

DESIGN OF A UST MANAGEMENT SYSTEM
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Abstract

Underground storage tanks, (USTs) contain diesel and gasoline, which must be constantly monitored as required by the regulations of the Tennessee Department of Environment and Conservation (TDEC). Automatic tank gauges (ATGs), which are able to track the tank's inventory and detect leaks in the tank, monitor these tanks. The results of the ATG tests are printed daily in the form of paper receipts that must be collected by employees at each of the eleven sites. The compliance manager then collects these receipts. Without proper communication among employees, the collection of receipts can be overlooked. In addition, there are problematic factors associated with the current UST management system, which make it very difficult to ensure regulatory compliance, and it is necessary to improve the existing system.

Memphis Light, Gas and Water serves Shelby County, Tennessee with 11 service depots that include twenty USTs. With the system approaching the end of its life cycle and the problems associated with maintaining compliance, it is imperative that upgrades be considered. This paper addresses these concerns and contains three components: analysis of current equipment and operations associated with the MLGW UST management system, which includes twenty USTs monitored by 11 ATGs; analysis of all viable alternatives, with a special emphasis on the environmental and economic impacts; and finally a pilot design that automates recording procedures by providing vital product information through MLGW's intranet in real time. The project will examine commercially available ATGs, especially the communication's features of the devices that allow each site to communicate with a central location. The pilot design, when implemented, will demonstrate that the selected plan meets system constraints and will guide designers in determining problems not anticipated before implementation.