2014 INTERNATIONAL OIL SPILL CONFERENCE

CANADA – UNITED STATES (SALISH SEA) SPILL RESPONSE ORGANIZATIONS: A COMPARISON

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ABSTRACT 299821:

The Salish Sea comprises the inland marine waters of Washington and British Columbia and is intersected by an international border between Canada and the United States. Planning for oil spills that threaten to cross the international border is under the jurisdiction of the Canadian Coast Guard and the United States Coast Guard as described in the Canada-United States Joint Marine Contingency Plan. As Canadian companies gain approval to construct new pipelines in order to move oil sands from Alberta, Canada, to Vancouver, British Columbia, and westward, governments, agencies and citizens are publicly questioning whether current levels of oil spill preparedness and response equipment will be adequate for the increased tanker traffic from Canadian ports. This paper will be a single document that contains a snapshot of regulations, actual inventories and current philosophies that make up the 2014 response picture for the Salish Sea. It does not seek to denigrate either nation's response posture but rather to provide hard numbers as a common foundation for future discussions.

BACKGROUND:

A longstanding model of international spill planning and cooperation, the Canada-United States Joint Marine Contingency Plan (JCP) marks its 40th anniversary in 2014. The JCP has guided the Canadian Coast Guard (CCG) and United States Coast Guard (USCG) in an ongoing collaborative approach to spill response and preparedness.

In the late 1980s, however, both countries faced domestic spill response challenges that led to legislative change and the development of industry-based response regimes. Existing industry response cooperatives were transformed to become Response Organizations (ROs) in Canada and Oil Spill Removal Organizations (OSROs) in the United States. The assets required and the timeframes for delivery of tiered response capacity were defined for industry in regulations, standards and guidelines. Both countries support doctrines whereby the Responsible Party (RP) [the spiller – be it a tank vessel, a non-tank vessel or an Oil Handling Facility, (OHF)] pays for cleanup. Potential spillers operating vessels and facilities are identified by regulation and must have response plans that include clean-up agreements in place with either ROs or OSROs per their government mandated response plan. Today, both nations rely on these private sector response organizations to supply the majority of oil spill response equipment and personnel.

This paper describes the guidelines and standards that provide the framework guiding Canada's and the United States' spill response organizations, then compares and contrasts actual response capacity throughout the shared waters. It compares RO/OSRO structure, tiered-response capabilities, response-time standards, expectations for shoreline cleanup, recovery methods, storage capacity and the potential for use of technologies such as dispersants and *in-situ* burning. The specific organizations compared in this paper are Canada's RO Western Canada Marine Response Corporation (WCMRC) and United States' OSROs Marine Spill Response Corporation (MSRC) and National Response Corporation (NRC). These entities provide spill response services in contiguous waters along the border of Canada and the United States – specifically the Salish Sea whose waters encompass the Southern Georgia Strait, Puget Sound, the Strait of Juan de Fuca and inland marine waters of southern British Columbia and northern Washington, all of which will be referred to in this document as the "Joint Area of Operations (JAO)."

GUIDELINES AND STANDARDS COMPARISON:

Canada

In Canada, government certified ROs provide oil spill response services to prescribed classes of tank vessels, non-tank vessels and oil handling facilities (OHFs) that transport and/or transfer oil to and from vessels. Under requirements established in the Canada Shipping Act 2001 (CSA 2001)[1] and related regulations, oil tankers of 150 gross tonnage or more and non-tank

[1] Pollution Prevention and Response, Sections 167 to 168, Canada Shipping Act, 2001, Part 8. (S.C. 2001, c. 26)

vessels of 400 gross tonnage or more that carry oil as cargo or as fuel[2] are required to have a Shipboard Oil Pollution Emergency Plan (SOPEP), as required under Annex 1 of MARPOL, approved by the vessel's flag state. They must also have an arrangement for spill response with a certified RO equal to the total quantity of the vessel's cargo and fuel to a prescribed maximum quantity[3]. Most of these vessels rely entirely on the RO for provision of the full range of oil recovery services though they may respond using their own or other non-certified contracted resources or respond using a combination of available response resources. No matter how the RP chooses to respond, the RP retains complete responsibility for the spill and must direct (provide command and control of) the response activities. If the RP fails to maintain an appropriate response, Canadian Government authorities will take over direction of the response while still holding the RP responsible.

