1.0 PURPOSE

The Truck Loading/Unloading Section of the Suncor Energy Operations Manual will have as its guiding influence the Canadian Fuels Association Professional Petroleum Driver’s Manual.

While this manual gives excellent guidance on most aspects of truck transportation of petroleum products, Suncor Energy has developed rules and regulations specifically for their sites to promote the safety of terminal operations.

This document covers general practices. Refer to site specific orientation material for guidance specific to individual terminals.

This document provides the necessary information required to ensure that all personnel are knowledgeable about the safe work practices that should be considered when loading petroleum tankers at Distribution Terminals.

A separate document details offloading procedures for retail sites
2.0 SCOPE

The scope of this document is to define and communicate the precautions and requirements for loading of petroleum trucks to Suncor Personnel and applicable Carrier Personnel working within Distribution Terminals.

This document applies to Suncor Personnel within Distribution. References in this document to “Suncor Personnel” include directors, officers, employees, contract workers, consultants and agents of Suncor.

3.0 RESPONSIBILITIES

Terminal Management
• Accountable to ensure full implementation and compliance of this safe-work practice.
• Responsible to fully comply with Transport Canada B620 and Transportation of Dangerous Goods requirements.
• Responsible to comply with Cat A-2 SOP #42 B620 Inspection.

Terminal Operating Personnel
• Responsible to enforce compliance with this procedure and report all incidents of non-compliance with Terminal Management.
• Responsible to fully comply with Transport Canada B620 and Transportation of Dangerous Goods requirements.

Carrier Personnel
• Carrier personnel must comply with all requirements of this document.
• Responsible to fully comply with Transport Canada B620 and Transportation of Dangerous Goods requirements.

4.0 REFERENCED DOCUMENTS

• Canadian Fuels Association Drivers Manual
• Distribution Terminal Procedure Cat A-2, SOP #03, Driver and Carrier Discipline
DISTRIBUTION TERMINAL OPERATING MANUAL
TRUCK LOADING PROCEDURES AND RULES
CAT A-2 - SOP #25

- Distribution Terminal Procedure Cat A-2 SOP #42 B620 Inspection
- Transportation of Dangerous Goods Regulation
- Transport Canada B-620 Regulation

5.0 PRECAUTIONARY STATEMENTS

5.1 Training
- All Carrier Personnel must be CFA certified and approved for loading at the terminal.
- All Carrier Personnel must be TDG and WHMIS certified and must ensure documentation is readily available at all times when in the terminal
- All Carrier Personnel must have adequate spill and fire response training.
- All Carrier Personnel must be fully compliant with this procedure.
- All Carrier Personnel must hold a valid Transport Drivers license

5.2 Specific Hazards
- Exposure to Petroleum Hydrocarbons
- Awkward Body Position
- Repetitive Motion
- Slips / Trips possible
- Distractions in Work Area
- Complacent with Work Task
- Rushing to Complete Task

6.0 SUSTAINMENT & CONTINUOUS IMPROVEMENT

This document is classified as a Non-Critical Safe-Work Practice and as such must comply with the Non-Critical Safe-Work Practice Procedure Standard as outlined in Distribution Procedure Program, Cat A-3, SOP #01.

Advisor Trucking Operations is to initiate document review process.
To ensure this Standard Operating Procedure document meets all applicable OEMS / PSM standards, this document is to be reviewed at a frequency not to exceed 5 years or when conditions change to warrant a review.
*** NOTE ***

This SOP is divided into two sections:
1) Procedures for truck loading (Section 7)
2) Rules and requirements for truck loading (Section 8 and subsections)

