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**COMMENTS OF THE AMERICAN FUEL & PETROCHEMICAL MANUFACTURERS ON THE PIPELINE
AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION'S ADVANCE NOTICE OF PROPOSED
RULEMAKING, "HAZARDOUS MATERIALS: VOLATILITY OF UNREFINED PETROLEUM
PRODUCTS AND CLASS 3 MATERIALS"
DOCKET No. PHMSA-2016-0077 (HM-251D)
82 FED. REG. 5499 (JAN. 18, 2017)**

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I. INTRODUCTION

The American Fuel & Petrochemical Manufacturers (“AFPM”) welcomes this opportunity to comment on the Pipeline and Hazardous Materials Safety Administration’s (“PHMSA’s” or the “agency’s”) Advance Notice of Proposed Rulemaking, “Hazardous Materials: Volatility of Unrefined Petroleum Products and Class 3 Materials”¹ (the “ANPRM”). PHMSA issued the ANPRM in response to Petition for Rulemaking P-1669 (the “Petition”) filed by the State of New York’s Office of the Attorney General (the “petitioners”).² The Petition seeks to limit the Reid Vapor Pressure (“RVP”) of crude oil transported by rail to 9.0 pounds per square inch absolute (“psia”).³ The ANPRM expands the scope of the Petition to all Class 3 flammable materials and all modes of transportation, including rail, motor carrier, pipeline, aviation, and marine.

AFPM member companies are crude oil experts. Our members understand crude oil properties better than anyone in the world, and they have extensive experience transporting it. Based on this expertise and as explained in these comments, AFPM concludes that the Petition is premised on fundamentally unsound assumptions about safety risks, and its treatment of RVP as a characteristic for regulatory control has no merit. Furthermore, PHMSA has rightly heeded the recommendation from 24 Members of Congress to defer any further proceedings until the completion of all technical studies and legislative recommendations required under the Fixing America’s Surface Transportation Act (“FAST Act”).⁴ AFPM therefore respectfully requests that PHMSA deny the Petition and close this docket.

A. AFPM’s Interest in the Petition

AFPM is a national trade association representing nearly 400 companies that encompass virtually all U.S. refining and petrochemical manufacturing capacity. AFPM members depend upon a plentiful, affordable supply of crude oil as a feedstock for the transportation fuels and petrochemicals that they manufacture. As manufacturers, AFPM members acquire crude oils from multiple sources, including an important domestic supply extracted from the Bakken formation, the Permian Basin, and the Eagle Ford Shale. Many AFPM members also consume or produce ethanol to meet obligations under the Renewable Fuel Standard of the Clean Air Act.

The members of AFPM depend on safe, efficient, and reliable transportation of crude oil and ethanol from the source of production to refining, blending, or manufacturing sites, as well as distribution of products through all modes of transportation to domestic and foreign markets. Rail transportation has played a particularly important role in members’ supply chains for these materials. Consequently, AFPM members lease and own thousands of rail tank cars to move

¹ Docket No. PHMSA-2016-0077 (HM-251D), 82 Fed. Reg. 5499 (proposed Jan. 18, 2017) [hereinafter “ANPRM”].

² *See id.* at 5499, 5500.

³ N.Y. Office of the Att’y Gen., Pet. for Rulemaking P-1669, Docket No. PHMSA-2015-0253 at 2 (Dec. 1, 2015) [hereinafter “Petition”].

⁴ *See* Letter from Rep. Kevin Cramer, et al., to Secretary Elaine Chao (Mar. 10, 2017).

crude oil, ethanol, and other flammable liquids. The large majority of these tank cars are designed to DOT 111, American Association of Railroads (“AAR”) CPC 1232, or DOT 117 specifications. Members also use large fleets of tanker trucks to move crude oil, ethanol, and finished products. The balance of members’ petrochemical and ethanol products are moved by marine vessel or pipeline.

B. AFPM’s Unwavering Commitment to Safe Transportation of Hazardous Materials

AFPM members have a strong appreciation for safety and environmental responsibility, and their operations and practices reflect that appreciation. Members are committed to protecting the health and safety of their workers, their contractors, their communities, their customers, and the communities through which crude oil, ethanol, and other flammable liquids are shipped. AFPM supports an informed, risk-based preventative approach to improving the safe transportation of crude oil by rail and other modes and is committed to working with PHMSA on this issue. AFPM and its members work diligently to maintain a safe working environment in our refineries, with a goal of zero incidents. This commitment also applies to the safe transportation of crude oil and other feedstocks to refineries, and of refined products to its members’ customers.

As detailed more fully in AFPM’s past comments to PHMSA,⁵ its members have made enormous voluntary investments bolstering the safe transportation of crude oil and other flammable liquids. Investments in new or newly retrofitted rail tank cars alone total billions of dollars, the lion’s share of which came as a good-faith effort to work with PHMSA and other authorities to develop national safety standards for rail cars. Those member investments continue today, along with continual investments in safe transportation through other modes.

II. EXECUTIVE SUMMARY

AFPM respectfully requests that PHMSA close this docket without further proceedings for both procedural and substantive reasons. Procedurally, further proceedings based on crude oil characteristics conflict with Congress’ considered judgment to delay further regulation until the completion of ongoing studies on the transport of flammable materials. Even if Congress had not done so, PHMSA has every reason to await the results of those studies before crafting any regulation that would impose enormous costs without any corresponding safety benefit. At the same time, the ANPRM was published in the *Federal Register* just days before an inflection point in Executive Branch regulatory governance, as exemplified in recent Executive Orders, and PHMSA should withdraw the ANPRM to ensure consistency with the new regulatory process.

As to the substance, the Petition simply does not present any credible evidence on the role of vapor pressure in transportation-related ignition events to warrant further proceedings.

⁵ See Comments of the Am. Fuel & Petrochemical Mfrs. on PHMSA’s Notice of Proposed Rulemaking for Hazardous Materials: Enhanced Car Standards & Operational Controls for High-Hazard Flammable Trains, Docket No. PHMSA-2012-0082 (HM-251) at 2 (Sept. 30, 2014) [hereinafter “AFPM HM-251 Comments”].

