

Regulations, Policies and Programs Governing Transport of Crude Oil

Introduction

In 1989, the Exxon *Valdez* supertanker ran aground off the coast of Alaska, spilling 11 million gallons of crude oil into Prince William Sound and spurring the U.S. Congress to draft and pass the Oil Pollution Act (OPA) in 1990. The magnitude of the spill and its effects were such that, as recently as 2008, the U.S. Supreme Court was still hearing arguments on the amount of damages Exxon Mobil Corp. should have to pay.¹ Large oil spills such as the Exxon *Valdez* event have long been catalysts for legal and legislative activity resulting in a large and complex regulatory regime governing oil transport in the United States and Canada. This paper explores the laws, regulations and policies governing different modes of transporting crude oil across the Great Lakes and St. Lawrence River region, highlighting new and noteworthy changes at the federal, state and provincial level.

Crude oil is transported across the United States and Canada by several modes including vessel, pipeline, truck and rail. Each mode, governed by different acts and agencies, has particular and independent benefits but poses its own set of risks, as well. Expanding oil production in both countries, coupled with economic incentives to move that oil to distant refineries, has greatly increased the transport of oil through the Great Lakes-St. Lawrence River region, potentially increasing the risk of spills in and around the Great Lakes basin itself. For example, in both countries, rail is becoming an increasingly popular way to transport oil due to its speed and efficiency. Rail is able to transport numerous cars of oil, simultaneously, at efficient speeds.² However, accidents involving rail cars can have disastrous effects, as exemplified by the 2013 Lac-Mégantic, Québec, accident, which took 47 lives and caused billions of dollars in damage to the community. Although the deadliest recent accident, it was not an isolated incident. In fact, the Québec accident was only one of three major accidents in 2013. These alarming incidents have caused both U.S. and Canadian officials to analyze their regulatory regimes for oil transport and enact stronger laws and policies.

Oil Pollution Act (1990)

As mentioned above, the event that prompted the drafting and passage of OPA was the Exxon *Valdez* spill in 1989. OPA focuses on spills from vessels and shore-based facilities, but also created a national response plan which was lacking at the time. Among its many important provisions, OPA requires vessel owners and operators to assume the burden of spill response, natural resource restoration, and compensation for damages caused by the spill up to a specified limit of liability.³ This “polluter pays” principle is meant to act as a deterrent by placing the liability and cost of spills on the vessel owner and operator who were responsible for the release. It is important to note that the mere presence of a discharge, not resulting harm, triggers the application of the statute.⁴

OPA expanded Section 311 of the Clean Water Act and created the National Contingency Plan (NCP). The NCP establishes the National Response System (NRS), “a multi-tiered and coordinated national response strategy for addressing oil spills.”⁵ Specifically, the NCP provides a framework for federal, state, and local collaboration in response to releases of hazardous substances.⁶ It also outlines funding mechanisms for cost of cleanup. Most federal emergency response plans are administrative in nature. The NCP however, is codified in federal regulations making it binding and enforceable.⁷ OPA applies to all discharges regardless of source. Thus, NCP regulations apply to applicable spills from vessels, pipelines, onshore and offshore facilities.⁸ The definition of “onshore facility” also includes “motor vehicles and rolling stock,” which would include railroads.⁹ Similar to other emergency response laws, OPA provides three defenses: (1) Act of God, (2) Act of war, or (3) Act or omission of a third party.¹⁰

In addition to OPA, the regulatory oversight of the transportation of oil in the maritime mode is governed by numerous treaties, statutes and implementing regulations. These include the Safety of Life at Sea (SOLAS) Convention, the Ports and Waterways Safety Act of 1972, the Port and Tanker Safety Act of 1978, and the Act to Prevent Pollution from Ships which implemented provisions from the International Convention for the Prevention of Pollution from Ships (MARPOL 1973 and 1978).

Liability Under OPA

Vessel owners or operators must pay cleanup costs associated with the response effort and costs incurred by the federal government, state government and private parties.¹¹ Under OPA, a responsible party is liable for removal costs and damages.¹² Liability limits, or the amount a responsibly party is required to pay are determined by a vessel's gross tonnage and varies by vessel type.¹³ To account for instances where the polluter cannot afford to pay, cannot be found or is foreign, Congress created the Oil Spill Liability Trust Fund (OSLTF) to supplement OPA's expanded range of covered damages.¹⁴ The Fund can supply up to \$1 billion for any single oil pollution incident, including up to \$500 million for the initiation of natural resources damage assessments (NRDA) and other claims. Essentially, the fund may be used to cover costs for responding to oil spills that are above the responsible party's liability limits or if the responsible party cannot be identified, and for some natural resource assessment and restoration activities.¹⁵ Sources for the principal fund have included taxation, transfer from existing pollution funds, and interest accrued through U.S. Treasury investments, in addition to recovery of both costs incurred by the government during spill response and recovery efforts and penalties for violations of the law, both of which are paid by responsible parties liable for a spill incident.^{16,17} The original 5-cent-per-barrel excise tax specified in OPA expired due to a sunset provision on December 31, 1994 and was reinstated again effective through April, 2006, by the 2005 Energy Policy Act.¹⁸ Most recently, the Energy Improvement and Extension Act of 2008 both extended the per-barrel tax – through December 2017 – and increased the tax to 8 cents from 2009-2016 and to 9 cents in 2017. The U.S. Coast Guard (USCG), acting in consultation with other federal departments, is responsible for determining adjustments to the fund. They can do this at most every three years. USCG provided a report on liability limits to Congress in 2012¹⁹ and proposed new liability limits in August 2014.²⁰

Models for States' Liability Authority Under OPA

Additionally, OPA preserves states' authority to enact higher penalties or stricter oil-handling requirements, presenting room for states to implement liability standards within their own jurisdictions exceeding the federal specifications.²¹ Two models for enacting higher penalties are oil transport laws implemented in Alaska and California, which specify robust financial responsibility requirements that significantly exceed the federal requirements under OPA. While total liability under OPA shall not exceed specified amounts depending on the particular vessel carrying oil, Alaska differentiates between carriage of crude versus non-crude oil, utilizing a metric for each category to specify liability instead of vessel categorization.²² For crude oil, Alaska's law requires "\$501.60 per incident for each barrel of capacity or total of \$1,672,000, whichever is greater," while for non-crude, it requires "\$167.20" per incident per barrel or a total of \$585,200."²³

Further, while OPA and Alaska's laws cap recovery from guarantors, California's law both requires proof of financial responsibility as a minimum requirement for vessel certification and does not set caps on liability. For example, the liability potential required for issuing of certification for a tank vessel states: "the applicant can satisfactorily demonstrate the capacity to pay at least \$1,000,000,000 for any damages during the time the certificate is active."²⁴ Smaller barges, non-tank vessels, mobile transfer units, and vessels carrying oil as secondary cargo are required to demonstrate a capacity to pay at least \$300,000,000 prior to receiving certification.²⁵ Significantly, California's law treats the amount of proven financial responsibility as a minimum quantity, stating it "in no way restricts or sets financial limitations on any duty, obligation or liability of the responsible party for the State of California or any other public or private entity. This includes civil penalties assessed pursuant to all applicable federal, state and local laws."²⁶

The California and Alaska oil transport models underscore the importance of ensuring that liability coverage and financial responsibility requirements satisfy obligations and liabilities that may arise from any major incident. Given high costs potentially incurred by ruptures and spills, the California and Alaska models provide notable models for

increasing financial responsibility by State jurisdictions. Other organizations have proposed the creation of an additional, comprehensive Oil Spill Contingency or Liability Trust Fund to cover oil transport areas where adequacy of requirements may not satisfy obligations and liabilities. Such a fund would be paid by the collective oil transportation industry financed by a fee per barrel of oil conveyed, and would be intended to provide short-term financial assistance to various levels of government for costs related to response, clean-up, or other required action.

