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Date: 11/20/2014 12:55 PM
Subject: Phillips 66 Railspur/Weak infrastructure of main line rails

Railroads and oil companies are shipping ever-larger amounts of crude by rail, and they are attempting to calm citizens' fears about rail accidents by citing outdated, historical statistics. For example:

The Association of American Railroads proudly notes that in the past, 99.9% of rail shipments of hazardous materials including oil, reached their destination without a spill.

Unfortunately, current data is far more sobering. Looking strictly at oil shipments, spills are spiking. According to the Associated Press -- in 2009, before the oil drilling boom, just one rail oil spill was reported.
But now, with the flood of new oil, the landscape is far different.
Through 2013, crude oil releases were reported from 137 rail cars versus just one car. TBL-01

Therefore, you can throw the industry's outdated "odds" out the window.
All you need to do is read the news to learn the real facts. Freight trains carrying crude oil, propane and other hazardous materials are going off their tracks at alarming rates because more trains are carrying that material.

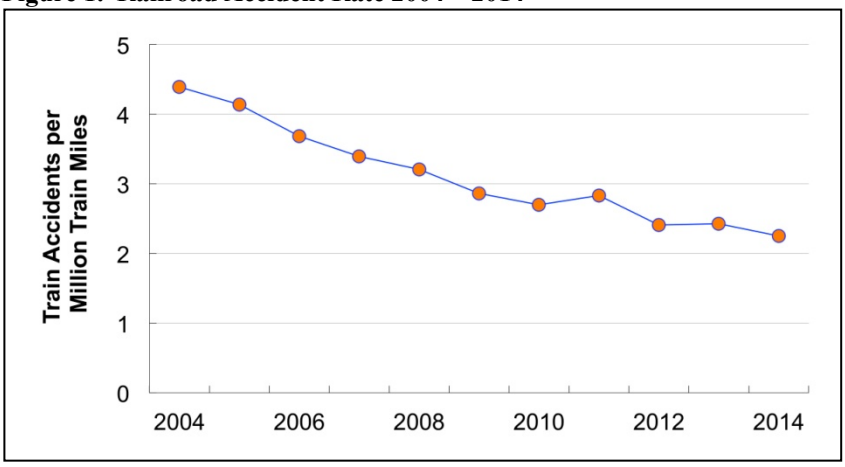
I personally rode the train from San Luis to Los Angeles last year, and I was concerned when the train had to slow down to a crawl in some places. I asked the conductor why, and he replied that it was because we were riding on rails that were built at the turn of the century (1900). After hearing that, I didn't really enjoy the rest of my train ride. However, I can't imagine that a train with 80 tankers cars filled with crude oil would be allowed to come down the Cuesta Grade (built in 1894) and go through Cal Poly with its 14,000 students.
It's not only a dangerous risk, but unconscionable.

Responses to TBlakeDBond@aol.com Comments

TBL-01	The historical accidental data used in the RDEIR is not limited to trains shipping crude oil in recent years, but the long term historical train accident data for all freight. The use of data from all freight train movements nationwide provides a very robust database for estimating rail accidents and derailments. Average U.S. train derailment rates over the 5-year period 2005 – 2009 have previously been estimated using data from the U.S. Department of Transportation, Federal Railroad Administration (FRA) Rail Equipment Accident (REA) database combined with traffic data from the rail industry (Liu et al, 2014). This dataset was used to develop detailed derailment rates as a function of three factors: FRA Track Class, traffic volume (which appears to be correlated with additional maintenance above basic federal requirements) and Method of Operation (i.e., signaled or non-signaled trackage). All three of these factors have a significant effect on freight train derailment rate. These factors were used to calculate segment-specific derailment rates thereby enabling a fine grained calculation of derailment probability for any particular route. As discussed below, the overall accident rate has declined since this data was recorded and analyzed, thereby resulting in an overestimate of the present-day risk, and future risk. For example the average accident rate for the five-year period 2010-2014 was 27% lower than the average for the five-year period from 2005-2009, and the preliminary estimate of the accident rate for 2014 was 35% lower than the five-year period from 2010-2014. The reason data from 2005-2009 was used is because that dataset contained additional information that allowed for the estimated effect of FRA Track Class, Traffic Density and Method of Operation (Signaled or Unsignaled) on derailment rate. This additional granularity is needed for more precise segment-specific accident rate used in the analysis. The derailment rates calculated were based on 1,420 Class 1 railroad mainline derailments. Inclusion of a few more crude oil train derailments in recent years would have virtually no effect on the estimated rates. The suggestion that because these recent accidents were not included in our dataset somehow invalidates the results reflects a lack of understanding of the analytical technique and how it was used. The data needed for this analysis are less complete than for overall accident rate but all other things being equal, there is no reason to believe that crude oil trains derail at a rate different than other freight trains. Using what data are available and making certain assumptions, the EIR consultant conducted an analysis in 2014 and observed no significant difference in the derailment rate for crude oil trains then for other freight trains. The railroad accident rate has been steadily trending downward for over a decade. The accident rates in the past few years were the lowest since the FRA started recording the data in the mid-1970s. In the period from 2004 to 2014 the rate declined by 49% (almost half) (see Figure 1 below). Most derailments receive little or no attention from the public or media. Railroads are required by regulation to report all accidents that exceed a certain monetary threshold in damage to track, signals and rolling stock (currently $9,600). Proper estimation of train accident rates involves analysis of all accidents, divided by the total

amount of traffic. The reason that some perceive an increase in the railroad petroleum crude oil accident rate is because of the more than 50-fold increase in this traffic since 2009. Estimates are that 233,698 tank cars of crude oil were moved by rail in 2012. This increased to over 435,000 tank cars moved by rail in 2013 (the full year of data is not yet available for 2014). With this increase in crude by rail traffic, the derailment and spill probability data would suggest that multiple crude by rail accidents would happen each year.

Figure 1. Railroad Accident Rate 2004 – 2014



Data Source: US DOT Federal Railroad Administration
http://safetydata.fra.dot.gov/officeofsafety/publicsite/summary.aspx
(Data for 2014 include January through November)

Using the accident and spill probability data from the RDEIR the DEIR would have estimated that between 2012 and 2013 there would have been two to five derailments that had spills of 100 gallons or more in the U.S. Based upon the United States Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) incident data base, there were three crude oil train derailments with spills of 100 gallons or more.

This does not contain the accident and spills that have occurred in Canada over this period since the accident and spill probability data is for mainline rails within the United States only.

The methodology for estimating crude oil unit train accidents and spill probabilities is also consistent with the methodology outlined by the American Institute of Chemical Engineers, Center for Chemical Process Safety (AIChE CCPS) document *Guidelines for Chemical Transportation Risk Analysis* (CCPS, 1995), which is the definitive reference on the methodology for estimating hazardous materials transportation risk.

The majority of the proposed rail routes are also used by Amtrak and undergone significant improvements to the rails. For all routes, over 90 percent of the tracks are classified as FRA Track Class 4 or better, which are associated with the lowest derailment and accident rates. In areas with lower FRA Track Classes, maximum speeds are reduced for safety reasons, thus reducing the probability of a derailment on these tracks.