PA Governor Wolf Releases Oil Train Safety Report

By

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"Every week, roughly sixty to seventy trains carrying crude oil travel through Pennsylvania destined for Philadelphia or another East Coast refinery, and I have expressed grave concern regarding the transportation of this oil and have taken several steps to prevent potential oil train derailments," said Governor Wolf. "Protecting Pennsylvanians is my top priority and Dr. Zarembski's report is important in helping my administration take the necessary steps. I will also continue to work with CSX and Norfolk Southern, both of which have demonstrated concern for rail safety and an interest in working with my administration. I would also like to thank Dr. Zarembski for his hard work in writing this report and for producing numerous recommendations that will help my administration prepare."

Dr. Zarembski will be available to media via conference call at 2:00 pm today. To RSVP for the call-in details, please email bmelena@pa.gov.

Dr. Zarembski, who was hired by the governor in late-April and started in mid-May, is an internationally recognized expert in the area of railway track and structures, vehicle-track dynamics, failure and risk analysis, safety, railway operations, and maintenance.

In May, Governor Wolf sent a letter to oil train companies, CSX Transportation and Norfolk Southern Railway, urging them to adopt improved safety initiatives for all trains with crude-by-rail cars operating in Pennsylvania and to fully and expeditiously comply with the U.S. Department of Transportation's announced Final Rule.

In February, Governor Wolf sent a letter to President Obama urging expedited federal regulatory action in several areas to better ensure safety. And in his first full week in office, the governor conducted an emergency table-top planning exercise to model the state's response in the event of a crude oil train derailment in an urban area. Governor Wolf has personally met with executives from Norfolk Southern and CSX Corporation to discuss safety measures that could lower the risk of derailments. Governor Wolf has also directed the Pennsylvania Office of the Fire

Commissioner to examine how an oil train fire could be extinguished to protect public safety, and the Wolf Administration has undertaken a review of the frequency and the procedures associated with rail infrastructure inspections by federal and state inspectors.

Assessment of Crude by Rail (CBR) Safety Issues in Commonwealth of Pennsylvania Executive Summary:

As the volume of Crude By Rail (CBR) shipments have increased over the past several years, the Commonwealth of Pennsylvania has become increasingly concerned about the risks of a CBR incident occurring on a rail line that goes through populated areas within the state. This is particularly important for the Commonwealth since large volumes of CBR are shipped through the state by two major Class 1 railroads, Norfolk Southern (NS) and CSX Transportation (CSX). While the recent actions taken by the railroad industry and the Department of Transportation have been of great value, there is still concern about the level of risk present on these rail lines.

Because of the concern about the level of risk present on these rail lines, the Commonwealth of Pennsylvania asked the University of Delaware to look at the current level of risk and advise as to how to reduce the risk of a CBR incident in the Commonwealth. This report presents the results of this assessment. This assessment addresses three major areas of CBR safety in the Commonwealth:

- Derailment Risk
- Tank Car Breach/Rupture Risk
- Regulatory Oversight

This assessment also addresses the effect of proposed new Department of Transportation and industry standards for tank car design and train operations and operating systems to include speed reduction, use of Electronically Controlled Pneumatic (ECP) Brakes and Positive Train Control (PTC).

For a catastrophic CBR event to take place, several elements are necessary:

- First a derailment must occur, usually unrelated to the CBR equipment itself
- Second a breach or rupture of the tank car shell must occur and a release of the crude take place.
- Third, conditions must be present and the volatility of the commodity must be such as to ignite or explode after the rupture of the tank car.

In the area of Derailment Risk, this assessment looked at the distribution of derailments by major categories (Track, Operations/Human Factors, Equipment, Signals, etc.) and subcategories (e.g. broken rail, wide gauge, etc.) both in the state of Pennsylvania and Nationwide. For those derailment categories that are high risk, i.e. with a significant number of annual occurrences or significant potential for occurrence of major tank car failure, the University of Delaware team identified opportunities for improvement in inspection and/or maintenance practices, based on state of the art industry practice as well as specific practices of railroads operating CBR trains in the State of Pennsylvania.

In the area of Tank Car Breach/Rupture Risk, the assessment examined the proposed improvements to the tank car such as:

- Improved head shields
- Increased tank shell thickness/external jacket
- Valve Protection (top and bottom valves)
- Reduction in train speed

In the area of Regulatory Oversight, the assessment reviewed the current safety oversight capabilities and resources of the Pennsylvania Public Utilities Commission as well as those of other neighboring states and identified opportunities for improvement of safety and Emergence Response. The report noted that the U.S. Department of Transportation, Federal Railroad Administration (FRA) has primary responsibility for rail safety and inspection under a 1970 federal law which preempted rail safety regulation.

Recommendations

A total of 27 recommendations are presented in this report; divided into primary (18) and secondary (9) categories. Primary categories are those expected to have direct safety results and which can be implemented by the railroads directly working with the Commonwealth of Pennsylvania or by the Commonwealth itself. Secondary categories include activities which are more difficult to implement or which may require action by a party other than the railroad or Commonwealth of Pennsylvania.

Primary Recommendations

Railroad

1. It is recommended that the routes over which CBR trains operate in Pennsylvania be tested at a rate such that the service defect rate is maintained at 0.04 to 0.06 service failures/mile/year. In all cases, rail on these routes should be tested no less than three times a year.

2. It is recommended that the routes over which CBR trains operate in Pennsylvania be tested by a railroad owned Track Geometry Car at a minimum of four times a year.