Oil handling facilities (OHF) are required to have oil pollution prevention and emergency plans (OPPP and OPEP) reviewed for compliance by Transport Canada (TC) and an arrangement with an RO. Unlike vessels, which may rely solely on RO resources under CSA 2001, the OHF is required to have equipment and personnel on site and meet specific initial response performance standards during the first six hours following the spill, in addition to resources that may be deployed by the RO. The Canadian planning threshold for vessels (tank and non-tank), OHFs and ROs is a maximum spillage or prescribed maximum quantity of 10,000 tonnes[4] or approximately 67,000 barrels[5]. The arrangements provided by Canadian ROs to their vessel and OHF members reflect that volume without exception. This is in contrast to the U.S. requirement for vessels and facilities to plan for a worst-case discharge.

Western Canada Marine Response Corporation (WCMRC) is the certified Canadian RO providing marine spill response services to ships and OHFs operating on Canada's west coast and, in particular, the Canadian waters of the JAO. Under Canadian standards[6], ROs are categorized according to their capability to respond to oil spills of a maximum specified quantity. For the purposes of planning an appropriate equipment mix, operating areas are defined as shoreline, sheltered and unsheltered. No separate distinction or requirement is made for river or inland response, but the RO must be able to provide oil spill response services to any prescribed vessel or OHF operating in any navigable water within the RO's geographical area of response (GAR).

Although Canadian ROs are able to rely on cascading of resources from within Canada to make up the Tier 4 capability, the planning response time standards restrict WCMRC's ability to meet their 10,000 tonne certificate of designation with cascaded resources; hence, they have a standalone capability for Tier 4 (Table 1). Due to U.S. and Canadian regulations, WCMRC is also unable to plan for resource cascading from U.S. OSROs to meet CSA 2001 equipment

[2] Environmental Response Arrangements Regulations, Canada Shipping Act, 2001, Section 4. (SOR/2008-275)
[3] Ibid
[4] Ibid
[5] For the purposes of this paper 1 metric tonne = 6.7 bbls (1 bbl = 42 U.S. gallons).
[6] Response Organizations Standards, Canada Shipping Act, 2001, TP 12401 E. (1995)

requirements. Canadian regulations and standards also link the four tiers to distinct geographical areas and provide time standards for deployment and/or delivery of response resources.

Table 1 ***Summary of Canadian Response Organization Planning Standards***

Tier	Planning Volume	Geographical Area	Time Standard	Resources Required*
Tier 1	150 Tonne (Dedicated to Port) 1,000 bbls	Designated Port (Port)(Vancouver)	Deployed - 6 hrs	1,800 m. boom 7.6 t. (51 bbl)/day rec. 115 t. (770 bbl) storage
Tier 2	1000 Tonne 6,700 bbls	Designated Port (Port)(Vancouver)	Deployed - 12 hrs	2,940 m. boom 51 t. (342 bbl)/day rec. 765 t. (5125 bbl) storage
Tier 3	2500 Tonne 16,750 bbls	PAR (50 nm radius from Port boundary)	Delivered - 18 hrs	8,275 m. boom** 150 t. (1005 bbl)/day rec. 2,280 t. (15276 bbl) storage
		ERA (Juan de Fuca Strait)	Delivered - 18 hrs	7,338 m. boom** 152 t. (1018 bbl) /day rec. 2,280 t. (15276 bbl) storage
Tier 4	10,000 Tonne*** 67,000 bbls	PAR (50 nm radius from Port boundary)	Delivered - 72 hrs	14,300 m. boom** 608 t. (4074 bbl) /day rec. 9,120 t. (61104 bbl) storage
		ERA (Juan de Fuca Strait)	Delivered - 72 hrs	10,550 m. boom** 642 t. (4301 bbl) /day rec. 9,120 t. (61104 bbl) storage

*Source - Response Organizations Standards (1995) - TP 12401 E
**Includes a required 5,000m cap for protection boom deployed on scene within 24 hours
***Tier 4 ROs are required to have a minimum of 15,000 metres of boom in inventory.
Note - This table does not include resource requirements or time standards for other areas in WCMRC's Geographic Area of Response (GAR) such as the mid or north coast of British Columbia that are not covered by this paper.

For WCMRC, the focal point of preparedness activities is the Port of Vancouver, which has been formally recognized by TC as a "Designated Port" due to the volume of oil transshipped (>500,000 tonnes annually) and marine traffic density and convergence. The Primary Area of Response (PAR), an area requiring additional levels of response capabilities and corresponding response times, extends a further 50 miles from the Port boundaries (Figure 1). The Port of Vancouver's southern boundary is the Canada-U.S. border extending from Boundary Bay west into southern Georgia Strait. The PAR follows the border south through Haro Strait and Boundary Passage almost to Victoria, where the Enhanced Response Area (ERA) follows the border around the southern tip of Vancouver Island, then west towards the open ocean. In order to meet the resource requirements and response-time standards for the Port, PAR and ERA, the majority of the RO's resources are concentrated in the Vancouver area and near Victoria on southern Vancouver Island. The contiguous waters of Canada and the U.S. feature prominently in both countries' spill response planning and preparedness.

