

Manual Section 5	Issue Date 03/17/10	Revision Date 01/01/24	Policy Number LLCP-049
	Vacuum Trucks		

Purpose

Vacuum truck operators, as well as facility personnel, will be aware of the numerous potential hazards associated with vacuum truck operations in petroleum facilities, including but not limited to: sources of ignition, flammable atmospheres, potential hazards associated with the surrounding area, toxic vapors and their PEL's and STEL's, additional hazards such as slips and falls, spills and releases, fires and explosions, and accidents within the facility or on the highway.

Scope

All LLC Companies including, Blanchard Industrial, LLC, GIS Engineering, LLC, Grand Isle Shipyard, Inc., and GWIS, Mack Steel, NuWave, Sun Industries, Valvemax, Discovery Industries, Inc.; hereafter identified as “Company”.

Procedure

Before beginning operations, vacuum truck operators shall obtain any required permits and inspect vacuum trucks, equipment, and loading/offloading sites to assure safe operations.

The areas where vacuum trucks will operate must be free of hydrocarbon vapors in the flammable range. The areas where the vacuum truck operator and others work without respirators must also be at or below air -contaminant PEL's/STEL's. If there is any question whether the area is vapor-or toxic gas- free, atmospheric testing shall be performed by a qualified person using properly calibrated and adjusted detectors. Testing shall be conducted prior to starting any operations, and if necessary, during operations, including but not limited to the following: When operations in the area are subject to change such as automatic pump start-up or product receipt into, or transfer out of, a tank located in the vicinity of the transfer operations; when off-loading; when atmospheric conditions change such as wind direction, when an emergency situation, such as product release, occurs in within the facility that may affect atmospheric conditions in the transfer area.

Vacuum hose constructed of conductive material or thick walled hose with imbedded conductive wiring, shall be used when transferring flammable and combustible liquids when the potential for a flammable atmosphere exists in the area of operations. Conductive hose shall provide suitable electrical conductance less than or equal to 1 mega ohm per 100 feet (as determined by the hose manufacturer). Thin walled metallic spiral-wound conductive hoses should not be used because of the potential for electrical discharge through the thin plastic that covers the metal spiral.

The complete vacuum transfer system needs to be bonded so that there is a continuous conductive path from the vacuum truck through the hose and nozzle to the tank or source container and grounded to dissipate stray currents to earth (ground). Prior to starting transfer operations, vacuum truck need to be grounded directly to the earth or bonded to another object that is inherently grounded (due to proper contact with the earth) such as a large storage tank or underground piping. A safe and proper ground to earth may be achieved by connecting to any properly grounded object including but not limited to any one or more of the following examples: a metal frame of a building, tank, or equipment that is grounded. An existing facility grounding system such as that installed at a loading rack. Fire hydrants metal light posts, or underground metal piping with at least 10' of contact with earth. A corrosion free metal ground rod of suitable length and diameter (approximately 9' long and 5/8-in. diameter), driven 8' into the earth (or to the water table, if less).

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Under normal conditions, the absence of oxygen minimizes the risk of ignition in a vacuum truck. However, operating rotary lobe blowers and vacuum pumps at high speeds creates high air movement and high vacuum levels, resulting in high discharge air temperatures and high discharge vapor concentrations that can present potentially ignitable conditions.

A number of methods can be used by vacuum truck operators to safely vent vacuum pump exhaust vapors, including but not limited to the following: Operators can prevent dieseling by locating the vacuum truck upwind of vapor sources and by extending the vacuum pump discharge away from the diesel engine air intake; vapors may be returned to the source container using conductive and closed connections; vapors may be vented into the atmosphere to a safe location using a safety venturi; Vacuum truck operators may provide vertical exhaust stacks, extending approximately 12' above the vacuum truck (or higher if necessary), to dissipate the vapors before they reach ignition sources or other potential hazards and personnel; Vacuum truck operators may attach a length of exhaust hose to the vacuum exhaust that is long enough to reach an area that is free from potential hazards, sources of ignition, and personnel. The hose should be preferably extended 50' downwind of the truck and away from the source of the liquids.

Vacuum truck personnel working in petroleum facilities shall be: trained in the safe operation of the vacuum equipment; familiar hazards of the petroleum products, by-products, wastes and materials being transferred, aware of relevant government and facility safety procedures and emergency response requirements; SDS; appropriate PPE; all personnel shall leave the vacuum truck cab during loading and off-loading operations; when transferring flammable liquids or hazardous materials, vacuum truck operators shall remain positioned between the vacuum truck and the source or receiving tank, vessel, or container and within 25' of the vacuum truck throughout the duration. Vacuum truck operators shall monitor the transfer operation and be ready to quickly close the product valve and stop the pump in the event of a blocked line or release of material through a broken hose or connection; smoking, or any other source of ignition, shall not be permitted within at least 100' (depending on local procedures and atmospheric conditions) of the truck, the discharge of the vacuum pump, or any other vapor source.

Vacuum truck operators shall be trained and properly licensed in accordance with applicable regulations: Vacuum trucks shall not enter into tank dike area until such areas have been checked/monitored and rendered safe: Vacuum trucks cargo tanks shall be depressurized: Vacuum truck operators must be aware of the effect of speeds, turns and the changing center of gravity: Vacuum truck operators shall maintain proper distances when operating vacuum trucks inside facilities with restricted clearances.