The thrust of the Petition is thus misleading. The risks associated with shipment of Class 3 liquids are well known and appropriately addressed by the Hazardous Materials Regulations (“HMR”), and any risks from shipment of crude oil—particularly from the Bakken region—have already been thoroughly addressed through recent regulatory actions. The result is a negligible likelihood of any real safety benefits to an RVP-based policy, coupled with high compliance costs imposed on industry in the form of field stabilization, field preconditioning, or transport in Division 2.1 packaging. The Petition’s proposal is also inconsistent with the current international framework for transportation of flammable liquids and gases.

AFPM appreciates that PHMSA took pains to craft a number of questions to which it seeks specific responses in the ANPRM. Nonetheless, because the Petition and any similar proposal rest on several flawed premises, AFPM is foregoing individual responses to each question in the ANPRM. Instead, AFPM is attaching to this letter a table, Exhibit 1, identifying the questions to which each section of this letter responds.

III. A VAPOR PRESSURE LIMIT WILL NOT CREATE MEANINGFUL SAFETY BENEFITS.

The Petition would not enhance the safe transportation of crude oil. That is because it rests on a false foundation: vapor pressure is not the key cause of ignition events in rail accidents. Any action on the Petition, even limited to the ANPRM, is a wasteful pursuit and will thus fail to address any genuine risk factors.

The weakness of the Petition is obvious from the meager evidence it tries to muster in support of its causal theory. For the three-year period it purports to cover, the Petition identifies only seven accidents involving release of crude oil.⁶ Of those seven accidents, the Petition identifies the vapor pressure of the lading in only one accident.⁷ And even *then* the Petition has no evidence that the particular vapor pressure in that case was in any way a contributing cause to ignition or increased the likelihood or severity of the accident. The closest the Petition comes on this point is a statement that the Sandia Study’s Task 1 report “did not disagree” that vapor pressure might contribute to flammability,⁸ when that same study also recognized the greater importance of other factors.⁹

The weakness of the vapor pressure theory should not be surprising. There are ample Class 3 liquids with low vapor pressures—ethanol, gasoline blend stocks, heavy naphthas, iso-octane, benzene, toluene, and the xylene isomers—that present similar ignition risks to Bakken or Permian

⁶ See Petition, *supra* note 3, at 8-9.

⁷ See *id.* at 13.

⁸ See *id.* at 14.

⁹ See *Crude Oil Characterization Research Study*, Presentation by Anay Luketa, Sandia Nat’l Labs., to Comm. for a Study on Domestic Transp. of Petroleum, Natural Gas, and Ethanol (May 12, 2016) (“No single parameter defines the degree of flammability[.]”), <http://onlinepubs.trb.org/onlinepubs/petroleum/Luketa051216.pdf>.

Basin crude and other unrefined petroleum products. In some cases, the vapor pressure of Class 3 flammable liquids is very low (*e.g.*, 2.0 psia), yet, like every other flammable liquid, they will burn. Perhaps RVP might serve as a dividing line between packing groups I and II, but even that change would not produce meaningful safety benefits. The packaging of bulk crude shipped by rail does not change by packing group.¹⁰ So long as vapor pressure does not approach the 43.5 psia of a gas (at 122 °F), it has little meaning for hazard classification.

Based on the evidence currently before PHMSA, the case for vapor pressure as the key driver of ignition risk is non-existent. And the case for an RVP limit of 9.0 psia is also a mirage. Further proceedings in this docket are not justified based on the facts presented in the Petition. Yet there is a better and more parsimonious explanation for ignition events from rail accidents: (1) the presence of a flammable liquid and (2) the presence of heat above the liquid's flashpoint.¹¹ The former condition will necessarily occur when a Class 3 liquid is involved, and any significant rail accident involving collisions between tank cars virtually guarantees the presence of the latter condition.¹² RVP can provide some information about the size of a vapor plume at certain temperatures; the size of that plume will have no meaningful impact on the risk of ignition when thousands of gallons of flammable liquid are likely to come directly in contact with an ignition source (typically, sparks from steel contacting other steel after a derailment).

Nor is there any meaningful tie between RVP and a boiling liquid expanding vapor explosion (“BLEVE”) or a sudden heat-induced tearing event (“HIT”). BLEVEs can occur with any liquid stored under pressure in a strong container subjected to intense heat. What drives the event is the presence of a large external fire or other heat source and an uncompromised container that allows pressure to increase as temperature rises.¹³ Under those conditions, both BLEVEs and HITs can occur if the train car's pressure relief device is damaged or misaligned during the derailment. Vapor pressure of the lading in the car is inconsequential.

¹⁰ See 49 C.F.R. § 173.243(a).

¹¹ See, *e.g.*, Emergency Order Establishing Additional Requirements for Attendance and Securement of Certain Freight Trains and Vehicles on Mainline Track or Mainline Siding Outside of a Yard or Terminal, 78 Fed. Reg. 48218, 48221 (Aug. 7, 2013) [hereinafter “FRA Emergency Order No. 28”] (“As demonstrated by the Lac-Mégantic derailment, in a catastrophic incident, crude oil is problematic when released *because it is flammable*. This risk is compounded because it is commonly shipped *in large units*. Similar dangers exist with other hazardous materials such as ethanol, which is another flammable liquid that is commonly transported by rail. More carloads of ethanol were transported via rail than any other hazardous material in 2012.” (emphasis supplied)).

¹² Rick Elliot, U.S. Dep't of Energy, *Literature Survey of Crude Oil Properties Relevant to Handling and Fire Safety in Transport*, Presentation to the Office of Hazardous Materials Safety (“OHMS”) Research & Development Forum (Apr. 16, 2015).

¹³ It is also possible that the very strength of the tank car containers mandated by PHMSA increase the severity of a BLEVE by allowing a greater accumulation of pressure before the failure of containment—a matter that should have been fully investigated and addressed in a complete petition.

Finally, there is also no reason to think that a classification scheme based on vapor pressure will materially aid emergency response. The North American guidebook for emergency response is based on hazard class, not more individualized criteria (*e.g.*, packing group).¹⁴ There is no evidence whatsoever that first responders have been hampered because they did not know the RVP of the lost lading. Emergency personnel will treat Class 3 materials like crude oil the same regardless of its vapor pressure.

