

2014-05-22

Captain Gordon Houston
Chair, Tanker Safety Expert Panel
Transport Canada,
330 Sparks Street
Ottawa, ON K1A 0N5

Dear Captain Houston,

Re: Invitation to Submit Input for Phase II of the Tanker Safety Expert Panel's Review

We would like to thank the Panel for presenting ARAC an opportunity to meet and subsequently provide written comments to contribute to the national conversation on this very important initiative.

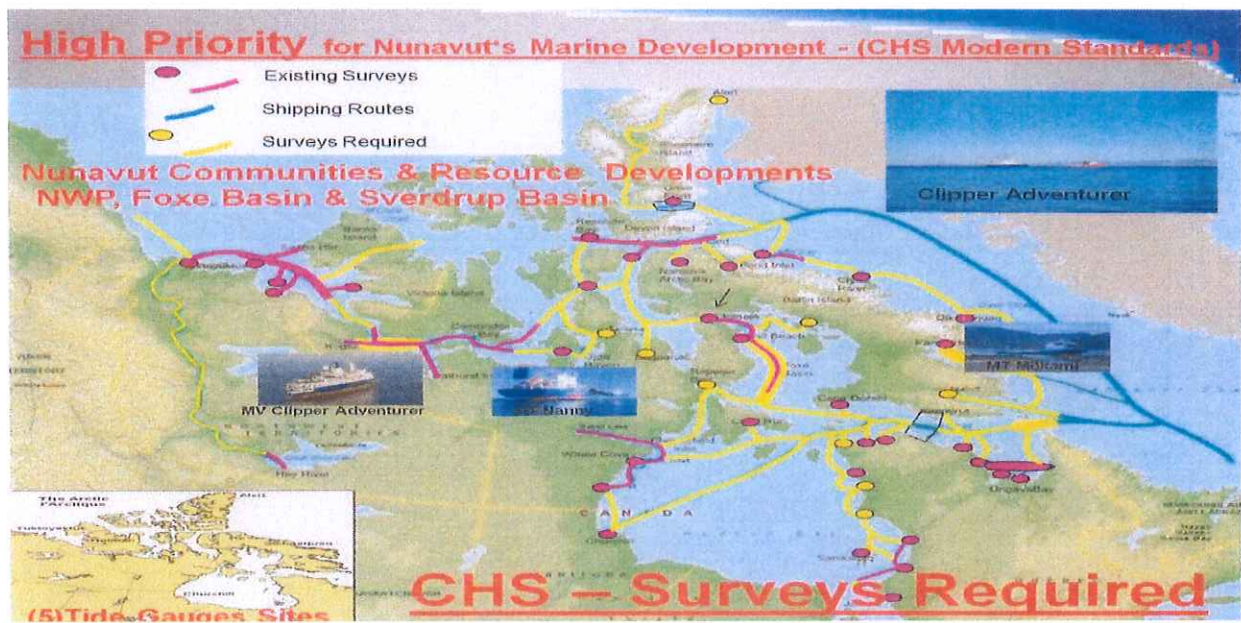
This written submission is intended to follow-up on our May 6 meeting and in particular to expand on many of the issues raised, which could not be covered in a 3 hour meeting. To simplify matters, ARAC members have addressed each of the questions in the "*Lines of Inquiry*" document.

The Arctic Environment

1. The Arctic provides a unique operating environment, both for navigators and regulators. What factors, including future considerations, should be considered while developing spill prevention, preparedness and response requirements for the Arctic?

Accuracy and availability of hydrographic charts, aids to navigation and sailing directions; no local pilotage and/or trained ice pilots; response time for 3rd party responders (Canadian Coast Guard or private response organization); ability of the vessel to contain and control a spill until a larger and better-equipped response team is brought to the site; marine infrastructure; communications; logistics; local response organizations; strict regulatory monitoring and enforcement.