Binational and Canadian Federal Acts

In the Great Lakes, the Great Lakes Water Quality Agreement (GLWQA), signed by the United States and Canada, was first negotiated in 1978 and is intended to, “provide a vital framework for binational consultation and cooperative action to restore, protect, and enhance the water quality of the Great Lakes.”²⁷ Specifically, Article 6 of GLWQA requires notification of “planned activities that could lead to a pollution incident or could have a significant cumulative impact on the waters of the Great lakes.”²⁸ Subsection (c) of the Article lists oil and gas pipelines and oil and gas drilling as examples of activities that could trigger notification.²⁹ Moreover, the Agreement leaves open the last clause of actions that trigger notification, saying simply “other categories of activities identified by parties.” While transport of crude oil by rail or ship is not specifically listed in the Agreement, it could be added under this section if the parties deem it appropriate. Great Lakes binational agreements such as CANUSLAK (the joint marine pollution contingency plan) and CANUSCENT (the joint inland pollution contingency plan) prompted by the Great Lakes Water Quality Agreement provide the framework for well-coordinated emergency preparedness and response between the two countries.

In Canada, the transportation of oil is primarily overseen by two federal agencies: Transport Canada and the National Energy Board (NEB). Under the Transport of Dangerous Good (TDG) Act, Transport Canada governs the movement of dangerous products, including oil, by road, rail, air and ship using regulatory oversight, inspections, and enforcement to prevent spills.³⁰ The agency also conducts inspections, monitors compliance and approves emergency response plans. The NEB, on the other hand, oversees pipelines. Provincial and territorial governments also have a role. For example, the individual provinces ensure that the federal regulations are implemented and may apply stricter regulations. Like the United States, Canada utilizes a polluter pays system with liability limits and requires shippers to carry insurance in similar amounts to those outlined in international protocols. Legislative and regulatory amendments have focused on enhancing Canada’s Ship-Source Oil Pollution Fund³¹ to help strengthen the current “polluter pay” principle and to ensure adequate coverage for those suffering damages as a result of a ship-source oil spill. If passed, the current per-incident Fund limit will be removed and the entirety of the Fund will be made available, which will provide \$1.6 billion for clean-up and compensation. If further funding is required, the Fund will be temporarily topped up by the federal government, and any requirement to top up the Fund will be recouped from industry through a levy, which would confer an unlimited amount available for eligible clean-up and compensation.

Both the U.S. and Canadian federal governments also consult with Tribal Governments, First Nations, and Métis peoples as a part of the governance of oil transportation and infrastructure development with respect to federal regulations recognizing treaty-based and other rights. For example, as part of environmental assessment processes in a number of situations, including due to “statutory and contractual obligations, policy and good governance, and the common law duty to consult,”³² Canada carries out consultations with First Nations. This “Whole of Government” approach to consultation is to ensure that First Nations and Aboriginal groups are sufficiently consulted when the government considers new action that may adversely impact potential or established treaty rights. Similarly, U.S. federal regulations include a number of different situations in which Tribal Governments must be consulted prior to federal permitting or other actions. Under the GLWQA, both the U.S. and Canadian governments consult with Tribal Governments, First Nations, and Métis representatives, and this function is integrated throughout implementation governance processes.

At the provincial level, some mechanisms for communication, coordination and notification between jurisdictions regarding oil transportation and spills currently exist and may be expanded to further enhance preparedness and response in the region. For example, the Ontario Ministry of the Environment and Climate Change (MOECC) has formal and informal notification arrangements with neighboring jurisdictions. MOECC has a formal agreement with the State of Michigan to notify regarding environmental discharges that may cross boundaries, and efforts are underway to formalize a similar spill reporting agreement with the province of Québec.

Vessels

Each mode of transporting oil has associated benefits and risks. Late in 2013, Calumet Specialty Products Partners, an Indiana-based energy company, noted the benefits of shipping crude oil by vessel due to a lack of sufficient pipeline and rail capacity. Calumet suggested transporting heavy crude oil from northern production fields to key refining centers through a dock upgrade project which would allow crude oil to be shipped by barge from Lake Superior. Even though this project is on hold for now, the proposal has garnered both support from the company's customers and opposition from groups concerned about the potential for spills of crude oil directly into the waters of the Great Lakes.³³ The prospect of expanding the shipment of crude on the Great Lakes by vessel is a concern to some in the region. On the St. Lawrence River, crude oil has been imported for years and is now beginning to be exported.

Shipping by vessel provides a reliable and cost-effective way of transporting bulk goods and it has made oil the most traded commodity in the world.³⁴ Liability for vessel operations is predominately governed by OPA, which amended the 1978 Tank Vessel Act as well as the Ports and Waterways Safety Act of 1972.³⁵ Under OPA, vessels must submit a vessel response plan to the agency of jurisdiction, either U.S. Coast Guard (USCG) or U.S. Environmental Protection Agency (U.S. EPA), before it is able to handle, store or transport oil.³⁶ Response plans must, at a minimum, identify how the owner or operator of a vessel will respond to a worst-case scenario spill.³⁷ Additionally, OPA requires all ships and tank barges to have certain design requirements, in particular double hulls, by 2015.³⁸ The respective Canadian framework is based on OPA, MARPOL and the Canada Shipping Act (CSA).³⁹ Since 2010, all large tankers have to be double-hulled and by 2015, all small tankers will also have to be.⁴⁰ All vessels operating in the Great Lakes meet double-hull standards.⁴¹ The industry directory *Greenwood's Guide to Great Lakes Shipping* lists a fleet of 18 powered tanker ships (as opposed to non-powered tank barges) active in the Great Lakes-St. Lawrence system, 17 of which are of Canadian registry. The lone U.S. flag powered tanker is a 120-foot vessel used exclusively to refuel cargo ships in southern Lake Michigan. Currently, the Coast Guard conducts annual safety and security inspections on all inland and oceangoing tank barges, and all must have a Coast Guard-issued Certificate of Inspection to be renewed no more than 90 days from the date of expiration each year.⁴²

The U.S. Coast Guard and Transport Canada are the two agencies charged with the regulatory oversight of oil transportation by vessel and preventing the discharge of oil into the Great Lakes. For responding to oil spills in the United States, the U.S. Coast Guard is the Federal On-Scene Coordinator for the coastal zone (including the Great Lakes) and the EPA has responsibility for the inland zone. The Canadian Coast Guard is responsible for responding to oil discharges on Canadian Great Lakes waters. The Canadian spill response framework is based on a tiered approach, with the Coast Guard acting as the on-scene commander and certified response teams (RO) being responsible for the cleanup.⁴³

Under OPA, USCG is responsible for the waters of the Great Lakes and oversees and tests spill response programs for vessels and shore-based transfer facilities in the region. Generally, the USCG performs two multi-agency, interstate spill response exercises each year along with smaller monthly exercises.⁴⁴ The Coast Guard has 29 planned oil response exercises to be conducted over the next five years.⁴⁵ Since the enactment of OPA, the Coast Guard has also partnered with the American Waterways Operators (AWO) to establish the AWO Responsible Carrier Program in 1994 and the Coast Guard-AWO Safety Partnership, which have sponsored a number of initiatives to cooperatively improve safety, security, and environmental stewardship.

Noted regulatory gaps are related to USCG operations. For example, Congress has expressed concern with the pace of the USCG issuing regulations. The 2010 Coast Guard Authorization Act directs the U.S. Coast Guard to re-visit the existing regulations addressing the transfer of oil to and from vessels at oil transfer facilities and examine if any additional preventative measures are needed in sensitive areas or during high-risk conditions. Under the Coast Guard Authorization Act,⁴⁶ USCG was to finalize rulemaking related to oil pollution prevention and towing vessels within 18 months of passage of the Act (April 15, 2012) and promulgate regulations to reduce the risk of oil spills during transfer of oil from vessel to tank.⁴⁷ The Coast Guard issued a request for public comments in October 2013 but has not yet proposed regulations.⁴⁸ Furthermore, USCG recently said that the USCG and other responders are not adequately equipped or prepared for a "heavy oil" spill on the Great Lakes.⁴⁹ A 2013 report issued by the USCG and U.S. Dept. of Homeland Security concluded that current methods are inadequate to find and recover submerged oil.⁵⁰

In Canada, Transport Canada oversees the shipping of dangerous goods and prevention of spills under the 2001 Canada Shipping Act (CSA) along with International Maritime Organization (IMO) standards.⁵¹ Under the CSA,

ships must have a Shipboard Marine Pollution Emergency Plan (SOPEP) approved by Transport Canada or a mandated organization.⁵² Tankers are also held to design standards under The International Convention for the Prevention of Pollution from Ships (MARPOL) and CSA.⁵³ As under OPA in the U.S, Canada's Marine Oil Spill Preparedness and Response Regime employs a public-private partnership model: industry funds and manages spill response while Transport Canada regulates and enforces the industry's responsibilities, with the Canadian Coast Guard (CCG) acting as the on-scene commander.⁵⁴

