

standing to windward

A cover should be removed with the man facing the dome. With feet well braced, he should use short, vigorous pushes on the bar. The cover (if not provided with a chain) and loose tools should be removed to the walk platform or other safe place so that they will not fall.

On the bolted type of dome cover, all nuts should be unscrewed one turn and the cover lifted to break adhesion which may exist between the cover and the dome ring. If there is a sound of escaping vapors, the dome should be tightened and the venting operation repeated.

All dirt, cinders, and debris should be removed from around the interior type of dome cover before the yoke is unscrewed.

When the car must be unloaded through the bottom outlet valve, dome covers should be adjusted to allow for venting. The screw type should be screwed down just enough to expose the 1/2-in. vent holes in the threaded portion of the cover.

A small, thin wood block should be placed under the bolted type of cover, and the interior type of dome cover should be tightened up in the yoke to within 1/2 in. of the closed position. An asbestos or metal cover or wet burlap or canvas should be placed over the tank manhole to protect against entrance of sparks or other source of ignition.

#### **Unloading and loading connections**

The safest method of unloading tank cars is through the dome. Some states prohibit bottom unloading. Where a car has only bottom unloading, the tank's outlet valve must be closed before the outlet chamber cap or plug is removed. A pail or tub should be placed under the outlet chamber and the 2-in. outlet cap unscrewed.

The condition of the outlet valve should be checked, and if there is no serious leak, the unloading should proceed. If the plug does not loosen readily with a 48-inch wrench, the bottom outlet cap or plug can be tapped to loosen it. If the valve leaks so badly that a connection cannot be made without spilling the product, the car should be unloaded from the top.

In cold weather the outlet chamber, if the chamber or valve is frozen or blocked with frozen liquid, should be carefully examined

for cracks. If a crack is not found, the connection for unloading should be made and the outlet chamber wrapped with burlap or other rags, and hot water or steam applied.

The connection from the car to the storage tank should be carefully checked for proper condition before the car valve is opened. The storage tank should be watched to prevent overflow, and the hose and unloading line should be checked frequently. The tank car should be examined before loading lines are disconnected to make certain that it is completely empty.

A workman should be present throughout the entire loading or unloading operation and while a car is connected. If it is necessary to discontinue operations before they are completed, the outlet valve should be closed and the dome cover and outlet chamber cap replaced.

Tank cars should not be allowed to stand with loading or unloading connections attached after operations are completed. If flammable liquids are spilled, spill areas should be covered with fresh dry sand or dirt. Never flush spills into public sewers and drainage systems, or natural waterways.

When heater pipes are used for unloading, the steam should be applied slowly until it begins to exhaust at the outlet pipe. Steam pressure should not exceed that needed to bring the contents to the desired temperature and should never be high enough to cause the contents to overflow.

Care also must be exercised to avoid exceeding the flash temperature of "cut-backs" or additives introduced into various heavy products—for example, the addition of naphtha to residual asphalt. Overheating these products containing certain additives can release dangerous quantities of flammable vapors.

#### **Placards**

Shipping cards and DANGEROUS or FLAMMABLE placards should be provided and then removed after operations are completed. They should then be replaced with DANGEROUS-EMPTY placards. DEFECT cards or forms of any kind which have been attached to a car by railroad employees should not be removed. Placards, rags, waste, and blocks should not be disposed of in the tank or car body.