

Exhibit G – USDOT Rail Car Specifications and Risk Levels

Table G-1 Final Regulatory Requirements for HHFT (USDOT May 1, 2015)

Proposed Requirement	Effected Entity
<p>Enhanced Standards for Both New and Existing Tank Cars Used in HHFTs</p> <ul style="list-style-type: none"> ▪ New tank cars constructed after October 1, 2015 are required to meet enhanced DOT Specification 117 design or performance criteria. ▪ Existing tank cars must be retrofitted in accordance with the DOT-prescribed retrofit design or performance standard. ▪ Retrofits must be completed based on a prescriptive retrofit schedule and a retrofit reporting requirement is triggered if initial milestone is not achieved. 	<p>Tank Car Manufacturers, Tank Car Owners, Shippers / Offerors and Rail Carriers</p>
<p>More Accurate Classification of Unrefined Petroleum-Based Products</p> <ul style="list-style-type: none"> ▪ Develop and carry out sampling and testing program for all unrefined petroleum-based products, such as crude oil, to address: <ol style="list-style-type: none"> (1) Frequency of sampling and testing that accounts for any appreciable variability of the material (2) Sampling prior to the initial offering of the material for transportation and when changes that may affect the properties of the material occur; (3) Sampling methods that ensures a representative sample of the entire mixture, as offered, is collected; (4) Testing methods that enable classification of the material under the HMR; (5) Quality control measures for sample frequencies; (6) Duplicate samples or equivalent measures for quality assurance; (7) Criteria for modifying the sampling and testing program; (8) Testing or other appropriate methods used to identify properties of the mixture relevant to packaging requirements ▪ Certify that program is in place, document the testing and sampling program outcomes, and make information available to DOT personnel upon request. 	<p>Offerors / Shippers of unrefined petroleum-based products</p>
<p>Rail routing - Risk Assessment</p> <ul style="list-style-type: none"> ▪ Perform a routing analysis that considers, at a minimum, 27 safety and security factors and select a route based on its findings. These planning requirements are prescribed in 49 CFR § 172.820. <p>Rail routing - Notification</p> <ul style="list-style-type: none"> ▪ Ensures that railroads notify State and/or regional fusion centers and State, local, and tribal officials who contact a railroad to discuss routing decisions are provided appropriate contact information for the railroad in order to request information related to the routing of hazardous materials through their jurisdictions. This replaces the proposed requirements to notify State Emergency Response Commissions (SERCs) or other appropriate state delegated entity about the operation of these trains through their States. <p>Reduced Operating Speeds</p> <ul style="list-style-type: none"> ▪ Restrict all HHFTs to 50-mph in all areas. ▪ Require HHFTs that contain any tank cars not meeting the enhanced tank car standards required by this rule operate at a 40-mph speed restriction in high-threat urban areas. 	<p>Rail Carriers</p>
<p>Enhanced Braking</p> <ul style="list-style-type: none"> ▪ Require HHFTs to have in place a functioning two-way end-of-train (EOT) device or a distributed power (DP) braking system. ▪ Require trains meeting the definition of a “high-hazard flammable unit train” (HHFUT) be operated with an electronically controlled pneumatic (ECP) braking system by January 1, 2021, when transporting one or more tank cars loaded with a Packing Group I flammable liquid. ▪ Require trains meeting the definition of a HHFUT be operated with an ECP braking system by May 1, 2023, when transporting one or more tank cars loaded with a Packing Group II or III flammable liquid. 	<p>Rail Carriers</p>

Source: USDOT, 2015a.

HHFT-High-Hazard Flammable Trains (A train comprised of 20 or more loaded tank cars of a Class 3 flammable liquid in a continuous block or 35 or more loaded tank cars of a Class 3 flammable liquid across the entire train.

HHFUT-High-Hazard Flammable Unit Train (a train comprised of 70 or more loaded tank cars containing Class 3 flammable liquids traveling at speeds greater than 30 mph.)

Table G-2 Final Safety Features by Tank Car Option (USDOT May 1, 2015)