IV. THE PETITION'S PROPOSAL IS PREMATURE.

A. Technical Information from the Sandia Study and Peer Review

PHMSA currently has substantial amounts of information (from AFPM and others) on the physical properties of crude oil, including that from Bakken fields.¹⁵ AFPM and its members continue to stress that this evidence shows Bakken crude to be unexceptional and well within the risks typical of light crude oil.¹⁶ Nonetheless, AFPM acknowledges that further investigation into the properties of light tight oil and its movement on the rail system is ongoing. Therefore, as PHMSA itself has determined, the Petition is premature and should be denied unless and until the results of this congressionally mandated research have been published and peer reviewed, especially the report on the Crude Oil Characteristics Research Sampling, Analysis, and Experiment Plan conducted by Sandia National Laboratory and others (the “Sandia Study”).¹⁷

Of the six “tasks” required for completion of the Sandia Study, the results of only one task—the literature survey—have been published.¹⁸ The remaining tasks are far more relevant to any determination of the need for further safety regulations.¹⁹ Task 3, for example, will provide information on the combustion of light oils and other hydrocarbons, including the pool fire phenomenon and explosive events.²⁰ Task 4 will examine whether tight oils might have an elevated risk of ignition in the event of a rail accident compared to other crude—clearly a

¹⁴ See generally PHMSA, 2016 Emergency Response Guidebook (2016), <http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/Hazmat/ERG2016.pdf>.

¹⁵ See, *e.g.*, *id.* Ex. 19.

¹⁶ See *id.*

¹⁷ See, *e.g.*, Fixing America’s Surface Transportation [“FAST”] Act, Pub. L. 114-94, § 7309, 129 Stat. 1312, 1600-01 (2015).

¹⁸ See David Lord et al., Literature Survey of Crude Oil Properties Relevant to Handling and Fire Safety in Transport (2015), <http://prod.sandia.gov/techlib/access-control.cgi/2015/151823.pdf>. AFPM understands that data collection for Task 2 is complete but that analysis and reporting for that task are not likely to conclude until sometime in the spring.

¹⁹ See Dep’t of Energy, Crude Oil Characteristics Research Sampling, Analysis and Experiment (SAE) Plan 3-6 (2015), <https://energy.gov/sites/prod/files/2016/06/f32/Crude%20Oil%20Characteristics%20Research%20SAE%20Plan.pdf>.

²⁰ See *id.* at 4.

premise that undergirds the entirety of the Petition.²¹ Task 5 (large-scale modeling of tank car accidents and ignition) also has special relevance to the safety benefits of any RVP limit.²² And Task 6 will address the ability of conditioning equipment to mitigate the risk of ignition.²³ Each of these tasks will not be completed in the very near-term, and PHMSA will need to allow time for peer review of, and stakeholder comment on, the Sandia Study once completed. AFPM therefore acknowledges the merit in PHMSA’s decision not to continue proceedings on the Petition before that time.²⁴ But given the timeline of the Sandia Study, a better course of action is to deny the Petition now and allow the petitioner to seek reconsideration if the results lend credence to its theory.

B. The FAST Act’s Timeline for Legislation and Regulation

PHMSA has correctly determined that any proposed regulation would impermissibly interrupt the timeline for further regulation of crude oil transportation articulated by Congress in the FAST Act.²⁵ The FAST Act obligates the government agencies participating in the Sandia Study to submit a report to Congress within 180 days of the study’s completion.²⁶ Along with that report, the agencies must submit “recommendations, based on the findings of the study,” for both “regulations by the Secretary of Transportation or the Secretary of Energy to improve the safe transport of crude oil” and “legislation to improve the safe transport of crude oil.”²⁷

The FAST Act reflects Congress’ judgment that the completion of the Sandia Study should be a condition precedent to any further regulation of the transportation of crude oil. It is also clear that the legislative recommendations required under the FAST Act must be considered and implemented (or rejected) before any regulatory recommendations are implemented by this agency or the Department of Energy. And if the text of the statute were not enough on its own, Members of Congress have directly explained their views that this rulemaking should not proceed until the FAST Act process has concluded.²⁸

²¹ *See id.* at 5.

²² *See id.* at 5-6.

²³ *See id.* at 6.

²⁴ *See* Letter from Sec. Elaine Chao, Dep’t of Transp., to Rep. Kevin Cramer, (May 16, 2017) (on file with AFPM). AFPM understands that the National Academy of Sciences’ Transportation Research Board might also be conducting similar work on the flammability of fuels in transportation; that work also provides a strong reason to suspend these proceedings until PHMSA and stakeholders have that evidence before them. *See Meeting Information: Domestic Transportation of Petroleum, Natural Gas, and Ethanol*, Nat’l Acad. of Sciences (2016), <http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingID=8516&MeetingNo=2>.

²⁵ FAST Act, § 7309, 129 Stat. at 1600-01.

²⁶ *Id.*

²⁷ *Id.*

²⁸ *See* Letter from Rep. Kevin Cramer, et al., to Secretary Elaine Chao (Mar. 10, 2017) (“PHMSA’s ANPRM . . . contravenes [c]ongressional intent, and due to the lack of meaningful scientific data at this time,

Granting the Petition before the statutorily required findings of the Sandia Study would not only ignore the process clearly desired by Congress, but also risk wasting PHMSA's resources and those of industry stakeholders. The agency has wisely recognized that if it proceeds with the Petition's proposal—or any other proposed regulation on the transport of crude oil not otherwise required by statute—it will simply be forced to revise or revoke the new rule once it receives the recommendations from the Sandia Study. PHMSA should further respect Congress' judgment by withdrawing or suspending the ANPRM and denying the Petition.

V. CURRENT REGULATIONS ADEQUATELY ADDRESS THE SAFETY OF RAIL TRANSPORTATION OF CRUDE OIL.

AFPM received the ANPRM with significant surprise given the exhaustive regulatory framework governing transportation of crude oil and other Class 3 flammable liquids, especially by rail. Collectively, these regulations already ensure that offerors and carriers take great pains to handle flammable liquids with all due care. PHMSA should acknowledge that these regulations provide little room for any incremental safety improvements through the Petition, and, in any event, that benefit could not be certain until PHMSA and industry stakeholders have finished implementing the more recent rules.