Figure 1 ***Canada and United States Unique Response Areas (Joint Area of Operations)***

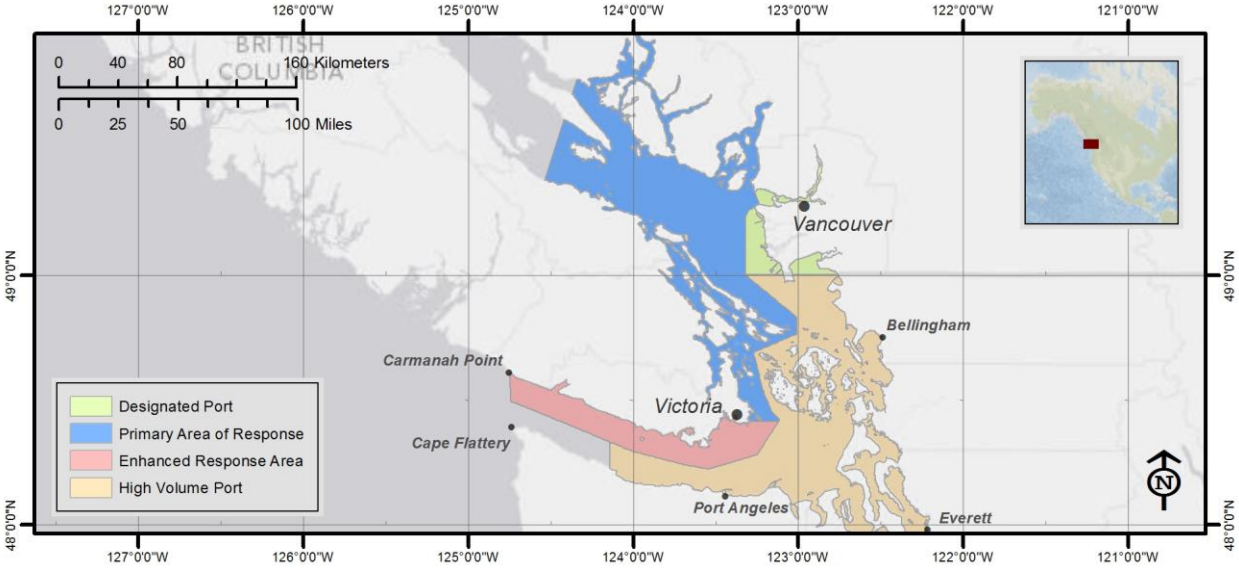

Chart provided by Polaris Applied Sciences March 2014

United States

Within the United States, vessels carrying bulk liquid petroleum, non-tank vessels (self-propelled vessels of 400 gross tons or greater[7] operating on the navigable waters of the United States and carrying oil of any kind as fuel for main propulsion), marine transportation-related facilities, pipelines and offshore facilities must submit oil spill response plans for approval by the U.S. government. The response plan specifies a means to mobilize and manage necessary personnel and resources required to mitigate up to a worst-case discharge. Since individual plan holders are rarely, if ever, capable of amassing the required amounts of oil spill response equipment (nor do they have at-the-ready a crew of spill responders), the vessel response plan (VRP), the non-tank vessel response plan (NTVRP) and facility response plan (FRP) holders must cite specific Oil Spill Removal Organizations (OSROs) with whom the plan holder has a contractual agreement to provide equipment and personnel to abate a spill. OSROs provide specific amounts of core equipment to plan holders per regulations set out in 33 Code of Federal Regulations (CFR) 155 (tank and non-tank vessel requirements) and 33 CFR 154 (marine transportation-related facility requirements).

It is believed that VRPs for very large vessels addressing a worst-case discharge (loss of the entire vessel's contents in adverse weather conditions), for example, a laden Polar-class tanker capable of carrying approximately 994,036 barrels of cargo or 127,000 (Deadweight tonnage, Puget Sound) tonnes of crude oil, will ultimately require the cascading of additional equipment from outside the JAO no matter which OSRO is identified in the RP's response plan. Worst-case discharge planning volumes can be limited by the On-water Oil Removal Capacity

[7] Regulation 37 of MARPOL Annex I requires that oil tankers of 150 gross tonnage and above and all ships of 400 gross tonnage and above carry an approved SOPEP.

rule[8] (CAPS) which establishes the amount of resources plan holders are required to ensure available by contract or other approved means. If the required capacity exceeds the applicable cap, then a vessel owner or operator must contract for at least the quantity of resources required to meet the cap, but must identify sources of additional resources up to twice the cap.

