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U.S. Department of Transportation
West Building, Ground Floor, Room W12–140, Routing Symbol M–30
1200 New Jersey Avenue, S.E.
Washington, DC 20590

Docket ID No. PHMSA-2014-0105 (HM-251B)

Re: Comments on PHMSA's Advanced Notice of Proposed Rulemaking for Oil Spill Response Plans for High-Hazard Flammable Trains

Harvard Law School's Emmett Environmental Law and Policy Clinic, Earthjustice, the Sierra Club, ForestEthics, and Oil Change International welcome the opportunity to comment on the Pipeline and Hazardous Materials Safety Administration's ("PHMSA") advanced notice of proposed rulemaking regarding the threshold for requiring comprehensive oil spill response plans ("OSRPs") for trains carrying crude oil.[1]

[1] About the Commenters: The Emmett Environmental Law and Policy Clinic works on a variety of local, national, and international projects covering the spectrum of environmental law and policy issues under the direction of Professor Wendy B. Jacobs. It has published papers and submitted comments on several topics related to oil and gas development, including the oversight of offshore drilling. Earthjustice is a nonprofit public interest law organization dedicated to protecting the magnificent places, natural resources, and wildlife of this earth, and to defending the right of all people to a healthy environment. It is representing conservation groups, communities, and an Indian Tribe in seeking to stop the expansion of hazardous crude-by-rail facilities and traffic and is seeking strong federal regulation to protect communities from disasters on the rails. Sierra Club is the nation's oldest grassroots environmental organization promoting the exploration, enjoyment, and protection of the environment and America's wild places. Sierra Club seeks to reduce the production, transportation, and consumption of dangerous fuels that put the health and safety of our communities at risk. With more than 1.2 million members and supporters, Sierra Club engages in grassroots organizing, educational and media outreach, and legal actions to achieve its goals. ForestEthics is a nonprofit environmental group committed to protecting North America's forests and wild places, and the wildlife and people that depend on them. ForestEthics has opposed new crude-by-rail terminals in North America and has raised awareness of the risks of transporting crude oil in outdated rail cars. It recently released an online mapping tool revealing that 25 million North Americans live in a one mile "blast zone" of the rail lines on which oil trains carry crude oil. Oil Change International is a research, communicaton, and advocacy organization focused on exposing the true costs of fossil fuels and facilitating the coming transition towards clean energy.

We commend PHMSA for revisiting the threshold for comprehensive OSRPs for trains carrying crude oil. The existing threshold exempts virtually all trains carrying crude oil from the duty to prepare comprehensive OSRPs. Given the well-documented harms that have already arisen, and that promise to occur again, from derailments of and spills from trains carrying crude oil, such an exemption is dangerous and inconsistent with 33 U.S.C. § 1321(j), particularly in light of the new risks presented by oil from the Bakken Shale and Alberta tar sands. We urge PHMSA to adopt the following revisions to its regulations:

1. Require the preparation of comprehensive OSRPs for *all* trains carrying crude oil—even those carrying only a single tank car, whatever the capacity of that tank car and whatever the type of crude oil being carried. Failing this, PHMSA should set the threshold no higher than 20 carloads of crude oil.
2. Provide greater specificity regarding the requirements for comprehensive OSRPs, including clarifying that:
    a. Worst-case scenario planning must be based on a spill of all of the contents of all of the tank cars of the largest crude oil unit train operated by the railroad;
    b. The range of scenarios considered includes not only variations in topographical and climatological conditions, but also the range of oils carried by the railroad (including volatile and explosive Bakken Shale oil and heavy bitumen from the Alberta tar sands);
    c. ORSPs explicitly address methods to prevent derailments and oil spills (including track maintenance, the use of buffer cars, and other operational controls); and

d. OSRPs should minimize the use of oil spill dispersants, and prohibit their use altogether in freshwater environments.

3. Comprehensive OSRPs should be provided to State Emergency Response Commissions ("SERCs"), Tribal Emergency Response Commissions ("TERCs"), Local Emergency Preparedness Committees ("LEPCs"), and the general public to the maximum extent allowed by law. In addition, the process for submission and review of proposed OSRPs should provide opportunities for public participation and include review under both the National Environmental Policy Act ("NEPA") and the Endangered Species Act ("ESA").

I. PHMSA Should Require Comprehensive OSRPs for All Trains Carrying Crude Oil; Failing That, the Threshold Should Be no Higher than a Train Carrying 20 Carloads of Crude Oil.

Question 1 in the ANPRM asks:

> *1. When considering appropriate thresholds for comprehensive OSRPs, which of the following thresholds would be most appropriate and provide the greatest potential for increased safety? What thresholds would be most cost-effective?*
> *a. 1,000,000 gallons or more of crude oil per train consist;*
> *b. An HHFT of 20 or more carloads of crude oil per train consist;*
> *c. 42,000 gallons of crude oil per train consist; or*
> *d. Another threshold.*

We recommend that PHMSA adopt another threshold, specifically that a comprehensive OSRP be required for all trains carrying crude oil—even a single tank car, whatever the capacity of that tank car and whatever the type of crude oil being carried. In the alternative, the agency should adopt a threshold no higher than 20 carloads of crude oil.

