

On Monday, May 2, 2016 12:37 PM, S. Saltoun <ssaltoun@verizon.net> wrote:

Hello, John...

I received a question from someone who had seen your 15 April briefing to the PC on hazard classification of Class 3's, and had also seen my [letter to the PC of 25 April](#) posted on the county website. They asked for more information on one paragraph in my letter, which said: "It doesn't matter if a bar graph showing fractional distributions of hydrocarbons for the materials looks similar. That graph, shown during the hearing, does not define 'degree of danger'."

Although it was an independent question sent to me, I thought I should show my response with you for information. Here it is:

Packing Group assignment is based on propensity of Class 3 flammable liquids to ignite and burn, not about sustained burning characteristics of crude oil.

The analogy you asked for might be a Sunday afternoon barbeque. We dump the charcoal briquettes into the Weber, and then have options for starting the cooking fire. Some of us squirt on charcoal lighter (like diluent added to Canadian oil sands bitumen), and toss in a match – that would be a metaphor for a PG I hazardous material. Some of us carefully arrange newspaper – a little more time consuming and less reliable starter – that's like PG II. No one even tries to start charcoal directly with a match. A blowtorch and patience will do the trick – that would be PG III. However, once you get the charcoal going, you can cook your steaks equally well no matter how you started the fire.

Although you didn't ask, here's a more technically complete reply:

When developing the High-Hazard Flammable Train Final Rule, PHMSA considered, and rejected pre-treating Bakken region crude oil to 'stabilize' it before shipment by rail. 'Stabilization' removes the more volatile light ends and/or blends in heavy components to make the 'Bakken' bar on the hydrocarbon fractions bar graph look closer to the 'Typical SMR' bar.

In the HHFT Final Rule Supplementary Information ([page 76-77](#)), the American Fuel & Petrochemical Manufacturers (AFPM) advised: "...that the treatment process used in the Bakken region is unlikely to result in Bakken crude's reclassification as a combustible liquid. AFPM stated treated crude should not be regulated differently than non-treated crude because, *'once ignited, the burning intensity of unstabilized and stabilized crude would not substantially differ.'*"

In other words, PG I flammable liquids – whether or not their hydrocarbon fractions bar graphs look like – are defined as having 'great danger' because they readily ignite. Once ignited, crude oil burns with similar intensity whether it's Bakken-like light crude or heavy diluted bitumen crude. A PG III (minor danger) crude like San Ardo crude and other California Monterey shale crudes, once ignited, will also have similar sustained burning characteristics as more easily ignitable crudes assigned a greater 'degree of danger'.

However, toxicity from the byproducts of combustion will likely differ because heavy crude and diluted bitumen typically contain more contaminants – such as sulfur, which produces dangerous gaseous oxides of sulfur.

I hope this answers your question... Sam

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