

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?
 - material being shipped
 - quantity of material being shipped
 - frequency of shipment
 - time of shipment (open water season alone vs year round)
 - vessel crew training/experience requirements
 - number of ships transiting (single vessel vs convoy)
 - type of vessel (ice class) double hulled
 - size of vessel
 - route of vessel
 - presence of wildlife; seasonal sensitivity (nesting, migration, aggregation)
 - sensitive habitat
 - important hunting, fishing locations, harvesting (eider down, eggs etc.)
 - culturally important locations, camping
 - archaeological sites
 - commercial fisheries
 - currents
 - water depth; nature of substrate (absence of comprehensive charts and extensive bathymetric data)
 - prevailing winds
 - thermoclines
 - haloclines
 - ice conditions, land fast ice
 - proximity to various Inuit communities
 - need for protected areas
 - heritage sites, underwater parks
 - tourist potential/ importance
 - consideration of Land Claims (current & future)
 - polynyas
 - tidal range
 - response capacity both equipment and manpower (distance & time)
 - training need simulated response exercises
 - communication (clear strategy with decision tree defined)
 - consideration of current shipping activity ie increasing traffic in already heavily used areas (such as Deception Bay)

- 2) Are there particularities and/or differences between regions of the Canadian Arctic that should be considered?
 - Canadian Arctic is not homogenous
 - significant differences in tidal range
 - differences in currents
 - wildlife species and concentrations are variable.
- 3) Are there sensitive areas where vessel traffic presents particular concerns? Where are they? What makes them sensitive areas?
 - proximity of communities
 - haul out areas for walrus
 - important nesting colonies for murre and other sea birds
 - pupping areas for ringed seals, marine mammal migration routes
 - "nursery" sites for beluga calves
 - refer to appended maps regarding important bird areas (IBA's)
- 4) What mechanisms are in place for outreach and engagement of Northern communities in spill preparedness and response?
 - little to no mechanisms save for local community fire departments
 - Canadian rangers

Prevention

- 5) What measures and resources are currently in place to prevent marine spills in the Arctic?
 - unknown (none)
- 6) What additional navigation support and resources are needed for safe shipping in the Arctic?
 - greater presence of Coast Guard in the Arctic
 - presence of tugs with adequate towing capacity
 - more bathymetric charting
- 7) What preventative practices could be undertaken at HNS and oil handling facilities and/or during HNS and oil transfers?
 - ensure adequate training
 - ensure simulated training exercises are conducted on a regular basis
 - ensure communication and implementation protocol and chain of command are clearly understood.
- 8) What more can ship-owners and/or oil handling facility operators do to prevent or reduce potential impacts of incidents?
 - ensure compliance with all procedures
 - ensure adequate penalties or sanctions are in place to determine compliance

- ensure all the necessary equipment is on-site/on-board and is in good operational condition.
 - ensure adequate oversight and monitoring
 - ensure response capacity is available.
- 9) Should the current practice of overwintering fuel in barges in land fast ice be reconsidered? Why or why not?
- none in Nunavik (to our knowledge)
 - on site availability of fuel ensures availability over longer period of time
 - equally ensures possible lower fuel cost if bought at advantageous price (stability of price to consumer)
 - alternatively the sensitivity of the specific location should be considered including variability in ice conditions, tidal ranges etc.

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?
- limited knowledge
- 11) What private-sector and public-sector resources are available currently to respond to ship-source spills in the Arctic?
- no idea
 - possibly locally owned and operated airlines could be used for aerial reconnaissance to assess location and extent of spills (similarly, tasking earth observation platforms is an alternative method)
- 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?
- None to our knowledge
 - dependant on size of spill and nature of material (incineration?)
- 13) Is there any existing capability in the Arctic to treat wildlife affected by HNS or oil?
- none

Preparedness and Response

- 14) What preparedness and response requirements are necessary for the Arctic?
- response capacity
 - require manpower training (including regular exercises), equipment and dedicated funding allocation