ARAC can present, for the information of the Panel, two slides to further illustrate our concerns:



2. Are there particularities and/or differences between regions of the Canadian Arctic that should be considered?

Yes. Certain areas of the arctic are becoming more vulnerable to the effects of changing ice dynamics and volume; i.e. ice islands, "bergy bits", and rapidly-moving multi-year ice. All of these factors present hazards to shipping and further deter response efforts. In regions, such as Hudson Bay, the

main element of risk is shallow water and unseen shoals, coupled with sudden and violent storms. Some of these hazards could be mitigated through regular updates of the Arctic Sailing directions and up-to-date hydrographic charts, while others will require a firm commitment from the Government of Canada to install proper marine facilities and proper land-based infrastructure such as shoreline navigational aids and towers/radar beacons etc. This is especially important considering any Northwest Passage route and new coastal mineral development areas.

3. Are there sensitive areas where vessel traffic presents particular concerns? Where are they? What makes them sensitive areas?

Yes.

A complete list of all known sensitive areas is beyond the scope of this exercise, however, some examples include: three national parks, five migratory bird sanctuaries, one marine protected area, and one more in process in the Inuvialuit Settlement Region; the Lancaster Sound special management area and the Bowhead Whale Sanctuary near Clyde River in Nunavut. There are hundreds of other "unofficial" sensitive areas; primarily those areas frequently used by local hunters and fishermen as an important source of country food.

Ultimately what is required for North of 60 is a comprehensive sensitivity atlas. This could be achieved by undertaking a project to produce such a publication. It would likely require several years of studies including visiting local hunters and fishermen who would be in a better position to identify sensitive areas. This would be combined with data gathered by wildlife and fisheries biologists and other researchers over the last several decades. It would be a complex project but ARAC and QRAC are willing to assist by obtaining and disseminating information through local contacts.

4. What mechanisms are in place for outreach and engagement of Northern communities in spill preparedness and response?

ARAC is aware that agencies such as the Territorial Governments have trained conservation officers in every community. Some or all of these officers have basic spill response training designed primarily for land-based spills. Other relevant personnel include Petroleum Products Officers of each Territorial Government.

Regrettably, the oil spill response components of the Federal Government are conspicuously absent throughout the North; except for brief periods during the summer season.

ARAC is aware that the Canadian Coast Guard (CCG) has been challenged to engage the general public and secure volunteers willing to take free training offered through CCG. This is not a feasible approach, but not because of a lack of effort on the part of CCG. There is an expectation of many residents, being asked to volunteer, to be remunerated for their efforts. CCG does not have a budget

allocated for this expenditure so local spill response training objectives have not been met. Another possible improvement could be expansion and enhancement of the Coast Guard Auxiliary to provide additional spill response training to its members.

Prevention

5. What measures and resources are currently in place to prevent marine spills in the Arctic?

Aside from the existing regulatory regime under the *Canada Shipping Act* and the subtending regulations, ARAC is not aware of any comprehensive prevention programs in the Arctic. We do, however, believe that more can and should be done in this regard: for example a more robust program of inspections, enforcement and development of modern marine infrastructure.

6. What additional navigation support and resources are needed for safe shipping in the Arctic?

Navigational aids and infrastructure in the Arctic should be upgraded and expanded where it is already in place and installed where it is not.

The state of marine infrastructure in the Arctic is not consistent with the Government of Canada's efforts to enhance Canadian Sovereignty".

By way of example, Iqaluit, Nunavut is the largest community in the Eastern Arctic and has the highest volume of inbound marine shipping. Yet it does not have a proper port facility. It is both interesting and disquieting to note that In 1957, J.R.K. Main, the Chief of Flight Operations for the Department of Transport, submitted a report on a joint DOT-USAF site visit to what was then called Frobisher Bay on August 26, 1957. In his report, he described the sealift operations as a "fiasco":

"...There were 8 ships in the harbor on August 2. A half dozen power-driven lighters and a Landing Ship Tank made daily attempts to get supplies ashore. The whole operation looked pathetic and distressingly inefficient. The lighters came in with the tide, struck rocks and sandbars, struggled away from them and made another run at it until they had pushed and struggled as far up the beach as the depth of water would allow. There they lay until the tide went out and the trucks and cranes moved in to pick up their cargo. When the next tide came in, they went out and reloaded at the ships thereby in most cases making only one successful landing in twenty four hours. I was told that some of the ships had been there for nearly two weeks and that the demurrage charges run to \$2,000.00 a day and more on some of them. The waste must run into hundreds of thousands of dollars annually...." (Main, 1957).

