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North America Crude-by-Rail Safety Update

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On April 30, 13 tanker cars of a 105-car train carrying crude oil from North Dakota derailed, and three of the cars caught fire in Lynchburg, Virginia. While details about the incident are still emerging, it is the latest in a series of high-profile accidents that have raised concern about the safety of transiting crude oil by rail. Even before the derailment in Lynchburg, regulators in both Canada and the United States were actively reviewing current regulatory standards and safety procedures in light of public concern over the uptick in crude-by-rail accidents. In the last month, regulators in both countries have moved toward addressing crude-by-rail safety.

The ultimate scope of new regulations is of great interest to oil producers, refineries, railroads, and the general public. New rail safety regulations may impose significant costs on industry that could affect the cost of moving crude oil by rail and, by extension, impact the pace and profitability of certain upstream investments. Failure to provide clear direction on the array of technical and procedural safety measures under review leaves the oil and rail industries without regulatory certainty and, more importantly, fails to address growing public and political concern over the safety of crude-by-rail transport.

The CSIS Energy and National Security Program previously released a brief issue paper detailing crude-by-rail safety concerns and regulatory action. This update provides more information on the latest regulatory action in Canada and the United States and explains what is likely to come next.

Regulators Have Recently Taken Action

In January, both the Transportation Safety Board of Canada and the U.S. National Transportation Safety Board (NTSB)—investigative agencies with no regulatory authority—issued recommendations covering an array of issues related to improved crude-by-rail safety (R-14-1 through -3 and R-14-4 through -6). In the last few weeks, regulators in both countries have moved to address these recommendations.

On April 23, Canadian minister of transport Lisa Raitt announced that Transport Canada, the Canadian regulatory authority, was taking action. Transport Canada's order:

1. prohibits an unmodified version of a tank car model called the DOT-111 from carrying flammable liquids such as crude oil and ethanol (this order immediately affects about 5,000 of the least crash-resistant such tank cars). These cars must be removed from flammable service by late May. In the interim, Transport Canada has put in place train routing restrictions;
2. mandates that all other DOT-111s used in Canada that do not meet an updated, industry-backed standard (called the CPC-1232) must be retrofitted or phased out within three years (by May 1, 2017);
3. requires railroads to have approved emergency response plans for all trains carrying even one car of flammable liquids, to reduce train speed when carrying dangerous goods, and to formally evaluate risk in routing hazardous goods, among other actions; and
4. creates a task force to address emergency response capacity.

The regulation affects all tank cars and crude-by-rail operations in Canada—much of which is in transit to or from a U.S. destination.

Across the border, U.S. regulators have also been busy. U.S. transportation secretary Anthony Foxx announced on April 24 that he would send "a comprehensive rulemaking package" to the Office of Management and Budget (OMB) during the week of April 28. The Department of Transportation (DOT) reported it had sent a "comprehensive rulemaking package" to OMB on the afternoon of April 30. While it is known that the package includes recommendations on tank car standards, what else the package includes—whether it addresses routing, emergency planning, or spill response thresholds, for example, the other issues addressed by NTSB recommendations—as well as the scope of the tank car recommendations, remains unknown. OMB typically takes 90 days to review rulemaking packages before they are sent back to the originating agency for publication as a draft rule, although that timeline can vary.

Given the mounting pressure to address public concerns over carrying crude oil on railroads and the recent Canadian regulatory action to strengthen its own standards, U.S. regulators may seek to expedite the rulemaking process. Secretary Foxx said that he intends that the rulemaking package will be finalized before the end of 2014 (faster than a previous timeline DOT has offered), and "I hope to have it done sooner than that if we can."

Seemingly in response to growing public concern following the latest crude-by-rail accident, DOT also issued an emergency order on May 7 requiring railroads that have trains carrying more than 1 million gallons of Bakken crude oil to provide the state with notification regarding the expected movements of such trains through their state, and identify the county/counties (or equivalent jurisdiction) through which the train will pass. The notification must provide estimated volumes and frequencies of traffic. Railroads that do not comply will be prohibited from transporting trains with 1 million or more gallons until notification is provided. Finally, railroads must help the state disseminate the information to appropriate emergency responders, as necessary. The railroad must also provide a point of contact for the state and relevant emergency responders.

The emergency order is mandatory, but DOT also issued a safety advisory encouraging shippers to use only the CPC-1232 compliant tank cars. The advisory is not mandatory. Interestingly, the advisory and order are specific to crude oil from the Bakken. As mentioned in our previous issue brief, there is a separate and ongoing process to examine the chemical nature of Bakken crude to determine whether it is more corrosive or combustible than other light, sweet crude.

Issues of Interest in the Forthcoming U.S. and Canadian Regulations

Tank car standards:

- *Uncertainty about ultimate tank car standard and timeline.* Importantly, the tank car standard mandated by Canadian regulators in April is preliminary; Canadian regulators left open whether there may be additional requirements in the future. Considering there is not absolute certainty as to the standard, the phaseout or retrofit deadline of May 2017 is aggressive. Assuming the current CPC-1232 standard remains in place, the three-year phaseout/retrofit requirement is estimated to affect around 65,000 tank cars, two-thirds of which are located in the United States.