7.0 TRUCK LOADING PROCEDURES

- Follow site specific staging procedures, entering a loading rack is only permitted when the exit path from the rack area is clear of any other vehicles.
- Engine idling should be kept to an absolute minimum during staging and idling is prohibited in loading racks. Engines must be shut off immediately once the unit is positioned for loading in the rack. Once loading is complete the unit should be moved out of the loading rack area as soon as practical after starting the engine.
- Before exiting the cab, all vehicle electrical systems (ignition, lights, windshield wipers, radios, etc) are to be shut off including Bunk Heaters. All non-authorized Personal Electronic Devices must be left in the cab and turned off.
- Set full system parking brakes (tractor & trailer) before exiting the cab and set chock blocks,
- Cab doors are always to remain closed except when entering or exiting the cab.
- Prior to loading, identify the location of the nearest ESD and shutdown valves.
- Ensure proper TDG placards are in place and are clean, legible and not faded.
  All placards changes must be completed before product flow starts.
- Dust caps and/or API adapters shall only be removed for loading and replaced before leaving loading rack area and may only be removed while parked in the loading rack.
- Vehicle cabs must not be occupied during the loading process.
• Carrier Personnel must remain in proximity of API couplers, tank unit valves, loading rack controller and be prepared to immediately stop product flow in the event of an emergency throughout the entire loading process.

• Vehicles shall not be moved with any loading rack equipment still attached.

• Vehicles are prohibited from backing up on Suncor property unless authorized and attended by terminal personnel.

• Loading is not permitted on a tank unit equipped with ANY uncertified, out of date test, expired or invalid offloading hoses. Any hoses unfit for use must be removed from the tank unit and disposed off in an approved manner before entering the terminal to load.

*** NOTE ***

For combination units equipped with separate overfill circuits, overfill protection must be connected to the same tank unit onto which product is flowing. Intentionally bypassing or obtaining a permissive signal in an unapproved manner is strictly prohibited and will result in an immediate loss of loading privileges at Suncor.

• Once the tank vehicle is positioned in the loading rack, before proceeding set chock blocks, complete a 360 walk around, attach the overfill cord and ground cable to the tank unit to be loaded. Verify all compartments are empty by pailing off. Verify ullage, product to be selected, and preset amounts are correct.

*** NOTE ***

Loading On Retains or loading any compartment beyond the greater of 250 litres or 3% remaining ullage is STRICTLY PROHIBITED and will result in an immediate loss of loading privileges at Suncor.
• For each compartment being loaded, a drip pail bonded to the tank vehicle will be placed directly below the dry break attachment. The internal safety valve, vent and API dry break will be opened with the appropriate handle(s) and control valve(s) placed in the open position before the preset volume is entered into the load rack controller.
• For each compartment that has been loaded, the internal safety valve, vent and API dry break will be closed with the appropriate handle(s) and control valve(s) placed in the closed position before loading arm is removed.
• Drip pails will remain bonded to the tank vehicle and in place directly below the dry break attachment until the compartment dust cap and/or API adapter has been replaced. Drip pails will be removed, drained of product and stored before moving tank vehicles.
• For terminals where vapour recovery is required, vapour recovery hoses will be attached, and their inlets/outlets opened before loading arms are attached to the tank vehicle.
• Once product loading is complete all loading arms will be disconnected and replaced in their parked position before vapour recovery inlets/outlets are closed and vapour recovery hoses are disconnected from the tank vehicle.
• Once loading is complete and after all loading arms, and vapour recovery hoses have been removed and drip pails have been drained and stored; disconnect the overfill cord and auxiliary ground cable. Ensure the cord and cable will not be driven over as the tank vehicle exits the loading rack area.
• Prior to leaving the load rack, complete a 360 walk around to verify all equipment and hoses are disconnected, wheel chocks removed and that there are no visible product leaks. In the case of a product spill, do not start the engine or move the vehicle until the area is clean, the incident has been reported and authorization to move has been granted by terminal personnel.
• Check both mirrors before moving the vehicle, and then exit the rack slowly while monitoring the path of the vehicle.
• Tank vehicles are to be moved out of the loading rack area as soon as practical, once loading is complete.
8.0 TRUCK LOADING RULES AND REQUIREMENTS

Below are rules and regulations to accompany the truck loading procedures noted above in
Section 7.

*** NOTE ***

After a driver-caused incident has occurred, driver is not permitted to continue to load and may
not return to load until incident investigation has been completed.

