



Update on Crude-Oil Rail Shipments In California



Unloading crude oil at Plains All-American
Bakersfield CA

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Presentation Overview

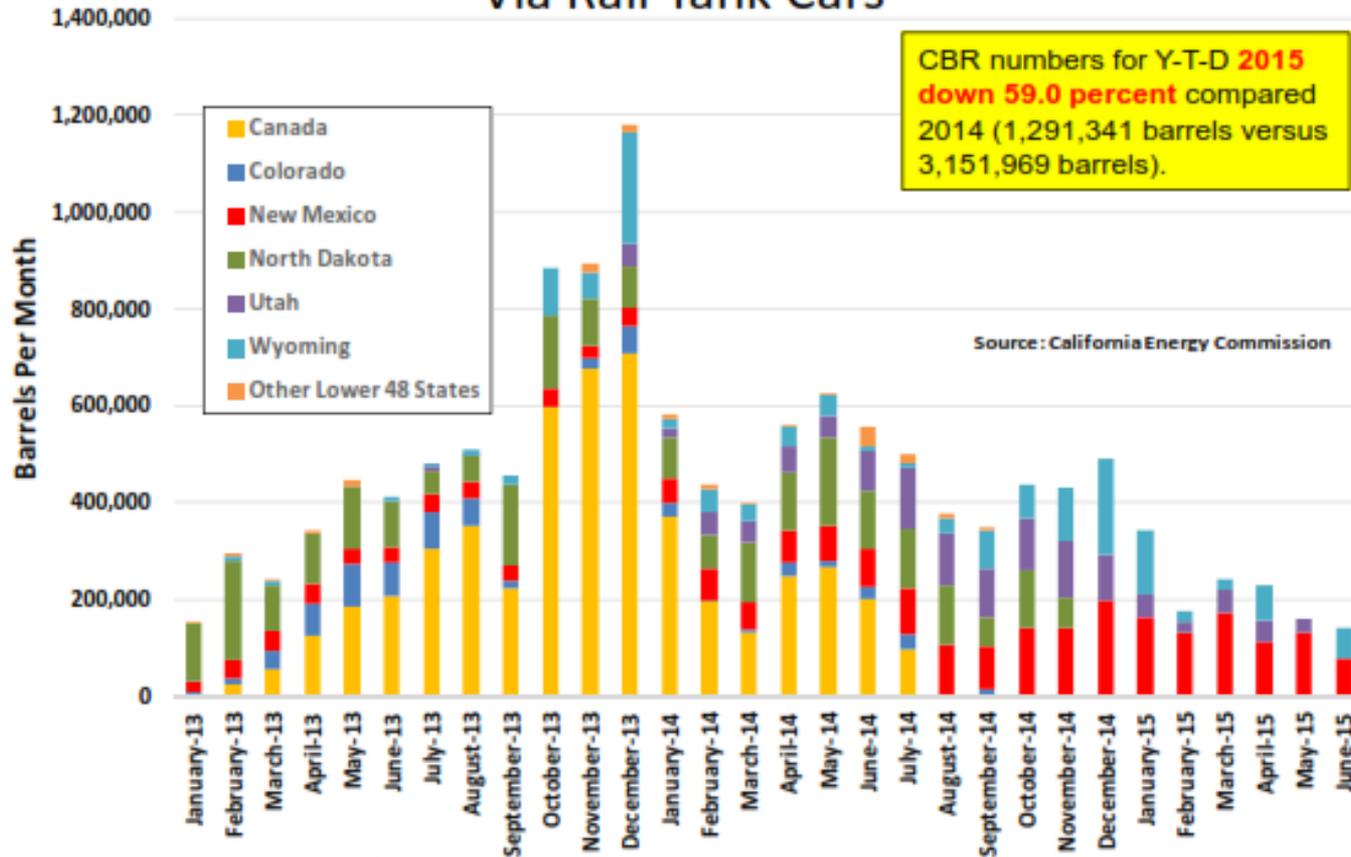
Updates:

- Crude-by-rail imports.
- New federal regulations.
- New state laws.





California Crude Oil Imports Via Rail Tank Cars





Crude Oil Recon Team (CORT)



Initiated to proactively monitor crude oil projects before they come online by:

- Identifying and remediating regulated and non-regulated risks to employee and public safety.
- Providing guidance to the railroads, crude oil facilities and their respective contractors to ensure compliance and mitigate any identified risks.





Current California Crude Oil Traffic

- No Bakken crude oil currently coming into California.
- Receiving crude from Canadian tar sands and from the Niobrara shale formation in Colorado, Kansas, Nebraska, and Wyoming.
- 12 trains expected in October (two over Tehachapi, the rest enter from Oregon).
- CORT has been inspecting all trains. To date, only one defect has been taken, which was a loose secondary closure on a vapor valve.





“Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains” Final Rulemaking – PHMSA/FRA*

- Effective July 7, 2015.
- Scope of Rulemaking:
 - Unless stated otherwise, the rule applies to “High-hazard flammable trains” (HHFT) which means “a continuous block of 20 or more tank cars loaded with a flammable liquid or 35 or more tank cars loaded with a flammable liquid dispersed through a train.”
 - A “high-hazard flammable unit train” (HHFUT) means a train comprised of 70 or more loaded tank cars containing Class 3 flammable liquids traveling at greater than 30 mph.
 - A unit train is a train that travels back and forth from origin to destination as a unit - not switched enroute.

* Adapted from FRA summary document: <https://www.fra.dot.gov/eLib/details/L16353>





New Standards and Controls for High-Hazard Flammable Trains (continued)

- Enhanced Braking
 - Requires HHFTs to have in place a functioning two-way end-of-train (EOT) device or a distributed power (DP) braking system.
 - EOT – a telemetry device mounted in the coupler at the rear of the train.
 - Provides the engineer with brake air pressure information.
 - Provides for a simultaneous emergency application of the brakes at two locations - the front and rear of the train.
 - DP – locomotives placed at different locations in the train, such as head-end, middle, and rear of train.
 - Provides for simultaneous brake applications at each locomotive's location.





New Standards and Controls for High-Hazard Flammable Trains (continued)

- Enhanced Braking (cont.)
 - Requires any high-hazard flammable unit train (HHFUT) transporting at least one car of the most flammable liquids (e.g., Bakken crude, ethanol) be operated with an electronically-controlled pneumatic (ECP) braking system by January 1, 2021.
 - Requires all other HHFUTs be operated with an ECP braking system by May 1, 2023.





New Standards and Controls for High-Hazard Flammable Trains (continued)

- ECP brakes (cont.)
- Brakes are applied by an electronic signal to each car instantaneously and simultaneously, rather than by a reduction in air pressure beginning at the controlling locomotive.
- Cost of implementing ECP brakes is most efficient for unit trains – i.e., those trains that travel back and forth from origin to destination as a unit and not switched enroute.





New Standards and Controls for High-Hazard Flammable Trains (continued)

- Advantages of ECP brakes:
 - Shorter stopping distances - up to 70 percent shorter.
 - Brakes applied simultaneously on all cars.
 - Brakes applied much faster.
 - In a derailment, brake application stops non-derailed cars faster, reducing the potential for them to derail.
 - Constant charging of brake air reservoirs to prevent depletion of braking air pressure and loss of brakes.





New Standards and Controls for High-Hazard Flammable Trains (continued)

- Advantages of ECP brakes (cont.):
 - Improved train handling.
 - Reduction of excessive in-train forces and the resultant derailment forces.
 - Less brake shoe and wheel wear.
 - Reduced fuel consumption.
 - Information on the condition of the braking system is continuously available.





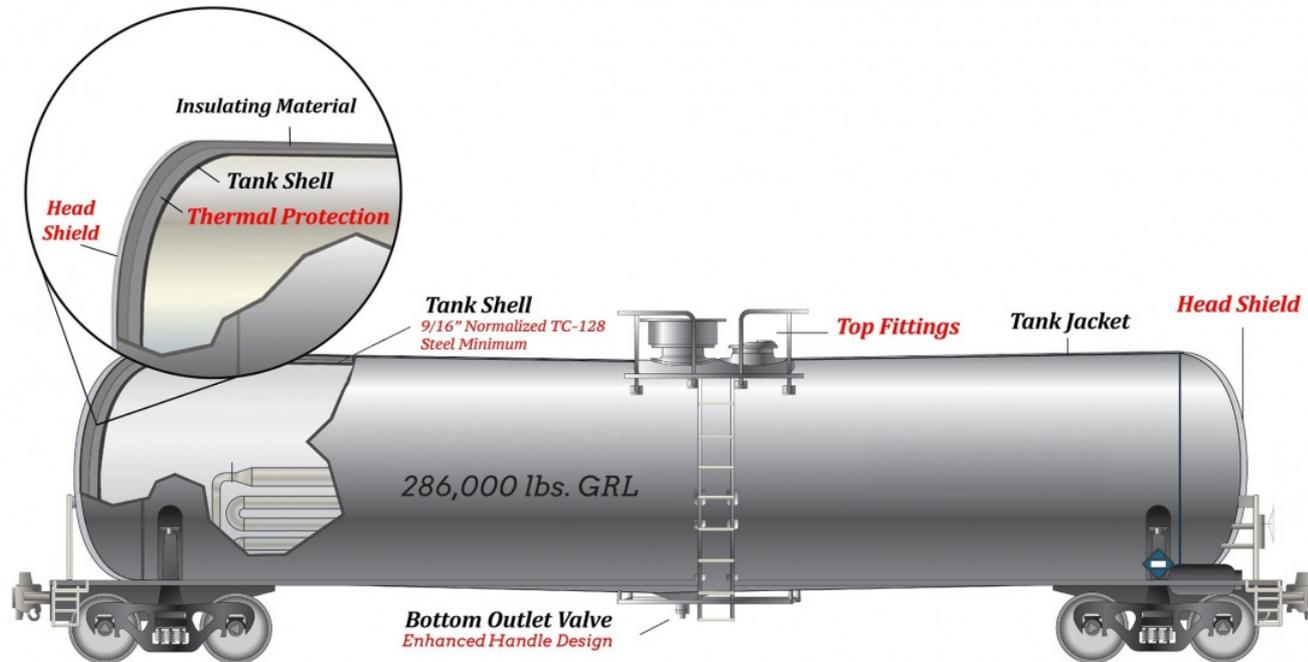
New tank car specifications

- Half-inch steel head-shields required.
- Tank shell thickness increased from 7/16” to 9/16.”
- Thermal insulation protection required.
- Steel jacket around thermal insulation required.
- Top and bottom fittings improved.
- Electronically-controlled brakes required.