3. It is recommended that the routes over which CBR trains operate in Pennsylvania be tested by a vision based joint bar inspection system at least once per year, this test to be in lieu of one of the required on-foot inspections, as permitted by FRA.

4. It is recommended that NS and CSX adopt the BNSF Railway voluntary speed reduction to 35 mph for crude oil trains through cities with a population greater than 100,000 people.

5. It is recommended that the railroad have sufficient Wheel Impact Load Detector (WILD) units in place to monitor all loaded oil train cars along their entire route within Pennsylvania, such that any track location on an oil train route within the state should have a WILD unit no more than 200 miles preceding (in the loaded direction) that location .

a. If a WILD measurement exceeds 120 Kips, the train should be safely stopped, the wheel inspected, and then if condition of the wheel allows, the train proceed at a reduced speed of 30 mph until the alerting car can set out at an appropriate location until repairs are made.

b. If the WILD measurement is greater than 90 Kips, the car should be flagged and the identified wheels replaced as soon as possible but no later than 1500 miles of additional travel.

6. It is recommended that the railroads have sufficient Hot Bearing Detector (HBD) units in place as to monitor all loaded oil train cars along their entire route within Pennsylvania, with a maximum spacing of 25 miles between Hot Box detectors.

7. It is recommended that the railroad have at least one Acoustic Bearing Detector unit in place to monitor all loaded oil trains along their entire route within Pennsylvania.

8. It is recommended that those yards and sidings that handle a significant number of CBR cars be inspected by the Railroad inspectors at a level of track tighter than the assigned FRA track class. Thus Yards that are FRA Class 1 should be inspected at a FRA Class 2 level to provide railroads with early warning of potential track conditions that can cause problems.

9. It is recommended that oil trains in Pennsylvania, not equipped with Electronically Controlled Pneumatic (ECP) Brakes, use two way end of train devices (TWEOT) or Distributed Power (DP) to improve braking performance.

10. It is recommended that CSX and NS complete their initial route analysis of High-hazard flammable train (HHFT) routes in Pennsylvania as quickly as possible, taking into account proximity to populated areas and safety considerations as outlined by DOT.

Commonwealth of Pennsylvania

11. It is recommended that the Commonwealth of Pennsylvania designate appropriate state and local officials to work with CSX and NS to provide all needed information and to assist in the route analysis.

12. It is recommended that Pennsylvania Public Utility Commission (PUC) inspectors, in co-ordination with FRA inspectors, focus on inspection of major CBR routes, to include track, equipment, hazmat, and operating practices. In particular, track inspectors should prioritize main line turnouts and yards and sidings that see a significant number of crude oil cars, to include both major railroads and the refineries themselves.

13. It is recommended that the Pennsylvania PUC and their track inspectors which are part of the PUC's Transportation Division coordinate with the Federal Railroad Administration and try to schedule the FRA's T-18 Gage Restraint Measurement System (GRMS) test vehicle to inspect all routes over which CBR trains operate in Pennsylvania at least once a year. This test should include both GRMS and conventional track geometry measurements.

14. It is recommended that Pennsylvania PUC fill their existing track inspector vacancy with a qualified inspector with railroad experience. Given the fact that most major refineries are in the eastern part of the state, where SEPTA and Amtrak are located as well, it may be necessary to add a third inspector to the eastern part of the state, pending filling of the existing eastern vacancy.

15. It is recommended that PEMA continue to actively work with both railroads to roll out information sharing technology tools and make these tools available to all emergency responders on CBR routes (PEMA is actively working in this area).

16. It is recommended that PEMA coordinate full scale emergency response exercise involving emergency responders from communities along the key oil train routes.

17. It is recommended that PEMA work with and insure that all communities along the CBR routes have appropriate emergency response plans.

18. It is recommended that PEMA work with NS and CSX to obtain an inventory of emergency response resources along routes over which Crude Oil Trains operate to include locations for the staging of emergency response equipment (PEMA is actively working in this area).

Secondary Recommendations

Railroad

19. It is recommended that conventional track geometry car tests on routes over which CBR trains operate in Pennsylvania be supplemented by Autonomous Track Geometry Measurement (ATGM) and/or Vehicle/Track Interaction (VTI) measurement systems.

20. It is recommended that NS and CSX verify that they have sufficient Hot Wheel Detectors on the Oil Train Routes to allow for the identification of overheated wheels on terrain where this can be a cause of wheel failure.

21. It is recommended that the railroad have at least one Truck Defect Detector or equivalent in place to monitor all loaded oil train cars along their entire route within Pennsylvania.

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22. It is recommended that the Commonwealth of Pennsylvania encourage both NS and CSX to implement Positive Train Control (PTC) on Oil Train routes in the Commonwealth as expeditiously as possible, in accordance with government mandated schedules.

23. It is recommended that State of Pennsylvania Track inspectors focus attention on the condition of turnouts on major CBR routes in the state.

24. It is recommended that Pennsylvania state inspectors include yards and sidings that handle a significant number of CBR cars as part of their inspection program. All such inspections to be coordinated with the FRA inspection program.

25. It is recommended that the Commonwealth of Pennsylvania lend its support to a set of national Minimum Characteristic Standards for all Crude by Rail (CBR) with defined target characteristics.

26. It is recommended that Pennsylvania PUC coordinate with FRA and NS and CSX Bridge Departments to insure that the railroads are maintaining a Bridge Safety Management Program in accordance with 49 CFR 237.

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