

Corrosion Treatment of AST and UST System Components

Storage Tanks and their associated piping have improved over time, due to better materials, construction methods, coatings, and corrosion protection devices. Inspectors have noticed that fittings and other connections made of steel and other metals continue to show significant oxidation or corrosion. Corrosion of metallic components is a problem in Florida due to high humidity and other environmental conditions at AST and UST facilities. A majority of the corrosion problems occur in vaults or sumps where vapors collect. Corrosion leads to operational and structural problems that could potentially result in a discharge or release. Rule 62-762.501, F.A.C., specifically states that *“exterior portions of...aboveground integral piping...shall be coated or otherwise protected from external corrosion. The coating shall be designed and applied to resist corrosion, deterioration and degradation of the exterior wall.”* Although there no specific language in on this matter, the language in Chapter 62-761.700(1)(a)3.a. F.A.C. is applicable to components associated with underground systems. This language states “Repairs shall be made (i)n a manner that will prevent corrosion for the remaining operational life of the storage tank system”.

The department does not require or recommend any specific treatment method, other than to remove the corrosion and **provide protection to exposed metal fittings**. Treatment of these fittings, with paint or other coatings, requires removal of rust to bare metal often followed by a primer or other treatment before final finish. Many of these coatings have been vetted through the Equipment Approval process and have been issued an EQ order. **Other treatments involve the removal of accumulated rust followed by a treatment with an organic acid or other chemical treatments that converts rust to black oxide and polymers which bond to the oxidized metals. This results in a metallic surface that is often black or dark, slightly rough and may have a “wet looking” appearance.** Routine inspection of any coated or treated fitting should, at a minimum, follow the manufacturer’s specifications with follow up treatment by the owner/operator as needed.

For more information on the cause and the effect of corrosion:

<http://www.epa.gov/ordntrnt/ORD/NRMRL/gwerd/pubs/corrosion-in-stp-sumps.pdf>

January, 2014

Bill Burns

Director of Compliance, Petroleum Storage

Florida, DEP