It is a remarkable fact that little has changed since that report was written over 55 years ago. To this day, supplies are offloaded in much the same way though some minor improvements have been realized in that the shipping companies are able to land more than just a single load per high tide cycle. The system remains, however, inefficient and cumbersome.

This already difficult situation will be exacerbated over the next ten years by the rapid increase in mineral, oil and gas exploration and development. This development appears to be occurring at a pace exceeding the Government of Canada's ability or willingness to put into place the required marine safety and protection measures.

A major challenge for the Government of Canada is not only to minimize the risk of major oil spills in the Arctic, but to also ensure the response capacity is proportional to the projected level of vessel traffic. Some of these concerns were communicated to the Government of Canada in a letter from the ARAC to the Minister of Transport of March 12, 2014 (a copy of which has been provided).

Subsequent to this letter, other related concerns have been identified by one of our ARAC members:

- Arctic Ocean Circulation regime and current flow patterns within the Canadian Arctic Archipelago must be updated to support a proper spill preparedness and response plan;
- ARAC is concerned by continued delays in the revitalization of the CCG fleet.
- Furthermore, it appears the Federal Government needs to re-examine its procurement system. While the desire to have new Canadian ice breakers constructed and procured in Canada with the anticipated cost of \$700-800M; this means that we can only afford to procure a small number of vessels and the time required to construct and launch an ice breaker is unacceptably long. ARAC believes that Canadians will be better served if the federal government seeks options offshore to deliver ice breakers within a shorter timeline and at a lesser cost.

7. What preventative practices could be undertaken at HNS and oil handling facilities and/or during HNS and oil transfers?

There are basic spill prevention/spill response principles that should be followed in addition to the specific safety and operating standards common to such facilities. This includes but is not necessarily restricted to:

- Ensuring that during fuel transfers, the transfer is being monitored 24/7, including monitoring weather conditions and considering any other factors which may result in upsets of the normal operating system.
- Having appropriate spill response equipment on hand for spills that can be reasonably expected to happen;
- Having a contingency plan for catastrophic failures.
- Ensuring that all equipment employed in the transfer is in a state of good repair, certified and that there are strict standard operating protocols and checklists in place to avoid malfunctions.
- A protocol for communicating information to any affected party and especially the public.

8. What more can ship owners and/or oil handling facility operators do to prevent or reduce potential impacts of incidents?

As a general rule of spill response, ship owners and OHFs should have on hand, trained staff and sufficient equipment to contain the spill and further, in the event that the spill exceeds their response capabilities, be able to manage the spill until outside assistance arrives on-scene. Additionally, these facilities should hold regular training exercises to test their response capacity.

9. Should the current practice of overwintering fuel in barges in land-fast ice be reconsidered? Why or why not?

Yes, definitely. This topic has been the subject of considerable concern and discussion across the Arctic; within ARAC on Oil Spill Response; the NWT/NU Spills Working Group and generally amongst regulatory authorities North of 60.

