

Oil trains derail and burst into flames in Canada, US

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Two recent derailments in the US and Canada of trains carrying crude oil caused dramatic fires and severe damage to railroad infrastructure. The incidents fortunately did not injure railroad workers or residents, but the potential for a deadly disaster is clear.

The most severe incident occurred on Monday afternoon in Adena Village, West Virginia, which is about 33 miles southeast of Charleston in the Kanawha River valley. At 1:20 p.m., amidst low temperatures and snowfall, the train of 107 CSX tank cars of crude oil derailed on the western edge of the town. Twenty-six of the tank cars left the rails, and 19 of them caught fire and began to leak crude oil.

The derailment happened along the Kanawha River and Armstrong Creek, a tributary of the river. Oil from the leaking cars may have spilled into the water but specific information is pending. A nearby water treatment plant that serves local communities was shut down for 24 hours while testing was conducted. The testing showed no signs of crude oil, but a boil water order remains in place for 2,000 residents until midday Tuesday.

In a pattern that has become standard, the tank cars that were ruptured produced enormous fireballs as the oil inside heated up and exploded. Fires burned throughout Monday and Tuesday while emergency crews waited for conditions to become safe. The shocking severity of such explosions is visible in a video from local news channel WSAZ, when an interview with a resident in a town across the river is interrupted by a massive fireball emerging from a burning tank car.

Because of the danger, residents over a 1.5 mile radius were evacuated, with CSX putting up residents in hotel rooms in Charleston. No cause for the derailment has been announced.

The train was headed to a refinery in Yorktown, Virginia. In April of 2014, another CSX train of Bakken crude oil along the same route derailed farther east in Lynchburg, Virginia, and caught fire. Investigation of that incident is still in progress, but a track inspection the day before the derailment found a broken rail in the area. It has not been determined yet whether that contributed to the incident.

In another incident at midnight on Saturday, a crude oil train operated by Canadian National derailed in a remote region of Ontario, inaccessible by road. The location is between the small communities of Gogoma and Foleyet, Ontario, and 29 tank cars on the 100 tank car train derailed, with seven catching fire. At the time, the region had cold temperatures and was blanketed in snow. The derailment blocked CN's main east-west route in Canada, and the Canadian Safety Transportation Board is investigating.

One factor to be examined in both derailments is the chemical makeup and volatility of the crude oil being carried by the trains. Hazardous cargoes are categorized according to their volatility, and in previous incidents it has been found that Bakken crude was assessed by the producers and shippers as less volatile than it actually is. Specifically, the "light" crude from the Bakken region can have highly volatile dissolved natural gas and toxic dissolved hydrogen sulfide as part of the mixture.

The amount of those ingredients varies widely because the Bakken crude production comes from hydraulic fracking at thousands of different wells. Each well can have a different mixture of chemicals involved in the fracking process, and the oil produced can contain different proportions of natural gas, hydrogen sulfide and other ingredients.

The Lac-Mégantic, Quebec train derailment and

explosion in July 2013, which killed 47 people, also involved tank cars igniting and producing massive fireballs. Investigators later found that the oil in the cars was classified as “Packing Group III,” the least volatile classification, when they should have been “Packing Group II,” a higher classification of volatility.

In the chaotic boom environment of the Bakken oilfields—now a bust, with mass layoffs coming from falling oil prices—there is a question whether there is even significant oversight ensuring the proper classification and protection of shipments. Very hazardous chemicals are carried by rail, but they are shipped in tank cars with more substantial protection than the tank cars currently carrying oil.

The Federal Railroad Administration has new proposed standards awaiting approval for tank cars used in the transport of oil, ethanol and other dangerous chemicals. Previously, concern was over an older model called a DOT-111. A newer design with safety improvements, the CPC-1232, has been recommended to replace the DOT-111 models, but in both the recent Canadian and West Virginia derailments the tank cars were CPC-1232 and still burst into flame.

In other words, accidents are proving the inadequacy of regulations that have not even been implemented yet, while trains of Bakken crude continue to roll across the country.

Another question raised in both incidents is the level of precaution the railroads take during extreme weather conditions. Low temperatures can cause broken rails that could be detected by inspection prior to the passage of a train. Low temperatures and inclement weather also make the control of long, heavy freight trains more difficult, but as a trend railroads insist on running trains longer and heavier despite the weather, as it uses fewer employees.

In the industry, there is a continuous effort to squeeze more productivity out of railroad workers. On Monday, a strike by 3,300 engineers and conductors at the other major railroad in Canada, Canadian Pacific, ended when the Teamsters union agreed to binding arbitration with the company. CP is run by the most ruthless CEO in the industry, Hunter Harrison, who is pushing for a 12-hour day instead of a 10-hour day. The 12-hour day and a totally unpredictable work schedule are the standard in the United States.

Canadian Pacific had its own derailment of crude oil

last Saturday, when 12 tank cars of crude oil derailed near the town of Frank, in southwestern Alberta. Most of the cars remained upright and did not leak or catch fire.



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