A. Legal Requirements.

The Clean Water Act of 1972, as amended by the Oil Pollution Act of 1990, requires that owners or operators prepare comprehensive OSRPs for an onshore facility that, "because of its location, could reasonably be expected to cause substantial harm into or on the navigable waters,

adjoining shorelines, or exclusive economic zone." 33 U.S.C. § 1321(j)(5)(C)(iv). "A spill response plan is intended to help the transporter develop a response organization and ensure the availability of resources needed to respond to an oil release."[2] Comprehensive OSRPs are more thorough than basic OSRPs; the statutory requirements for comprehensive OSRPs are contained in 33 U.S.C. § 1321(j)(5)(D).

In 1996, PHMSA issued a rule requiring comprehensive OSRPs for shipments containing more than 42,000 gallons per tank car (a basic OSRP is required for a capacity of 3,500 gallons).[3] In developing this standard, the agency noted the lack of "objective data that would support the threshold any commenter proposed."[4] In addition, during a public meeting held to discuss the proposed rule, the "participants did not agree on what volume of oil reasonably could cause substantial harm."[5] The agency therefore adopted the 42,000-gallon threshold in part because it was used "by the EPA in related sections of the Code of Federal Regulations."[6] For example, the Environmental Protection Agency ("EPA") uses this threshold to decide whether a Spill Prevention, Control and Countermeasure Plan is required for underground storage tanks.[7] Nevertheless, PHMSA acknowledged that "[t]he risk . . . posed by oil in transport is proportional to the quantity of oil that could be discharged in an accident."[8]

[2] NTSB, Safety Recommendations R-14-4 through -6, at 8 (Jan. 21, 2014).

[3] Oil Spill Prevention and Response Plans, 61 Fed. Reg. 30,533, 30,542 (June 17, 1996).

[4] *Id.* at 30,537.

[5] *Id.*

[6] *Id.*

[7] 40 C.F.R. § 112.

[8] 61 Fed. Reg. at 30,538.

B. The Character and Magnitude of Oil Shipping by Rail has Changed Dramatically Since 1996.

Since the current rule was adopted in 1996, there have been two substantial changes in the circumstances under which railroad carriers ship crude oil. First, trains in the United States now transport much larger quantities of crude oil and most railroad carriers ship it in unit trains rather than individual tank cars.[9] Approximately 434,000 carloads of crude oil were shipped by rail in 2013, up from 9,500 in 2008.[10] This amount is expected to increase to 650,000 carloads in 2014.[11] The increase has been driven by the adoption of oil "unit trains," in which dozens to more than 100 tank cars of crude oil are carried by a single-cargo train.[12]

Second, the oil transported is no longer limited to conventional crudes. Most crude oil shipped by rail today is from either the Bakken Shale in North Dakota or the tar sands of Alberta.[13] These types of oils have different chemical properties and present different handling concerns than do conventional varieties. The pronounced increase in the shipping by rail of these varieties of oil presents a host of new challenges that PHSMA did not consider in 1996.

Oil from the Bakken Shale is both more volatile and more flammable than conventional crudes, and as a result more likely to spontaneously ignite.[14] The Department of Transportation ("DOT") has described these as "unique hazardous characteristics of Bakken crude oil."[15]

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[9] NTSB, *supra* note 2, at 9.

[10] JOHN FRITTELLI, ET AL., CONGRESSIONAL RESEARCH SERVICE, U.S. RAIL TRANSPORTATION OF CRUDE OIL: BACKGROUND AND ISSUES FOR CONGRESS 1 (2014).

[11] *Id.*

[12] American Association of Railroads, *Moving Crude Oil by Rail* 5 (2014), *available at* https://www.aar.org/keyissues/Documents/Background-Papers/Crude%20oil%20by%20rail.pdf.

[13] Musfiq Islam & Robert Wolfe, *Oil by Rail: If We Want Better Rules, We Need Better Data*, GLOBE & MAIL (TORONTO), Jan. 16, 2014.

[14] DOT, Emergency Order DOT-OST-2014-0025, at 10 (Feb. 25, 2014).

[15] *Id.*

Because of these characteristics, PHMSA issued a safety alert in January 2014 requiring that Bakken crude oil be classified as Packing Group I or II hazardous material, which is subject to more stringent materials regulations than are materials in Packing Group III.[16]

Oil from the tar sands in Alberta, by contrast, is heavier than conventional crudes and therefore more likely to sink in water, which can frustrate cleanup efforts.[17] Tar sands oil originates as bitumen, which is extremely viscous. As a result, it is usually blended with diluent for shipping. Diluted bitumen is also known as "dilbit," or "railbit" when it contains lower concentrations of diluent.[18] The components of the diluent can themselves present unique risks:

> [D]issolved components of the dilbit . . . such as benzene, polycyclic aromatic hydrocarbons (PAHs), and heavy metals, could be slowly released back to the water column for many years after a release and could cause long-term chronic toxicological impacts to organisms in both the benthic and pelagic portions of the aquatic environment.[19]

Thus both Bakken Shale crude and tar sands bitumen present different risks than those PHMSA considered in 1996.

C. Trains that Are not Covered by the Existing Standard Can Cause Substantial Harm.

Despite this dramatic increase in the amount of crude oil being transported by rail, and change in the character of the oils being transported, the trains carrying that oil are not covered

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[16] PHMSA, *Safety Alert – January 2, 2014*, (2014), *available at* http://phmsa.dot.gov/pv_obj_cache/pv_obj_id_111F295A99DD05D9B698AE8968F7C1742DC70000/filename/1_2_14%20Rail_Safety_Alert.pdf.