DOT 117 Specification Car



Safety enhancements of DOT Specification 117 Tank Car:

- Full-height ½ inch thick head shield
- Tank shell thickness increased to 9/16 inch minimum TC-128 Grade B, normalized steel
- Thermal protection
- Minimum 11-gauge jacket
- Top fittings protection
- Enhanced bottom outlet handle design to prevent unintended actuation during a train accident





New Standards and Controls for High-Hazard Flammable Trains (continued)

- Enhanced Standards for New and Existing Tank Cars Used in HHFTs
 - New tank cars constructed after October 1, 2015, must meet enhanced DOT Specification 117 design or performance criteria for use in an HHFT.
 - Existing tank cars must be retrofitted in accordance with the DOT-prescribed retrofit design or performance standard for use in an HHFT, with some exemptions allowed.
 - Retrofits must be completed based on a prescriptive retrofit schedule, with deadlines between 2017 and 2025 based on risk factors.





New Standards and Controls for High-Hazard Flammable Trains (continued)

- Reduced Operating Speeds
 - Restrict all HHFTs to 50-mph in all areas.
 - Require HHFTs containing any tank cars not meeting the new tank car standards to operate at a 40-mph speed restriction in densely populated areas, “high-threat urban areas,” as defined by the Transportation Security Administration.





New Standards and Controls for High-Hazard Flammable Trains (continued)

- High Threat Urban Area (HTUA)
 - Means an area comprising one or more cities and surrounding areas including a 10-mile buffer zone.
 - California HTUAs:*

CA	Anaheim/Santa Ana Area.	Anaheim, Costa Mesa, Garden Grove, Fullerton, Huntington Beach, Irvine, Orange, Santa Ana, and a 10-mile buffer extending from the border of the combined area.	Anaheim, CA; Santa Ana, CA.
	Bay Area	Berkeley, Daly City, Fremont, Hayward, Oakland, Palo Alto, Richmond, San Francisco, San Jose, Santa Clara, Sunnyvale, Vallejo, and a 10-mile buffer extending from the border of the combined area.	San Francisco, CA; San Jose, CA; Oakland, CA.
	Los Angeles/Long Beach Area.	Burbank, Glendale, Inglewood, Long Beach, Los Angeles, Pasadena, Santa Monica, Santa Clarita, Torrance, Simi Valley, Thousand Oaks, and a 10-mile buffer extending from the border of the combined area.	Los Angeles, CA; Long Beach, CA.
	Sacramento Area *	Elk Grove, Sacramento, and a 10-mile buffer extending from the border of the combined area.	Sacramento, CA.
	San Diego Area *	Chula Vista, Escondido, and San Diego, and a 10-mile buffer extending from the border of the combined area.	San Diego, CA.

* From Title 49 Code of Federal Regulations, Part 1580, Appendix A





New Standards for High-Hazard Flammable Trains (cont.)

- Rail routing - Risk Assessment
 - Railroads operating HHFTs must perform a routing analysis considering at least 27 safety and security factors, and select a route based on its findings.
- Rail routing - Notification
 - New rule: Railroads must provide contact information for State, local, and tribal officials to request information related to the routing of hazardous materials through their jurisdictions.
 - The May 7, 2014, FRA Emergency Order requiring railroads to notify emergency responders of expected shipments, but only of Bakken crude – was set to expire in March 2016, being replaced with the new rule.
 - PHMSA will not let the Emergency Order expire following Congressional objections.
 - PHMSA and FRA indicate a new rulemaking will be opened to reconcile the notification emergency order with the new notification rule.





New Standards and Controls for High-Hazard Flammable Trains (continued)

- Status:
 - The new HHFT rules are in effect, with timelines.
 - Association of American Railroad (AAR) has appealed the ECP brake requirement .
 - AAR has appealed the allowances for railroads to use any old tank cars in trains with fewer than the 20-car and 35-car HHFT thresholds.
 - American Petroleum Institute has appealed for more time to make tank car retrofits
 - Environmental groups and two Illinois municipalities have appealed for shorter timelines for old tank car phase-out.





New California State Laws

- AB 380 – Dickinson.
 - Requires information be provided to CalOES on the 25 top hazardous materials commodities, by volume, shipped in CA.
 - Requires notification of expected Bakken shipments, and changes in expected shipments.
 - Requires railroads to maintain an emergency response management communications center with hazardous materials commodity information.
 - Requires summary of emergency response plans be provided.