ARAC's concerns with respect to the overwintering of fuel-laden vessels can be briefly summarized as follows:

- How fuel volumes will be monitored when barges are stationary/beset in ice;
- How precise are the methods by which the fuel volume is measured and, further, if a leak were to develop in the barge, how much product will have escaped before the loss is detected;
- There are no demonstrated methods for effectively and efficiently managing spills in ice-infested and ice-covered waters.
- The Canadian Coast Guard is frequently cited as the response agency for marine spills in the Arctic; however, the reviewer is also aware that the Coast Guard is limited in its ability to respond to an incident in ice-infested waters, which would be marginal at best, or impossible in land-fast ice conditions. Furthermore, and practically-speaking, the Canadian Coast Guard cannot reasonably be expected to cover all Arctic waters. Response times for a CCG ship to reach a spill site could be several days, depending on the location of the CCG ship nearest the spill.
- Overwintering fuel-laden barges essentially bypasses the stringent requirements for establishing a fuel storage facility on land. Furthermore, there are no similar stringent requirements that provide the same level of environmental protection, for the storage of fuel in land-fast ice. A letter from ARAC on this subject has been provided to the Panel.

Existing Response Capacities

10. Are the vessels currently operating in the Arctic capable of responding to a spill of their bunkers or oil/HNS cargos? If not what do they need?

No. ARAC believes that a thorough review of ships' response capacity, including a capacity to respond to major events is required.

11. What private-sector and public-sector resources are available currently to respond to ship-source spills in the Arctic?

Both Territorial Governments are required under the OHF Regulations to have on hand, sufficient equipment to manage a spill during ship to shore transfer operations. It is possible that private firms such as mining companies have similar mechanisms in place. That being said, ARAC recommends that a review of this practice be undertaken to determine response capabilities across the Arctic and to further determine compliance with the OHF Regulations.

12. Are there facilities in place in the Arctic to treat or dispose of waste from an oil spill or release of HNS? How could these waste products be dealt with in the event of a spill?

ARAC is not aware of any such facilities in the Arctic.

Options for managing waste from a spill event would include:

- i. Where permissible, open burn it at a designated site,
- ii. Import the requisite equipment for managing the waste, or
- iii. Ship the waste to a southern treatment/disposal facility.

13. Is there any existing capability in the Arctic to treat wildlife affected by HNS or oil?

ARAC is not aware of any such capability in the Arctic.

Preparedness and Response

14. What preparedness and response requirements are necessary for the Arctic?

The most basic of requirements would include but not be restricted to:

- Spill response equipment at strategic locations across the Arctic and of sufficient quantity, quality and suitable for the conditions under which it will be deployed; as well as personnel

- trained in its deployment;
- Regular training exercises;
 - The ongoing financial resources required to maintain this capability;
 - Designated temporary disposal sites at key locations, (these being in close proximity to shipping routes);
 - modern marine infrastructure at every community;
 - Updated and expanded hydrographic charts; sailing directions and land-based navigation structures;
 - Improved communications;
 - Effective regulation monitoring and enforcement by the appropriate regulatory authorities.

ARAC further suggests that such requirements be incorporated into existing legislation, if they have not already been, and strictly enforced through a robust and frequent inspection regime.

15. To whom should these requirements apply?

The responsible party; i.e.: ship owners, operators and facilities. In the case of regulatory agencies, they have a duty to enforce their own legislation.

16. Should the Arctic be treated differently than the parts of the country South of 60° in terms of response capacity and response time requirements? Why or why not?

Yes, most definitely.

The area covered by the Arctic in Canada and its coastal length are much more fragile than that of its southern neighbors. Additionally, Canadian Arctic waters are one of the world's last resource-rich areas for marine life. As such, the Canadian Government has to invest adequate resources for the protection of this fragile ecosystem. This includes having in place, the capability to respond to ship-sources spills effectively, efficiently and quickly. Canada should act in a tangible manner to demonstrate its presence in the Arctic by having the ability to deploy spill response resources anywhere in the Arctic. It is worth noting that due to the lack of transportation infrastructure in the north – in many parts of the Arctic, the only mode of inter-community transportation is by aircraft and ships – the response times for spill events are much longer.