8.1 PPE REQUIREMENTS FOR CARRIER PERSONNEL

In the case for all Carrier Personnel that have loading / unloading privileges at our terminals, the
following PPE requirements must be adhered to at all times. All FRC clothing and PPE must be
outfitted prior to entering the facility loading area and removed only after exiting the site.

a) **HARDHAT** - Must be a Type I Level E hardhat and must meet CSA Z94.1-92 OR ANSI
   Standard Z89.1-1986. Hard hat and harness must be in good physical condition, with no
dents. Hardhat must be worn as designed with the brim facing forward. Hardhat stickers are
to be avoided; however metallic stickers are not allowed. “Meat Packer” type hats are not
acceptable headwear.

b) **SAFETY FOOTWEAR** – CAN/CSA Z195-1 Grade 1 Green Triangle safety footwear is
   required. Footwear must be in good physical condition, no evidence of penetration by oil or
   chemical, no soles with excessive wear, no exposed steel toes or shanks. Safety footwear
   must be a minimum medium cut, 150 mm in height and must always remain laced fully and
   slip on boots are not allowed.

c) **SAFETY EYEWEAR** – Use of safety glasses meeting the CAN/CSA-Z94.3-07 standard or
equivalent ANSI standard (i.e. Z87) as referenced in the applicable provincial OH&S codes
is mandatory. Prescription safety glasses must be fitted with side shields which are
d) **RESPIRATORS** - Must be in use at all times when top loading of gasoline and solvents.

e) **FIRE RESISTANT CLOTHING**
   - All FRC clothing must meet CAN / CGSB 155.20-2000 OR NFPA 2112-2012 requirements.
   - All FRC must be kept clean
   - All FRC clothing must be outfitted prior to entering the loading rack area and removed after exiting the loading rack area.
   - The FRC clothing shall constitute the outermost layer of clothing and shall **FULLY** cover the workers’ arms and legs.
   - All FRC clothing must be adorned with high visibility markings. In the event that the FRC clothing does not meet this standard, then tear away reflective FR vests must be worn over the outermost layer of garment.
   - All parkas, jackets, winter coveralls and rainwear that are worn as the outermost layer of clothing must meet these FRC requirements.
   - Articles of clothing made from 100% synthetic or nylon material are not allowed due to the possibility of static discharge. Clothing must be 100% cotton or cotton blended materials.

f) **GLOVES**
   - Fuel impervious gloves, suitable to the hydrocarbon exposure and task must always be worn.

g) **“HOODIES”** will be permitted in Distribution work area providing:
   - Hoodies must be FR, fire resistant, and must be identified as such on the garment by the use of a tag and or a label
   - Hoodies must not protrude beyond the worker’s eyes and impair the worker’s peripheral vision.
   - Hoodies must not be worn underneath the worker’s hardhat
   - Any strings must be removed to prevent entanglement hazards
• Hoodies must not hang loose from the garment, if the hood is not worn over the hard hat then it must be secured under the outer garment.

Traction Aids—
During winter months (November 1st – March 31st), all drives must have intrinsically safe traction aids readily available to them.

Wheel Chocks
• Picking the appropriate wheel chock that fits the tires “diameter” is one of the most important specification details when selecting the appropriate wheel chock(s). If the wheel chock is not WIDE enough, it will not maintain the tire and weight of the vehicle.

GROSS VEHICLE WEIGHT (GVW): The overall “GVW” is important when selecting wheel chocks because each chock is rated to specific weight capacities. Consult vehicle user manual or contact vehicle manufacture for exact details on gross vehicle weight.

8.2 CARRIER PERSONNEL CERTIFICATION

All Carrier Personnel MUST:
• Be CFA and TDG certified and hold valid Transport Driver licenses for the class of vehicle operated.
• Have valid Driver card issued from terminal
• Comply with applicable Terminal rules and regulations

8.3 TRACTOR / TRAILER CERTIFICATION

All Tractors and Trailers MUST:
• Be fully compliant with Transport Canada B-620 and Transportation of Dangerous Goods regulations
• Be fit for roadworthiness.
• Be without fluid leaks and major defects
• Be in a condition that is safe for operating and transporting dangerous goods
• Not be driven into the loading rack area if a known problem exists with the engine starting or the vehicle electrical system
• Comply with all applicable CFA regulations
• Be equipped with offloading hoses (when applicable) with legible and current B-620 certification tags. It is prohibited to load a tank unit if it is equipped with one or more expired, invalid, or otherwise uncertified offloading hoses
• Be registered for the correct GVW
• Comply with all provincial safety regulations
• Be equipped with at least one spill kit per combination vehicle
• Each power unit must be equipped with one fire extinguisher with a minimum rating of 5B:C.
• Each tank unit must be equipped with one fire extinguisher with a minimum rating of 80 B:C
• Be equipped with a Positive Air Shut-off if required to have engine running to load or offload.