The Canadian government has proposed new changes to further strengthen shipping regulations. For example, the Safeguarding Canada's Seas and Skies Act, which would amend the CSA, proposes strengthening current requirements, increasing Transport Canada oversight and enforcement capabilities. The Act also proposes removing legal barriers that have blocked Canadian response organizations from participating in cleanup as well as implementing liability schemes for spill cleanup costs based on international conventions.⁵⁵ The bill has not been voted on yet.⁵⁶ Furthermore, the ministers of Transport and Natural Resources announced other measures to strengthen Canada's tanker safety system, including increasing the number of tanker inspections, establishing an incident command system and enhancing Canada's current navigation system.⁵⁷ These measures are part of a federal initiative to "create a world-class tanker safety system" in preparation for the growth of export transportation by tanker.⁵⁸

Pipelines

In the United States, interstate pipelines are governed by a number of different regulations and agencies. First and foremost, the Pipeline Safety Act (PSA) grants to the U.S. Department of Transportation (U.S. DOT) regulatory authority over the safety of hazardous liquid pipelines, which may transport oil.⁵⁹ Within U.S. DOT, the Pipeline and Hazardous Material Safety Administration (PHMSA) administers the program through U.S. DOT's Office of Pipeline Safety (OPS).⁶⁰ OPS implements pipeline design, construction, operation, maintenance and spill response planning provisions.⁶¹ Federal pipeline safety requirements are enforced by three primary mechanisms: PHMSA administrative orders, and civil and criminal sanctions pursued in court or citizen suits.⁶² PHMSA is the only agency authorized to prescribe safety standards for interstate pipelines.⁶³ However, it does not have the authority to prescribe the location or routing of a pipeline.⁶⁴ This gap in federal power allows the states an opportunity to become directly involved as they may exercise authority over the selection of pipeline routes within their state.⁶⁵ Only three Great Lakes states have exercised their authority: Michigan,⁶⁶ Minnesota⁶⁷ and Illinois.⁶⁸ All three states require permits for new oil pipeline construction. Proposed standards must be compatible with federal regulations. However, specific permitting requirements vary by state and may not compel coordinated risk assessment or environmental review, while jurisdiction over construction is split across a number of different regulatory bodies in each state. Furthermore, states may take a leadership role in the oversight of pipeline safety by stat assuming intrastate regulation, inspection and enforcement responsibilities under an annual certification issued by PHMSA. Three states in the Great Lakes basin (Minnesota, New York and Indiana) have certified programs.⁶⁹ Despite their certification, none of these states impose a requirement on pipelines that is stricter than the federal government standards.⁷⁰

Beyond the PSA, other acts applicable to the governance of pipeline safety include the Hazardous Liquid Pipeline Safety Act of 1979, which grants power to U.S. DOT to regulate various issues regarding oil spills from pipelines,⁷¹ and the Pipeline Safety and Reliability Improvement Act of 2006, intended to improve pipeline safety and security practices and reauthorize the federal Office of Pipeline Safety and make it part of PHMSA.⁷²

In Canada, interprovincial and international transport of oil by pipeline is governed by the NEB pursuant to the National Energy Board Act (NEBA).⁷³ Pipelines which lie completely within the borders of a single province are regulated by that province's regulatory body under provincial law.⁷⁴ The NEB promotes the safety, security, environmental protection and efficient energy infrastructure and markets in the Canadian public interest. It is a quasi-judicial, federal tribunal operating as a court that reports to parliament and is charged with overseeing and maintaining pipelines to ensure continued compliance with applicable regulations and standards, such as the Canadian Standards Association's Oil and Gas Pipeline System Standards.

Pipeline companies are also required to adopt management systems. The NEB regulation is focused on outcomes and is as specific as necessary. It starts by defining the safety and security, environmental protection and economic efficiency outcomes to be achieved. This approach requires regulated companies to determine the means to achieve the outcomes to effectively manage risk. It then sets the necessary management processes, operational standards and

reporting requirements to achieve the desired outcomes. The NEB is of the view that carefully designed and well-implemented management systems are the fundamental method to be used by industry to keep people safe and protect the environment. Management system requirements are set out in the *National Energy Board Onshore Pipeline Regulations* (OPR), a “management system” a systematic approach designed to effectively manage and reduce risk. It includes the necessary organizational structures, resources, accountabilities, policies, processes and procedures for an organization to fulfill all tasks related to safety, security and environmental protection. The NEB verifies that companies have implemented those management systems by conducting audits, onsite inspections, and verifying company documents and procedures.⁷⁵ Under the NEB Act, sanctions for violating certain sections consist of fines, prison sentences or both.

Other regulations involved in the operations of safe pipelines across Canada are the National Energy Board Act regulations on onshore Pipeline Regulations (OPR) and Processing Plant Regulations.⁷⁶ Pipeline operators are responsible for spill cleanup. They must submit an Emergency Response Plan (ERP) to the NEB. The plans are tested regularly by emergency response exercises.⁷⁷ Much like the requirements under the U.S. OPA, operators in Canada must have sufficient insurance to pay remediation and associated costs of spill cleanup. In June 2013, the Canadian government announced that it intends to start requiring major crude oil pipeline operators to have one billion in financial capacity to operate pipelines in a manner that ensures safety of the people, security of the pipeline, and protection of the property and environment.⁷⁸

Further, cooperation between regulators and governments in Canada allows cross-jurisdictional energy transportation projects to be regulated. A Memorandum of Understanding (MOU) is one tool to identify opportunities to coordinate responsibilities when possible and share information. Each party to an MOU remains independent and sovereign to its decision-making. . In a July 2013 Memorandum of Understanding (MOU) between NEB and Transport Canada, Transport Canada transferred approval authority for new pipelines that pass in, over or under navigable waters to NEB.⁷⁹ The National Energy Board (NEB) has also various MOUs in place to deal with adjacent jurisdictions, including a multi-party agreement between the NEB and the Ontario Ministry of Energy and Environment, the Ministère des Ressources Naturelles du Québec and various other provincial governments

The U.S. and Canadian governments have taken recent actions to assess and improve pipeline safety and preparedness regulations. A May, 2014, Audit by U.S. DOT Inspector General found that PHMSA’s State Pipeline Safety Program guidelines, policies, and procedures for state pipeline safety programs lack elements to ensure state inspections cover all Federal requirements and pipeline operators maintain safety standards. It noted an outdated staffing formula and that guidelines lack sufficient detail on states’ use of risk factors for scheduling inspections and do not require PHMSA evaluators to review the adequacy of states’ inspection procedures. In June, 2014, Canada’s NEB amended the National Energy Board Onshore Pipeline Regulations to require companies to have management systems in place that support the development and maintenance of a healthy Safety Culture.⁸⁰ States and provinces have also played a role. For example, beginning in June of 2014, Michigan’s Attorney General and Department of Environmental Quality Director are convening a taskforce to study petroleum pipeline safety and preparedness for spills in Michigan. In Canada, the provinces of Ontario and Québec have submitted conditions to approve TransCanada’s Energy East project. These include high technical standards, strict inspection programs, and a detailed response plan.

Rail

North American crude oil producers are increasingly turning to rail because it is a quicker, more flexible alternative to new pipeline projects.⁸¹ According to the Association of American Railroads, the total amount of freight shipped by all modes will increase by nine percent, or 1.1 billion tons between 2010 and 2020. 176 million tons of that increase will be freight shipped by rail.⁸² This projection includes a rapid increase in freight traffic related to energy production and crude oil shipping.⁸³ Further, rail terminal capacity is expected to increase fourfold from 2012-2015.⁸⁴ The increase in rail traffic has resulted in a greater number of rail accidents. The frequency of accidents has led state and federal legislators and agencies to implement emergency measures and seek immediate regulatory change.

