

# MSA Gas Detection: Monitoring Petroleum Loading in Terminal Bays



## Situation

Over 1,800 tank car and truck terminals to load and unload petroleum products for customer delivery are located in North America. Each terminal consists of 2 to 10 bays to accommodate trucks and tank cars. The majority of these petroleum products are processed for use as heating oil, gasoline, jet fuel, propane, butane, and cooking oils.

Railroad tank cars normally deliver these petroleum products into storage facilities beside terminals, although sometimes barges unload at waterfront docks with unloading facilities. Truck-loading bays allow trucks to load their products for transfer to gasoline filling stations, homes, office buildings, etc. These facilities are located in every

refinery, fuel storage terminal, and gasoline storage terminal. Because of the hazards associated with petroleum products, these areas must be monitored continuously.

Each terminal bay area should be protected with 2 to 4 flame detectors and a controller in order to activate alarms, shut down loading operations if necessary, and turn on a (sprinkler or foam) fire-suppression system.

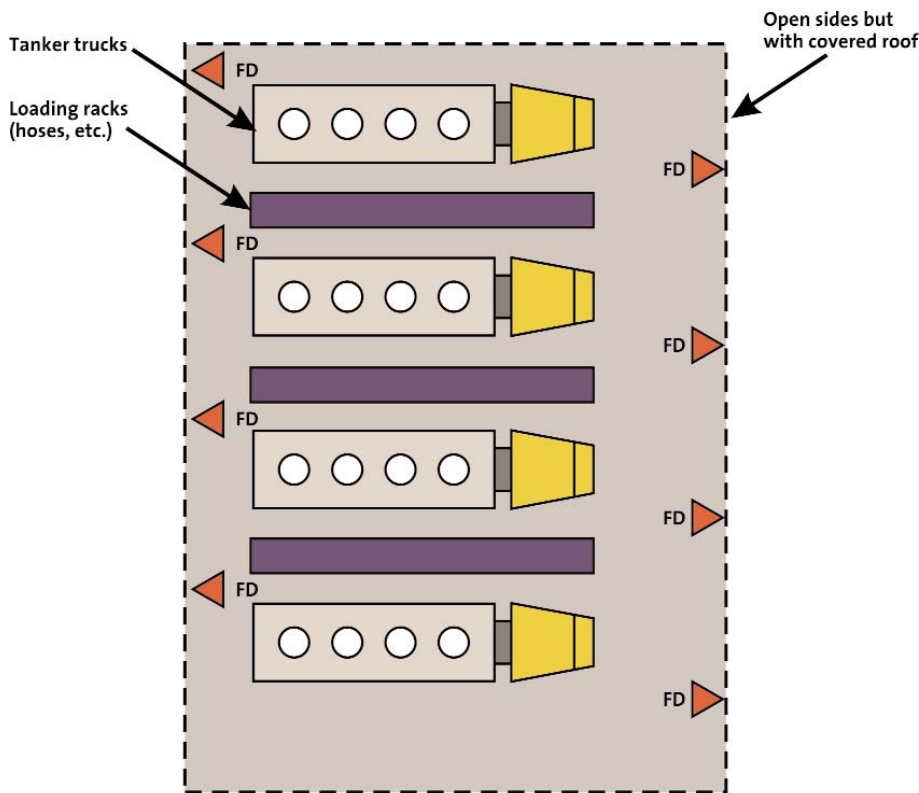
The flame detector of choice is MSA's Flamegard® IR3 Flame Detector (triple IR), often mounted slightly above and on both sides of trucks or tank cars. Often, gas detection has not been used in these terminals, because personnel must be present during loading/unloading operations.

## Solutions from MSA

MSA's Flamegard® IR3 Flame Detector is an extremely sensitive, self-contained instrument that incorporates patented "triple IR" sensor technology. This rugged 316 stainless-steel, stand-alone unit detects virtually any hydrocarbon fire, including natural gas (LNG), town gas, liquefied petroleum gas (LPG), and hydrocarbon gases and liquids. The Flamegard IR3 is highly immune to false alarms. Other convenient features include onboard relays, sensitivity selection, and built-in-test capabilities.

MSA's Suprema® Control System offers the new standard in flame- and gas-detection technology through modular redundancy for the monitoring

# Tanker Truck Loading/Unloading Terminal



FD = Flamegard® IR3 Flame Detector

## MSA Recommended Equipment



Flamegard® IR3  
Flame Detector

of 4-20mA input sensors, smoke detectors, heat sensors, and manual alarm call points. Offering signal processing for up to 256 inputs and 512 outputs per controller, this intelligent safety system is field-configurable and provides a distributed bus technology architecture to ensure fail-safe internal data transfer. This unit has ATEX safety approvals and TUV approval for up to SIL3 systems and CUL approvals.

For more information on these MSA products for terminal bay applications, go to [www.msanet.com](http://www.msanet.com) for bulletin# 07-2078, MSA Flame and Gas Detection for the Oil, Gas, and Petrochemical Industries.

**Note:** This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products.



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