API Recommendations Focus on Restarting Fuel Tank Operations after Flooding

In the wake of the deluge caused by Hurricane Katrina, the American Petroleum Institute (API), in conjunction with Steel Tank Institute, Petroleum Equipment Institute and the Fiberglass Petroleum Tank and Pipe Institute, has reissued recommendations on steps for resuming fueling service after flooding.

All four associations have agreed to help distribute the information.

Applicable to situations faced by tank owners in the Gulf Coast region, the API document was updated in recent days. It initially was developed after hurricanes caused massive flooding in North Carolina and South Carolina during 1999. Following is the text of the API document.

Options for Consideration: Opening a service station after flooding

(This list is not intended to be a complete checklist. In general, after severe flooding, consideration should be given to doing a system test similar to a test done for a new installation. All suggestions may not necessarily be applicable to every station or situation and therefore may not be required.)

Do:

- Check all electrical panels and make sure they are clean and dry.
- Check electrical system for continuity and shorts (pumps, turbines, dispensers, emergency shutoff, panel box, etc.)
- Eliminate water in dispenser sumps, pans, tank sumps etc. (tank sump water should be removed by an authorized and/or state licensed waste hauler to be taken to an appropriate treatment facility)
- Check monitoring wells for contamination
- Handle hazardous waste according to the law (gasoline contaminated water or water contaminated gasoline)
- Check tank bottoms for water and debris (due to surface infiltration) *
- Tightness testing of tanks. Use electronic leak detection system 0.1 gph test if available. Tanks with brine or vacuum interstitial sensors may be returned to service if brine or vacuum levels are normal.
- Check deflection of fiberglass tanks. If deflection is greater than manufactures specification (general guideline is 2%) call the manufacturer for instruction
- If tanks shifted and problems are found, repair them according to
manufacturer’s instructions and appropriate industry standards (API 1615 and NFPA 30 and 30A) and regulations (40 CFR 280)

• Check vent and vapor lines (Stage II) for movement and cracking
• Check vents for blockage and proper operation
• Check pressure transducers on product line leak detectors (ensure no water infiltration)
• Tightness testing of piping – Use electronic line leak detection 0.1 gph test if available
• Check cathodic protection system to ensure it is connected and operational
• Check with vendors for recommendations on proving equipment
• Inspect dispenser electronics for evidence of water intrusion. Use dispenser manufacturer dryout procedures prior to energizing dispensers.
• Check dispenser filters and submersible check-valve screens for plugging with dirt or mud
• Flush dispensers and all UST system
• Check all Stage II vapor recovery system equipment, if present (e.g., filters, screens, etc for the presence of dirt, mud, etc.)
• Check critical safety devices (e.g., Emergency power off controls, line leak detectors, air compressor pressure limiters, shear valves, stop switches, isolation relays on dispensers, etc.)
• Provide new tank calibration charts and where appropriate tank gauge programming

Don’t:

• DO NOT receive new product until system integrity is proven
• DO NOT assume everything is okay because water didn’t actually flood over station. The water table could have risen and caused problems.
* Stick tank or read automatic tank gauge system to determine whether water has entered the UST. If using ethanol as an oxygenate in your fuels determine whether an ETOH phase-shift has occurred (use an ethanol-water detecting paste). If water is in the tank and ethanol is not an oxygenate, have the water pumped from your UST by a licensed and approved waste hauler to be taken to an appropriate treatment facility. If ethanol is used as an oxygenate and a phase-shift has occurred, which could happen with 5-6 inches of water) consider pumping the UST completely. Again have the water pumped from your UST by a licensed and approved waste hauler to be taken to an appropriate treatment facility.

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Editor’s Note: Tanks with debris may necessitate that the tank be cleaned. Tank Talk has featured several articles on this topic. Click this link for the most recent article, "Q&A: Avoiding Phase Separation During Conversion to Ethanol," by Richard Bradley, can be found at