Tank Car	Bottom Outlet Handle	GRL (lbs)	Head Shield Type	Pressure Relief Valve	Shell Thickness	Jacket	Tank Material	Top Fittings Protection	Thermal Protection System	Braking
DOT-117	Bottom outlet handle removed or designed to prevent unintended actuation during a train accident	286k	Full height, ½-inch thick head shield	Reclosing pressure relief device	9/16 inch Minimum	Minimum 11-gauge jacket constructed from A1011 steel or equivalent. The jacket must be weather-tight	TC-128 Grade B, normalized steel	Equipped per AAR Specifications Tank Cars, appendix E paragraph 10.2.1	Thermal protection system in accordance with §179.18	In trains with DP or EOT devices
DOT-117R for Unjacketed CPC-1232	Bottom outlet handle removed or designed to prevent unintended actuation during a train accident	286k	Full height, ½-inch thick head shield	Reclosing pressure relief device	7/16 inch Minimum	Minimum 11-gauge jacket constructed from A1011 steel or equivalent. The jacket must be weather-tight	TC-128 Grade B, normalized steel	Equipped per AAR Specifications Tank Cars, appendix E paragraph 10.2.1	Thermal protection system in accordance with §179.18	In trains with DP or EOT devices
CPC-1232	Bottom Outlets are Optional	263K	Optional; Bare Tanks half height; Jacket Tanks full height	Reclosing pressure relief valve	7/16 inch Minimum	Jackets are optional	TC-128 Grade B, normalized steel	Not required, but when Equipped per AAR Specifications Tank Cars, appendix E paragraph 10.2.1	Optional	Not required

Source: Adapted from USDOT 2015a.

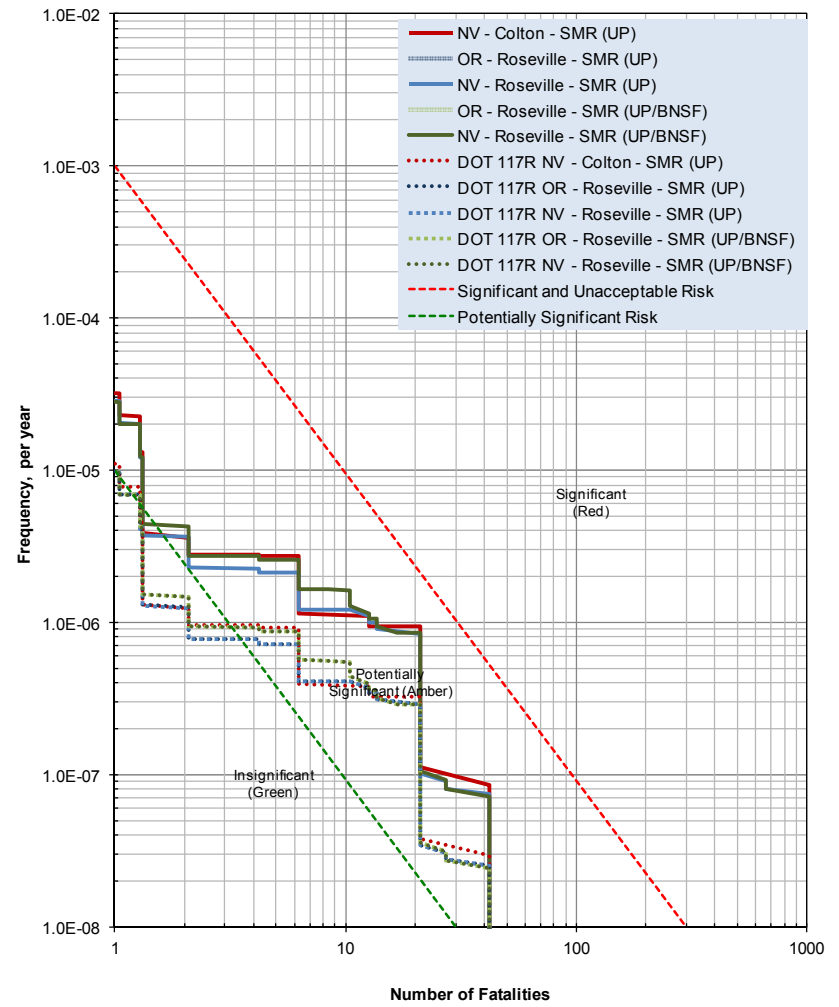
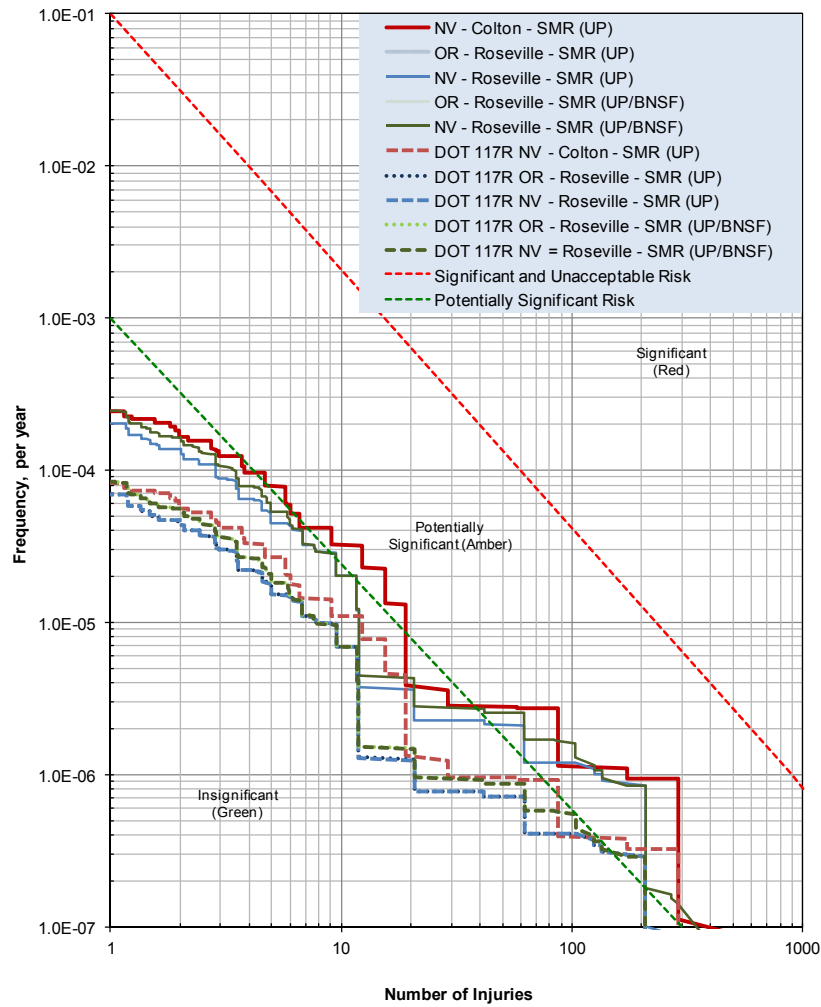
¹ This is referred to as a post October 1, 2011 tank car and is the tank car design proposed for use by Valero.