[17] GOV'T OF CANADA, FEDERAL GOVERNMENT TECHNICAL REPORT: PROPERTIES, COMPOSITION AND MARINE SPILL BEHAVIOUR, FATE AND TRANSPORT OF TWO DILUTED BITUMEN PRODUCTS FROM THE CANADIAN OIL SANDS 15-16 (2013); Vivian Luk, *Diluted Bitumen Sinks when Mixed with Sediments, Federal Report Says*, GLOBE & MAIL (TORONTO), Jan. 14, 2014; Lisa Song, *A Dilbit Primer: How It's Different from Conventional Oil*, INSIDE CLIMATE NEWS, June 26, 2012.

[18] U.S. Dep't of State, Draft Supplemental Environmental Impact Statement for Keystone XL Project, at 1.4-47 (Mar. 2013).

[19] EPA, Comment Letter on Keystone XL DSEIS 5 (Apr. 22, 2013), *available at* http://www.epa.gov/compliance/nepa/keystone-xl-project-epa-comment-letter-20130056.pdf.

by the comprehensive OSRP requirement. Because all crude oil shipped by railroad is carried in tank cars individually smaller than the 42,000-gallon threshold, the existing regulation, as the National Transportation Safety Board ("NTSB") has put it, "is rendered ineffective because of its lack of applicability to any real-world transportation scenario."[20] Even a 120-tank car unit train, carrying approximately 3.6 million gallons of oil, is exempt under the current standard.

There can be no doubt that "substantial harm" can arise from an accident involving a train that does not satisfy the existing threshold, as amply demonstrated by several derailments that have occurred in recent years. These accidents have resulted in explosions, fires, loss of life, and spills into rivers and other navigable waters.

The worst such accident to date was the tragic derailment in Lac-Mégantic, Québec, in July 2013. In this accident, at least 59 of the 63 tank cars on the train ruptured and released 1.6 million gallons of Bakken Shale crude oil.[21] The massive fire and explosion that resulted from the spill killed 47 people and destroyed the center of the town.[22]

Unfortunately, this accident was not an isolated incident. In the past year alone, other crude oil discharges as a result of derailments have occurred in Aliceville, Alabama; Casselton, North Dakota; New Augusta, Mississippi; Vandergrift, Pennsylvania; Lynchburg, Virginia; and LaSalle, Colorado.[23] The first three of these accidents resulted in releases of crude oil well in excess of the existing 42,000-gallon threshold.[24] Several of these accidents resulted in

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[20] NTSB, *supra* note 2, at 9.

[21] Transportation Safety Board of Canada, *Railway Investigation Report R13D0054*, at 39 (2013), *available at*: http://www.tsb.gc.ca/eng/rapports-reports/rail/2013/r13d0054/r13d0054.pdf.

[22] *Id*. at 1.

[23] Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains, 79 Fed. Reg. 45,016, 45,020 (proposed Aug. 1, 2014).

[24] *Id.*

explosions and fires, causing significant property damage and requiring the evacuation of nearby residents.[25]

Local fire departments frequently lack the capacity to combat fires caused by flammable liquids such as crude oil. As discussed in a Canadian report prepared in the wake of the Lac-Mégantic disaster,

> Extinguishing flammable liquid fires requires the use of firefighting foam such as Aqueous Film Forming Foam (AFFF) or Alcohol Resistant - Aqueous Film Forming Foam (AR- AFFF). To be successful in achieving extinguishment the foam concentrate must be inducted or injected and mixed with water at the correct ratios (usually 3% - 6%), aerated and applied correctly so as not to agitate the flammable liquid. The foam solution (water and foam mixture) must be applied at a rate sufficient to overcome the heat being generated by the fire and be able to blanket the surface of the flammable liquid.
>
> The resources (sufficient quantities of the correct foam concentrate, foam pumps or eductors, foam aerating nozzles etc.) and the specialized training are not found in most municipal fire departments. Historically the low frequency of large flammable liquid fires has not justified the costs involved in equipping and training for this type of firefighting. Limited funding of most fire departments (large and small) will not permit them to even consider attempting to acquire this specialized equipment.[26]

In addition to creating a risk of explosions and catastrophic fires, oil transport by rail has the potential to cause substantial harm to navigable waters. Because railroads crisscross the nation, they frequently pass in close proximity to navigable waters and adjoining shorelines. As PHMSA acknowledged during the 1996 rulemaking, "virtually all transportation of oil poses a potential risk to these areas."[27]

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[25] US DOT, Emergency Restriction / Prohibition Order: Petroleum Crude Oil Railroad Carriers, Docket No. DOT-OST-2014-0067, at 5-7 (May 7, 2014).

[26] *Report and Recommendations of the Transportation of Dangerous Goods General Policy Advisory Council (GPAC) Emergency Response Assistance Plan (ERAP) Working Group Relating to Class 3 Flammable Liquids*, at 12-13 (Jan. 31, 2014).

[27] 61 Fed. Reg. at 30,537.