Traditionally, rail in the United States, has been governed by PHMSA and the Federal Railroad Association (FRA) within U.S. DOT. Rail regulations do not outline a specific response program in the same way as OPA. Railroads must adhere to all federal railroad regulations as well as applicable state regulations of the states in which they

operate. In fact, railroads have primary responsibility for their own safe operation.⁸⁵ Title 49 of the U.S. Code of Federal Regulations, commonly known as Federal Motor Carriers Safety Regulations (FMCSR), outlines the duties of each party involved in shipping hazardous material by rail. Shippers must properly classify the material and memorialize the information in shipping papers.⁸⁶ Shipping papers are then given to the carrier who must possess a hard copy of the shipping papers until delivery.⁸⁷ Each tank car must be subject to, at a minimum, an exterior visual inspection by the shipper before it is offered for shipment.⁸⁸ This includes ensuring the required markings on the tank car are legible and inspection test intervals are within the prescribed intervals.⁸⁹ Likewise, the carrier must inspect each rail car containing the hazardous material, at ground level, for required markings, labels, placards, securement of closures, and leakage at each location where a hazardous material is accepted for transportation or placed in a train.⁹⁰ In addition to carrying shipping papers,⁹¹ carriers must mark and placard all rail cars carrying hazardous materials before materials can be transported.⁹² If a placard is lost in transit then it must be replaced at the next inspection point.⁹³

PHMSA and FRA share oversight responsibility, with the FRA responsible for inspecting shippers for safety compliance.⁹⁴ Rail incidents are then investigated by the National Transportation Safety Board (NTSB).⁹⁵ Unlike the FRA, NTSB has no regulatory authority so it may weigh benefits of additional safety measures without regard to cost.⁹⁶ Specifically, PHMSA regulates safe transport of hazardous material (hazmat) by all modes of transportation. FRA then enforces PHMSA hazmat requirements with respect to railroads. FRA regulates track safety, grade crossings, rail equipment, operating practices, and movement of hazardous material.⁹⁷ Rail companies perform their own safety inspections by a team of trained inspectors.⁹⁸ FRA trains state safety inspectors and has about 400 inspectors nationwide.⁹⁹

It is important to note that state inspectors predominately enforce federal law because federal rail safety law preempts state law.¹⁰⁰ When a state law is preempted by a federal law, the state is barred from regulating on the facet of law expressly regulated by the federal government. The Supreme Court spoke in favor of upholding state regulation unless specific authority has been granted to the federal government. The Court said that when federal and state laws both apply, then there is a presumption that a state's police powers are not to be superseded unless it was "the clear and manifest purpose of Congress."¹⁰¹ Thus, when Congress has given the federal government specific jurisdiction to regulate then a state can be prohibited from acting. This can produce weaknesses in areas of federal jurisdiction when regulatory frameworks are nascent, such as in this case of crude oil transport by rail.

An example of this preemption conundrum arose in Washington State with respect to OPA. Washington created a new state agency which promulgated rules on tanker design, equipment reporting, and operating requirements. A shipping company filed suit to challenge the newly promulgated rule. Ultimately, in *U.S. v Locke*, the Supreme Court held Washington's new regulations were preempted under OPA.¹⁰² The Court upheld some of the new state regulations but invalidated others on the grounds that, rules related to crew training were, "preempted by the comprehensive federal regulatory scheme governing oil tankers."¹⁰³ OPA speaks directly to crew training and operations requirements so Washington could not create a new state agency regulating tanker crew training. While *Locke* dealt with OPA, this holding is analogous to the facts of railroad regulation because one of the largest concerns with rail safety is the adequacy of inspections. The power to train state safety inspectors is granted to the FRA.¹⁰⁴ Thus, should states raise their inspection standards for safety inspectors they may be entering the field of federal regulation and face a preemption challenge.

Furthermore, amending FRA regulations can be challenging. It requires a formal rulemaking process and consultation with industry experts, which can take years to complete.¹⁰⁵ However, an increase in rail traffic will require more safety personnel in a greater number of locations but the FRA National Inspection Plan (NIP) is not designed to account for newly emerging risks or react swiftly to accidents.¹⁰⁶ In fact, according to FRA headquarters, hiring and training new inspectors can take 4 to 6 months while qualifying new inspectors to be able to conduct inspections independently can take as long as 4 years.¹⁰⁷ This inability of safety inspections and inspectors to keep pace with the rate of increase of rail activity poses a gap in applying safety regulations. In an effort to fill that gap and circumvent the lengthy amendment process, states may choose to enact their own laws, which could give rise to preemption challenges.

Other notable gaps or weaknesses in the rail regulatory framework include the need to upgrade Class 111 (DOT-111 in the United States) tank cars, introducing legislation requiring the installation of positive train control (PTC) designed to override human error in controlling train speed in all trains, and enforcing adequate inspection and labeling procedures. Congress has acknowledged many of these weaknesses and gaps in the current regulatory

regime and is taking steps to correct the system.¹⁰⁸ In light of the mounting number of recent accidents, both federal agencies and state governments have been pursuing policy and legislative changes.

First, Congress has introduced legislation to require two-person crews on all trains¹⁰⁹ and now requires that PTC be installed in all routes carrying certain types of hazardous material.¹¹⁰ Currently, installation of PTC is not required on lines carrying crude oil but the law authorizes FRA to expand the scope and apply it to tracks carrying crude oil.¹¹¹ Further, over the past year, PHMSA and FRA have undertaken a number of actions such as launching ‘Operation Classification’ in the Bakken region to verify that crude oil is properly classified, conducting special investigations and aggressively moving forward with a rulemaking to enhance tank car standards.¹¹² PHMSA has proposed a rulemaking seeking to impose additional safety standards on the DOT-111 tank cars and the phasing out of old DOT-11 tank cars.¹¹³ The proposed rule, published July 23, 2014, was one of four amendments recommended by the National Transportation Safety Board, and the final rule is expected in May, 2015, despite a deadline set by Congress for February, 2015. The notice of proposed Rulemaking (NPRM or Rule) proposed enhanced tank car standards, classification testing and new operations requirements that include braking controls and speed restrictions.¹¹⁴ Specifically, the rule proposes phasing out DOT-111 tank cars for the shipment of packing group I flammable liquids, including most Bakken crude oil, unless the tank cars are retrofitted to comply with new tank car design standards.¹¹⁵ U.S. DOT has also issued Emergency Orders imposing stricter standards to transport crude oil by rail; prohibiting shippers from switching to an alternate classification that involves less stringent packaging; as well as requiring railroad carriers to inform first responders about crude oil being transported through their communities and for the immediate development of oil spill plans. U.S. DOT also sent a letter to the American Association of Railroads (AAR) outlining actions that can be voluntarily taken immediately by industry to improve safety for railroads transporting crude oil and the communities they move through; AAR and member railroads subsequently signed the agreement.

Moreover, U.S. DOT has mandated testing standards. The agency issued an emergency restriction/prohibition order mandating adequate testing and treating all bulk petroleum crude oil as the highest level packing class. As the basis for the order, U.S. DOT said “misclassification is one of the most dangerous mistakes to be made when dealing with hazardous material because proper classification is a critical first step in determining how to...safely transport hazardous material.”¹¹⁶ The agency then issued an amended version of its order stating exactly which tests were required so as to prevent shippers’ attempts to circumvent the requirements.¹¹⁷ Shortly thereafter, U.S. DOT issued another emergency prohibition requiring all railroads operating trains with 1 million gallons or more of Bakken crude oil to notify State Emergency Response Commissions of transport.¹¹⁸

States are also proposing regulatory changes, improving implementation of existing programs, and taking other actions on transport of crude oil by rail. For example, a new Minnesota law, enacted in July 2014, pertains directly to safety and emergency response preparedness of oil transport by rail.¹¹⁹ The new law strengthens emergency response standards for pipelines and oil-carrying railroads and requires railroads to provide triennial emergency response training to every fire department located along train routes and submit fire emergency response plans to the Minnesota Pollution Control Agency.¹²⁰ As of December, 2014, the State of New York has implemented a new targeted rail inspection and training campaign, among other measures. The Governor of New York previously issued in January, 2014, an Executive Order directing state agencies to petition U.S. DOT to strengthen rail car standards, and to assess federal agencies’ needs and risks associated with the transport of crude oil. A multi-agency report was released in April, 2014, by the State of New York on transporting crude oil with recommendations to reduce risks and improve response capacity directed toward the state, the federal government and industry.¹²¹ A status update that includes a progress report was published in December 2014.¹²² The New York Department of Environmental Conservation’s and New York Department of Transportation’s Commissioners, and separately the Governor of Minnesota wrote a letter to the Governor of North Dakota advocating that the North Dakota Industrial Commission establish conditioning standards to reduce volatility of Bakken crude oil. Subsequently, in December 2014, North Dakota regulators ordered that such crude oil be treated to reduce volatility in advance of transport.

