

Program Letter
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Satellite or Remote Vehicle Fuel Dispensers

A concept in vehicle fueling, which is becoming more frequent, involves a secondary system dispenser designed to provide an alternate means of fueling a vehicle from the opposite side of the vehicle. The alternate means is a second dispenser plumbed from the primary (master) dispenser to a location on the opposite side of the vehicle. This concept is intended to shorten the fueling activity by providing a means to fill fuel tanks on the opposite sides of the vehicle simultaneously. This concept is predominant at service stations fueling saddle tanks on diesel trucks. The second dispenser is referred to as a satellite or remote dispenser. The secondary dispenser relies on the pump and meter that is associated with the primary dispenser. The pump is generally a submersible located at the tank. The piping that is running to the remote dispenser is connected to the primary dispenser piping just after the product meter. The remote dispenser is electrically wired to be activated independent of the primary dispenser. However, in order to initially activate the satellite, the controls of the primary dispenser must be activated first. This is typically done by removing the nozzle of the primary dispenser from its hanger/bracket and activating the "on" switch. The NFPA 30A Automotive and Marine Service Station Code expresses requirements for these units detailing how components must be pieced together. The intent of the code is that any device used to transfer fuel into a vehicle tank must have all the attributes of a dispenser.

Department inspectors are seeing satellite dispensers that do not provide the required fire or environmental safety components. Frequently, components are used in a capacity not intended by the manufacturer or in conflict with industry practices. Components frequently lacking are: automatic shut-off, leak detection, collision protection, etc. In some cases the satellite is no more than a riser with a hose and nozzle connected to it.

As the regulatory authority with the responsibility of maintaining fire, health, and environmental safety standards for flammable or combustible liquids, the department will use the following criteria when inspecting satellite dispensers. The criteria is based upon logical engineering and design practices within the intent of the code.

NFPA 30A (1987 & 1993 Edition) Chapter 4-2 addresses Fuel Dispensing Devices.

NFPA 30A 4-2.2 (1987 & 1993 Edition), requires that a dispensing device for Class I liquids be a listed device. *Devices used for dispensing of Class II liquids are not specifically addressed in NFPA 30A. The pump used to provide product to a device must be listed. Since operators frequently switch between Class I and Class II liquids, the department has taken the position that all pumps dispensing liquids regulated under ILHR 10 must be listed.*

Major manufacturers of dispensing devices manufacture satellites to be used in conjunction with a master dispenser. These devices are listed for that use and carry a label.

NFPA 30A 4-2.3 (1987 & 1993 Edition), requires that a control be provided that will only allow the pump to operate when the nozzle has been removed from its bracket. This control must also stop the flow of product when the nozzle has been returned to its bracket.

NFPA 30A (1987 & 1993 Edition), Chapter 4-3.1 addresses *Remote Pumping Systems* which sets the industry standard for the transfer of fuel from a dispenser that is supplied by a pump remote from the dispenser. In the interest of human and environmental health and safety the department takes the position that dispensing systems with satellite or remote dispensers must have the following elements:

- The dispensing unit must be provided with a device that will control the flow of product, and prevent accidental discharge or leakage (NFPA 30A-4-2.1, 1987 & 1993 Edition). *This requirement prohibits any dispensing through a system that does not incorporate some type of variable flow valve (nozzle).*

- A control shall be provided that will allow the pump to operate only when a dispensing nozzle is removed from its bracket or normal position and a switch on the dispensing device must then be manually activated to energize the pump and solenoid valves. The control shall also stop the flow of product when *all* nozzles have been returned to their brackets or non-dispensing position. Single action master (primary) and satellite dispensers shall have a clearly marked “pump stop” control at each fueling position. Controls on the satellite are not required to shut down product supply to a master dispenser. Controls on a master shall shut off flow to a satellite dispenser.

NFPA 30A 4-2.3 (1987 & 1993 Edition) is a general statement that the control must interact with the pump. Today's remote dispensing locations normally have multiple devices fed from the same pump. The control at each dispenser has the ability to place the pump in operation or to stop the pump. When more than one dispenser is in use, the control does not directly start or stop the pump, it does however activate solenoid valves, internal to the dispenser, allowing or stopping flow of product to the respective hose. The control must stop the pump when all nozzles supplied by a submerged remote pump have been returned to their non dispensing position.

- The dispensing device shall be mounted (NFPA 30A-4-2.5, 1987 & 1993 Edition) on a concrete island or otherwise protected from collision and securely bolted in place. Installation shall be in accordance with manufacturers instructions.
- Hoses shall comply with NFPA 30A 4-2.6 (1987 & 1993 Edition).
- A listed rigidly anchored emergency shut off valve per NFPA 30A 4-3.6 (1987 & 1993 Edition) shall be provided on the supply line at the base of each individual island type dispenser or inlet, of each overhead dispensing device.
- Piping from the primary dispenser to the remote dispenser *must be provided with* leak detection and catastrophic release detection as is required for the piping to the primary dispenser. A leak and release detection system on the piping from the tank to the primary dispenser capable of monitoring the piping to the satellite dispenser is acceptable.

This can be achieved if the solenoid at the satellite dispenser is located on the outlet side of the fire/impact valve at the satellite dispenser. The line leak detector for the primary line must have the ability to monitor the satellite line. A principle being that as either dispenser is activated, the leak detector will quickly “read” the line from the point of the leak detector to the solenoid in the satellite dispenser. If the detector senses a breach anywhere in the line it will activate flow restriction.

Another satellite dispenser issue which the bureau does not have regulatory authority for, but occasionally has inquiries about, involves a “weights and measures” regulation. The National Institute of Standards and Technology Handbook 44 is an adopted reference of the Wisconsin Department of Agriculture - Weights and Measures. *Section 3, UR. User Requirements, UR.2.4 Diversion of Liquid Flow.* - A motor-fuel device equipped with two delivery outlets (master and satellite) used exclusively in the fueling of trucks shall be so installed that any diversion of flow to other than the receiving vehicle cannot be readily accomplished and is readily apparent. Allowable deterrents include, but are not limited to, physical barriers to adjacent driveways, visible valves, or lighting systems that indicate which outlets are in operation, and explanatory signs (Amended 1991).