Recent accidents demonstrate that harm to navigable waters is not a hypothetical threat. For example, in a November 8, 2013 derailment in Aliceville, Alabama, 750,000 gallons of Bakken Shale crude oil were released, some spilling into sensitive wetland areas, and eventually contaminating the nearby Tombigbee River.[28] Even after a cleanup of 10,700 gallons from the water and 290 cubic yards of contaminated soil, oil was still seeping into the water months later.[29] In April 2014, a derailment in Lynchburg, Virginia discharged approximately 30,000 gallons into the James River, a drinking water source for Lynchburg and Richmond, Virginia.[30] The Lac-Mégantic accident itself resulted in the discharge of 26,000 gallons of oil into the Chaudière River.[31]

Further evidence of the risk of harm to navigable waters is provided by the July 2010 spill from the Enbridge Line 6B pipeline in Michigan, which released 843,444 gallons of diluted

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[28] Curtis Tate, *Crude-oil Spills on U.S. Railways in 2013 Topped Total Since 1975*, WASHINGTON POST, Jan. 21, 2014.

[29] Jay Reeves, *Oil Mars Alabama Swamp Months after Crude Train Crash*, ASSOCIATED PRESS, Mar. 15, 2014, *available at* http://bigstory.ap.org/article/oil-mars-ala-swamp-months-after-crude-train-crash.

[30] Curtis Tate, *Lynchburg, Va., Oil Train Derailment Illustrates Threat to Rivers*, MCCLATCHY DC, May 2, 2014.

[31] Monique Beaudin, *Lac-Mégantic Oil Spill Even Worse than First Feared, Investigation Shows*, MONTREAL GAZETTE, Oct. 22, 2013, *available at* http://www.montrealgazette.com/news/M%C3%A9gantic+spill+even+worse+than+first+feared+investigation+shows/9063521/story.html. There have also been near-misses. In January 2014, a train with six tank cars carrying crude oil derailed on a bridge over the Schuylkill River in Philadelphia; one oil tank car was left dangling over the river for more than 12 hours. Sarah Glover, Dan Stamm & David Chang, *Train Derails on Bridge Over Schuylkill River*, NBC PHILADELPHIA, Jan. 21, 2014, *available at* http://www.nbcphiladelphia.com/news/local/Train-Derails-Schuykill-Expressway-Closed-241114931.html. On February 13, 2014, a train carrying 19 tank cars with diluted bitumen from the Alberta tar sands derailed near the Kiskiminetas River in Vandergrift, Pennsylvania. Between 4,300 and 10,000 gallons of crude oil spilled from punctured tank cars, but apparently none of it reached the river. *See* Mary Ann Thomas, *Feds: Broken Spike Caused Vandergrift Derailment, Oil Spill*, TRIBLIVE.COM, June 20, 2014, http://triblive.com/neighborhoods/yourallekiskivalley/yourallekiskivalleymore/6313479-74/oil-derailment-crude; Robert Gibbons & Elizabeth Dilts, *Train Carrying Canadian Oil Derails, Leaks in Pennsylvania*, REUTERS, Feb. 13, 2014, *available at* http://www.reuters.com/article/2014/02/13/us-energy-crude-derailment-idUSBREA1C13120140213.

bitumen from the Alberta tar sands.[32] "The crude oil release soaked the rupture site and the surrounding wetlands, eventually spreading to the Talmadge Creek and the Kalamazoo River."[33] When the diluents evaporated, the bitumen sank to the bottom and mixed with sediment. A twenty-five mile stretch of the Kalamazoo River was closed for almost two years. The cleanup was still ongoing in 2013 "because, according to EPA, the oil sands crude 'will not appreciably biodegrade.'"[34] By that time the estimated cost of the cleanup had reached $1.035 billion, "which is substantially higher than the average cost of cleaning up a similar amount of conventional oil."[35] Although this spill was from a pipeline rather than a train, the harm it caused is relevant both because unit trains can result in spills of a similar magnitude. As the NTSB has observed, "[t]he Lac-Mégantic accident shows that railroad accidents involving crude oil have a potential for disastrous consequences and environmental contamination equal to that of the worst on-shore pipeline accidents."[36]

In sum, accidents resulting in "substantial harm into or on the navigable waters, adjoining shorelines, or exclusive economic zone" are currently occurring and can be expected to continue to occur from trains that are not currently subject to the comprehensive OSRP requirement. The standard must be changed.

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[32] NTSB, ACCIDENT REPORT: ENBRIDGE INCORPORATED HAZARDOUS LIQUID PIPELINE RUPTURE AND RELEASE, MARSHALL, MICHIGAN, JULY 25, 2010, at 1 (2012).

[33] *Id.* at 4.

[34] FRITTELLI ET AL., *supra* note 10, at 13 (quoting Letter from Cynthia Giles, EPA, to U.S. Department of State, Apr. 22, 2013).

[35] *Id.* at 13. More recently, another spill from an oil pipeline sent 210,000 gallons of diluted bitumen into a residential neighborhood in Mayflower, Arkansas, some it eventually reaching nearby Lake Conway. Neela Banerjee, *Federal Regulators Fine ExxonMobil for Arkansas Oil Leak*, L.A. TIMES, Nov. 12, 2013.

[36] NTSB, *supra* note 2, at 8.

D. PHMSA Should Mandate Comprehensive OSRPs for All Trains Carrying Crude Oil.

For the foregoing reasons, we urge PHMSA to require that all trains carrying crude oil be subject to the comprehensive OSRP requirement—even those carrying only a single tank car of crude oil, whatever the capacity of that tank car and whatever the type of crude oil being carried. DOT-111 tank cars, which currently comprise the majority of cars carrying crude oil, have a capacity of approximately 30,000 gallons; other, improved tank cars have slightly smaller capacities.[37] PHMSA should set the comprehensive OSRP requirement to cover a train carrying even one crude oil tank car of the size actually used, rather than a capacity that is realistically never used (i.e. 42,000 gallons).