The JAO encompasses Captain of the Port Area Puget Sound, which is designated a "high volume port (HVP)." The high volume port area includes navigable waters under United States jurisdiction within a 50-mile arc seaward of the Strait of Juan de Fuca at Port Angeles, Washington, to and including Puget Sound, Washington.[9] OSROs operating in the high volume port area are required to respond with the prescribed amount of equipment in shorter time frames than they would respond to other port locations not designated "high volume."

In the United States, OSROs must meet several levels of classification criteria. The first deals with the size of the spill event with which the OSRO is capable of dealing. The four spill sizes are Maximum Most Probable Discharge (MMPD), Worst-Case Discharge (WCD) Tier 1, WCD Tier 2, and WCD Tier 3. The second classification criterion is the operating area to which the OSRO is capable of responding. The six operating areas are Rivers /Canals, Inland, Great Lakes, Near Shore, Offshore and Open Ocean. Finally, OSROs are classified for operations in the USCG Captain of the Port Zone in which they are located and are able to meet inventory and response-time requirements. Classifications are based upon set equipment amounts and response-time standards outlined in the Coast Guard OSRO Guidelines (Table 2). There are 10 USCG-classified OSROs working within Sector Puget Sound Captain of the Port Zone. Only two maintain classification in all operating environments. They are Marine Spill Response Corporation (MSRC) and the National Response Corporation (NRC). MSRC and NRC are also the only two OSRO's in the Puget Sound area classified as capable of providing "mechanical" and "dispersant" response resources.

Table 2 ***Summary of U.S. Oil Spill Response Organization Required Resources by Tier (Three Operating Areas)***

Tier	Operating Area	Time Standard	Resources Required*	Dispersant Application
Tier 1 (WCD1)	Near Shore	Response – 12 hours	30,000 feet boom 12,500 bbl/day EDRC 25,000 bbls storage	
	Offshore	Response – 12 hours	15,000 feet boom 12,500 bbl/day EDRC 25,000 bbls storage	
	Open Ocean	Response - 12 hours	No boom requirement 12,500 bbl/day EDRC 25,000 bbl storage	4,125 gallons of dispersant to treat 82,500 gallons of oil
Tier 2 (WCD2)	Near Shore	Response – 36 hours	30,000 feet boom 25,000 bbl/day EDRC 50,000 bbls storage	

[8] Vessel and Facility Response Plans for Oil: 2003 Removal Equipment Requirements and Alternative Technology Revisions, Federal Register, Volume 74, Number 167, 33 CFR Parts 154 and 155. (31 August 2009)

[9] Higher Volume Port Areas Definitions, 33 CFR § 154.1020 and 33 CFR § 155.1115, Aug. 2009.

	Offshore	Response – 36 hours	15,000 feet boom 25,000 bbl/day EDRC 50,000 bbls storage	
	Open Ocean	Response - 36 hours	No boom requirement 25,000 bbl/day EDRC 50,000 bbl storage	23,375 gallons of dispersant to treat 467,000 gallons of oil
Tier 3 (WDC3)	Near Shore	Response – 60 hours	30,000 feet boom 50,000 bbl/day EDRC 100,000 bbls storage	
	Offshore	Response – 60 hours	15,000 feet boom 50,000 bbl/day EDRC 100,000 bbls storage	
	Open Ocean	Response – 60 hours	No boom requirement 50,000 bbl/day EDRC 100,000 bbl storage	23,375 gallons of dispersant to treat 467,000 gallons of oil **

*Data from "Guidelines for the U.S. Coast Guard Oil Spill Removal Organization Classification Program"
**Numbers are cumulative total 50,875 gallons of dispersant to treat 1,017,500 gallons of oil, Dispersant to Oil Ratio (DOR) of 1:20

EQUIPMENT COMPARISON:

Canada

Canada supports only mechanical and manual tactical solutions for response to marine oil spills. Regulations and standards for ROs focus primarily on containment boom, mechanical recovery by skimmers and gross oil storage requirements. There is no provision in law or in practice for *in-situ* burning or dispersant application.