8.4 TRUCK ENTRANCE & EXIT

• Cab doors will remain unlocked and ignition keys will always be left in the ignition while on terminal property.
• Only authorized vehicles are permitted to enter Suncor property.
• Authorized vehicles must follow established traffic routes and stop and/or park in designated areas only. Traffic flow and protocol will be adhered to if switching loading racks is required.
• Diesel particulate filter regeneration is prohibited while on Suncor property.
• Vehicles equipped with emission control high exhaust temperature indicator lights are prohibited from entering Suncor property while these indicator lights are illuminated.
• Prior to entering Suncor property all tank unit compartments must be verified empty of tools and equipment that may have been used internally and could potentially promote static collection/discharge.
• Passengers, except those employed by the carrier for safety and compliance or training purposes, are not permitted in any terminal area where personal protective equipment is required. Passengers are prohibited from occupying vehicle cabs while on terminal property. Passengers must check in with terminal personnel on arrival and remain only in authorized areas.
• Pets are not allowed on Suncor property. Certified Service Animals are allowed, but must be first registered with and approved by the Suncor terminal management.
• Carrier Vehicles must not block driveways or gates and ensure gates are closed behind them on entrance & exit.
• All vehicle marker and headlights are to be fully illuminated when moving in the yard (day or night).
• Leaving the terminal without a Bill of Lading for the product loaded is prohibited.
• Observe terminal speed limit and all posted terminal signs.
• Engine idling is prohibited in the staging and loading rack area.
• All vehicles must use Chock Blocks while loading, offloading or when the driver leaves the driver seat.

8.5 TERMINAL EQUIPMENT

• Unsafe conditions, damaged, defective, malfunctioning, or leaking loading rack equipment must be reported to terminal personnel immediately and prior to leaving the terminal property.
• All loading rack equipment including loading arms, hoses, cords, cable, etc will be placed in the correct at-rest position before moving a tank vehicle in the loading rack area.
• Using loading rack equipment with carelessness, excessive force or for unintended purposes is prohibited.

8.6 OVERFILL PROTECTION
• Any time a loss of permissive situation occurs during the loading process, unless temporary such as due to poor electrical connection, loading shall stop, and the event must be reported to terminal personnel immediately.
• Intentional bypass of the overfill protection system is strictly prohibited and will result in an immediate loss of loading privileges.
• The overfill cord (and auxiliary ground cable if applicable) will be attached to the tank vehicle as the first step of the loading process. Disconnecting the overfill cord (and auxiliary ground cable if applicable) will be the last equipment disconnected from a tank vehicle once all loading is complete.
• For combination units equipped with separate overfill circuits, overfill protection must be connected to the same tank unit onto which product is flowing. Intentionally bypassing or obtaining a permissive signal in an unapproved manner is strictly prohibited and will result in an immediate loss of loading privileges at Suncor.
• Draining a compartment after a loss of permissive event to re-establish a permissive signal is prohibited.
• Tank units involved in overfill events, other than those caused by human error, are prohibited from loading until documented proof of repair and positive response to wet-testing is received from an approved tank vehicle maintenance facility.

8.7 CONTROL OF IGNITION SOURCES

• All electrical ignition sources on any vehicle in the terminal must be shut off and switches placed in the off position including bunk heaters prior to exiting the vehicle cab.
• All un-authorized portable electronic & electrical devices are not allowed at the rack and shall be turned off and left in the cab i.e. cell phones, Bluetooth, Tablets.
• Only intrinsically safe rated electronic equipment can be approved for use at the load rack once the devices are each approved by Suncor terminal operations.
• Matches and lighters are not permitted to be carried in pockets/articles of clothing. These items must be left inside vehicle cabs while on Suncor property.
• Flashlights must be intrinsically safe
• Use of electronic cigarettes, personal vaporizers or electronic nicotine delivery systems are not intrinsically safe and must only be used in designated smoking areas.
• Plastic drip pails are prohibited on Suncor property.
• All loading will cease immediately in the event of lightning, utilize the 30 second rule, if it takes less than 30 seconds to hear thunder after seeing the flash, lightning is near enough to pose a threat; after the storm ends, wait 30 minutes before resuming product flow.
• When bonding / grounding to tank vehicles it is preferred to utilize grounding posts intended for that purpose. If posts are not in near proximity, bond directly to bare metal as close to the tank shell as practical. Painted surfaces may not adequately conduct electricity and therefore should not be used for grounding/bonding.
8.8 RESIDUAL PRODUCT