A. The Hazardous Materials Regulations

The current classification system provides for safe packaging and fulfills the core purpose of the Hazardous Materials Transportation Act (“HMTA”). As flammability is the fundamental concern with crude oil, the use of a Class 3 hazard class properly characterizes its transportation risks.²⁹ Packing group designations further define the risks among Class 3 liquids based on the two most relevant physical criteria: flash point and initial boiling point (IBP).³⁰ Crude oil is particularly characterized with the U.N. 1267 and other description incorporated into 49 C.F.R. § 172.101.³¹

The HMR mandate a comprehensive response to the risks of transporting a flammable liquid. Consignment and certification requirements ensure that the material and its risks are correctly communicated through the supply chain and that agencies can investigate and enforce any misclassification.³² Marking, placarding, and labeling required by the HMR fully convey the

the safety justification for a requirement to establish a national RVP standard has yet to be proven. . . . [U]ntil the results of the Sandia Study are released and reviewed we request PHMSA defer review of the proposal and withdraw the ANPRM.”)

²⁹ See 49 C.F.R. § 173.120(a) (defining a Class 3 flammable liquid).

³⁰ See *id.* § 173.21(a).

³¹ See *id.* § 172.101 (table).

³² See generally *id.* pt. 172, subpt. C; see also *id.* § 173.22.

risk of combustion (as well as any risks from hydrogen sulfide in the crude oil).³³ Employees working with hazardous materials must be fully trained to manage these risks.³⁴ In the event of any loss of lading, the HMR ensure that emergency responders will have the information necessary from offerors and carriers to deal with the situation as effectively as possible.³⁵

B. Other Regulatory Actions to Address Crude-By-Rail

The protections of the HMR are already robust and complex; this is especially true for regulations that address the risks of crude oil shipped by rail. As PHMSA well knows, the last few years have seen repeated and increasingly costly regulatory actions to address the perceived risks from crude-by-rail. Since 2014, the Department of Transportation (“DOT” or “Department”) alone has promulgated a number of actions, including the following:

- Heightened enforcement focus on hazardous materials shipments from the Bakken area through PHMSA’s Bakken Field Working Group;³⁶
- Heightened enforcement focus on crude-by-rail from “Operation Classification” by PHMSA and the Federal Railroad Administration (“FRA”);³⁷
- An FRA emergency order on attendance and securement of freight trains designed to target the sort of carrier error that caused the Lac-Mégantic derailment;³⁸
- An emergency order requiring offerors of crude oil transported by rail to classify the materials as Packing Group I or II only;³⁹

³³ See *id.* §§ 172.302, 172.400, 172.419, 172.542; see also *id.* § 172.327 (requiring warning signs for bulk packaging of sour crude).

³⁴ See *id.* § 172.704.

³⁵ See generally *id.* pt. 172, subpt. G.

³⁶ See *Safe Transportation of Energy Products: Chronology*, PHMSA, <http://www.phmsa.dot.gov/hazmat/osd/chronology> (last visited Feb. 28, 2017).

³⁷ See, e.g., *Operation Classification*, PHMSA (2014), <http://www.phmsa.dot.gov/hazmat/osd/operation-classification>.

³⁸ FRA Emergency Order No. 28, 78 Fed. Reg. 48219-20; see also *id.* at 48221 (noting that unattended trains accounted for a substantial part of accidents).

³⁹ See Amended and Restated Emergency Restriction/Prohibition Order, U.S. Dep’t of Transp. Docket No. DOT-OST-2014-0025 at 2-3 (March 6, 2014).

- An emergency order requiring rail carriers to notify State Emergency Response Commissions in each state in which the carrier operates trains carrying more than one million gallons of Bakken crude;⁴⁰
- A sampling and testing program, complete with certification, record-keeping, and official access requirements, targeted entirely at ensuring the proper classification of crude oil;⁴¹
- An industry-wide mandate to retire or retrofit the tank car fleet used to transport crude oil and invest in new tank cars;⁴²
- An array of operational controls on high-hazard flammable trains or high-hazard flammable unit trains, including speed, risk assessment, improved routing, and emergency response notification requirements;⁴³
- Mandatory implementation of positive train control systems;⁴⁴ and
- An accelerated phase-out of DOT 111 tank cars carrying unrefined petroleum products.⁴⁵

Presumably, PHMSA and its sister components in the Department believe these measures are paying and will pay dividends in the form of reduced crude-by-rail accidents. The Petition seeks to address a perceived hazard characteristic, where the risks of crude transportation have been addressed through these multiple, existing regulatory requirements.⁴⁶ AFPM sees no further meaningful incremental risk reductions from establishing a new RVP ceiling on the

⁴⁰ See Emergency Restriction/Prohibition Order, U.S. Dep't of Transp. Docket No. DOT-OST-2014-0067 at 1 (May 7, 2014).

⁴¹ See 49 C.F.R. § 173.41.

⁴² See Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-hazard Flammable Trains, 80 Fed. Reg. 26643, 26666-83 (May 8, 2015); see also Hazardous Materials: FAST Act Requirements for Flammable Liquids and Rail Tank Cars, 81 Fed. Reg. 53935, 53936-37 (Aug. 15, 2016) (revising tank car retrofit schedule in light of the FAST Act).

⁴³ See Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-hazard Flammable Trains, 80 Fed. Reg. 26683-714 (codified at 49 C.F.R. § 174.310(a)).

⁴⁴ See, e.g., Positive Train Control Enforcement and Implementation Act of 2015, Pub. L. 114-73, 129 Stat. 576 (2014) (codified at 49 U.S.C. § 20157); see also 49 C.F.R. § 236.1011.

⁴⁵ See 49 C.F.R. § 173.243(a)(1).

⁴⁶ AFPM here uses “risk” and “hazard” in the senses used by the Occupational Safety and Health Administration (“OSHA”). See, e.g., OSHA, *Hazard Identification and Assessment*, OSHA.gov (last visited May 17, 2017) (“‘Risk’ is the product of hazard and exposure. Thus, risk can be reduced by controlling or eliminating the hazard or by reducing workers' exposure to hazards.”).

transportation of flammable liquids.⁴⁷ Significant safety benefits would be especially difficult to capture as pipelines gradually replace rail as the preferred means of transporting Bakken and other crudes.