In addition to required portable response equipment resources, WCMRC dedicated skimming vessels (OSRVs), boom boats (work boats) and storage barges are strategically located in the Port, PAR and ERA. WCMRC owns all of the equipment resources required in order to meet certification requirements and more, but relies on sub-contractors for provision of additional personnel and vessel resources. Vessels of Opportunity (VOO) are not required by regulation but there is government guidance that allows ROs to plan for the use of VOOs when responding to support unsheltered-water response operations. WCMRC has developed plans using fishing vessels provided by the Fishermen's Oil Spill Response Team (FOSET) program.

United States

Both MSRC and NRC are classified in five core resource categories including protective boom, effective daily recovery capacity boom, temporary storage capacity, response vessels and personnel. As indicated previously, they are classified as "dispersant OSROs," having the capability to apply chemical agents, usually by aircraft, to aid in breaking up surface slicks and dispersing oil within the water column. To be classified as a dispersant OSRO, OSROs must have the ability to apply set volumes of surface dispersant within required time frames.[10] MSRC and NRC also have supplementary equipment in their inventories to detect, contain and remove Group V, sunken (heavy) oil. Though not a USCG classification category, both companies have an inventory of *in-situ* burn boom used for controlled burning. This method involves corralling

[10] Guidelines for the U.S. Coast Guard Oil Spill Removal Organization Classification Program, April 2013.

large quantities of oil with specialized fire-resistant boom and setting the oil on fire. The technique can be extremely efficient in removing oil from the marine environment, but it also has environmental tradeoffs. United States Federal regulations do not address a specific requirement for a Vessel of Opportunity (VOO) fleet; however, the State of Washington does. Based on the number of Washington State operating areas they cover, MSRC and NRC combined could have up to 144 vessels under contract[11].

Table 3 ***Actual Equipment Owned by Canadian Response Organization Western Canada Marine Response Corporation / United States Oil Spill Response Organizations National Response Corporation and Marine Spill Response Cooperative***

Description*	**WCMRC**	**NRC**	**MSRC**
Boom (6-18 in./15-45 cm.)	7,195 feet 2,193 meters	7,800 feet 2,378 meters	24,900 feet 7,590 meters
Boom (> 18 in. < 42in./45-105 cm.)	94,473 feet 28,794 meters	63,400 feet 19,326 meters	74,630 feet 22,747 meters
Boom (> or = to 42 in./105 cm.)	5,390 feet 1,643 meters	9,100 feet 2,774 meters	28,170 feet 8,586 meters
Total Boom	107,059 feet 32,630 meters	80,300 feet 24,477 meters	127,700 feet 38,932 meters
Estimated Daily Recovery Capacity (EDRC)	67,120 bbls 10,018 metric tonnes**	72,659 bbls 10,845metric tonnes	271,947 bbls 40,589 metric tonnes
Temporary Storage	54,015 bbls 8,062 metric tonnes	36,806 bbls*** 5,493metric tonnes	129,087 bbls 19,267 metric tonnes
Oil Spill Response Vessels (OSRVs)	5 OSRVs (various capabilities)	7 OSRVs (various capabilities)	18 OSRVs (various capabilities)
Work Boats	20 work boats	73 work boats	37 work boats
Dispersant Product	Dispersant not approved in Canada	53,530 gallons (nationwide stockpile)	104,000 gallons (nationwide stockpile)
Aerial Dispersant Application Platforms	Dispersant not approved in Canada	6 Aircraft Nationally (Three dedicated to NRC)	6 Aircraft Nationally (All dedicated to MSRC)

* The equipment listed for NRC and MSRC was taken from the Western Response Resource List (WRRL). The WRRL is a comprehensive list of spill response equipment in which participants list the majority of their response equipment.
The WCMRC equipment summaries were provided by WCMRC.
** For the purposes of this paper, 1 metric tonne = 6.7 bbls (1 bbl = 42 US gallons).
***Includes 30,000 bbls to be added to NRC inventory in July 2014.

Table 4 ***Comparison Response Organization and Oil Spill Response Organizations - Fire Boom and Dispersant Capability***

Description	**WCMRC**	**NRC**	**MSRC**
Fire Boom	feet/meters (500 feet/152 meters) *In-situ* burning not pre-approved in Canada	feet/meters 500 feet/152 meters	feet/meters 1,000 feet/304 meters
Dispersant Product	Dispersants not approved in Canada	53,630 gallons*	104,000 gallons*
Dispersant Application	Dispersants not	6 Aircraft *(Three	6 Aircraft *(All

[11] Covered Vessel Planning Standards for Vessels of Opportunity (VOO), WAC 173-182-317, Washington State legislation, January 2013.