- Small volumes of residual product may be disposed of through pail drains when authorized by terminal personnel. Pail drains are intended for petroleum product only.
- Dumping of debris in pail drains such as garbage, rags, absorbent and other solid materials is prohibited.
- Dumping of non-diesel / gasoline / ethanol-based products such as water, urine, used motor oil or antifreeze is prohibited.
- Drip pails and those used to drain residual product must be equipped with a means of bonding and not equipped with any non-conductive components.
- Drip pails and those used for draining residual product will be bonded to pail drains before being emptied.

8.9 PRODUCT TRANSFERS

- Transfer of product from truck to truck or compartment to compartment is prohibited on Suncor property.

8.10 ACCESS TO ELEVATED HEIGHTS

- Access to any elevated surface such as on top of tank units or on catwalks behind cab, between trailers or in proximity to the engine or vehicle windshield is prohibited under any circumstance on Suncor property.
- Suncor personnel are authorized to access top of tank units if required, if correctly tied off.
- If it is necessary to gauge or sample a tank vehicle, to allow for adequate static dissipation, a delay of at least 15 minutes relaxation time is required.
- When sampling, never use a plastic pail or a metal container that is not bonded.

8.11 MECHANICAL REPAIRS

- Repairs of any kind are prohibited on Suncor property.
- In case of a breakdown trucks shall be towed from rack or traffic lanes as soon as possible at the carrier’s expense and only by authorized, approved and competent tow truck operators.
• Dropping of tank trailers or unhooking tractors from tank trailers for any reason is strictly prohibited on Suncor property.
• Vehicles that fail to start must be towed out of the loading rack area. In the case of significant air loss, air supply from an external source is only permitted while attended and authorized by terminal personnel.
• All repairs to components such as piping and tank shells that are designed to contain product must comply with specifications outlined in Transport Canada B-620 and be verified liquid and vapour tight before loading is attempted.

8.12 EMERGENCIES

• In the event of an emergency, follow all applicable terminal emergency instructions.
• All spills MUST be reported immediately, DO NOT walk through spilled product.
• Before moving a tank vehicle out of an area where a spill has occurred ensure that it is safe to do so and that no product will be tracked onto asphalt surfaces.
• In the event of a large product spill, (greater than 20 liters) in the loading area, activate the ESD, do not start engines or move any vehicle from adjacent loading racks until authorized by terminal personnel.
• During an on-going emergency, terminal gates will automatically open. When a Terminal has lights and alarms notifying of an emergency, DO NOT drive into the terminal under these circumstances.
• If a fire occurs during loading, if it is safe to do so:
  • Activate ESD
  • Shut off flow of product
  • Close internal valves
  • Disconnect truck electrical system if equipped with an isolation switch for that purpose.
  • Fight fire with extinguisher if trained to do so.
8.13 SWITCH LOADING

- Note: Drivers must bail off all compartment contents prior to switch loading.
- Switch loading is the term used to describe the operation on which a tank or compartment is filled with a high flash point product (e.g. fuel oil, diesel after it has contained a low flash point product - e.g. gasoline).
- Most switch loading explosions result from product splashing, high initial product flow rate, static promoting material moving freely inside the compartment or insufficient dissipation of static electricity.
- Whenever switch loading is to be carried out, if auxiliary ground cables are available at the terminal, they are required. Preset controllers are programmed to control product flow rates to specific parameters to minimize the build-up of static electricity. Manipulating preset volumes and start/stop buttons to intentionally bypass programmed rates is prohibited.

9.0 INFORMATION VERIFICATION

Note: Fill out this section and return to the Terminal Supervisor once all the steps in the procedure have been completed.

Are changes required for this procedure? ☐ YES ☐ NO

If yes, add the required changes into this procedure and return the document to your Supervisor.

10.0 PROCEDURAL DEVIATION

Deviations are allowed for this Standard Operating Procedure if approved by the Terminal Director.
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