If nothing else, PHMSA cannot yet know the full effects of other regulatory efforts. Past releases or incidents of non-compliance are likely to have been addressed by one of the myriad policies listed above, as is the case for Lac-Mégantic. The Petition does not, and could not, fully account for the safety improvements made since December 2015. Nor do the Petition's claims about the benefits of an RVP limit address the downward trend in crude-by-rail movements since 2015.⁴⁸ Thus, any analysis of the Petition's marginal benefits will remain premature until all such regulations are fully implemented, including the phase-out of DOT 111 tank cars, and the science from ongoing studies is complete.

VI. THE PETITION'S PROPOSAL WOULD IMPOSE UNREASONABLE COSTS.

To keep the RVP under 9.0 psia, the ultimate effect of any RVP limit—and the clear goal of the Petition—is to require field stabilization of much of the crude oil extracted from the Bakken formation, the Permian Basin, the Eagle Ford Shale, and other production areas.⁴⁹ Alternatively, the Petition would require Division 2.1 pressure equipment for flammable liquids exceeding the RVP limit. AFPM harbors grave concerns about the costs of either requirement. Because these costs are enormous and could impact the ability to produce oil from these areas, PHMSA should not proceed with the Petition's proposal.

These costs mean that PHMSA cannot grant the Petition without undermining the policy of the President. Executive Order 13783 directs all agencies to “avoid[] regulatory burdens that unnecessarily encumber energy production, constrain economic growth, and prevent job creation.”⁵⁰ Like other agencies, PHMSA is in the process of reviewing all “agency actions” that “potentially burden the development or use of domestically produced energy resources, with

⁴⁷ If any meaningful safety gains are possible, they will come from further regulation of carriers, not shippers or crude oil. As recent FRA inspections have made clear, the root cause of rail incidents is track integrity, not tank car packaging. See *Inspections find thousands of defects on oil train lines*, GreenWire (Apr. 5, 2017) (noting that FRA inspectors found 24,000 defects on 58,000 miles of carrier track) (citing Matthew Brown, *APNewsBreak: Thousands of defects found on oil train routes*, The Virginian Pilot (Apr. 5, 2017)), <https://www.eenews.net/greenwire/2017/04/05/stories/1060052643>.

⁴⁸ See *Crude-by-rail volumes to the East Coast are declining*, EIA.gov (Aug. 3, 2016), <https://www.eia.gov/todayinenergy/detail.php?id=27352>.

⁴⁹ AFPM explained in its comments on the HM-251 rulemaking that stabilization is inappropriate and appended a study on that topic prepared by Dangerous Goods Transport Consulting, Inc. See AFPM HM-251 Comments, *supra* note 5, at Ex. 20. AFPM now incorporates that study by reference.

⁵⁰ Exec. Order 13783, Promoting Energy Independence and Economic Growth, 82 Fed. Reg. 16093 (Mar. 31, 2017).

particular attention to oil, natural gas, coal, and nuclear energy resources.”⁵¹ The Petition proceedings are one such action that clearly meet the Executive Order’s test of “unnecessarily obstruct[ing], delay[ing], curtail[ing], or *otherwise impos[ing] significant costs* on the siting, permitting, production, utilization, transmission, or delivery of energy resources.”⁵² Even the potential for the costs described below should preclude a grant of the Petition.

A. Field Stabilization

Field stabilization (or field conditioning or pre-treatment) would entail undue costs. Because the crude oil would need to be stabilized to 9.0 psia or below before consignment in Class 3 packagings, stabilization would need to occur at the wellhead. Thus, oil producers would need to install significant numbers of field stabilizers across the country. Current equipment for separation or heat treatment is insufficient to reduce crude oil RVP to levels suggested in the Petition.⁵³ As AFPM has previously explained, the equipment needed is considerable and goes beyond process heater treatment. Moreover, there are no piping systems for moving both gases and liquids from the stabilization process to processing facilities or transportation hubs.⁵⁴ Furthermore, there are insufficient tanks and storage for the light ends produced by the process,⁵⁵ and those light ends would then need a new distribution system tailored to demand and a market disposition for those products.⁵⁶ Alternatively, producers would require topping refineries to distill the crude oil to a vapor pressure well below the threshold; these facilities simply do not exist in remote locations. Exploration and production companies would bear the capital costs of wellhead stabilization. In the Bakken area and Permian Basin in particular, much of the production might cease altogether for some time, especially in a low-price environment.⁵⁷ The

⁵¹ *Id.* OIRA’s recent guidance on this Executive Order underscores its applicability to the Petition, especially in light of the costs AFPM identifies in Section VI, *infra*. See Dominic J. Mancini, OIRA, *Guidance for Section 2 of Executive Order 13783, Titled “Promoting Energy Independence and Economic Growth,”* WhiteHouse.gov at 2-3 (May 8, 2017) (“The types of agency actions that are covered . . . include, but are not limited to, agency actions that materially: (1) [a]ffect the design and/or location of domestic energy production; (2) [a]ffect the design and/or location of drilling or mining of energy production resources; and (3) [l]imit the use of certain sources of energy, such that the development of domestically produced energy resources from a certain sector may be negatively affected.”), <https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2017/M-17-24.pdf>.

⁵² *Id.* (emphasis supplied) (defining “burden”).

⁵³ See, e.g., AFPM HM-251 Comments, *supra* note 5, at 52; see also John R. Auers et al., Turner, Mason & Co., North Dakota Petroleum Council Study on Bakken Crude Properties: Bakken Crude Characterization Task Force 36 (2014) [hereinafter “NDPC Study on Bakken Crude Properties”], available at https://www.ndoil.org/image/cache/Bakken_Quality_Report.pdf.

⁵⁴ See AFPM HM-251 Comments, *supra* note 5, at Ex. 20 at 2-3.

⁵⁵ *Id.* at 3.

