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INSIGHTS

PHMSA Proposes Plans to Revise Volatility Standard for the Transport of Crude Oil

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Today, PHMSA released an ***advanced notice of proposed rulemaking (ANPRM),*** announcing that it is considering revising the Hazardous Materials Regulations (HMR) to establish vapor pressure limits for the transportation of crude oil and potentially all Class 3 flammable liquid hazardous materials. The ANPRM is in response to a ***petition for rulemaking from the New York Attorney General*** that requested PHMSA establish a nationwide vapor pressure standard for the transportation of crude oil by rail. Going beyond the scope of the NY AG's petition, the ANPRM asks stakeholders whether any future standards should apply not just to rail, but to all modes of transportation, including truck or cargo-ship shipments. PHMSA's expanded ANPRM presents numerous questions to industry stakeholders and sets forth a 60-day comment period, ending on March 20, 2017.

The NY AG's petition is in response to derailments of railcars carrying crude oil from the Bakken shale play in North Dakota that have resulted in explosions. The NY AG alleges that Bakken crude is highly volatile and extremely flammable and that current standards do not adequately mitigate that risk. Therefore, the NY AG's petition requests that PHMSA undertake a rulemaking to limit vapor pressure of crude oil transported by rail to 9.0 psi, a move the NY AG contends will reduce the risk of death or damage from fire or explosion during an accident. The NY AG's petition, however, fails to take into consideration a ***recent study*** that concluded that Bakken crude is a light, sweet crude with low corrosivity that can actually be transported safely using DOT-111 tank cars and in accordance with existing federal regulations.

Nonetheless, PHMSA's position is that, in order to grant the NY AG's petition, it must:

- Determine the best metrics (e.g., vapor pressure or other another metric) for measuring and controlling fire and explosion risk in crude oil transport;
- Quantify the improvement in safety, if any, due to risk reduction from implementation of vapor pressure thresholds at varying levels;
- Identify the measurement techniques necessary to establish compliance;
- Identify offerors' compliance strategies and market impacts with RVP standards at varying levels of stringency, and estimate their economic costs and environmental impacts;

- Identify other regulations and industry practices, such as VOC emissions standards imposed through the Clean Air Act, or State regulations, or pipeline operator RVP standards, potentially affecting compliance strategies and costs, and safety benefits;

- Evaluate the extent to which use of DOT Specification 117 tank cars mitigates the risk of transporting crude oil;

- Compare compliance costs of mitigation strategies with risk reduction from adoption of the petition; and

- Balance the benefits and costs in setting the level of the chosen metric.

To that end, PHMSA is soliciting information from stakeholders, so that the Administration can make an informed decision as to whether a vapor pressure standard is appropriate. PHMSA lays out nearly 40 questions in the ANPRM, seeking more information on the validity of the NY AG's petition, what measurement standards would be best, whether other regulatory requirements exist, cost impacts of a nationwide vapor pressure standard, how liability should be structured, and packaging. We have laid out some of PHMSA's key questions below:

Validity of the NY AG's Petition

- The NY AG's petition recommends a RVP of no greater than 9.0 psi. In contrast, the NDIC implemented a maximum vapor pressure threshold of 13.7 psi, (VPCR4 as defined in ASTM D6377). If PHMSA were to establish a national vapor pressure limit, what should it be?

- If the NY AG's petition were adopted, would there be an impact in the transportation of other flammable products, and if so, what would they be?

- To what extent, if at all, would requiring crude oil shipped by rail to have a RVP of no greater than 9.0 psi decrease the expected degree, consequence, or magnitude of a release or the likelihood of a fire during an accident? PHMSA seeks relevant scientific or other empirical information to support a position.

Liability

- While offerors would be legally responsible for compliance with a volatility standard, it may be that actual compliance would be more cost-effectively implemented at some other point in the supply chain. What physical, institutional, or legal arrangements would be needed for implementation of a vapor pressure standard?

Costs

- How many carloads and trains would be affected by setting a vapor pressure limit for the transport of crude oil by rail? What portion of current carloads would be out of compliance with the standard proposed in P-1669? Similarly, how many cargo ship shipments, truck shipments and barrels of oil transported by pipeline would be affected by adopting the standard proposed in P-1669?

- What are the expected impacts of establishing a nationwide vapor pressure standard for crude oil intended for transportation in commerce? Should that standard apply to all modes of transportation or be limited to specific modes? What are the costs and benefits of those impacts? PHMSA seeks supporting data and information as well.

General Questions

- What options are available for reducing the volatility of crude oil before it is offered for transportation and loaded into tank cars, such as existing consensus standards or operating practices used for conditioning (heating and treating) crude oil? What voluntary measures has industry taken to reduce the volatility of crude oil shipped in interstate commerce by any mode? If so, what are they?

- What other regulatory and industry marketability measures are in place that restrict the volatility of crude oil in transport, such as RVP limits set by pipeline operators, or the impact of volatile organic compound emission standards for storage tanks and other petroleum facilities?

- Should there be different vapor pressure limits depending on the specific circumstances of the shipment, such as the mode, the quantity of material or whether the shipment will travel through populated areas?

- Are there other risk factors that should be considered instead of, or in addition to, vapor pressure (e.g., a material's flammability range, specific heat or heat of vaporization)? How do these risk factors affect the magnitude of release or the likelihood of fire resulting from an accident?

- What types of additional technology, equipment, labor, and changes to existing operations would be needed for the establishment of a nationwide vapor pressure standard for crude oil intended for transportation in commerce? What would be the initial and recurring, and fixed and variable costs? If changes to existing operations would involve additional labor, then please provide the additional time by activity and labor category.

- Would the use of RVP, True Vapor Pressure, VPCRx, or some other standard be the best method for measuring vapor pressure for classification and packaging? Does this method appropriately account for liquids containing dissolved flammable and non-flammable gases under non-equilibrium conditions?

- Is there a unit of measure for how much dissolved flammable and non-flammable gases contribute to the vapor pressure, volatility, and flammability of crude oil?

- Have any other nations established vapor pressure limits for transporting crude oil or other flammable liquids by any mode? If so, which nations, what limits do they use, and what information did they use to support the specific limits?