Even in 1996, PHMSA recognized that a spill of 42,000 gallons could result in substantial harm to navigable waters, thus necessitating the preparation of a comprehensive OSRP.[38] As mentioned above, this finding was made at a time when the little oil being shipped by rail in the United States was all from conventional sources. A spill involving one car of Bakken Shale oil or bitumen from Alberta can cause much more harm in the event of a derailment than could the type of oil being shipped in 1996.[39] The Lynchburg incident described above involved a spill of approximately 30,000 gallons.

[37] *See* Railway Supply Institute Comments on Advanced Notice of Proposed Rulemaking, Docket No. PHMSA-2012-00082, at 8 (describing reduced tank capacity of jacketed P-1577 tank cars), *available at* http://rsiweb.org/wp-content/uploads/2014/01/ctc-PHMSA-2012-0082.pdf.

[38] PHMSA's reference to EPA's regulation of underground storage tanks as a benchmark for the threshold for comprehensive OSRPs also ignores the mobile nature of railroads. Trains carrying crude oil endanger broad swaths of landscape because of their mobility. Trains moving oil often encounter populated areas on their cross-country routes and threaten to pollute multiple sources of water per trip. FRITTELLI ET AL., *supra* note 10, at 22.

[39] *See* pp. 7-10, *supra*; *see also* US DOT, *supra* note 25, at 9.

Moreover, especially given the novel threats presented by Bakken Shale oil and Alberta tar sands diluted bitumen, a spill of almost any size can result in substantial harm. As a Congressional Research Service report explains:

> [S]pill volume is arguably a relatively unimportant factor in terms of impacts and cleanup costs. Location matters more: a major spill away from shore will likely cost considerably less to abate than a minor spill in a populated location or sensitive ecosystem. Depending on timing and location, even a small spill can cause significant harm to individual organisms and entire populations.[40]

In light of the new and potentially more dangerous varieties of petroleum now being shipped, the threshold for requiring railroad carriers to prepare comprehensive OSRPs should be lowered and made more reflective of the actual practices in the industry.

Further support for a single-tank-car threshold is found in the Department of Transportation's "Orange Book" guide for emergency first responders. In the Orange Book, the DOT has established safety guidelines that advise clearing and evacuating a half-mile area surrounding even just one rail car on fire.[41] This recommendation clearly demonstrates the danger of a spill from even a single tank car.

Moreover, the requirement should apply to all types of crude oil, not merely Bakken Shale crude. The NTSB has explained that "[c]rude oil of all types and from all regions are flammable materials."[42] Diluted bitumen, for example, includes diluents that usually include natural gas liquid condensate, which contains volatile hydrocarbons such as benzene, toluene,

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[40] FRITTELLI ET AL., *supra* note 10, at 11.

[41] U.S. DEPARTMENT OF TRANSPORTATION / TRANSPORT CANADA, EMERGENCY RESPONSE GUIDEBOOK: A GUIDEBOOK FOR FIRST RESPONDERS DURING THE INITIAL PHASE OF A DANGEROUS GOODS/HAZARDOUS MATERIALS TRANSPORTATION INCIDENT 160 (2012).

[42] Letter from NTSB Acting Chairman Christopher A. Hart to Senators Wyden & Merkley (June 25, 2014).

ethyl benzene, and xylene.[43] In a February 2014 emergency order, DOT required rail shipments of all kinds of crude oil—not only Bakken Shale crude—to comply with Packing Group I or II hazardous materials regulations.[44] Similarly, there is no reason to limit the comprehensive OSRP requirement to trains carrying Bakken Shale crude oil.[45]

E. In the Alternative, the Threshold Should Be Set no Higher than a Train with 20 Cars of Crude Oil.

In the event that PHMSA elects not to set the threshold at a single tank car, it should set the threshold no higher than a train carrying 20 cars of crude oil. As discussed above, a major shortcoming of the existing standard is that it does not account for the transport of crude oil in unit trains. Unit trains can carry far more than 42,000 gallons of crude oil, even if each individual tank car has a capacity below this threshold. For example, a unit train consisting of 20 DOT-111 tank cars carries approximately 600,000 gallons of oil. A 120-car unit train carries more than 3.5 million gallons.

As has been made clear from disasters such as the one in Lac-Mégantic, where 1.6 million gallons of oil were spilled in a single derailment, an accident involving a crude oil unit train has the potential to spill immense quantities of oil, on par with spills from pipelines. A 20-car threshold would ensure that the comprehensive OSRP requirement applies to all unit trains carrying large quantities of crude oil. The ANPRM refers to a 35-car threshold and states that it "expects the business practices for HHFTs would result in train consists that exceed 35 crude oil

[43] Diane Bailey & Danielle Droitsch, *NRDC Issue Brief - Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel* 4 (Feb. 2014), *available at* http://www.nrdc.org/energy/files/tar-sands-health-effects-IB.pdf.

[44] DOT, *supra* note 14, at 2.