ECP-Electronically controlled pneumatic; DP-Distributed power; EOT-End of Train

HHFUTs transporting at least one car of Packing Group I flammable liquid to operate with ECP braking system by January 1, 2021. Requires all other HHFUTs to operate with ECP braking system by May 1, 2013 or operate at a maximum speed of 30 miles per hour.

Non –Jacketed CPC-1232 tank cars in Packing Group I (Applicant proposed tank cars) must meet DOT-117R standard by April 1, 2020.

Figure G-1 Risk Associated with Mainline Rail Crude Oil Unit Train Transportation Using DOT-117 or DOT-177R Tanker Cars – SMR to California State Line



Note: Some lines overlap and may not be visible.

Exhibit G

Table G-3 FEIR Mitigation Measure HM-2a and DOT Rule Comparison Table

Tank Car	Bottom Outlet Handle	GRL (lbs)	Head Shield Type	Pressure Relief Valve	Shell Thickness	Jacket	Tank Material	Top Fittings Protection	Thermal Protection System	Braking
FEIR MM, HM-2a: Option 1: PHMSA and FRA Designed Tank Car	Bottom outlet handle removed or designed to prevent unintended actuation during a train accident	286k	Full height, ½-inch thick head shield	Reclosing pressure relief device	9/16 inch Minimum	Minimum 11-gauge jacket constructed from A1011 steel or equivalent. The jacket must be weather-tight	TC-128 Grade B, normalized steel	TIH Top fittings protection system and nozzle capable of sustaining, without failure, a rollover accident at a speed of 9 mph	Thermal protection system in accordance with §179.18	ECP brakes
DOT-117	Bottom outlet handle removed or designed to prevent unintended actuation during a train accident	286k	Full height, ½-inch thick head shield	Reclosing pressure relief device	9/16 inch Minimum	Minimum 11-gauge jacket constructed from A1011 steel or equivalent. The jacket must be weather-tight	TC-128 Grade B, normalized steel	Equipped per AAR Specifications Tank Cars, appendix E paragraph 10.2.1	Thermal protection system in accordance with §179.18	In trains with DP or EOT devices
DOT-117R for Unjacketed CPC-1232	Bottom outlet handle removed or designed to prevent unintended actuation during a train accident	286k	Full Height 1/2 inch thick head shield	Reclosing pressure relief device	7/16 inch-Minimum	Minimum 11-gauge jacket constructed from A1011 steel or equivalent. The jacket must be weather-tight	TC-128 Grade B, normalized steel	Equipped per AAR Specifications Tank Cars, appendix E paragraph 10.2.1	Thermal protection system in accordance with §179.18	In trains with DP or EOT devices