Platforms	approved in Canada	dedicated to NRC)	dedicated to MSRC)

Source – National Strike Force Coordination Center and Western Response Resource List
* National stockpile or equipment

Table 5 ***United States Oil Spill Response Organizations Tiers for Effective Daily Application Capacity (EDAC)***

Tiers	Response time for completed application (hours)	Dispersant application/Oil treated in gallons* (JAO)
Tier 1	12	4,125/82,500
Tier 2	36	23,375/467,000
Tier 3	60	23,375/467,000
Tier 4	60	50,875/1,017,500

Source - Guidelines for the United States Coast Guard Oil Spill Removal Organization Classification Program, April 2013
*Based on a Dispersant to Oil Ratio (DOR) of 1:20. This is used as a planning standard and actual DOR may vary in real incident depending on oil type and weathering.

PERSONNEL COMPARISON:

Canada

WCMRC maintains its main warehouse and administrative offices in Burnaby, British Columbia, providing response capability for the southern BC Mainland as well as Vancouver Harbour and approaches. A satellite base in Duncan provides resources and spill response capability for the Vancouver Island operating area. Each area has trained and dedicated WCMRC personnel (on call) and equipment resources available 24/7 to respond if called to a member's marine oil spill. In addition to the operational responders listed in the table below, WCMRC has in-house administrative support and contracted incident management support. Marine contractors and FOSET members, all trained in advance for the jobs they will undertake, provide additional vessels and personnel resources on an as-available basis.

United States

OSROs are required to train their personnel to take actions associated with their job responsibilities, meet Occupational Safety and Health Administration requirements, receive communications training and be trained on specific response equipment owned by the OSRO.

In Washington State, MSRC has a regional office in Everett with prepositioned-equipment sites in Bellingham, Anacortes, Seattle, Tacoma, Port Angeles and Neah Bay. Each prepositioned site has dedicated personnel and equipment resources available 24/7 to respond to a member's marine oil spill. MSRC also has additional standby licensed mariners available in Washington State. This is done via a separate "augmented crew" contract used to "plus up" staff and relieve workers operating vessels should an incident occur.

In Washington State, NRC has a regional office in Seattle with prepositioned-equipment sites in Anacortes, Ferndale, Neah Bay, Seattle, Pasco and Spokane. Each prepositioned site has dedicated personnel and equipment resources available 24/7 to respond to a member's marine oil spill. NRC annually trains and keeps in contact with a 120-person list of part-time staff. These personnel are available for spill response and other projects as assigned.

Table 6 ***Full-time Personnel Comparison (Staff and Responders)***

WCMRC (Western Canada)	NRC (Oregon & Washington)	MSRC (Oregon & Washington)
34	127	72

Source – Western Canada Marine Response Corporation, National Response Corporation and Marine Spill Response Corporation

OPERATING LIMITS COMPARISON:

Canada

Canadian ROs are required to conduct on-water recovery operations in the unsheltered waters of its GAR in the upper limits of Beaufort Force 4 conditions, meaning a mean wind speed of 11- 16 knots (moderate breeze), 1-2 metre (3-6 feet) probable wave height (moderate sea = sea state 3 - 4), and the presence of some whitecaps. Conventional booming and mechanical recovery is typically not effective above Beaufort Force 4, which limits on-water response activities.

United States

In the United States, oil recovery devices and boom operating in the most exposed waters, which include Offshore and Open Ocean operating areas, must be capable of operating in wave heights up to and including 6 feet (2 metres). Per regulations, this correlates to sea state 3 – 4. Specifically, minimum properties for boom including height, reserve buoyancy, tensile and tear strength are required for four operating environments. (33CFR155, Table 1, Appendix B). The Northwest Area Contingency Plan; however, further describes how environmental conditions (wind, fog and tides) together with the physical limitations of existing spill response technology may preclude the effective protection of some areas.

SHORELINE PROTECTION AND CLEANUP COMPARISON:

Canada

Planning guidelines for Canadian ROs identify a minimum of 5,000m (16,400 feet) of protection boom to be delivered on scene in 24 hours.

The Response Organization Standards require the RO to effectively treat a minimum of 500 metres (1,640 feet) of oil-impacted shoreline a day. Planning guidance, developed during government - industry consultations, indicates that the minimum amount of shoreline boom required to support shoreline treatment is twice the length of shoreline to be treated or 1,000m (3,280 feet). Shoreline treatment options will vary widely depending on a range of variables including oil type, shoreline type, degree of shoreline oiling, and the environmental sensitivities present in the shoreline environment. Accordingly, the RO is required to demonstrate an understanding of the need for a range of treatment options. Although Canadian ROs must plan to rely entirely on manual and mechanical treatment techniques for on water oil spill recovery, there have been situations, such as a crude oil spill in Vancouver Harbour in 2007, where approval has been granted for chemical treatment (Corexit 9580A) of impacted shoreline.