⁵⁶ *Id.*

⁵⁷ Bakken production is particularly vulnerable as the current transportation infrastructure has been built around vapor pressure limits above 9.0 psia. The current conditioning requirements of the North Dakota Industrial Commission are, of course, higher than that proposed by the Petition. As the ANPRM also notes,

result might well be an increase in petroleum imports to the U.S. to make up for the lost domestic production; U.S. energy security would deteriorate as a result.

Fundamentally, a vapor pressure limit would put much current and future production at risk, and not only in the Bakken. At best, producers and midstream companies would suffer significant financial harm as marginal production becomes uneconomical. Flammable liquid shippers will incur higher costs related to the uncertainty, testing, and litigation of inadvertent or mistaken violations of a Class 3 liquid moving just over the vapor pressure threshold. For the petroleum sector in particular, those costs might include blending the product to reduce vapor pressure well below the RVP threshold. The higher costs of energy production would likely be passed through to refiners—and, ultimately, consumers. State and local governments might also suffer substantial losses in tax revenue.

Moreover, stabilization will not address the fundamental nature of flammability. Even stripped of all light ends, crude oil will still ignite. As explained above, what matters is a source of spark or flame and a Class 3 liquid. The vapor pressure of the lading does not communicate the risk of ignition. Indeed, stabilization might increase transportation safety risks as there would be a need for tank cars dedicated to transporting the separated light ends.⁵⁸ With no local demand for the light ends⁵⁹ (a critical difference between the Bakken and the Eagle Ford Shale), shippers would need to transport them long distances to new markets. The risk of an accidental release would only increase with the distance. Alternatively, the production well would be closed, or the light ends would be stranded in the distribution chain and their economic value wasted. The stranded product might be flared, creating further air emissions.

B. Packaging for Compressed Gases

The alternative to field stabilization is the equally untenable option of using pressurized packaging for flammable liquids above 9.0 psia. Pipelines in the Bakken, for example, could not hope to absorb the additional light ends in the short-term, as the ANPRM recognizes. Liquid

pipelines carrying crude from North Dakota set their vapor pressure limits at 9.0 psia or above. Thus, all modes of transporting crude oil out of the Bakken—rail, truck, or pipeline—would need to assess their compliance with any vapor pressure limit, examine their sources of supply, and consider necessary equipment investments. Similar concerns exist for the light tight oil production in the Permian Basin.

⁵⁸ See, e.g., UN/SCETDG/45/INF.17, Transmission from the IPIECA to the Subcomm. of Experts on the Transp. of Dangerous Goods, Comm. of Experts on the Transp. of Dangerous Goods & on the Globally Harmonized System of Classification & Labelling of Chems., 45th Session 3 (June 5, 2014) (“All else being equal, at 60°C, the maximum volume of flammable vapours produced by a Bakken crude oil would be four tenths the volume produced by a single component flammable liquid When compared with single component flammable liquids, pressure build up in a fire engulfed tank containing crude oil and release of vapours through tank relief valves proceed more slowly given the higher temperatures required (and consequently higher amounts of heat) to boil off the crude oil.”), <https://www.unece.org/fileadmin/DAM/trans/doc/2014/dgac10c3/UN-SCETDG-45-INF17e.doc>.

⁵⁹ See *id.* at 4.

petroleum gases removed from light oil require use of pressurized tank cars or tank trucks for transport.⁶⁰ Yet the transition would not come cheap, nor result in any overall risk reduction to crude transportation. Crude shippers have already sunk enormous costs into new and retrofitted non-pressurized tank cars; many of those cars would suddenly become useless investments under the Petition. Pressurized tank cars are also often unsuitable for heavy crudes and rarely, if ever, have the heater coils needed to remove the lading.⁶¹ These cars would have to be produced or retrofitted, potentially creating backlogs and delays as the new *de facto* requirements coincide with PHMSA's DOT 117 mandate. Crucially, refiners would need to invest major capital in new loading and unloading infrastructure to accommodate the new pressure cars.

Rail transportation would not be the only mode that would become more costly. Producers and refiners would need substantial investments in pressurized truck transportation, another source of large capital outlays. New trucking equipment might be especially necessary for transporting mid- and winter-season gasoline, the vapor pressure of which typically exceeds the limits proposed by the Petition—again, without any increase in transportation safety.

VII. COMPARISONS TO PIPELINE VAPOR PRESSURE CAPS ARE MISLEADING.

The Petition emphasizes vapor pressure limits written into pipeline tariffs as evidence that stabilization is feasible.⁶² The petitioner is misinformed, and PHMSA has heretofore failed to set the record straight. The ANPRM suggests that “[u]nderstanding how oil producers comply with pipeline operators’ RVP standards . . . would provide useful insights for understanding the consequences of setting RVP limits for rail transport.”⁶³ PHMSA should instead reject the Petition’s attempted reliance on pipeline RVP standards.

For past comments submitted to PHMSA, AFPM commissioned a survey of Bakken crude oil characteristics prepared by Dangerous Goods Transport Consulting, Inc.⁶⁴ Survey respondents reported that pipelines employ RVP limits to prevent pump cavitation or vapor lock.⁶⁵ Pipeline vapor pressure is, in essence, self-limiting.⁶⁶ Those inherent limits are not

⁶⁰ See 49 C.F.R. § 173.314(c); Auers et al., NDPC Study on Bakken Crude Properties, *supra* note 59 at 36 (“Stabilizers . . . [are] used . . . [to] separate out the lightest components Those components are then transported separately . . . in pressurized rail cars[.]”).

⁶¹ See, e.g., Ass’n of Am. R.R., Field Guide to Tank Cars 49 (2010) (“Although rare, pressure tank cars may be equipped with heater coil systems.”), http://www.joinnsoar.com/pdf/4185_Field_Guide_To_Tank_Cars1-opt.pdf.

⁶² See Petition, *supra* note 3, at 23-24.

⁶³ See ANPRM, 82 Fed. Reg. 5505.

⁶⁴ See AFPM HM-251 Comments, *supra* note 5, Ex. 19 at 1-3.

⁶⁵ See *id.* Ex. 19 at 20.

