



Hazard Management for Shop Fabricated Aboveground Tanks

Routine Maintenance

- Emergency vents should be cleaned and inspected annually.
- Lubricate parts as prescribed by the manufacturer.
- Inspect/clean/lubricate sealing surfaces.
- Lubricate hinges on hatch type E-Vents.
- Inspect gaskets on hinge type vents and replace as necessary.

E-Vents stuck shut with paint



Routine Maintenance

- Combination PV Vent/flame arrestors should be serviced as prescribed by the manufacturer.
- Normal vents should be periodically cleaned and inspected for blockage or sticking components that can occur in pressure/vacuum vents.
- Make sure when re-installing directional vents to point the outlet away from potential ignition sources such as delivery vehicle.

Directional vents





Routine Maintenance

- Float activated combination pressure/vacuum overflow alarm vents should be inspected and cleaned annually to ensure proper function.
- This usually requires disassembly that should only be performed by a trained technician.
- Electronic overflow alarm/gauges should be inspected and tested frequently.
- Audible test button should always be depressed to confirm alarm prior to each delivery.

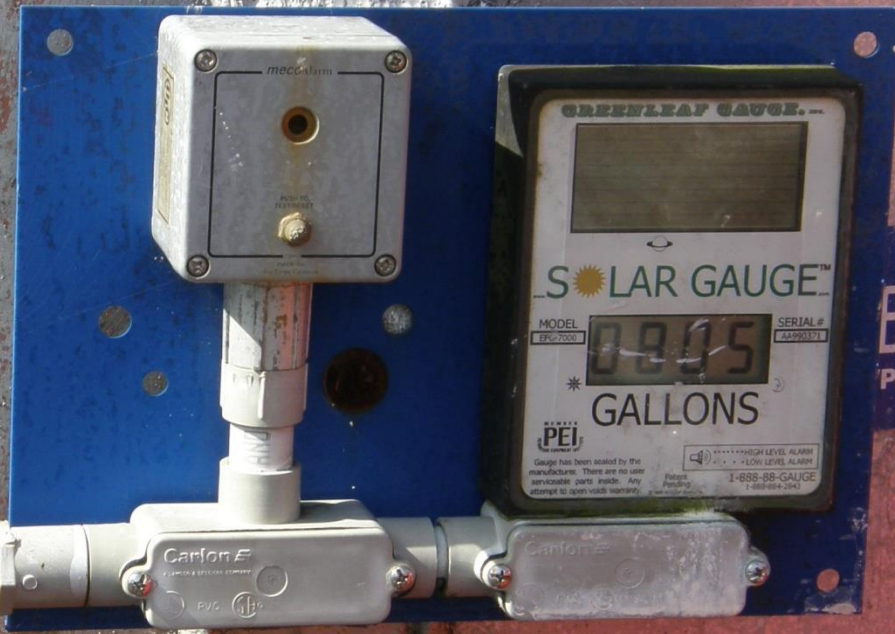
Routine Maintenance

- Battery life varies a great deal on electronic devices especially if the enclosure is not weather tight.
- Corrosion is the leading cause of failure on electronic devices.
- Cracked touch pads become brittle and crack from UV and cold temperatures allowing moisture to enter the housing and corrode contacts.



Routine Maintenance

- Probe wires do not need to be in explosion proof conduit but should be protected by general purpose conduit to prevent damage from wind or other debris.
- Conduit should be supported and secured to the tank shell in some manner.
- Simulated overflow testing should be performed on these type devices annually if possible.



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Routine Maintenance

- Float/tape style gauges especially on tanks storing class 1 liquids should be inspected frequently.
- Packing glands should be on a fixed schedule for greasing based on the frequency of receipts and manufacturers instructions.
- Sight glass gaskets should be inspected and replaced as needed.

Missouri Rule (CSR) Housekeeping

- All areas adjacent to storage tanks containing products regulated by Chapter 414 RSMo shall be kept free of flammable and combustible material.
- Weeds, tires, tall grass and free product shall be removed from in and around all storage facilities.







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Visual Inspections

- Visual walk around inspections should be performed each day when taking gauge readings for inventory reconciliation.
- Accurate daily inventory is the best method of detecting leaks in the tank or piping.

Internal Tank Maintenance

- It is critical to remove water bottoms especially in tanks storing low sulfur diesel.
- If there is no practical way to maintain zero water such as draws in the tank bottom, a fungicide should be considered.
- Internal corrosion is becoming a huge problem, tank failures are occurring at an alarming rate.

Internal Tank Maintenance

- Gasoline will be lower in sulfur content in the near future.
- With E-10 in practically all gasoline, there will be a considerable amount of water suspended in the fuel at all times.
- It is uncertain how the reduction of sulfur in gasoline will effect tanks.

Documentation

- Installers or vendors should provide the owner with following information;
- Operating instructions for all components in the storage system;
- Equipment manufacturers' warranty certificates;
- Regulatory permits obtained by the installer;

Documentation

- Documentation for all testing during construction and before system start up;
- Recommended test procedures;
- Equipment maintenance schedules;
- Tank charts that indicate liquid volume in the tank as a function of depth.

Documentation

- It is equally important for the operator to document all visual inspections and maintenance performed.
- The first thing regulators and insurance companies ask for during an inspection or response to a spill is documentation.

ROUTINE MAINTENANCE, GOOD
HOUSEKEEPING, VISUAL
INSPECTIONS AND
DOCUMENTATION ARE
ESSENTIAL TO HAZARD
MANAGEMENT.



Thank you

MISSOURI DEPARTMENT
OF AGRICULTURE

*WEIGHTS ,MEASURES, and
Consumer Protection Division*