


**Tennessee Department of Environment and Conservation  
Division of Underground Storage Tanks  
Office of the Director  
Regulatory Interpretive Memo**

DATE: November 1, 2006

TO: All UST Division Staff

FROM: Stanley R. Boyd 

SUBJECT: Suction piping and vent restriction overflow prevention devices

QUESTION: For tanks with suction piping systems, do vent restriction overflow prevention devices (ball float valves) meet the requirements of the Underground Storage Tank Program Rules?

**SCOPE OF THIS DISCUSSION**

The applicable rules for this question are: Rule 1200-1-15.2(1)(c) and Rule 1200-1-15-.02(1)(d). The relevant language in 1200-1-15-.02(1)(c) requires all tanks to be equipped with overflow protection devices ... to prevent spilling and overflowing associated with petroleum transfer to the UST system... The relevant language in Rule 1200-1-15-.02(1)(d) states that "All tanks and piping shall be installed in accordance with the manufacturer's installation instructions."

There are four specific reasons that using ball float valves on suction piping systems will not adequately prevent overfills and is not in compliance with the Rules. These are explained below:

1. The product catalog of petroleum equipment manufacturer OPW, states that ball float valves are not to be used in suction systems: "OPW Overflow Warning Systems should only be used on submerged pumping systems, not suction pump systems.... OPW Overflow Warning Systems should only be used on gravity drop systems. Do not use where Pump -Off unloading or coax fills are used."
2. Petroleum Equipment Institute (PEI) has established installation standards that are widely accepted in the industry. PEI Recommended Practice **RP-100-05**, Section 7.3.3 "Vent Restriction Devices" states that:
  - Vent restriction devices **must not**<sup>1</sup> be installed in storage systems that are equipped with suction pumps and air eliminators.
3. The United States Environmental Protection Agency (EPA) has dealt with this issue in the past and has taken a position on this question. EPA states that:

"You should not use a ball float valve for overflow protection if any of the following conditions apply because you could create overfills or dangerous situations (such as pressure building up in the tank) and result in gasoline spraying onto the delivery person or into the environment.

Do not use ball float valves if:

  - Your UST receives pressurized deliveries
  - **Your UST has suction piping**
  - Your UST has coaxial stage I vapor recovery<sup>2</sup>
4. The Division is unaware of any technical information that would support the use of ball float valves as valid overflow protection for suction piping systems regardless of the size of the tank or product contained.

**CONCLUSION**

For UST systems with suction piping, vent restriction devices (ball float valves) do not satisfy the overflow requirements of the Tennessee Underground Storage Tank Rules.

<sup>1</sup> Emphasis added

<sup>2</sup> July 2004 EPA publication "Model Underground Storage Tank Environmental Results Program Workbook"