Between the United States and Canada, cross border shipments must meet both U.S. and Canadian requirements. In fact, safety standards developed by the rail industry apply to both countries.¹²³ Also, a tank car authorized by Transport Canada may be used for U.S. operation provided it complies with U.S. requirements¹²⁴ The Canadian regulatory framework for rail is similar to the U.S. system, with Canadian railways regulated by both the federal and provincial governments.¹²⁵ As most trains are interprovincial or international, Canadian federal law is controlling. Transport Canada establishes a safety regime for railway operations that stems from its overarching duty to protect

the people and environment, but the railway companies have the primary responsibility for ensuring safe operations.¹²⁶ The primary acts involved are the Railway Safety Act (RSA)¹²⁷ and Transportation of Dangerous Goods Act (TDG).¹²⁸ Under the RSA, rail companies must establish a safety management system (SMS), but safety culture assessments (audits) are not mandatory under this program.¹²⁹ The Act is applied broadly but sets a flexible standard by allowing a single company to be treated uniquely.¹³⁰ Further, the RSA allows rail companies to set their own standards, which can become legally recognized as regulations, subject to Transport Canada approval.¹³¹ Rail companies are obligated to inspect any equipment which traverses their lines, but ownership of the rail car remains with the shipper.¹³² Both the railroad and shipper must be prepared for a spill. Under the TDG Act, every shipper must send a Transport Canada-approved Emergency Response Assistance Plan (ERAP) with each shipment and rail companies must submit ERAPs for each train.¹³³

Like the U.S. government, the Canadian government has noted a number of regulatory gaps. In a 2011 Audit, the Commissioner of the Environment and Sustainable Development found major gaps to include: 1) a lack of national risk-based compliance inspection, 2) lack of follow-up by Transport Canada on identified deficiencies, 3) lack of knowledge by Transport Canada as to the extent to which organizations transporting dangerous goods are complying with regulations and, 4) inability of Transport Canada to conduct adequate timely reviews when responding to ERAPs.¹³⁴ An August 2013 report to the Standing Senate Committee on Energy, the Environment and Natural Resources noted two other gaps, finding that Transport Canada cannot assure that sites are inspected relative to the amount of risk posed by each specific transport and that Transport Canada has only given approval for half the ERAPs submitted. This means many dangerous goods are regularly shipped without a sufficient response plan.¹³⁵ The Canadian government has acknowledged these gaps and is working to remedy the danger. Most recently, the Transportation Safety Board of Canada published the results of their investigation of the derailment accident in Lac-Mégantic, Québec. The Board identified 18 causes and contributing factors, including a lack of enhanced safety features, specifically sufficient handbrake force to keep the train from moving once stopped and unmanned. This could have prevented the train to go downhill, derail and cause the resulting fire.¹³⁶ Furthermore, the board found that, although Montreal, Maine & Atlantic Railway Company (MMA) had developed a safety management system in accordance with federal law in 2002, the company did not begin implementing the system until 2010. By the time of the accident in 2013, the system was still not functioning effectively.¹³⁷ Likewise, Transport Canada's regional office in Québec did not audit MMA until 2010 even though inspections had shown that the company's safety management system was not effective. Additionally, Transport Canada Headquarters did not effectively monitor the region's activities. Thus, Transport Canada was not aware of a weakness in oversight by the Québec regional office and did not intervene.

Like in the United States, the most common liquids transport car in Canada is the Class 111 (CTC-111) tank car. Following the Lac-Mégantic disaster in July 2013, the Minister of Transport issued an Emergency Directive to certain rail companies mandating immediate employment of additional safety measures such as a minimum two-member operating crew, protecting unattended locomotives from unauthorized entry, specific instruction on handbrakes, prohibiting leaving any rail car transporting dangerous goods unattended.¹³⁸ In October 2013, Transport Canada, under Section 32 of the TDG Act, issued a Protective Direction requiring that all persons importing or offering for transport crude oil immediately test the classification.¹³⁹ Both the instructions issued on handbrakes and the protective order requiring adequate and additional testing stem directly from the Lac-Mégantic accident.¹⁴⁰ These emergency and protective orders culminated in the Canadian Minister of Transport announcing proposed regulatory changes that will require new CTC-111 tank cars to be built with thicker steel and top fitting and head shield protection.¹⁴¹ Similarly, in the months following the Lac-Mégantic accident, TSB issued an advisory letter calling for needed changes such as the need for employee training programs.¹⁴² Between March and June of 2014, Transport Canada took a number of additional actions, including: announcing a three-year phase out deadline for DOT-111 tank cars; releasing an amendment to the Railway Safety Act (RSA) to speed up directive approvals in emergencies; introducing monetary penalties for RSA violations; introducing a series of regulatory amendments requiring 35 provincially regulated railway and light-rail companies operating on federal track to develop and implement Safety Management Systems; formalizing new Class 111 tank car standards; and improving data reporting requirements for railways to proactively identify and address safety risks before accidents happen.¹⁴³ Meanwhile, MMA eliminated single-person crews and increased testing and enforcement.¹⁴⁴ In August 2014, TSB put forth their most recent set of recommendations: 1) Canadian railways must put in place additional physical defenses to prevent runaways, and 2) Transport Canada must take an active role in ensuring that railways' safety management systems not only exist but are effectively working.¹⁴⁵ Near the end of 2014, Transport Canada also released a regulation requiring companies to

hold a valid Railway Operating Certificate in order to operate on federally regulated railways in Canada, as well as new regulations for federally-regulated road and rail crossings and amends existing information regulations to identify and address safety risks.¹⁴⁶

Noteworthy State Programs

Updating programs and policies in the Great Lakes basin is rapidly progressing with state elected officials and agencies implementing more rules, regulations and policy suggestions at regular intervals. A few examples from the basin include:

- 1) The Michigan attorney general and Department of Environmental Quality (DEQ) director are convening a taskforce to study petroleum pipeline safety throughout the state as well as the state's preparedness for spills¹⁴⁷
- 2) On Jan. 14, 2014, the New York governor issued an Executive Order to various state agencies directing them to petition U.S. DOT to strengthen rail car standards, and assess federal agencies' needs and risks associated with the transport of Crude Oil.¹⁴⁸ The agencies subsequently issued a report outlining 26 suggested actions.¹⁴⁹ The update published in December 2014 presented the progress report, including a list of upgraded and new programs.¹⁵⁰
- 3) Minnesota has been exploring ways to enhance their emergency response system and highlighting the importance of lessening the volatility of Bakken crude oil transported by rail. The legislature discussed this issue earlier this winter when the Oil Spill Defense Act was moving through the Legislature.

There are states outside the basin that have noteworthy and innovative programs, as well. Some examples include:

Washington

Washington utilizes an innovative strategy to respond to spills under the Vessel of Opportunity (VOO) Program. This program identifies private vessels, such as fishing vessels that are able to help out in the event of a spill.¹⁵¹

Alaska and California

Alaska has an entire Department of Environmental Conservation (DEC) Division on Oil Spill Prevention and Emergency Response dedicated to protecting the public and mitigating the effects of oil and hazardous substance releases.¹⁵² Likewise, California has the Office of Spill Prevention and Response within the Department of Fish and Wildlife.¹⁵³

Hawaii

Hawaii has designed their own fully equipped training program to respond to oil releases. The Oil Spill Response Center, run by the Clean Island Council and wholly funded by member companies, is a combination training and response facility.¹⁵⁴ The center also serves as a meeting area for the Area Planning Committee (APC) and 17 associated subcommittees.¹⁵⁵

Conclusion

The transport of oil in both the United States and Canada is regulated by a patchwork of statutes and agencies based on the mode of transport. While progress has been made within each mode there is room for further improvement. Regulations have not kept pace with the increasing amount of oil being transported, with railroads and pipeline systems under particular pressure to increase capacity. In the wake of recent oil transport-related accidents, governments at all levels have noted the need for change and have begun taking steps to alleviate the risks. Both the U.S. and Canadian governments have noted gaps in their individual regulatory frameworks and are strengthening existing laws, enacting new ones, revising policies, and revamping or expanding existing programs. As oil transport through the Great Lakes region continues to grow, actions such as maintenance of infrastructure, retrofitting of tank cars to newer, safer models, and verifying that all product is properly classified will be vitally important to the safety of the region. Likewise, ensuring that federal, state and provincial agencies are not only adequately staffed and equipped to carry out inspections and respond to spills but also dutifully report all spills will keep the region as safe as possible.