17. How should the placement of spill response equipment be determined for the Arctic?

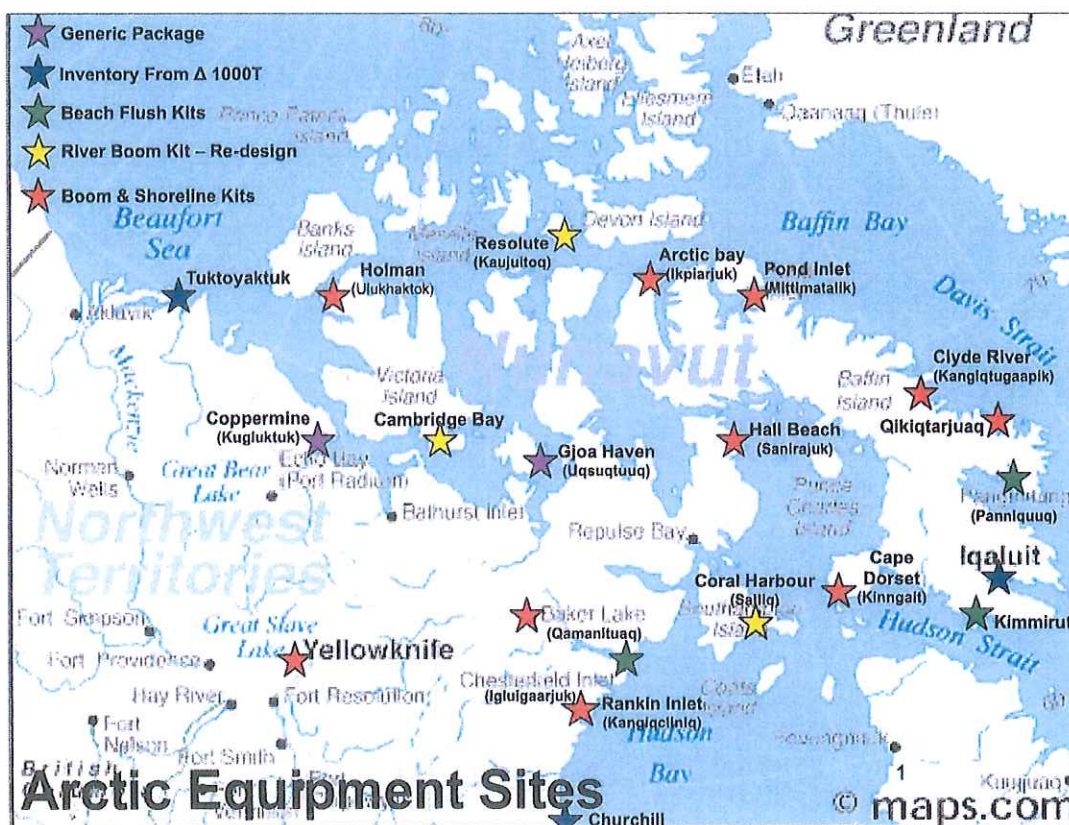
Ideally, every community in the Arctic should have a substantial stock of spill response equipment as well as trained personnel that can deploy it effectively and efficiently; at least enough that the spill can be managed for however long it takes the responsible party to marshal any equipment, supplies and personnel that are not immediately on hand and that must be brought in from elsewhere. The amount of equipment located at each community would be determined through an analysis of current and projected shipping traffic within a pre-determined radius of the community. In short this

would entail a risk assessment.

It should be noted that it is not enough to have spill equipment in place. There must also be trained personnel to deploy that equipment and to conduct regular training exercises.

In addition to locally-sited equipment and personnel, ARAC recommends that spill response vessels be deployed, during the navigation season, at strategic locations throughout the Arctic; for example, at each end of the NW Passage and perhaps some locations within the Passage. The attached map is the latest information that ARAC has with respect to the Canadian Coast Guard's stockpile of response equipment located across the Arctic.

The current stockpiles are not capable of adequately dealing with offshore spills.



18. What spill response techniques are appropriate and effective for oil spills and HNS incidents in Arctic waters?

Response techniques will be dependent upon, among other considerations, local conditions, sea state, weather, the properties of the spilled substance and availability of trained personnel and equipment as well as what logistical support is available locally.