[45] In addition, PHMSA should clarify that the regulations, whose "scope" is limited to "liquid" petroleum oils, 49 C.F.R. § 130.2(a), apply to bitumen, in whatever form it is shipped.

cars."[46] This may or may not currently be the case, but a 35-car threshold would create incentives to ship oil in unit trains of 35 cars or fewer, particularly if railroads wished to avoid the public scrutiny that would occur if OSRPs were subject to public disclosure (as we recommend below in section III).

II. PHMSA Should Clarify and Provide Greater Specificity Regarding the Requirements for Comprehensive OSRPs.

Question 3 in the ANPRM asks:

> *3. In exploring the applicability of comprehensive OSRP requirements to trains carrying large volumes of crude oil, are there elements that should be added, removed, or modified from the comprehensive OSRP requirements? Please consider the regulations covering other modes of transporting crude oil (such as pipelines), and the relevant differences between modes of operation, in your response.*

We recommend that PHMSA clarify and provide greater specificity regarding the requirements for comprehensive OSRPs. In particular, it should mandate that:

- Worst-case scenario planning be based on a spill of all of the contents of all of the tank cars of the largest crude oil unit train operated by the railroad;
- The range of scenarios considered include not only variations in topographical and climatological conditions, but also the range of oils carried by the railroad (including volatile and explosive Bakken Shale and heavy bitumen from the Alberta tar sands);
- Plans explicitly address methods to prevent derailments and oil spills (including track maintenance, the use of buffer cars, rail routing, and other operational measures); and

[46] 79 Fed. Reg. at 45,082.

- Plans minimize the use of oil spill dispersants, whose effects in freshwater environments are not well understood.

A. Worst-Case Scenario Planning.

A comprehensive OSRP must "[i]dentif[y], and ensure[] by contract or other means the availability of, private personnel (including address and phone number), and the equipment necessary to remove, to the maximum extent practicable, a worst case discharge."[47] PHMSA has explained that this requirement mandates an analysis of "[t]he largest foreseeable discharge from a motor vehicle or rail car" which it describes as "the capacity of the cargo container."[48]

Given the transport of crude oil in unit trains, this single-car approach to worst-case scenario analysis is insupportable. The worst-case scenario analysis must instead consider a discharge of all of the crude oil from the largest crude oil unit train operated by the railroad.[49]

Additionally, this analysis must consider different types of "worst cases." These could include, for example, a spill of volatile Bakken Shale crude in a city center or a spill of tar sands bitumen into a drinking water source. Different types of crude oils present different risk profiles and thus necessitate different preparatory measures for spills. A comprehensive OSRP must demonstrate that the railroad has the personnel and equipment necessary to respond to the worst-case discharge of all types of crude oil that it carries.

[47] 49 C.F.R. § 130.31(b)(4).

[48] 61 Fed. Reg. at 30,539.

[49] *See* NTSB, *supra* note 2, at 10 ("US Coast Guard regulations for marine tank vessels require spill response planning to address a worst-case discharge, which is defined as the entire cargo of the vessel. Planning to respond to maximum potential releases for trains transporting crude oil, many of which are configured in unit trains as 'virtual pipelines' of tank cars, also must take into account the entire quantity of lading.").

B. The Range of Scenarios to be Considered.

PHMSA has described the range of scenarios to be considered as including "the range of topographical and climatological conditions the owner or operator may face," as well as discharges that "result[] from, or [are] accompanied by, a complicating condition, such as explosion or fire."[50] Just as the worst-case scenario analysis should consider the range of crude oils carried by a railroad, we urge PHMSA to expand the range of scenarios to be considered in general to include the variety of crude oils carried by the railroads and their different characteristics. As described above, Bakken Shale crude oil and Alberta tar sands bitumen present different risks. These different risks, and the different approaches to oil spill response they will necessitate, should be incorporated into comprehensive OSRPs.

C. Incorporation of Preventive Measures in OSRPs.

By statute, OSRPs are required to, among other things:

> (iii) identify, and ensure by contract or other means approved by the President the availability of, private personnel and equipment necessary to remove to the maximum extent practicable a worst case discharge (including a discharge resulting from fire or explosion), and to mitigate *or prevent a substantial threat of such a discharge*;
>
> (iv) describe the training, equipment testing, periodic unannounced drills, and response actions of persons on the vessel or at the facility, to be carried out under the plan to ensure the safety of the vessel or facility and to mitigate *or prevent the discharge, or the substantial threat of a discharge*.[51]

As demonstrated by the Enbridge pipeline spill in Michigan and the Aliceville, Alabama, derailment, it can be extremely difficult to clean up an oil spill into wetlands, rivers, or streams. Moreover, most railroads have insufficient insurance coverage to pay for the costs of even a

[50] 61 Fed. Reg. at 30,538.

[51] 33 U.S.C. § 1321(j)(5)(D) (emphasis added).

moderate oil train accident.[52] Therefore, it is particularly important that comprehensive OSRPs also address prevention. To ensure this happens, PHMSA should strengthen the requirement that comprehensive OSRPs incorporate plans to prevent oil spills, including preventive measures such as improved track maintenance, changes in routing, adding buffer cars to unit trains, and additional operational measures.