United States

Shoreline protection for persistent oils (oils which do not dissipate quickly) requires 30,000 feet of boom available in 12 hours. Shoreline protection for non-persistent oils (oils which will dissipate rapidly) requires 10,000 feet of boom available in 12 hours.[12]

In order to be classified an OSRO, 10 or 20 percent of the OSRO's resources, (the percentage depends on its assigned operating area classification), must be capable of operating in shallow water. Shallow water is defined as water six feet or less. Because both NRC and MSRC are recognized as having near-shore classification status, they meet the 20 percent bar.[13]

Regional Response Teams and Area Committees must address in their planning activities the desirability of using appropriate dispersants, surface-washing agents, surface-collecting agents, bioremediation agents, or miscellaneous oil spill control agents listed on the National Contingency Plan (NCP) Product Schedule. [14]

MUTUAL AID COMPARISON:

Canada

Under the Oil Pollution Act of 1990, all working spill responders in the United States, including those from across the border, have "limited responder immunity" that provides responders with a legal defense for simple negligence. There is no similar responder immunity under Canadian law for American OSROs crossing into Canadian waters to work on a spill or even participate in a drill. Obviously, certified Canadian ROs have immunity. Lessons learned from the 2012 Canada-United States Pacific Geographical Annex, vessel deployment exercise address the immunity impasse between MSRC and Transport Canada, which resulted in MSRC refusing to cross into Canada at the request of the United States Coast Guard. Though Part 181 of CSA 2001 (Civil or criminal liability) has provisions to correct this problem, TC is still working to find the administrative tool that will address responder immunity, allowing for foreign responders at the time of an incident to enter into Canada. At present, immunity may be granted by the Minister of Transport Canada to "approved responders", but the only method of approving responders in Canada is to certify them as a RO over a three-year timeframe. The immunity issue is complex and there are examples of workarounds for major industry cooperatives such MSCRC and their plan holders. MSRC offers an international addendum to their contracts, which shifts the responsibility of indemnity from MSRC to their customers.

[12] Shoreline Protection Requirements, 33 CFR 155 Appendix B, Table 2, Sept. 2013.
[13] Response Plan Development and Evaluation Criteria, 33CFR 154.1045 and 155.1050, Aug. 2009.
[14] NCP Product Schedule, 40 CFR, Part 300.905, Aug. 2000.

United States

Unequal immunity has repercussions for the Canadian RO operating in the United States per the Jones Act[15].

> *Notwithstanding any other provision of law, an oil spill response vessel documented under the laws of a foreign country may operate in waters of the United States on an emergency and temporary basis, for the purpose of recovering, transporting, and unloading in a United States port oil discharged as a result of an oil spill in or near those waters, if - (1) an adequate number and type of oil spill response vessels documented under the laws of the United States cannot be engaged to recover oil from an oil spill in or near those waters in a timely manner, as determined by the Federal On-Scene Coordinator for a discharge or threat of a discharge of oil; and (2) the foreign country has by its laws accorded to vessels of the United States the same privileges accorded to vessels of the foreign country under this section.*

The issue of Responders' legal vulnerability, now entering its third decade of debate, needs to be resolved for the sake of both countries. Under the Canada-United States Joint Marine Contingency Plan (JCP), the federal governments of both countries agreed to allow the free movement of oil spill resources across the border, in order to minimize the impact of a spill incident. The lack of reciprocal responder immunity between the two countries, however, has prevented ROs and OSROs from entering into meaningful mutual aid agreements.

The ongoing debate over responder immunity has crowded out another critical and related issue concerning the willingness of regulators to even consider allowing the cascading of large amounts of resources from the U.S. to Canada. Regulators are concerned that allowing the cross border movement of resources under mutual aid will negatively affect U.S. plan holders, causing them to be short of their Federal and State response-plan equipment requirements.

Both Canada and the United States are signatories to The International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC). International cooperation and mutual assistance are fundamental components of the convention.

SUMMARY:

It should be no surprise that two neighbor nations have oil spill cleanup regimes that have similarities and differences. Laws and government guidance underpin the strategies and standards that direct spill response industries in both countries. Those laws and regulations reflect, amongst other things, each country's perceived risk, public involvement and history of spill incidents. Laws and regulations will change as circumstances and attitudes within a country change, and Canadian law may influence U.S. law, or, likewise, U.S. statutory changes may influence Canadian law. At present, both Canadian and U.S. Government and Non-Government Organizations are debating various aspects of production and transportation of oil sands products being moved out of Alberta in all directions, including oil spill response preparedness. It is clear that these discussions and upcoming legislation will have impact on the findings of this paper.