Taking into account, the climate and short navigation season, the response techniques which appear most promising for the Arctic include in-situ techniques such as open-burning, dispersants and natural attenuation (the “no response and monitor” option). This only applies to some petroleum products. HNS would require different techniques, if such exist, for spills of non-crude oil materials which are injurious to human health, into Arctic waters.

In the final analysis, proposed methodologies for managing an oil-under-ice/in ice-infested waters scenario, should identify real-world effectiveness, efficiency and recovery rates.

19. Should the use of dispersants, in-situ burning and other response techniques be permitted in the Arctic if they yield a net environmental benefit?

Yes.

20. Are the availability, the frequency and the quality of training and exercises in the Arctic adequate? Who should participate in training and exercises?

No.

The ARAC believes that more emphasis should be placed on training and exercises. Most importantly more effort should be made to train and equip northern residents. ARAC is aware that the Canadian Coast Guard (CCG) has made a concerted effort to do just that, however, CCG requires more financial resources to achieve this goal. Even if CCG were successful in training a large contingent of Northern responders, it is not enough to provide a short training course. Regular exercises must also be conducted and should include other agencies such as Transport Canada and the Territorial Governments in order to keep Response Teams current.

It is worth noting that a training program has been developed for the Beaufort Regional Environmental Assessment (BREA). BREA is currently in the process of acquiring accreditation for this course to be delivered through Aurora College. This will include acceptance of this course by industry as a base standard for community spill response training.

Roles, Responsibilities and Legal Framework

21. Should the regime(s) for Arctic oil spill and HNS incident preparedness and response be

structured the same way as the Ship-source Oil Spill Preparedness and Response Regime in place South of 60°?

In principle this is a worthwhile goal. In practice, at the present time, and likely for the foreseeable future, it is unattainable. This is primarily because of the presence of dynamically changing ice conditions, low temperatures, bad (and increasingly unpredictable) weather, and lengthy periods of darkness. It is also because of the woefully inadequate infrastructure as referenced several times in this submission. The latter we can do something about now, the former is largely outside our control, and must be mitigated by arctic-specific measures.

ARAC believes this issue should receive further in depth consideration, particularly with respect to HNS.

22. What should be the role of private stakeholders (e.g., potential polluters, response contractors) in terms of ship-source oil spill or HNS incident preparedness and response in the Arctic?

Ultimately, the responsible party – that is, the person in ownership and/or control of the materials -- should bear all the cost of any clean-up operation. With respect to response contractors, their responsibilities will be contingent upon whatever contractual agreement is in place with their client. Response contractors need to be able to manage any situation; however, this is not a legislated obligation and would be more of a matter for the courts to determine any breach of contract in any spill scenario.

23. What should be the role of the Canadian Coast Guard (CCG) in ship-source oil spills or HNS incidents in the Arctic?

It is difficult to respond to this question in light of the current state of the Canadian Coast Guard icebreaker fleet, the modernization of which has experienced continual delays. It should be understood that there is no capability to effectively respond to major spills of petroleum products and/or HNS in the Arctic. This is not intended to be a disparaging commentary on the CCG who, in our opinion, have made admirable efforts to this end. But CCG has not been provided with the financial resources to effectively meet their responsibilities.

Ideally, a modernized and revitalized Coast Guard icebreaker fleet would be in best position to provide support and/or take control over a situation where the responsible party is incapable of mounting a proper response. It is suggested that their fleet, equipment and personnel will have to be expanded if Canada is to keep up with the rapid pace of industrial development and related activities – and with it, increased shipping traffic – in the Arctic.

24. To what extent and how should local communities participate in spill preparedness and response?

To the greatest extent possible, by having properly trained and equipped Northern residents who would be immediately available to respond to spills, is a reasonable strategy and demonstrates a sound approach to spill response north of 60. Where the consequences of inaction and/or delayed action are severe, the importance of conducting regular training exercises cannot be over-emphasized.

Nevertheless, given the hurdles involved in realizing this goal – some of which have been presented in this response -- considerable effort and innovation will be required to develop and maintain a local spill response capacity.