⁶⁶ See, e.g., Godwin A. Chukwu et al., *Operational Challenges in Gas-to-Liquid (GTL) Transportation Through Trans Alaska Pipeline System (TAPS): Final Report 106-09* (2007), <https://www.osti.gov/scitech/servlets/purl/919007>.

necessarily relevant to rail or other modes of transportation, and they do not provide a risk-based and scientifically supported reason to grant the Petition.

Moreover, the existence of pipeline operational limits does not imply that the costs of stabilization are minimal. Pipelines offer a cheaper means of transporting crude oil compared to rail, but they require long lead times and large capital expenditures, including any infrastructure necessary to stabilize or separate crude oil with vapor pressure above the pipeline's operational limit. These investments have not been made, or have not been made sufficiently early or sufficiently widely, for pipelines to be economical short- or medium-term alternatives to rail in areas like the Bakken. Even for the pipelines that do exist in such areas, the separated light ends do not simply disappear. Producers often transport them via truck, perhaps the least cost-effective mode of ground transportation for crude oil.

VIII. THE PETITION CONFLICTS WITH THE INTERNATIONAL CONSISTENCY MANDATES OF 49 U.S.C. § 5120.

PHMSA should also deny the Petition and close these proceedings as it has no defensible grounds for disregarding the obligation under the HMTA to ensure “consisten[cy] with standards and requirements related to transporting hazardous materials that international authorities adopt.”⁶⁷ The settled international classification scheme in this instance is the United Nations Model Recommendations on the Transport of Dangerous Goods: Model Regulations (the “U.N. Model Regulations”). Under the HMTA, PHMSA has an obligation to ensure PHMSA can call upon only two exceptions to this consistency requirement. First, PHMSA may issue a non-identical standard or requirement if it “decides the standard or requirement is unnecessary or unsafe[.]”⁶⁸ Second, PHMSA may issue a more stringent standard or requirement if it decides that doing so “is necessary in the public interest.”⁶⁹

Congress did not craft these provisions with the intent to give PHMSA unbridled discretion. The agency must instead overcome a strong presumption that consistency should be maintained;⁷⁰ PHMSA and its predecessor have long paid due respect to that presumption in past proceedings.⁷¹ And for good reason: as PHMSA has succinctly explained, consistency with

⁶⁷ See 49 U.S.C. § 5120(b).

⁶⁸ *Id.* § 5120(c)(1).

⁶⁹ *Id.* § 5120(c)(2).

⁷⁰ See *Lilliputian Sys., Inc. v. PHMSA*, 741 F.3d 1309, 1312 (D.C. Cir. 2014) (“Lilliputian contends . . . [that PHMSA] failed to provide a reasoned explanation for its prohibition, including failing to explain why it declined to follow *the presumption* that federal hazardous materials regulations be harmonized with international standards.” (emphasis supplied)); see also Hazardous Materials: Harmonization With International Standards (RRR), 80 Fed. Reg. 1076, 1076 (Jan. 8, 2015) (“Federal law and policy strongly favor the harmonization of domestic and international standards for hazardous materials transportation.”).

⁷¹ See, e.g., Howard McMillan, Acting Deputy Administrator, PHMSA, Pipeline and Hazardous Materials Safety Administration’s Notice Regarding the IMDG Code and ICAO Technical Instructions (2017) (suspending enforcement actions against offerors and carriers adhering to recent adoptions of new international

international standards “provide[s] economic benefits by eliminating the costs of complying with a multitude of differing national, regional and modal regulations.”⁷² PHMSA has particularly noted that “[t]he [U.N.] Model Regulations enhance safety, improve enforcement capability, ease training requirements[,] and enhance global trade and economic development” by reducing the need for repackaging at national borders or between modes.⁷³ The severe costs of disharmony with international transportation requirements are what drove PHMSA’s predecessor to overhaul the HMR (and abandon a vapor pressure criterion for flammable gases) decades ago.⁷⁴

The HMR currently recognize a “gas” as a “material which has a vapor pressure greater than 300 kPa (43.5 psia) at 50 °C (122 °F) or is completely gaseous at 20 °C (68 °F) at a standard pressure of 101.3 kPa (14.7 psia).”⁷⁵ This aligns with the definition used in the U.N. Model Regulations.⁷⁶ Also like the HMR,⁷⁷ the U.N. Model Regulations tie classification of flammable gases to similar thresholds.⁷⁸

The Petition would effectively depart from these proven accepted norms. By capping the RVP of crude oil or other flammable liquids, the Petition would force offerors and carriers to treat these materials as Division 2.1 flammable gases, or incur unreasonable pretreatment costs. The RVP limit of 9.0 psia would become, in the law if not in science, the dividing line between a flammable liquid and a flammable gas, with all the attendant consequences for pressurized packaging. But that would be true only in the United States. Tellingly, past attempts to revise

standards),

http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/PHMSA_Note_IMDG_Code_and_I_CAO_Technical_Instructions_Signed_2_27_17.pdf; see also Hazardous Materials: Harmonization with the United Nations Recommendations, International Dangerous Goods Code, and the International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air, 76 Fed. Reg. 3308, 3308 (Jan. 19, 2011) (recounting the history of HMR revisions to maintain consistency with the U.N. Model Regulations).

⁷² *UN Recommendations*, PHMSA, <http://www.phmsa.dot.gov/hazmat/standards-rulemaking/international/un-recommendations> (last visited Mar. 2, 2017).

⁷³ *Id.*

⁷⁴ See Performance-Oriented Packaging Standards; Changes to Classification, Hazard Communication, Packaging and Handling Requirements Based on UN Standards and Agency Initiative, 55 Fed. Reg. 52402, 52402 (Dec. 21, 1990).

⁷⁵ See 49 C.F.R. § 171.8.

⁷⁶ See United Nations Recommendations on the Transport of Dangerous Goods: Model Regulations, vol. I, Pt. 2, ¶ 2.2.1.1 (19th rev. ed. 2015) [hereinafter “U.N. Model Regulations”], http://www.unece.org/fileadmin/DAM/trans/danger/publi/unrec/rev19/Rev19e_Vol_I.pdf.

⁷⁷ See 49 C.F.R. § 173.115(a).