D. Minimize the Use of Dispersants and Prohibit their Use Altogether in Freshwater Environments.

The regulations should mandate that OSRPs restrict the use of dispersants to extremely limited circumstances. The use of dispersants to treat oil spills drew renewed attention during and after the Deepwater Horizon oil spill in 2010. In that event, which discharged 4.9 million barrels of crude oil into the Gulf of Mexico, over 1.8 million gallons of dispersant were applied to the ocean, both at the surface and up to a mile underwater near the leak.[53] Two types of chemical dispersant were used: Corexit 9500 and Corexit 9527. The latter in particular is highly toxic, as it "contains 2-butoxyethanol, pinpointed as the cause of lingering health problems experienced by cleanup workers after the 1989 Exxon Valdez oil spill."[54] (Approximately 45,000 gallons of Corexit 9527 were sprayed during the Exxon Valdez cleanup.)[55]

[52] Draft Regulatory Impact Analysis, *Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains*, Docket No. PHMSA- 2012-0082, at 17 (Aug. 1, 2014); Kathryn A. Wolfe, *DOT: Rail Insurance Inadequate for Oil Train Accidents*, POLITICO, Aug. 6, 2014.

[53] United States Coast Guard, *On Scene Coordinator Report* Deepwater Horizon *Oil Spill* 217 (2011), *available at*: http://www.uscg.mil/foia/docs/dwh/fosc_dwh_report.pdf.

[54] Elana Schor, *Ingredients of Controversial Dispersants Used on Gulf Spill Are Secrets No More*, GREENWIRE, June 9, 2010, http://www.nytimes.com/gwire/2010/06/09/09greenwire-ingredients-of-controversial-dispersants-used-42891.html.

[55] NOAA, TWENTY-FIVE YEARS AFTER THE EXXON VALDEZ OIL SPILL: NOAA'S SCIENTIFIC SUPPORT, MONITORING, AND RESEARCH 4 (2014).

EPA recognized these concerns about the toxicity of the dispersants used in the Gulf and ordered BP to determine whether there were less toxic alternatives available.[56] When BP responded that other dispersants were not less toxic than Corexit 9500, EPA ordered BP to reduce dispersant use by 75%.[57] Despite these measures, there were reports that cleanup workers were suffering health problems attributed to dispersants in the aftermath of the spill.[58] Dispersants continue to be found on Gulf beaches.[59] In response, EPA is in the process of revising the regulations governing the listing of dispersants in the National Contingency Plan Product Schedule;[60] the proposed rule was recently sent to the Office of Information and Regulatory Affairs.[61]

Aside from general concerns about dispersants, there are particular reasons to urge caution in the use of dispersants to respond to spills from trains. First, the interaction of dispersants and oil is different in freshwater than in salt water; dispersants designed for marine environments may not function with similar effectiveness in freshwater.[62] Second, the effects of dispersants on spills of unconventional oils are also not well understood. For example, a

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[56] EPA, Dispersant Monitoring and Assessment Directive - Addendum 2 (May 20, 2010), *available at* http://www.epa.gov/bpspill/dispersants/directive-addendum2.pdf.

[57] EPA, Dispersant Monitoring and Assessment Directive - Addendum 3 (May 26, 2010), *available at* http://www.epa.gov/bpspill/dispersants/directive-addendum3.pdf.

[58] *See* Bruce Alpert, *Watchdog Group Reports Health Problems from Dispersant Use During BP Oil Spill*, NEW ORLEANS TIMES-PICAYUNE, Apr. 19, 2013; Antonia Juhasz, *Investigation: Two Years After the BP Spill, A Hidden Health Crisis Festers*, THE NATION, Apr. 18, 2012, *available at* http://www.thenation.com/article/167461/investigation-two-years-after-bp-spill-hidden-health-crisis-festers.

[59] *See* Kimberly Blair, *BP Oil Spill Dispersants Still in Environment*, PENSACOLA NEWS JOURNAL, July 26, 2014.

[60] EPA, *Revisions to the National Oil and Hazardous Substances Pollution Contingency Plan; Subpart J Product Schedule Listing Requirements*, http://yosemite.epa.gov/opei/RuleGate.nsf/byRIN/2050-AE87 (last visited Sept. 28, 2014).

[61] *Id*.

[62] *See* B.A. Wrenn, et al., *Dispersibility of Crude Oil in Fresh Water*, 157 ENVTL. POLLUTION 1807 (2009).

Canadian government report has found that Corexit 9500 has a limited effect on diluted bitumen.[63] For these reasons, we urge that the regulations make it clear that the use of dispersants should be a disfavored option in comprehensive OSRPs.

III. Comprehensive OSRPs should be provided to State Emergency Response Commissions, Tribal Emergency Response Commissions, Local Emergency Preparedness Committees, and the general public. In addition, the Federal Railroad Administration's review of draft OSRPs should include public participation and review under NEPA and the ESA.

Question 9 in the ANPRM asks:

> *9. Should PHMSA require that the basic and/or the comprehensive OSRPs be provided to State Emergency Response Commissions (SERCs), Tribal Emergency Response Commissions (TERCs), Fusion Centers, or other entities designated by such state, and/or made available to the public?*

PHMSA's regulations currently mandate the submission of comprehensive OSRPs to the Federal Railroad Administration ("FRA").[64] There is no requirement, however, that the plans be submitted to any state, local, or tribal authorities or be made available to the public. We urge PHMSA to require that comprehensive OSRPs be provided to State Emergency Response Commissions ("SERCs") and Tribal Emergency Response Commissions ("TERCs"), as well as Local Emergency Preparedness Committees ("LEPCs"). Such sharing of OSRPs is necessary for state, tribal, and local authorities to be able to prepare for, and coordinate their responses to, spills of crude oil from trains. Mandatory disclosure only to federal officials, as is currently the case, is inadequate given that state and local authorities will usually be the first responders to an accident and bear the burden of ensuring preparedness and the consequences of failing to do so. PHMSA should also mandate public disclosure of OSRPs. The contents of such plans will not be Sensitive Security Information or confidential business information.

