agreement on enhancing International Arctic Scientific Cooperation mandates this kind of cooperation
- The cooperation should create better linkages between the appropriate scientific/academic communities
- It is important to keep in mind the operationalisation of research development and the transition from research to operational use

HOW TO MOVE FORWARD?

- R&D should be on the agenda for EPPR-meetings every year
- There is a need to work through the Marine Environmental Response Experts Group (MER EG) to create recommendations for what's next
- It was proposed, as inter-sessionary work for each country, to develop a position paper that provides views on the importance of cooperation and collaboration and identifies research needs/gaps. The US has already developed a paper and could be used as an example.
- At the next EPPR meeting each country could come up with 3 priorities for R&D related to oil spill research in arctic areas
- It is important to identify topic areas that are suited for/can facilitate collaboration. A key question is if there are synergies between the identified prioritized research needs.
- One of the top 3 prioritizations could be chosen and followed up the following year with a workshop dedicated to this issue
- How, when, where to do these workshops depends on the topic and membership, one proposal being that there could be preparation and a workshop every second year
- Another proposal was to develop a spill exercise designed to open up science questions, (e.g. herders, impact on fish farms, dispersants etc.). Using that information, a sciencespecific EPPR day in conjunction with another EPPR meeting could be created focused on the subject specific to the exercise

4 CONCLUSIONS

To influence or make regulatory changes regarding oil spill prevention, preparedness and response, there is a need for transparent research processes, peer reviewed research and to share research internationally to reach a broader consensus and credibility. There is also a need to disseminate research to a broader audience and to regulators, translating results into a more common language to make them available for regulators to help impact policy and for the public for better understanding and acceptance of risk and measures.

Cooperation and collaboration in research activities can be increased by identifying and agreeing on areas and issues suitable for increased cooperation. Support for increased cooperation can be achieved by working through the EPPR and the Arctic Council to bring attention to the needs within the R&D community, for example, by initiating a consensus document.

To increase cooperation and collaboration in regulatory development, it is important that scientists and regulatory authorities cooperate. It is also necessary to work across the working groups of the Arctic Council, finding ways to influence policy makers. One proposition was to provide a white paper from the EPPR that identifies issues and prioritizes those recommendations that best relay what the scientific community concludes as most emergent and actionable. Another proposition was to share regulations on different oil spill response measures, describing how they work and the reasons behind their implementation.

The workshop participants agreed that the workshop and this type of cooperation on R&D through the EPPR has great benefits and that The Arctic Council Agreement on Enhancing International Arctic Scientific Cooperation supports this type of cooperation. The group also gave recommendations for how the EPPR specifically should move forward with the results of the workshop. Intersessional work was proposed, in which each country develops a position paper that provides views on the importance of cooperation and collaboration and identifies their most pressing research needs/gaps and bring them to the next EPPR meeting. The importance of identifying issues that are suited for collaboration and with possible synergies between identified research needs was noted. A steering group for R&D cooperation and collaboration was proposed to be formed and any future work would be conducted through the MER EG.

ANNEXES

4.1 AGENDA

AGENDA

EPPR Oil Spill Research and Development Workshop 3 June 2019 – Bodo, Norway
09:00 – 17:00

09:00 – 09:30 - Welcome, opening remarks, introductions, and review of agenda

Rune Bergstrøm, Department of Emergency Response, Norwegian Coastal Administration
Kent Lien, Technical Leader - Emergency Management, National Energy Board, Canada

09:30 – 10:15 - Country Presentation – Canada

Dr. Ken Lee, National Senior Science Advisor - Fisheries and Oceans Canada

10:15 – 10:30 - Break

10:30 – 11:15 - Country Presentation – Kingdom of Denmark

Nils Westergaard – Kingdom of Denmark

11:15 – 12:00 - Country Presentation – Norway

Rune Bergstrøm, Senior Adviser, R&D and Environment - Department of Emergency Response, Norwegian Coastal Administration

12:00 – 13:00 - Lunch

13:00 – 13:45 - Country Presentation – United States

CAPT Kirsten R. Trego, Deputy Director, Emergency Management - U.S. Coast Guard

13:45 – 14:30 - SINTEF Presentation

Per Daling, Senior scientist – SINTEF

14:30 – 15:00 - Break

15:00 – 16:30 - Round table and plenary discussion

Discussion questions to be distributed ahead of time and at workshop.

16:30 - 17:00 - Workshop wrap-up and discussion

Development of country “issue papers” on multi-lateral coordination on R&D – see U.S. paper for example
Where do we go from here? Next steps.

Action items

- Norwegian Center for Oil Spill Preparedness and Marine Environment to prepare workshop summary report.
- Other?

Name	Organization	Country
Kathy Nghiem	Canadian Coast Guard	Canada
Thierry Mezzana	Environment and Climate Change Canada (ECCC)	Canada
Kenneth Lee	Fisheries and Oceans Canada	Canada
Kent Lien	National Energy Board – Canada	Canada
Josee Lamoureux	Transport Canada	Canada
Helgi Jensson	Environment Agency of Iceland	Iceland
Mikkel Davidsen	Government of Greenland	Kingdom of Denmark
Nils Westergaard	Joint Arctic Command (Danish)	Kingdom of Denmark
Eline J. Mosand	MARINENVIRON	Norway
Gaute Wahl	MARINENVIRON	Norway
Snorre Sklet	MARINENVIRON	Norway
Hanne Solem Holt	Norwegian Coastal Administration	Norway
Johan Marius Ly	Norwegian Coastal Administration	Norway
Rune Bergstrøm	Norwegian Coastal Administration	Norway
Ole Kristian Bjerkemo	Norwegian Coastal Administration	Norway
Per S. Daling	SINTEF	Norway
Natalia Andreassen	UArctic	Norway
Moonjin Lee	Korea Research Institute of Ships – Ocean Engineering	Republic of Korea
Andrey Kushev	Marine Rescue Service (MRS)	Russian Federation
Gladys Tan	Maritime and Port Authority of Singapore	Singapore
Alexander von Buxhoeveden	Swedish Coast Guard	Sweden
Doug Helton	NOAA	USA
Adam Mosley	U.S Coast Guard	USA
Kirsten Trego	U.S Coast Guard	USA
Wes James	U.S Coast Guard	USA
Eric J. Miller	U.S. Bureau of Safety and Environmental Enforcement (BSEE)	USA
Jessica Garron	University of Alaska/International Arctic Science Committee	USA

4.3 WORKSHOP DISCUSSION QUESTIONS

- What do we need to know from a science perspective to most effectively influence or make regulatory changes regarding oil spill prevention, preparedness, and response?
- How do we increase cooperation and collaboration in research activities?
- How do we increase cooperation and collaboration in regulatory development?
- How do we address emergency response planning in new hydrocarbon exploration areas closer to the leading ice edge?
- What do we expect from industry in terms of emergency response planning and how it considers the fate and behaviour of spilled hydrocarbons?
- What research, processes, and regulations need to be in place to address use of dispersants and other spill treating agents?
- What research, processes, and regulations need to be in place to address use of in-situ burning?
- How do we facilitate the transition of research and science to operational response planning and regulatory requirements?
- What are the main knowledge gaps regarding oil fate and behaviour and how it informs response planning and consideration of environmental effects?
- How do we effectively educate regulators and the response planning community on the importance of considering the potential fate and behavior of spill hydrocarbons in response planning and regulatory development?
- How does the EPPR specifically move forward with the results of the workshop?

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