⁷⁸ See U.N. Model Regulations, *supra* note 76, vol. I, pt. 2, ¶ 2.2.2.1.

the U.N. Model Regulations to reclassify crude oil based on vapor pressure have not achieved success.⁷⁹

That a new *de facto* distinction between flammable gases and liquids might be drawn in narrow circumstances does not make the departure any more justifiable. Congress has spoken clearly on the high bar to any classifications at odds with international standards, and Congress has repeatedly amended the HTMA against the background of the agency's long-held distinction between Division 2.1 and Class 3 materials.⁸⁰

IX. PHMSA SHOULD WITHDRAW THE ANPRM IN LIGHT OF EXECUTIVE ORDERS 13771 AND 13783.

PHMSA published the ANPRM on January 18, 2017, two days before the inauguration of President Donald Trump.⁸¹ On January 30, 2017, President Trump signed Executive Order 13771, which creates a “regulatory cap”⁸² for PHMSA and other agencies. The goal of Executive Order 13771 is crystal clear: prevent incremental costs from new regulations, unless offset by reductions in the costs of existing regulations. Before any agency may “propose[] for notice and comment” any “new regulation” in fiscal year 2017, that agency must “identify at least two existing regulations to be repealed.”⁸³ The two regulations to be repealed must be selected so that their repeal will fully offset the incremental costs of the new regulation.⁸⁴ For later fiscal years, each agency will receive an “allowance” of incremental costs determined by the Office of Management and Budget (“OMB”); this allowance may be positive or negative, in which case the agency would need to repeal regulations with incremental costs greater than any new regulation.⁸⁵

⁷⁹ See, e.g., UN/SCETDG/48/INF.623 & UN/SCEDGHS/30/INF.23, Transmission from the Expert from Canada, to the Subcomm. of Experts on the Transp. of Dangerous Goods & Subcomm. of Experts on the Globally Harmonized System of Classification & Labelling of Chems., Comm. of Experts on the Transp. of Dangerous Goods and on the Globally Harmonized System of Classification & Labelling of Chems., 48th Session 4-5 (Dec. 4, 2015), <https://www.unece.org/fileadmin/DAM/trans/doc/2015/dgac10c4/UN-SCEGHS-30-INF23-UN-SCETDG-48-INF62.pdf>.

⁸⁰ Cf. *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 143-59 (2000).

⁸¹ See 82 Fed. Reg. 5499.

⁸² See Exec. Order No. 13,771: Reducing Regulation & Controlling Regulatory Costs, 82 Fed. Reg. 9339, 9339 (Feb. 3, 2017).

⁸³ *Id.*

⁸⁴ *Id.* Of course, the Executive Order does not apply to those regulations the promulgation of which are required by statute. See *id.* (imposing the regulatory cap “[u]nless prohibited by law”). No statutory mandate requires PHMSA to grant the Petition.

⁸⁵ *Id.* at 9339-40.

OMB's Office of Information and Regulatory Affairs ("OIRA") has issued guidance for the implementation of Executive Order 13771 in this fiscal year.⁸⁶ Importantly, the OIRA guidance interprets the sweep of the order to include not merely final rules but all major "regulatory action[s]" as defined in Executive Order 12866.⁸⁷ That term embraces the promulgation of any Notice of Proposed Rulemaking.⁸⁸ OIRA has also clarified that, by default, agencies should seek to repeal two regulations "in a reasonable period of time before the agency issues the . . . regulatory action."⁸⁹ Similarly, Executive Order 13783 obligates PHMSA to identify and revise any regulatory actions that potentially burden domestic energy production, as explained above. PHMSA should withdraw the ANPRM so that it can assure full compliance with the letter and spirit of these new directives.

Until PHMSA can create the structure and process required by the Executive Orders, plowing ahead with the ANPRM—and a possible Notice of Proposed Rulemaking—will only entail a later need to revise information collection and policy proposals in light of the new review framework. Compounding that problem is the uncertainty of when any Notice of Proposed Rulemaking could be issued. If PHMSA takes regulatory action before October 2017, it will have precious little time to identify offsetting cost-savings through deregulation and implement those cost-savings. But PHMSA also cannot yet know its regulatory "allowance" for any future fiscal year. As that allowance might well be negative (requiring net deregulation), PHMSA also cannot know whether it will be able to impose any new incremental costs. Clearly, a rulemaking process that occurs after these issues are addressed will allow the agency and stakeholders to allocate their resources most effectively, and PHMSA should therefore withdraw the ANPRM until that time.

X. CONCLUSION

AFPM appreciates this opportunity to inform PHMSA of its views and those of its members. Nonetheless, AFPM remains concerned that PHMSA is now entertaining an RVP limit two full years after the Petition was filed. AFPM trusts that PHMSA will quickly see the lack of merit in any RVP limit and urges the agency to deny the Petition and close the proceedings as soon as possible.

⁸⁶ See generally Dominic J. Mancini, Acting Administrator of OIRA, Memorandum: Implementing Executive Order 13771, Titled "Reducing Regulation and Controlling Regulatory Costs" (Apr. 5, 2017), [hereinafter "OIRA Guidance"] <https://www.whitehouse.gov/the-press-office/2017/04/05/memorandum-implementing-executive-order-13771-titled-reducing-regulation>.

⁸⁷ *Id.*

⁸⁸ See Exec. Order No. 12,866: Regulatory Planning and Review, 58 Fed. Reg. 51735, 51737-38 (Oct. 4, 1993).

⁸⁹ Mancini, OIRA Guidance, *supra* note 86.

EXHIBIT 1

Section of Comment Letter:

III – Lack of Safety Benefits

IV – Prematurity (Sandia Study)

V – Current Regulations

VI – Costs

VII – Pipeline Vapor Pressure Limits

VIII – International Consistency

Responsive to ANPRM Questions:

A-1, A-3, A-5, A-9 to A-11, A-17, A-18,

A-20 to A-23, B-6

A-2, A-5, C-5, C-8

A-1, A-3, A-9, A-11, A-14, A-15,

B-1 to B-5,

A-1, A-3, A-6, A-9, A-10, A-12 to

A-14, A-16, A-20, A-21, A-23, B-6, C-6

A-7

A-4, A-12, A-14, A-20, B-2