  There is also uncertainty about what the ultimate tank car standard will be in the United States. Tank car design is a key issue. There are three types of cars that are affected by any regulation: (1) tank cars currently on order that are CPC-1232 compliant (built to a voluntary 2011 industry standard); (2) tank cars in service that are CPC-1232 compliant; and (3) tank cars that are not CPC-1232 compliant (also called legacy cars). Regulators have indicated that they may go beyond the CPC-1232 standard, but whether they will do so and what will happen to cars in

categories 2 and 3 remains unknown (presumably the cars on order but not yet built can be upgraded). Each decision has enormous costs associated with it. For example, adopting a thicker steel standard than required by CPC-1232 compliant cars and not allowing retrofits would mean that nearly all cars currently in service would be unusable for moving crude oil/ethanol.

According to the Railway Supply Institute, if CPC-1232 is adopted as the standard for new cars, 66,000 noncompliant tank cars in crude oil and ethanol service would need to be retrofitted or replaced (if the requirement extends to all DOT-111s in flammable liquids service, and not just those in crude oil and ethanol service, that number is approximately 81,500). There are currently 55,000 CPC-1232 compliant cars on order; by year end 2015, there will be 57,000 tank cars built to the CPC-1232 standard in use. The industry estimates that it has the capacity to produce 33,800 new CPC-1232 compliant tank cars per year. If, however, the new standard goes beyond the CPC-1232 requirements--something that the Pipeline and Hazardous Materials Safety Administration (PHMSA) has hinted at--approximately 95,000 cars would require retrofits or need to be phased out. Finally, whether regulators lay out what cars to prioritize for retrofit/phaseout remains unknown.

- *Harmony between U.S. and Canadian tank car standards.* Two issues will require harmony. First, tank car designs. Canada has stated its intent to "meet or exceed any new U.S. standards." Ideally, regulators would adopt the same standard since the cars move across the border frequently. Second is timeline for any retrofit or phaseout requirement. Whether the U.S. phaseout timeline will mirror the Canadian requirement (three years) or standard is still uncertain. There has also been concern about whether industry can accommodate such a stringent phase-in requirement without delaying shipments. It has been estimated that upgrading tank cars in the United States will cost $3 billion, although costs will vary depending on car design and modification, as well as the pace of any retrofit requirement. The clock is ticking while the standards have not been finalized.

Emergency/incident response:

- *Railroad spill response plan requirements.* In January, NTBS recommended that PHMSA revise the spill response planning thresholds to require spill response plans for tank cars carrying smaller volumes of crude. Until the May 6 emergency order, these plans were only required for tank cars carrying over 42,000 gallons of crude. (That threshold was not met in practice, as only a few tank cars can store that much oil, and none is currently being used to transport crude oil). The emergency order required that all crude oil trains originating in the Bakken that carry over 1 million barrels of oil must have such plans. It is uncertain whether a rule will also address this issue.
- Emergency response and responsibility of the railroads to provide information and resources to local communities. In addition to NTSB's spotlight on the issue, local communities have mobilized around hazmat safety and preparedness among communities through which crude trains pass. Specifically, local first responders, including voluntary firefighters and local fire chiefs, have drawn attention to the challenges first responders face when accidents occur. Fire chiefs and local first responders have recently testified in front of Congress and the NTSB that they: (1) lack information about the materials passing through their communities and therefore may not know the best way to respond and react to a hazardous materials fire; (2) lack the training to know how to respond to hazardous materials fire; and (3) lack the equipment and resources necessary to respond and react to a hazardous materials fire. As mentioned above, the Canadian announcement includes emergency response planning measures. NTSB recommended that the Federal Railroad Administration (FRA) review and approve

comprehensive incident response plans from the railroads. The emergency order issued on May 7 requires information be made available to state emergency response committees, but it does not address a response plan requirement, local communities, training, or equipment staging, and further rulemaking is not precluded.

Railroads have also voluntarily agreed to spend $5 million in training local first responders. Railroads have said that they will develop an inventory of emergency response resources for responding to incidents, including locations for staging of emergency response equipment. However, that information will only be provided to FRA and upon request to appropriate emergency responders. DOT rulemaking may address what incident planning information railroads will be required to provide to communities, but that is uncertain.

Other:

- *Classification.* Classification issues (discussed in our previous safety update) have been partially dealt with by an emergency order DOT issued in early March. That order sought to emphasize and clarify the legal requirement for classifying hazardous materials. However, new regulations could require further testing or even require processing before shipment. PHMSA is expected to announce the results of its own testing program any day, while the industry itself is expected to release a study of crude characteristics later this month.
- *Routing.* Railroads have taken voluntary action to expand hazardous materials route planning and selection requirements and where feasible require rerouting to avoid transit through populated and other sensitive areas. They have also voluntarily reduced speeds. None of these actions precludes further regulatory review or more stringent measures.

Regulators attempting to address concerns about crude by rail have the difficult task of evaluating and managing a very large and changing portfolio of associated risks and safety concerns. Collaboration among the industry, local communities, regulators, and other affected parties is necessary to ensure that the safety of operators and communities is not compromised.

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