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- ¹ See generally: *Exxon Shipping Co. v. Baker*, 554 U.S. 471, (2008)
- ² See Issue Brief 2, *Advantages, Disadvantages and Economic Benefits Associated with Crude Oil Transportation*, for an analysis of the benefits and relative risks of transporting oil by rail.
- ³ Government Accountability Office, *Highlights*, 07-1085, 4 (September 2007).
- ⁴ Rebecca F. Dye, L. Pittman & Cynthia M. Wilkinson, *Slick Work: An Analysis of the Oil Pollution Act of 1990*, 12 J. Energy Nat. Resources & Envtl. L. 181, 201 (1992).
- ⁵ Jonathan L. Ramseur, *Oil Spills in US Coastal Waters: Background and Governance*. (Congressional Research Service, 2012); 40 C.F.R. Part 300 subpart D.
- ⁶ John Fritelli, Paul A. Performak, Jonathan L. Ramseur, Anthony Andrews, Robert Pirog and Michael Ratner. *U.S. Rail Transportation of Crude Oil: Background and Issues for Congress*. (Congressional Research Service, 2004)
- ⁷ John Fritelli et al, *U.S. Rail Transportation of Crude Oil: Background and Issues for Congress*; 40 C.F.R. Part 112.
- ⁸ John Fritelli et al, *U.S. Rail Transportation of Crude Oil: Background and Issues for Congress*
- ⁹ 40 C.F.R. § 300.5 (2001).
- ¹⁰ Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 107(b) (2006); Jonathan L. Ramseur, *Oil Spills in US Coastal Waters: Background and Governance* (Note: the third party defense requires additional burden of proof and does not necessarily discharge the owner/operator of all liability.)
- ¹¹ Oil Pollution Act 33 U.S.C. § 1002(b)(1).
- ¹² Oil Pollution Act 33 U.S.C. § 1002(b) (Removal Costs).
- ¹³ Government Accountability Office, *Highlights* 07-1085, 5 (September 2007).
- ¹⁴ Jonathan L. Ramseur, *Oil Spills in US Coastal Waters: Background and Governance*; 33 U.S.C. 2718(c).
- ¹⁵ Jonathan L. Ramseur, *Oil Spills in US Coastal Waters: Background and Governance*; Rebecca F. Dye, L. Pittman & Cynthia M. Wilkinson, *Slick Work: An Analysis of the Oil Pollution Act of 1990*. (J. Energy Nat. Resources & Envtl. L., 1992).
- ¹⁶ National Pollution Fund Center, Uses of the Fund, Structure of the Fund, The Emergency Fund, The Principal Fund. Available at: http://www.uscg.mil/ccs/npfc/About_NPFC/osltf.asp
- ¹⁷ 33 USC §2704 et seq.
- ¹⁸ 42 USC §13201 et seq. (2005).
- ¹⁹ U.S. Coast Guard, *Oil Pollution Act Liability Limits in 2012: Report to Congress* (Department of Homeland Security, 2012).
- ²⁰ Consumer Price Index Adjustments of Oil Pollution Act of 1990 Limits of Liability- Vessels, Deepwater Ports and Onshore Facilities, 79 Fed. Reg. 49205 (proposed Aug. 19, 2014, comment period ends October 20, 2014). Available at: <https://www.federalregister.gov/articles/2014/08/19/2014-19314/consumer-price-index-adjustments-of-oil-pollution-act-of-1990-limits-of-liability-vessels-deepwater>
- ²¹ 33 USC §2718(c).
- ²² Alaska Admin. Code tit. 18, §75.235(a) (2011); see also Alaska Stat. §46.04.04(c) (before inflation).
- ²³ Alaska Admin. Code tit. 18, §75.235(a) (2011); see also Alaska Stat. §46.04.04(c) (before inflation).
- ²⁴ Cal. Gov. Code §8670.37.53(a): see also Cal. Code Regs., tit 14, §791.7(d)(1)(2012) (applying the regulation to “Operator(s) or owner(s) of tankers, large barges, or owners of, or persons accepting responsibility for the oil”)
- ²⁵ Cal. Code Regs., tit. 14, §791.7 (e)(2)(B)-(C) (2012).
- ²⁶ Cal. Code Regs., tit. 14, §792(c) (2012); Cal. Code Regs., tit 14, §793(i) (2012).
- ²⁷ Great Lakes Water Quality Agreement as amended in 2012.
- ²⁸ Great Lakes Water Quality Agreement, art. 6(c)(iii), (iv) (Sept. 7, 2012).
- ²⁹ Great Lakes Water Quality Agreement, art. 6(c)(ix).
- ³⁰ Standing Senate Committee on Energy, the Environment and Natural Resources. *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*. (Standing Senate Committee on Energy, the Environment and Natural Resources, 2013).
- ³¹ Ship-source Oil pollution Fund. Available at: <http://www.ssopfund.ca/en/the-fund/about-the-fund>
- ³² Canadian Environmental Assessment Agency, Aboriginal Consultation in Federal Environmental Assessment, available at: <https://www.ceaa-acee.gc.ca/default.asp?lang=en&n=ED06FC83-1>
- ³³ David Schaper, *Oil Company Looks to Great Lakes as Shipping Demand Booms*, NATIONAL PUBLIC RADIO, Dec. 27, 2013 (available at: <http://www.npr.org/2013/12/27/257628015/oil-company-looks-to-great-lakes-as-shipping-demand-booms>).
- ³⁴ Commissioner of the Environment and Sustainable Development. “Oil Spills from Ships” in *Report of the Commissioner of the Environment and Sustainable Development to the House of Commons*. (Office of the Auditor General of Canada, 2010).
- ³⁵ See OPA Section of this brief for discussion of liability scheme under OPA
- ³⁶ Jonathan L. Ramseur, *Oil Spills in US Coastal Waters: Background and Governance*; 33 U.S.C § 4202 amending 33 U.S.C. 1321(j)(5)(E).
- ³⁷ David Schaper, *Oil Company Looks to Great Lakes as Shipping Demand Booms*, NATIONAL PUBLIC RADIO, Dec. 27, 2013. Available at: <http://www.npr.org/2013/12/27/257628015/oil-company-looks-to-great-lakes-as-shipping-demand-booms>
- ³⁸ See generally: 33 U.S.C. § 2701.