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[63] GOV'T OF CANADA, *supra* note 17, at 6, 21-24.

[64] 49 C.F.R. § 130.31(b)(6).

In addition, a robust process of public participation and review is necessary to ensure that comprehensive OSRPs achieve their purposes. Although the FRA is required to review the plans submitted by railroad carriers, and "require amendments to any plan that does not meet the requirements of this paragraph,"[65] neither PHMSA nor the FRA has promulgated regulations requiring that draft comprehensive OSRPs be made available to local officials and the public or that there be an opportunity to comment on those drafts. By contrast, the Bureau of Safety and Environmental Enforcement ("BSEE") has accepted public comments on draft oil spill response plans for offshore drilling operations.[66] In that context, the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling specifically recommended that "[Oil Spill Response] Plans should . . . be made available for a public comment period prior to final approval and response plans should be made available to the public following their approval."[67]

The regulations should specify the process for the submission of comprehensive OSRPs, and the FRA's review thereof, including a robust public participation process. Comprehensive OSRPs will be deployed to prevent and repair damage from accidents across the nation. State and local officials and first responders can provide crucial insights and input through the public participation process. Response plans prepared without proper local input can fall victim to operational difficulties peculiar to the area. As noted in the legislative history of the Oil Pollution Act, in the aftermath of the *Exxon Valdez* spill, "a paper plan without benefit of serious

[65] 33 U.S.C. § 1321(j)(5)(E)(i)-(ii); *see also* 49 C.F.R. § 130.31(b)(6) (requiring that railroad comprehensive OSRPs be submitted to the FRA).

[66] David Hults, *Environmental Regulation at the Frontier: Government Oversight of Offshore Oil Drilling North of Alaska*, 44 ENVTL. L. 761, 777 n.94 (2014) (stating that BSEE accepted public comments on Shell's 2012 OSRPs for the Chukchi and Beaufort Seas).

[67] NATIONAL COMMISSION ON THE BP DEEPWATER HORIZON OIL SPILL AND OFFSHORE DRILLING, DEEP WATER: THE GULF OIL DISASTER AND THE FUTURE OF OFFSHORE DRILLING 267 (2011).

independent review, without standards, and public review, did not protect Alaska or Alaskans."[68] To this end, the regulations should require the publication of draft OSRPs followed by a period for public comment upon them.

In addition, the process for submission and review of proposed OSRPs should include review under both NEPA and the ESA. Under NEPA, an agency must prepare an Environmental Impact Statement ("EIS") for all "major Federal actions significantly affecting the quality of the human environment."[69] The Council on Environmental Quality's NEPA regulations define "major Federal action" to include "actions with effects that may be major and which are potentially subject to Federal control and responsibility[,] . . . including projects and programs . . . approved by federal agencies."[70] The agency's decision approving a private action is exempt from NEPA only if it has no discretion at all to consider environmental values.[71]

Similarly, under Section 7 of the ESA, an agency must consult with the U.S. Fish and Wildlife Service or National Marine Fisheries Service when it authorizes a private action that may affect listed species and the agency has discretion to influence that action to benefit the listed species. "The relevant question is whether the agency could influence a private activity to benefit a listed species, not whether it must do so."[72]

Here, in reviewing comprehensive OSRPs submitted by railroads, the FRA has ample discretion to consider environmental values and to influence private activity to benefit a listed species. For example, the FRA can ensure that the plan:

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[68] 135 Cong. Rec. H8241-07 (Nov. 9, 1989) (statement of Mr. Sikorski).

[69] 42 U.S.C. § 4322(2)(C).

[70] 40 C.F.R. § 1508.18.

[71] *See Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1213-14 (9th Cir. 2008).

[72] *Karuk Tribe of California v. U.S. Forest Serv.*, 681 F.3d 1006, 1025 (9th Cir. 2012).

> Identifies, and ensures by contract or other means the availability of private personnel . . ., and the equipment necessary to remove, to the maximum extent practicable, a worst case discharge (including a discharge resulting from fire or explosion) and to mitigate or prevent a substantial threat of such a discharge.[73]

These requirements can both influence the degree of the environmental harm caused by an oil spill (including harm to listed species or their critical habitat) and reduce the likelihood that a spill will occur in the first place. As a result, in reviewing a draft comprehensive OSRP, the FRA has ample discretion to consider environmental values and influence a private activity to benefit a listed species. As a result, its approval of these plans should include review under NEPA and the ESA.

IV. Conclusion

We are encouraged that PHMSA is revisiting the threshold for mandating comprehensive OSRPs for trains carrying crude oil. It should take this opportunity to ensure that all trains carrying crude oil are subject to the comprehensive OSRP requirement, to strengthen and clarify the regulations governing the contents of such plans, and to mandate public disclosure of the plans and public participation in their development.

Thank you for your consideration of these comments. We welcome the opportunity to discuss this important matter with you at any time. Please direct follow up communications to Shaun Goho, 617-496-5692, sgoho@law.harvard.edu.

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[73] 49 C.F.R. § 130.31(b)(4).

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