25. Are there roles for other local parties to play in the response to an oil spill or HNS incident in the Arctic?

Suggestions have been made with regard to engaging local (volunteer) fire departments, and the Canadian Rangers. These organizations, however, for insurance and other operational reasons, are not authorized at this time by their parent organization to respond to an oil spill or a hazardous materials accident.

A group that may be ideally suited the task is the Canadian Coast Guard Auxiliary (CCGA) however with only 3 units in Nunavut and 5 in the NWT, this is not nearly enough coverage to provide for an effective response.

Other possibilities include local hunters and trappers and Search and Rescue organizations, however, it should be noted that a system of remuneration and training would likely be required.

26. Do the *Arctic Waters Pollution Prevention Act*, *Canada Shipping Act 2001*, and *Marine Liability Act* provide an effective basis for a ship-source preparedness and response regime in the Arctic? Are there changes required to create a coherent spill preparedness and response regime?

None of the ARAC members are familiar enough with the above legislation to offer an informed opinion on this matter. It is suggested that Transport Canada's legal counsel undertake an examination of these legislative instruments, taking into account the findings of the Panel.

27. How could a spill preparedness and response regime for the Arctic be funded?

ARAC concurs with recommendations 23& 24 from Phase 1 of *A Review of Canada's Ship-Sourced Oil Spill Preparedness and Response Regime*

28. How could a regulatory preparedness and response regime for the Arctic be overseen and enforced?

We believe that existing legislation should be strictly and frequently enforced through inspections, monitoring and where necessary, prosecution. ARAC suggests that a legal review be conducted on existing legislation in order to identify any gaps with respect to establishing a preparedness and response regime. Where gaps are identified, these should be corrected through amendments to the legislation. Separate Arctic Waters legislation to protect those waters should be encouraged, in light of the Arctic Waters being the world's last most resource-rich ecosystem.

29. What opportunities exist for bilateral, multilateral, or circumpolar cooperation in the Arctic (e.g., Denmark, Alaska, and Arctic Council)? How should this influence Canada's regime?

There are numerous opportunities to this end. ARAC strongly advises Canada to actively participate in international live exercises with our circumpolar neighbors. Some Arctic states are far ahead of Canada in terms of spill response and prevention resources and expertise so Canada could stand to benefit from such associations.

30. Are there international best practices (ship-source or other) that should be considered when creating a regime in the Arctic?

There is value in examining best practices from other jurisdictions. ARAC recommends that Canada examine other jurisdictions and select initiatives that may be suited for application in Canada.

Research and Development

31. Are there gaps in knowledge on the behavior, fate and effects of oils and HNS in icy waters?

This has been extensively studied by Canadian researchers for decades. It appears, however, that this has occurred primarily on a small scale with a few larger-scale controlled experiments. More research is needed on the fate, behavior and effects of oil for large-scale, uncontrolled spills and in real-world conditions. Research must be conducted on HNS spills (in controlled environments) and wherever possible, drawing lessons from actual spills of HNS and ideally those that have occurred under cold-weather conditions.

32. Are there gaps in knowledge on response techniques to address these spills in icy waters?

Yes.

33. Who should be responsible for funding and conducting this research?

The Government of Canada should take the lead on conducting further research but should actively engage industry as a partner and where possible, universities, and other countries. With respect to industry-government partnership, ARAC feels that both parties have an obligation to further this research: the Government of Canada because of its responsibility to the public to protect the environment; because it has the resources to do so; and because it is an advocate for industrial

development in the Arctic. Industry has an obligation because they stand to benefit monetarily from natural resource extraction in the Arctic as well as the use of Arctic shipping routes. In both scenarios, Northerners assume the greatest risks with increased commercial activities which may result in oil and HNS spills.

This concludes ARAC's comments. If you require clarification or have any questions with respect to any of the observations and recommendations provided in this document, please do not hesitate to contact the undersigned.



Dr. Norm Snow
President,
ARAC