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- ³⁹ Transport Canada, Phasing Out of Single-hulled Oil Tankers. Available at: <https://www.tc.gc.ca/eng/marinesafety/oepe-environment-tankers-background-539.htm>
- ⁴⁰ Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ⁴¹ Lyman C. Welch, Alec Mullee, Abhilasha Shrestha and Dan Wade. *Oil and Water: Tar Sands Crude Shipping Meets the Great Lakes* (Alliance for the Great Lakes, 2013) citing D9 10 years of oil spills, Freedom of Information Act (FOIA) Response from USCG District nine in Cleveland (September 3, 2013).
- ⁴² United States Coast Guard. Prevention Division, Inspections Department. Available at: <http://www.uscg.mil/d8/sectumr/Prevention/inspections.asp>
- ⁴³ For more details on the response structure, please see Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ⁴⁴ Lyman C. Welch *et al.*, *Oil and Water: Tar Sands Crude Shipping Meets the Great Lakes*
- ⁴⁵ Lyman C. Welch *et al.*, *Oil and Water: Tar Sands Crude Shipping Meets the Great Lakes* citing FOIA Response from Lieutenant Commander Ben Gullo, U.S. Coast Guard District (May 17, 2013).
- ⁴⁶ John Frittelli. *Shipping U.S. Crude Oil by water: Vessel Flag Requirements and Safety Issues*. (Congressional Research Service, 2014) and P.L. 111-281, 701.
- ⁴⁷ John Frittelli, *Shipping U.S. Crude Oil by water: Vessel Flag Requirements and Safety Issues*
- ⁴⁸ John Frittelli, *Shipping U.S. Crude Oil by water: Vessel Flag Requirements and Safety Issues*; 78 Fed. Reg. 63235, (October 23, 2013) and Department of Homeland Security, Office of Inspector General. *Marine Accident Reporting, Investigations, and Enforcement in the United States Coast Guard*,” OIG-13-92. (Department of Homeland Security, 2013).
- ⁴⁹ Keith Matheny, *Coast Guard: We can't adequately respond to Great Lakes heavy oil spill*, DETROIT FREE PRESS (Sept. 11, 2014). Available at: <http://www.freep.com/article/20140911/NEWS06/309110045/oil-spill-coast-guard-plan-response> quoting a presentation at an International forum on Heavy oils in Detroit.
- ⁵⁰ Michele Fitzpatrick, Peter A. Tebeau and Kurt A. Hansen. *Development of Bottom Oil Recovery Systems- Final Project Report* (U.S. Coast Guard and U.S. Dept. of Homeland Security, 2013).
- ⁵¹ Transport Canada, Tank Safety and Spill Prevention. Available at: <http://www.tc.gc.ca/eng/marinesafety/menu-4100.htm>
- ⁵² Transport Canada, Environmental Prevention and Response National Preparedness Plan. Available at: <https://www.tc.gc.ca/eng/marinesafety/tp-tp13585-procedures-EPRNPP-3091.htm>
- ⁵³ Commissioner of the Environment and Sustainable Development, “Oil Spills from Ships”
- ⁵⁴ Commissioner of the Environment and Sustainable Development, “Oil Spills from Ships”
- ⁵⁵ 42 Parliament Hansard 105 (2014). Available at: <http://www.parl.gc.ca/HousePublications/Publication.aspx?Pub=Hansard&Doc=105&Parl=41&Ses=2&Language=E&Mode=1>); Canadian Newswire, Harper government announces first steps towards World-Class Tanker Safety System <http://www.newswire.ca/en/story/1131237/harper-government-announces-first-steps-towards-world-class-tanker-safety-system> (last accessed Sept. 15, 2014) (The bill went to the floor for third reading on June 17, 2014. The time for debate expired. The house did not hold a vote.)
- ⁵⁶ 42 Parliament Hansard 105 (2014)
- ⁵⁷ Commissioner of the Environment and Sustainable Development, “Oil Spills from Ships”
- ⁵⁸ Transport Canada, Flag State Control. Available at: <http://www.tc.gc.ca/eng/marinesafety/dvro-fsc-menu-1741.htm>
- ⁵⁹ Sara Gosman, Lesley MacGregor, Gabe Tabak and James Woolard. *After the Marshall Spill: Oil Pipelines in the Great Lakes*. (National Wildlife Federation, 2004).
- ⁶⁰ Sara Gosman *et al.*, *After the Marshall Spill: Oil Pipelines in the Great Lakes*; 49 C.F.R. §§ 195.1, 195.2 (2011).
- ⁶¹ Jonathan L. Ramseur, *Oil Spills in US Coastal Waters: Background and Governance*
- ⁶² Sara Gosman *et al.*, *After the Marshall Spill: Oil Pipelines in the Great Lakes*; 49 U.S.C. §§ 60117(l) Administrative orders, 60122 (administrative penalties); 60120(a)(1) (civil suits); 60121 (citizen suits) (2006).
- ⁶³ Sara Gosman *et al.*, *After the Marshall Spill: Oil Pipelines in the Great Lakes*
- ⁶⁴ Sara Gosman *et al.*, *After the Marshall Spill: Oil Pipelines in the Great Lakes*
- ⁶⁵ Sara Gosman *et al.*, *After the Marshall Spill: Oil Pipelines in the Great Lakes*
- ⁶⁶ 1926 PA 16, MCL 483.2b(2012).
- ⁶⁷ Minn. R. 7852.1400 (2012).
- ⁶⁸ Sara Gosman *et al.*, *After the Marshall Spill: Oil Pipelines in the Great Lakes*
- ⁶⁹ Sara Gosman *et al.*, *After the Marshall Spill: Oil Pipelines in the Great Lakes*
- ⁷⁰ Sara Gosman *et al.*, *After the Marshall Spill: Oil Pipelines in the Great Lakes*
- ⁷¹ Jonathan L. Ramseur, *Oil Spills in US Coastal Waters: Background and Governance*; Pub. L. 96-129. 93 Stat 989.
- ⁷² Jonathan L. Ramseur, *Oil Spills in US Coastal Waters: Background and Governance*; Pub. L. 109-468, 120 Stat 3486.
- ⁷³ Transportation of Dangerous Goods Act, 1992 (S.C. 1992, c. 34) Sec. 3(4)(b).
- ⁷⁴ Transportation of Dangerous Goods Act, 1992 (S.C. 1992, c. 34) Sec. 3(4)(b).

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- ⁷⁵ Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ⁷⁶ Lyman C. Welch *et al.* *Oil and Water: Tar Sands Crude Shipping Meets the Great Lake*
- ⁷⁷ Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ⁷⁸ Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ⁷⁹ See Memorandum of Understanding Between Transport Canada and National Energy Board for Pipelines and Power Lines Subject to the *National Energy Board Act* and *Canada Oil and Gas Operations Act* (2 July 2013) [hereinafter TC-NEB-MOU]. Available at: http://www.neb-one.gc.ca/clf-nsi/rpblctn/ctsndrgltn/mmrndmndrstndng/trnsprtnd2013_07_03-eng.html
- ⁸⁰ Advancing Safety in the Oil and Gas Industry – Statement on Safety Culture. Available at: <https://www.neb-one.gc.ca/sftnvrnmnt/sft/sftyctr/index-eng.html>
- ⁸¹ John Fritelli *et al.*, *U.S. Rail Transportation of Crude Oil: Background and Issues for Congress*
- ⁸² United States Government Accountability Office (U.S. GAO). *Improved Human Capital Planning Could Address Emerging Safety Oversight Challenges – Report to Congressional Requestors Rail Safety* (U.S. GAO, 2013)
- ⁸³ U.S. GAO, *Improved Human Capital Planning Could Address Emerging Safety Oversight Challenges – Report to Congressional Requestors Rail Safety*
- ⁸⁴ U.S. GAO, *Improved Human Capital Planning Could Address Emerging Safety Oversight Challenges – Report to Congressional Requestors Rail Safety* citing E. Russel Braziel, RBN Energy Inc. presentation as CSIS conference, *North American Oil and Gas Infrastructure, Shale Changes Everything* (November 14, 2013).
- ⁸⁵ U.S. GAO, *Improved Human Capital Planning Could Address Emerging Safety Oversight Challenges – Report to Congressional Requestors Rail Safety*
- ⁸⁶ 49 C.F.R. § 172 Subpart C *et. seq.*
- ⁸⁷ 49 C.F.R. § 172.201(5)(i).
- ⁸⁸ 49 C.F.R. § 173.31 (d).
- ⁸⁹ 49 C.F.R. § 173.31(d)(ix),(x).
- ⁹⁰ 49 C.F.R. § 174.9(a).
- ⁹¹ 49 C.F.R. § 174.24(a).
- ⁹² 49 C.F.R. § 174.59, Hazardous Materials: Minor Editorial Corrections and Clarifications- Carriage by Rail, 74 Fed. Reg. 53189, (proposed Oct. 16, 2009) (to be codified at 49 C.F.R. Pt. 172).
- ⁹³ 49 C.F.R. § 174.59.
- ⁹⁴ PHMSA considering new rules for trains carrying hazmats, 2013 WL 4757478- CQ Roll Call Washington Energy Briefing (September 5, 2013).
- ⁹⁵ U.S. GAO, *Improved Human Capital Planning Could Address Emerging Safety Oversight Challenges – Report to Congressional Requestors Rail Safety*
- ⁹⁶ U.S. GAO, *Improved Human Capital Planning Could Address Emerging Safety Oversight Challenges – Report to Congressional Requestors Rail Safety*
- ⁹⁷ U.S. GAO, *Improved Human Capital Planning Could Address Emerging Safety Oversight Challenges – Report to Congressional Requestors Rail Safety*
- ⁹⁸ U.S. GAO, *Improved Human Capital Planning Could Address Emerging Safety Oversight Challenges – Report to Congressional Requestors Rail Safety*
- ⁹⁹ U.S. Department of Transportation Federal Railroad Administration, Railroad Safety. Available at: <https://www.fra.dot.gov/Page/P0010>
- ¹⁰⁰ U.S. GAO, *Improved Human Capital Planning Could Address Emerging Safety Oversight Challenges – Report to Congressional Requestors Rail Safety*
- ¹⁰¹ *U.S. v. Locke*, 529 U.S. 89, 108 (2000) *citing* Rice v. Santa Fe Elevator Corp. 331 U.S. 218, 230 (1947).
- ¹⁰² *U.S. v. Locke*, 529 U.S. 89, 108 (2000) *citing* Rice v. Santa Fe Elevator Corp. 331 U.S. 218, 230 (1947).
- ¹⁰³ *U.S. v. Locke*, 529 U.S. 89, 108 (2000) *citing* Rice v. Santa Fe Elevator Corp. 331 U.S. 218, 230 (1947).
- ¹⁰⁴ Office Auditor General of Canada. “Oversight of Rail Safety – Transport Canada” in *Report of the Auditor General of Canada* (Office of the Auditor General of Canada, 2013).
- ¹⁰⁵ John Fritelli *et al.*, *U.S. Rail Transportation of Crude Oil: Background and Issues for Congress*
- ¹⁰⁶ U.S. GAO, *Improved Human Capital Planning Could Address Emerging Safety Oversight Challenges – Report to Congressional Requestors Rail Safety*
- ¹⁰⁷ U.S. GAO, *Improved Human Capital Planning Could Address Emerging Safety Oversight Challenges – Report to Congressional Requestors Rail Safety*
- ¹⁰⁸ Letter from Association of American Railroads to Federal Railroad Administration (October 16, 2013) Available at: <http://www.fra.dot.gov/eLib/details/L04721> (Full chronology of actions taken by DOT, PHMSA and FRA in 2013-2014).
- ¹⁰⁹ Safe Freight Act of 2013, H.R. 3040, 113th Cong. (2013).