- the unique ice and weather conditions require a more specialized and rigorous capacity than in more southern ecozones.
- 15) To whom should these requirements apply?
- requirements should apply to all interveners involved in the chain from monitoring to implementation (i.e. from the ship owner/crew → government agency → respondents)
- 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?
- Because of the climatic conditions with slower metabolic rates, reduced volatility and greater persistence of spill materials different considerations must be afforded to the Arctic.
 - distances covered from respondent source are generally much greater.
- 17) How should the placement of spill response equipment be determined for the Arctic?
- minimum response capacity and equipment should be present in all communities.
 - increased / full capacity should be spread out geographically dependant on frequency and volume of shipping / tanker traffic to given communities; the presence of Coast Guard vessels in more than just location (Iqaluit) should be reviewed with objective of expanding.
- 18) What spill responses techniques are appropriate and effective for oil spills and HNS incidents in Arctic waters?
- contaminant booms (mechanical recovery)
 - chemical and biological methods (dispersing and gelling agents) research should be conducted through institutions such as the CHARS scheduled for construction in Cambridge Bay to identify new technology including microbial denaturing of oil spills.
 - scare tactics (devices such as propane scare cans, floating dummies and helium balloons to scare off birds in particular)
 - Makivik is encouraged by Transport Minister Raitt's announcement May 13th to remove legal impediments to the use of dispersants in the event of spills
- 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?
- case specific: on the face of it yes, however must examine a weigh net environmental benefit and to whom.
- 20) Are the availability, the frequency and the quality of training and exercises in the Arctic adequate? Who should participate in training and exercises?
- not to our understanding

- it would be of great value of having a joint simulated training exercise on some pre-determined regular basis (each 5 years?) involving all interveners.
- 21) Should the regime(s) for Arctic oil spill and HNS incident preparedness and response be structured the same way the Ship-source Oil Spill Preparedness and Response Regime in place south of 60°?
- As a minimum the response structure should follow that for the south of 60°; however must take into account the uniqueness of the Arctic.
- 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?
- uncertain
- 23) What should be the role of the Canadian Coast Guard (CCG) in ship-source oil spills or HNS incidents in the Arctic
- Coast Guard must be the front line responder that retains coordination and oversight of all spill response efforts and ensures compliance with the defined protocol.
- 24) To what extent and how should local communities participate in spill preparedness and response?
- local communities must be directly involved in preparing response plans and their implementation given their expertise regarding all aspects of the local environment, (currents, wildlife sensitive areas, etc.)
 - they equally have an explicit vested interest in ensuring optimum preparedness and response procedures are implemented rapidly and seamlessly given they are the full time residents of those communities. It is their land/home.
 - there must be careful consideration of any liabilities related to local involvement; offloading onto local communities would be unacceptable. To avoid inducing an unnecessary local “panic” response regarding an oil spill there must equally be clear lines of communication established (importance of messaging)
- 25) Are there roles for other local parties to play in the response to an oil spill or HNS incident in the Arctic?
- Yes – also specifically ship to shore transfer of fuel or HNS
 - police facilities
 - fire fighters
 - medical response
 - Municipal/Hamlet office (mayor)
 - Canadian rangers

- 26) Does 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?
- Makivik is disappointed by Transport Canada Minister Raitt's announcement May 13th 2014 in not imposing unlimited liability on oil tanker companies in the event of an oil spill in contradiction to the recommendation from the expert panel
 - Minister Raitt's announcement of 4 new regional planning resources is welcomed however Makivik is greatly disappointed that no locations in the Arctic have been announced. This must be remedied.
- 27) How could a spill preparedness and response regime for the Arctic be funded?
- Industry
 - Government
- 28) How could a regulatory preparedness and response regime for the Arctic be overseen and enforced?
- Regular Audits
 - Central Arctic Command
- 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?
- need to table/discuss this issue at political level
 - from Canadian perspective could be lead by ITK and ICC Canada
- 30) Are there international best practices (ship-source or other) that should be considered when creating a regime in the Arctic?
- don't know

Research and Development

- 31) Are there gaps in knowledge on the behaviour, fate and effects of oils and HNS in icy waters?
- Yes; need to conduct research in situ.
 - use facilities such as CHARS
 - identify and commit funding for the research (possible industry 'user fee')
- 32) Are there gaps in knowledge on response techniques to address these spills in icy waters?
- Yes, as above.
- 33) Who should be responsible for funding and conducting this research?
- Industry and Government; Universities and established research institutions