As it stands, both nations have very similar requirements for cleanup liability, response planning, and response organizations. With increasing amounts of oil sands products and new

[15] Use of Foreign Documented Oil Spill Response Vessels, 46 U.S. Code, Title 46, Subtitle V, Part D, Chapter 551, 55113, Oct. 1996.

routes on the five-year horizon, the countries will continue to follow each other's leads to some extent with respect to equipment resources and cleanup methodology. Effective Daily Recovery Rates, which are oil-collection baselines, have been shown to be overly optimistic. The amount of recoverable oil is impacted by numerous factors that can impede or exceed the operating limits of the equipment. Constraints such as spill location, oil type , weather and sea conditions, and responder safety concerns all conspire to reduce the ability to encounter the oil and subsequently to effectively remove it. When recovery numbers, for whatever reason, do not meet expectations set out in response plans or spill management objectives, a call for additional equipment is usually sent out.

CONCLUSION:

Generally, differences in the two nations' response regimes appear primarily in regulations and planning standards, approaches to clean up equipment, and inventories held by response organizations. At present, the Canadian planning threshold for vessels (tank and non-tank), oil handling facilities and response organizations is a maximum spillage or prescribed maximum quantity of 10,000 tonnes (approximately 67,000 barrels), in contrast to the U.S. requirement for vessels and facilities to plan for a worst-case discharge, whose quantity may be reduced per the CAPS rule. Beach cleanup differs in that Canadian planning standards identify a minimum shoreline length to be treated each day and that on-water spill operations should be completed in 10 operational days. In the U.S., standards are not as specific.

Canada focuses exclusively on mechanical spill recovery. In addition to mechanical tools, the U.S. requires dispersant capability, which in the right situation can be as effective as mechanical recovery tools. When used in combination, mechanical tools and dispersants at least double the impact that the Unified Command can exert operationally on a significant spill. Canada does not have a planning mechanism to use dispersants, has no requirement for its use and does not have dispersal equipment or dispersant stockpiles.

As for the equipment comparison, the first line of defense is most often the Oil Spill Response Vessel (OSRV). Five dedicated OSRVs are based on the Canadian side of the JAO while there are 25 OSRVs of various lengths and capabilities on the U.S. side. In all categories, the amount of equipment favors the U.S. side of the border. This is not unexpected given that Canada has fewer government-sanctioned ROs.

Experienced personnel are critical for an effective response, but in many cases, Canadian and U.S. spill responders may not directly employ sufficient personnel to effectively operate all of the required equipment for around-the-clock operations. NRC and MSRC have combined full-time staffs of 199 while WCMRC has 22. To address this emergency condition, both nations' response organizations plan for and have agreements in place for "surge" staff.

The ability and need to cascade equipment and personnel from outside the region and across the globe is an essential part in meeting spill standards in the United States, as it would be in Canada in the case of a catastrophic event. However, the legal constraints, arising from a lack of reciprocal responder immunity, prevent the free movement of equipment and personnel resources across the border. As signatories to the OPRC Convention, both nations must remain

focused on working cooperatively to solve this impasse so that mutual assistance can work in the time of a crisis. The enactment of appropriate responder immunity provisions by Canada will be an important first step in unlocking the reciprocity built into the Jones Act, eliminating the need for contractual workarounds on the part of U.S. OSROs, and allowing the Canada-United States Joint Marine Contingency Plan (JCP) to work the way it was intended.

Additionally, lessons learned from the 2010 Deepwater Horizon response highlighted several cases where attempting to surge oil spill response equipment from outside the Gulf of Mexico resulted in failures. In order to address the cascading topic, the United States Coast Guard is leading an inter-governmental committee on equipment cascading with the goal of identifying current barriers and recommending potential changes to planning regulations, policy, and doctrine.

Notwithstanding obvious differences in the two nations' spill response regimes, both countries continue to work together to plan for transboundary spill events that may occur. Change is happening. Canadian regulators, inspired by industry's concerted push to make Alberta oil sands crude more available to foreign markets, are working to significantly strengthen plan-holder requirements and RO standards. It is conceivable that over the next decade considerable response capacity will be added on the Canadian side of the boundary. In recognition of the critical importance of mutual aid assistance in the event of a cross border incident, Canada is currently putting in place the administrative tools necessary to protect and indemnify U.S. OSROs that may be called upon to respond in Canadian waters. For their part, responders on both sides of the border continue to invest in new and better equipment and hone their response procedures and skills.

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