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- ¹¹⁰ Pub .L. 110-432 § 104.
- ¹¹¹ John Frittelli *et al.*, *U.S. Rail Transportation of Crude Oil: Background and Issues for Congress*
- ¹¹² Letter from Association of American Railroads to Federal Railroad Administration (October 16, 2013)
- ¹¹³ Tait Militana, *PHMSA considering new rules for trains carrying hazmats*, CQ ROLL CALL WASHINGTON ENERGY BRIEFING, September 5, 2013, *available at* 2003 WL 4757478.
- ¹¹⁴ Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains, 79 Fed. Reg. 45015 (Aug. 1, 2014) (to be codified at 49 C.F.R. pt. 170). Available at: <https://federalregister.gov/a/2014-17764>
- ¹¹⁵ Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains
- ¹¹⁶ Letter from Association of American Railroads to Federal Railroad Administration (October 16, 2013)
- ¹¹⁷ Letter from Association of American Railroads to Federal Railroad Administration (October 16, 2013)
- ¹¹⁸ Letter from Association of American Railroads to Federal Railroad Administration (October 16, 2013)
- ¹¹⁹ 2014 Minn. Laws. Article 10. *See generally* <https://www.revisor.mn.gov/laws/?id=312&year=2014&type=0#laws.10.8.0> Article 10.
- ¹²⁰ Office of Governor Mark Dayton, New state rail safety regulations now in effect (July 1, 2014). Available at: <http://www.mn.gov/governor/newsroom/pressreleasedetail.jsp?id=102-134725>
- ¹²¹ NYS Department of Environmental Conservation; NYS Department of Transportation; NYS Department of Health; NYS Division of Homeland Security and Emergency Services; New York State Energy Research and Development Authority. *Transporting Crude Oil in New York State: A Review of Incident Prevention and Response Capacity*. (N.Y. State, 2014).
- ¹²² NYS Department of Environmental Conservation; NYS Department of Transportation; NYS Department of Health; NYS Division of Homeland Security and Emergency Services; New York State Energy Research and Development Authority. *Transporting Crude Oil in New York State: A Review of Incident Prevention and Response Capacity – Status Update*. (N.Y. State, 2014).
- ¹²³ John Frittelli, *Shipping U.S. Crude Oil by water: Vessel Flag Requirements and Safety Issues*
- ¹²⁴ 49 C.F.R. § 173.31 (a)(8).
- ¹²⁵ Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ¹²⁶ Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ¹²⁷ Railway Safety Act R.S.C. 1985, c. 32.
- ¹²⁸ Transportation of Dangerous Goods Act, R.S.C. 1992, c. 34.
- ¹²⁹ Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ¹³⁰ Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ¹³¹ Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ¹³² Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ¹³³ Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ¹³⁴ Auditor General of Canada, “Oversight of Rail Safety – Transport Canada”
- ¹³⁵ Standing Senate Committee on Energy, the Environment and Natural Resources, *Moving Energy Safely - A Study of the Safe Transport of Hydrocarbons by Pipelines, Tankers and Railcars in Canada*.
- ¹³⁶ Transportation Safety Board of Canada. *Railway investigation Report R13D0054, Runaway and main-track derailment, Montreal, Maine & Atlantic Freight train MMA-002, Mile 0.23, Sherbrooke Subdivision, Lac-Mégantic, Québec, 6 July 2013. (Lac-Mégantic runaway derailment investigation)* (Transportation Safety Board, 2013). Available at: <http://www.tsb.gc.ca/eng/rapports-reports/rail/2013/r13d0054/r13d0054.pdf>
- ¹³⁷ Transportation Safety Board of Canada, *Lac-Mégantic runaway derailment investigation*
- ¹³⁸ Transport Canada, Emergency Directive Pursuant to Section 33 of the Railway Safety Act. Available at: <http://www.tc.gc.ca/eng/railsafety/emergency-directive-947.html>
- ¹³⁹ Transport Canada Protective Direction No. 31(Oct. 17, 2013). Available at: [http://www.transportation.alberta.ca/Content/docType521/Production/Protective%20Direction%2031%20\(Signed\).pdf](http://www.transportation.alberta.ca/Content/docType521/Production/Protective%20Direction%2031%20(Signed).pdf)
- ¹⁴⁰ Transportation Safety Board of Canada, *Lac-Mégantic runaway derailment investigation*
- ¹⁴¹ Government of Canada, Addressing the Safety of DOT-111 tank cars carrying dangerous goods. Available at: <http://news.gc.ca/web/article-en.do?nid=841119>
- ¹⁴² Transportation Safety Board of Canada, *Lac-Mégantic runaway derailment investigation*
- ¹⁴³ Transport Canada, Transportation Safety Board (TSB) Related Rail Issues. Available at: <https://www.tc.gc.ca/eng/railsafety/rail.htm>

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- ¹⁴⁴ Transportation Safety Board of Canada, *Lac-Mégantic runaway derailment investigation*
- ¹⁴⁵ Transportation Safety Board of Canada, *Lac-Mégantic runaway derailment investigation*
- ¹⁴⁶ Transport Canada, Transportation Safety Board (TSB) Related Rail Issues.
- ¹⁴⁷ John Frittelli, *Shipping U.S. Crude Oil by water: Vessel Flag Requirements and Safety Issues*
- ¹⁴⁸ N.Y. Exec. Order No. 125 (2014). Available at: <http://www.governor.ny.gov/executiveorder/125>
- ¹⁴⁹ NYS Department of Environmental Conservation *et al.*, *Transporting Crude Oil in New York State: A Review of Incident Prevention and Response Capacity*.
- ¹⁵⁰ NYS Department of Environmental Conservation *et al.*, *Transporting Crude Oil in New York State: A Review of Incident Prevention and Response Capacity – Status Update*.
- ¹⁵¹ Lyman C. Welch *et al.* *Oil and Water: Tar Sands Crude Shipping Meets the Great Lakes* citing National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, *Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling*. Available at: <http://cybercemetery.unt.edu/archive/oilspill/20121210200431/http://www.oilspillcommission.gov/final-report>).
- ¹⁵² State of Alaska, Div. of Spill Prevention and Response. Available at: <http://dec.alaska.gov/spar/perp/>
- ¹⁵³ California Department of Fish and Wildlife, Office of Spill Prevention and Response. Available at: <https://www.wildlife.ca.gov/OSPR>
- ¹⁵⁴ List of Clean Island member companies available at: http://www.cleanislands.com/files/MEMBER_LIST_2014.pdf
- ¹⁵⁵ Clean Islands Council, Hawaii Oil Spill Response Center. Available at: <http://www.cleanislands.com/spillcenter.php>